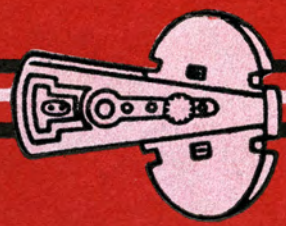
LUFKIN OIL FIELD EQUIPMENT



CATALOG 38

Featuring the

LUFKIN *Universal* PUMPING UNIT

LUFKIN FOUNDRY & MACHINE COMPANY • LUFKIN, TEXAS

LUFKIN EQUIPMENT OF ADVANCED DESIGN

LUFKIN FOUNDRY & MACHINE CO.

FACTORY AND GENERAL OFFICES

LUFKIN, TEXAS

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WATCH LUFKIN

As pioneers in the manufacture of geared units for oil field pumping, the Lufkin Foundry & Machine Company has gained its present position as the world's largest manufacturer of PUMPING EQUIPMENT through no miracle, but rather having won this place through the continued efforts of its engineers seeking new and improved designs as experience dictated. In this endeavor we have had the fine and friendly cooperation of oil company engineers and practical operators in the field. As a result of this constant striving for the best to be had for the desired operation, LUFKIN UNITS stand foremost in the minds of producers everywhere.

Being located close to many producing areas has enabled our engineers to keep in close touch with the performance of our equipment, which has made it possible to continually watch details, which many times makes for success or failure in practical operation.

In appreciation of the confidence of our friends, we will continue our policy of producing the most efficient, practical equipment, proportionately designed, manufactured of the best materials available; of superior workmanship; and to maintain helpful service as long as our equipment is in use.

Testing Lufkin Units

THE LUFKIN UNIVERSAL UNIT

Users of Lufkin Units will note many improvements both in design and construction. These improvements have been made to meet changing demands of the industry. As a consequence we offer the **Lufkin Universal Unit.**

All general sizes and dimensions have been maintained so that recent improvements are interchangeable with former designs or can be applied to present equipment when necessary. The principal improvements in the new Lufkin Universal Unit are: larger pitman bearings; straight line Universal equalizers; and Universal beam bearings that allow "push-up" as well as "pull-down" movement without lost motion.

The last named improvement has been found necessary when more than one well is pumped from the same beam or when taking potential tests at high speeds.

Generally speaking, the new beams, posts, bearings, hangers and horseheads are interchangeable on either twin crank or single crank units.

Unit assemblies 0A, 1A and 2A, having longer beams, are regularly furnished with rod hangers (see Page 1885). However, horseheads with wire line hangers can be furnished if desired at slight extra cost.

Twin Crank Units No. 2, 3, 4, 5 and the No. 6 Special unit are regularly furnished with horseheads.

Interchangeability of parts will be found a very desirable advantage in the new Lufkin Universal Unit.

Particularly, attention is called to the standardization of the single crank units shown on Page 1306.

The new Lufkin No. 6 Special Unit is especially designed for light production and provides for either fast or slow pumping (see Page 1292).

Lufkin powers and surface equipment have been greatly improved and will appeal to those appreciative of substantial practical products.

ALL LUFKIN REDUCTION GEARS ARE TESTED UNDER FULL LOAD

After all, the real cost is not determined by the purchase price but by how well the unit performs and how long it lasts!

To date no Lufkin Herringbone Gears have failed in service.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

WORKING "POINTS" THAT INSURE FULL STROKE ON POLISH RODS AND HIGHEST COUNTERBALANCE EFFICIENCY

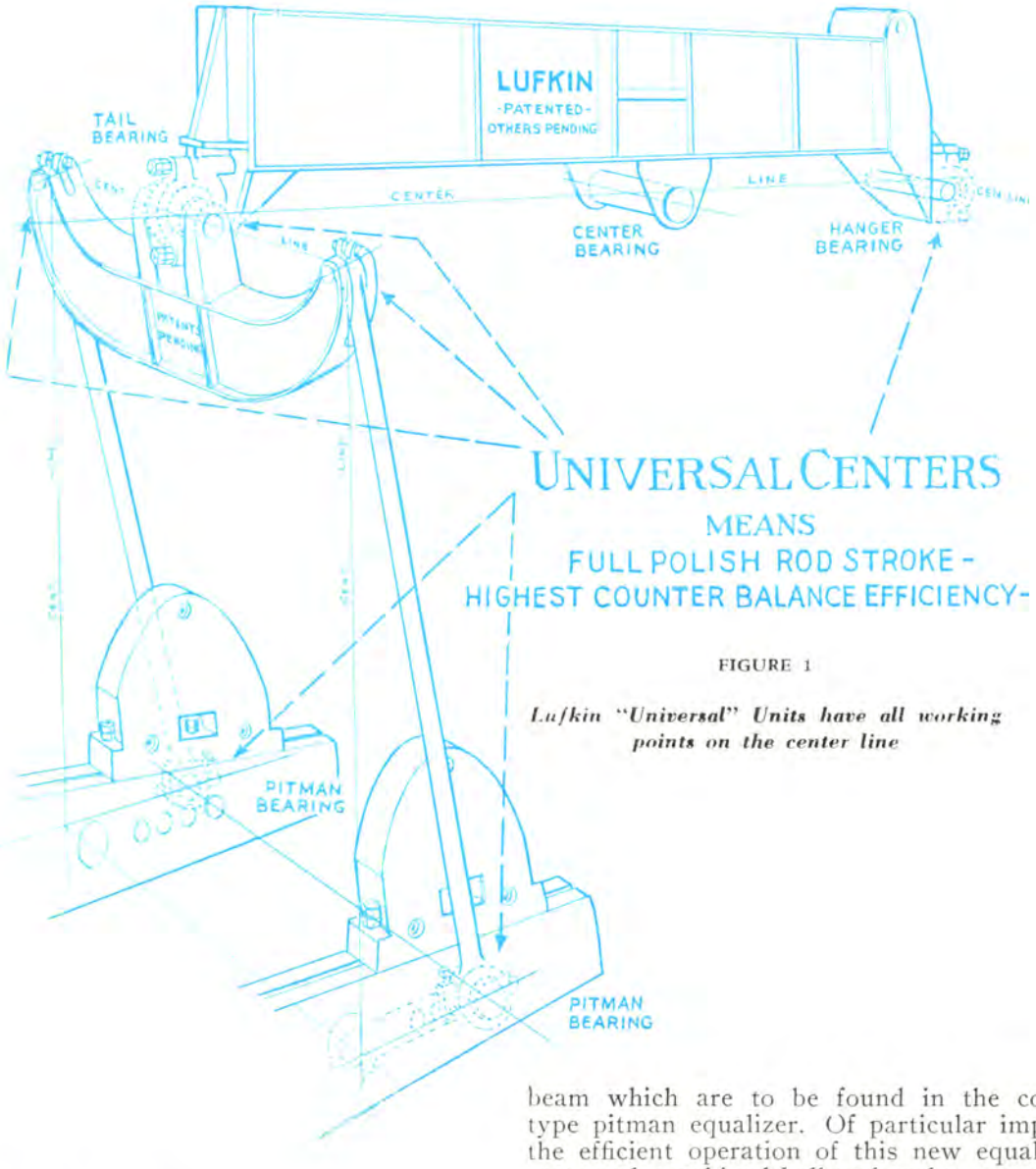

FIGURE 1

Lufkin "Universal" Units have all working points on the center line

UNIVERSAL CENTERS . . .

What They Mean to the Efficient Operation of Pumping Equipment.

This improved Lufkin Unit is the result of many years experience in the design and manufacture of pumping equipment. After exhaustive experimental operations in the field, we offer it as the latest and most efficient development.

The success of the Lufkin center line beam is phenomenal. With all centers in line, this design permits full length stroke on the polished rod and makes possible the highest operating efficiency of the rotary type crank counterbalance.

This center line idea, originated and patented by Lufkin Foundry & Machine Co., has been incorporated in the design of the new pitman equalizer. All working points are in line, eliminating thereby all the usual unnecessary strains on pitman and beam which are to be found in the conventional type pitman equalizer. Of particular importance to the efficient operation of this new equalizer is the cast steel, machined ball and socket connection with Bronzoid shaft bearings. In this design the pressure area is placed on the bottom of the bearing.

It is evident that where this "center line action" is not included (where pitman connects from top of beam) that not only is there loss in the length of stroke on polished rod, but there is also a serious loss in counterbalance effect. Charts of equipment of conventional designs in operation indicate a "nose-diving" action as the rods go in the hole, making correct counterbalance adjustment impossible.

The new Lufkin center line equalizer has been under test for a considerable length of time under the most exacting operating conditions, and has been found not only efficient in every respect, but practical and desirable from every operating standpoint.

Ball and socket connections are standard equipment and are provided on either end of the beam.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

BOILED DOWN FACTS ABOUT LUFKIN COUNTERBALANCE CRANKS

THE TROUT COUNTERBALANCE CRANK

Rotary crank counterbalancing (originated by Lufkin) is now universally accepted, the idea not only reducing the power required, but due to the even strain placed on rods and walking beam, as well as the geared unit, rod trouble and beam breakage has been almost entirely eliminated.

Cranks in several forms have since been offered, but our many customers continue to favor the Trout crank. It has twelve outstanding mechanical advantages:

1. Simple, practical construction.

2. Easily adjustable from zero to maximum counterbalance.

3. Accurate balance within 2-amps on up and down stroke.

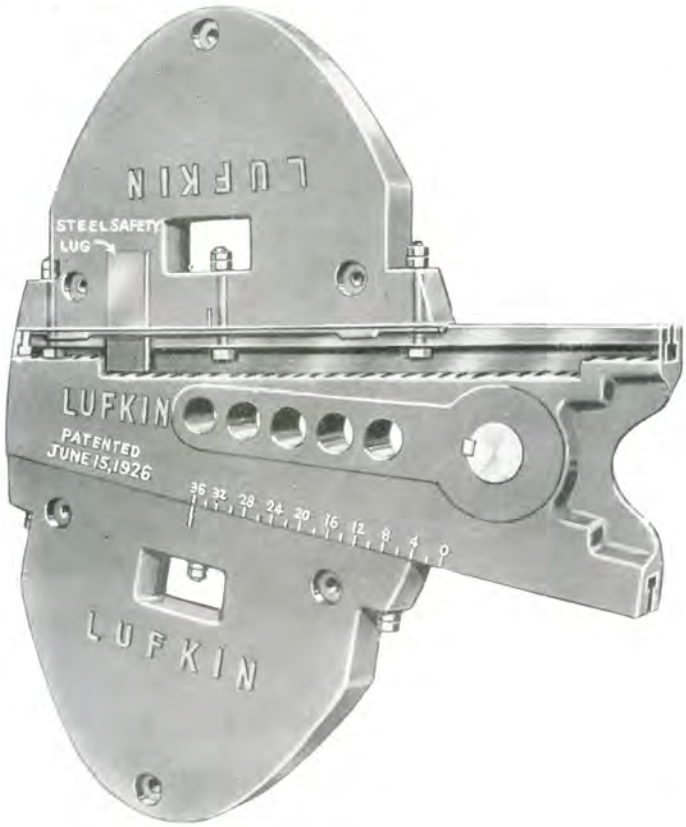

FIGURE 2

Adjustable Counterbalance Crank. — Note Safety lugs; weights cannot slide off. This feature with fly-wheel brake allows weights to be shifted in five minutes.

4. Adjustments quickly made. Average not over five minutes, no weights to lift, add or subtract.

5. Lead or lag balance readily obtainable.

6. Safety feature — impossible for weights to slide off — steel safety lug cast in each weight with forged steel bolts insure absolute safety. Unquestionably the safest crank to handle from the operator's standpoint.

7. Trout cranks have a short radius of gyration (do not require as high concrete foundations as do those with weights on out end) consequently a better balance at top and bottom of dead center, and due to concentrated weight closer to crank pin, insures less bearing pressures and eliminates excessive strains on crank shaft.

8. Due to gas and other changing conditions frequent adjustment of crank weights is necessary to effect maximum power saving, etc. This is readily accomplished with a Trout crank, but is very costly with an "added to" or "subtracted from" drop crank.

9. Sufficient counterbalance proportionate to stroke readily obtainable, and especially desirable in a three-well hook-up.

10. Counterbalance cranks, aided by high speed fly-wheel brake, cuts down the strain on pumping equipment, and aids economical operation by permitting the use of smaller electrical equipment.

11. Accurate counterbalancing means operation at highest efficiency.

12. You CAN balance a well with a Lufkin Unit and Trout Crank.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

SINGLE REDUCTION GEAR UNITS

Single reduction gear units are preferred where slow speed engines (up to 750 R.P.M.) are used. They are built in four sizes and four horse powers.

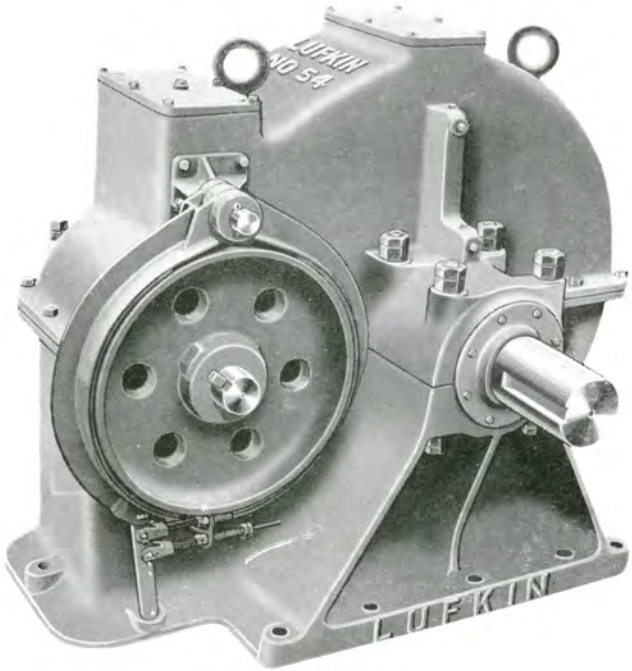

FIGURE 3

DOUBLE REDUCTION GEAR UNITS

Double reduction gear units are used with electric motors and multi-cylinder gas engines. They are made in seven sizes and seven horsepowers.

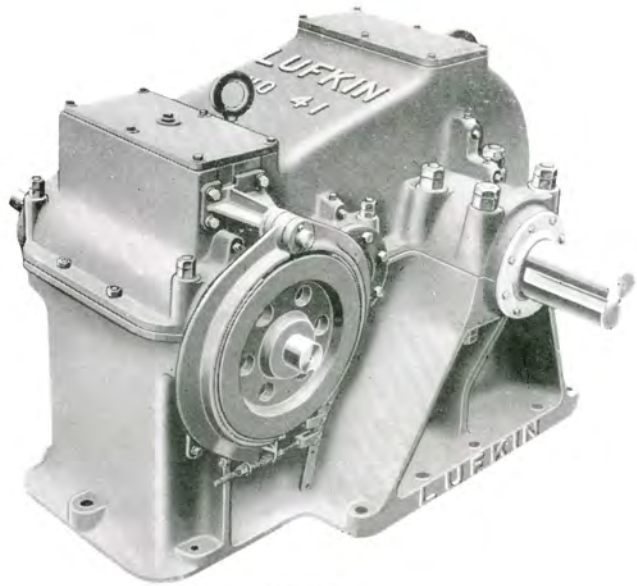

FIGURE 5

LUFKIN ENGINEERS HAVE A RICH BACKGROUND of practical experience in unit operation, and behind their manufacturing processes is a plant using modern production methods and up-to-date tools where absolute duplicate precision work is maintained.

Our entire product is made in jigs or by template, even to posts and walking beams, to secure correct alignment and absolute duplication of parts.

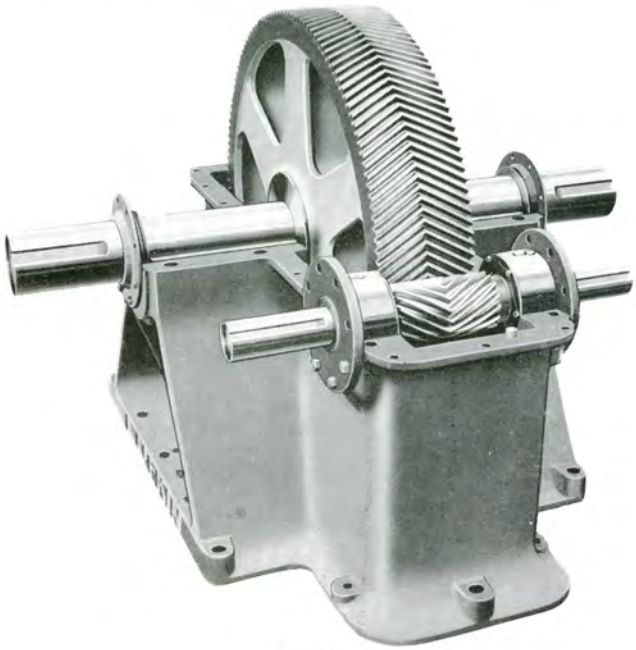

FIGURE 4
Single Reduction Gear Unit, cover removed

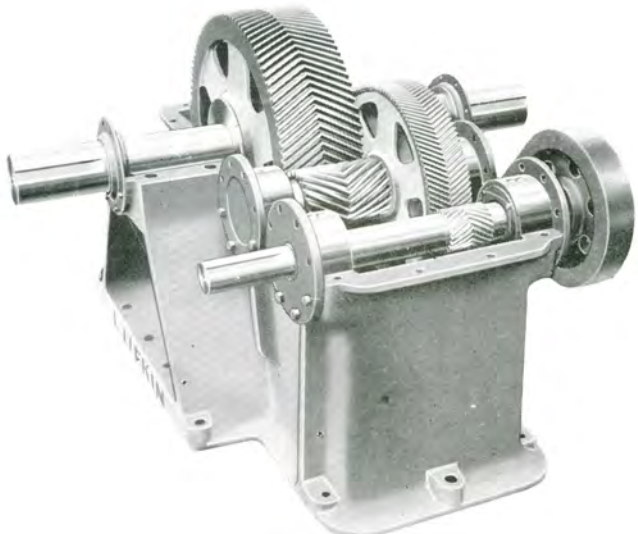

FIGURE 6
Double Reduction Gear Unit, cover removed

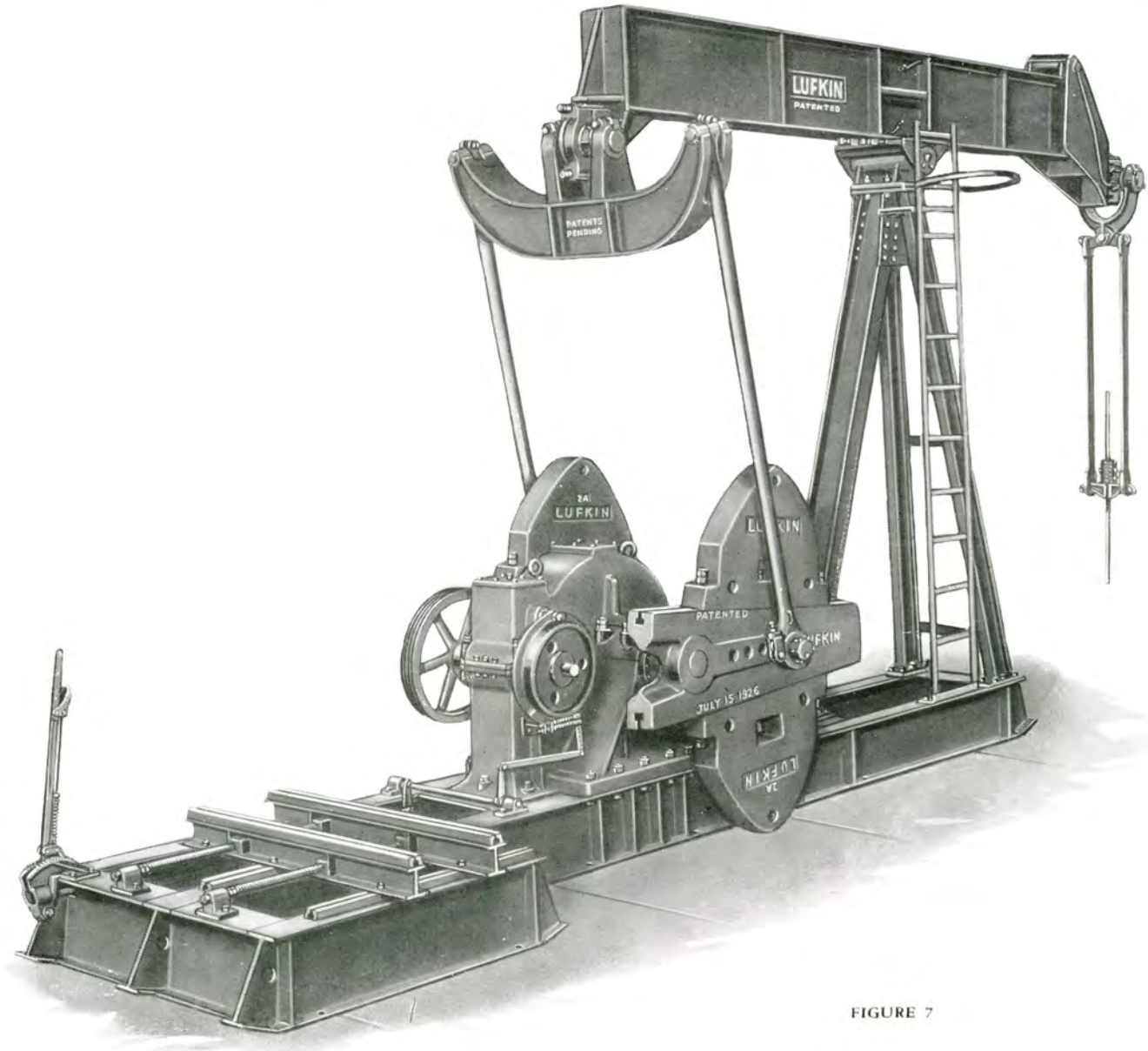

FIGURE 7

THE LUFKIN UNIVERSAL TWIN CRANK PUMPING UNIT

Into the design of the new Lufkin Universal Unit has been built all of the experience of Lufkin engineers. Chief among the improvements is the "center-line" beam and Pitman hanger in which all bearings are maintained on an absolute center line. (See Fig. 1, Page 1277).

Successful experimental application of this new principle in field operation permits us to offer the innovation of "Universal Center-line" design as the epitome of mechanical efficiency.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

BOILED DOWN FACTS ABOUT LUFKIN REDUCTION GEARS

1. Housings especially built for oil well service, of rugged construction with large factors of safety in design.
2. Lufkin-Sykes Herringbone Gears, precision cut on our machines, are used exclusively in Lufkin units.
3. Gears Cases are jig bored to same accuracy as gears.
4. All shafts forged from alloy steel, heat treated and precision ground.
5. Oversize Bronzoid bearings on crank shafts. Easily renewable.
6. Crank Shaft held rigid by Bronzoid hub plates. All pinions float on Hy-Load Hyatt Roller Bearings.
7. No Oil Leaks. Pinion shaft bearings equipped with patented oil seals, main crankshaft with collar oil slinger and aluminum drain cover.
8. No Oil Pumps. Lufkin gears operate in oil bath with gear wipers to flood bearings.
9. Clam Shell Brake. No grabbing. Improved ratchet lever and stand, locomotive type.
10. Trout Cranks are equipped with quick change crank pins having tapered bushings in straight holes, with safety key and castellated nuts to eliminate pin turning or loosening in crank. (See Page 1283).

BOILED DOWN FACTS ABOUT LUFKIN UNIVERSAL ASSEMBLIES

1. All structural members are arc welded; made in jigs and are therefore interchangeable.
2. Walking beams are interchangeable for single or twin crank units and are adjustable laterally to set over well in correct position. They are also arranged to swivel for well clearance.
3. Hanger heads or horseheads swing back over top of beam to clear well, and are interchangeable.
4. Beams and equalizer bearings are always in line.
5. All bearings, with the exception of the center bearings, are self-aligning.
6. Pitman and hanger bearings are lubricated under pressure from the center of the beam. Samson post ladders are equipped with a safety guard loop at top, to protect the operator when lubricating bearings.
7. Beam and center bearings are Bronzoid, oil sealed and of generous size.
8. Pitman connections are of extra heavy tubing.
9. The new Universal pitman bearings are of improved type (see page 1283) and have one-third more bearing area than usual types; they are equipped with improved oil seals. The bearings are self-aligning, being equipped with straps and ball seated joint which are easily disconnected.

LUFKIN UNITS ARE MANUFACTURED ON A MODERN

PRODUCTION BASIS — WHEN IN EAST TEXAS —

VISIT OUR PLANT

LUFKIN UNIVERSAL BEAM CONNECTIONS

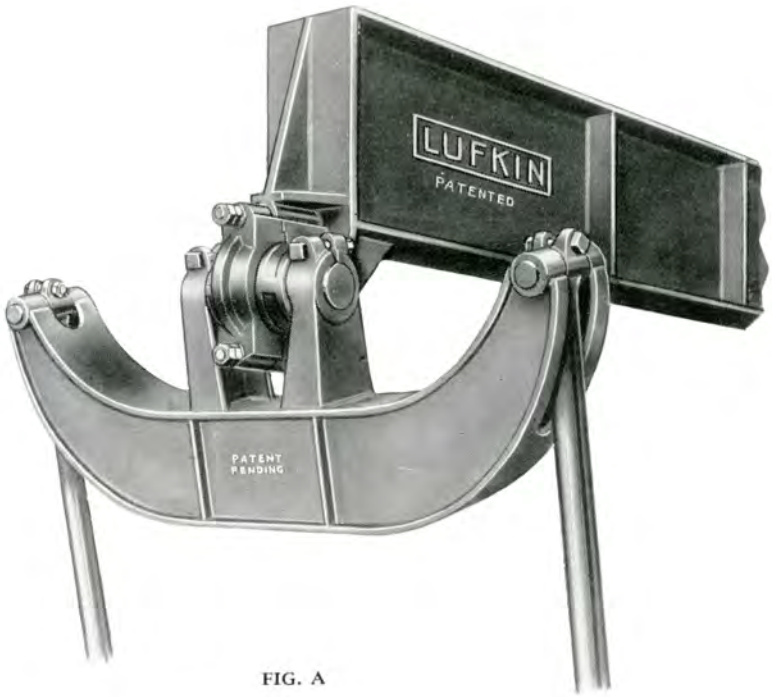

FIG. A

FIG. B

FIG. C

Fig. A. Shows Universal bearing and equalizer construction. The equalizer, made of welded steel, of box type structure, is strong and rigid with heavy, well designed connections to tail bearing shaft and pitmans. Shafts of generous size, turned and ground, are provided for all bearings.

Special attention is called to the Universal bearing which is Bronzoid bushed and oil sealed, and which, with its socket of steel, is a completely machined job. This design gives full Universal action as all connections are in one line. The bearing is Alemite lubricated from center of beam.

Fig. B. The Universal hanger bearing is a duplicate of the tail bearing, only it is mounted on a hinged hanger that may be laid back on the beam. Like the tail bearing, it is lubricated from the center of the beam. An equalizing hanger, with solid side bars, is standard equipment. This type hanger has proven most satisfactory in service on the heaviest wells. It is regularly furnished on Assemblies Nos. 0A, 1A and 2A. (See page 1308 for special hanger used to take potentials at high speeds).

Fig. C. Horseheads and wire line hangers to polish rod carriers are standard equipment on assemblies Nos. 2, 3, 4 and 5. These horseheads are of all welded steel construction and are hinged to turn back on beam but are locked when in operating position. An improved equalizer sheave is provided which facilitates putting wire lines on or off by the removal of only one bolt.

NEW LUFKIN "UNIVERSAL" PITMAN

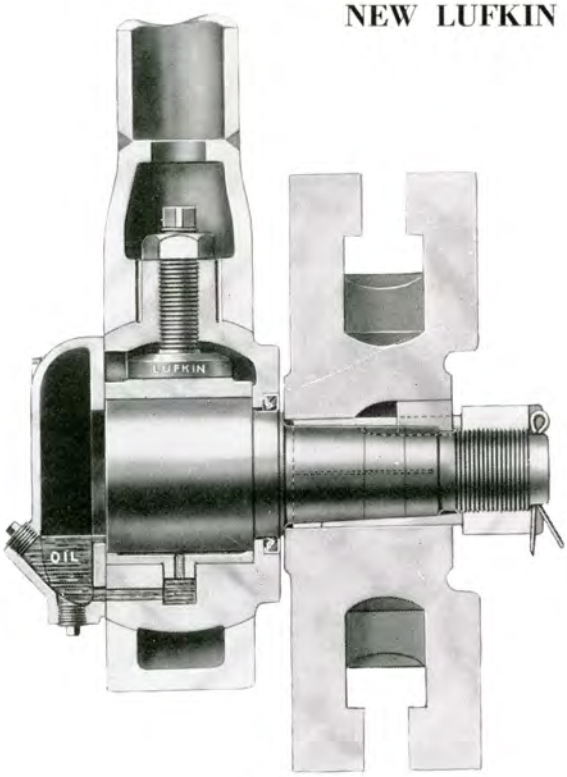

FIGURE 8

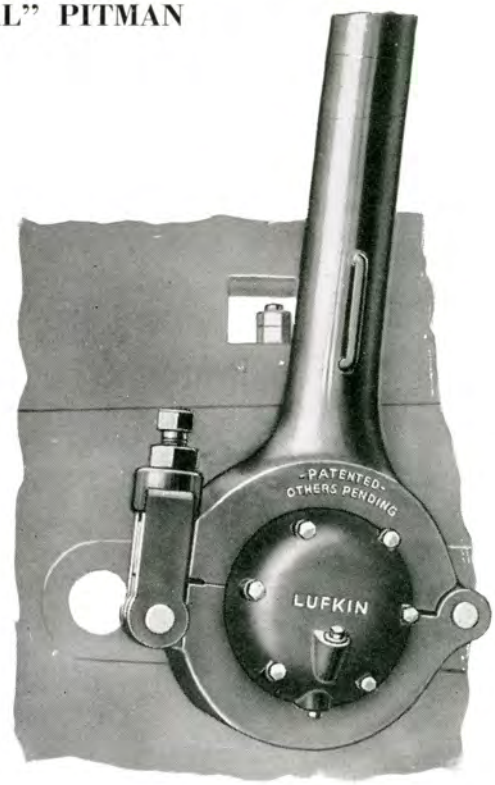

FIGURE 9
General View of Pitman

The new "Universal" pitman is shown in Figures 8 and 9. Many notable improvements have been made in these pitmans, but the original pin hole sizes have been maintained.

General characteristics of the new "Universal" pitman are:

1. One-third more bearing surface.
2. Bronzoid bearings top and bottom, with adjustable top bearing.
3. Patented oil seal—no leaks. No head of oil against seal.
4. Both the interior of the strap and the exterior of the pitman box are machined, and thus insure alignment without possibility of binding.
5. The pitman bearing is adjustable when straps or shackles are removed, and may be tested by hand before shackles are re-applied.
6. Trout Universal pitmans are designed to pull or push—no lost motion.
7. Journal box is semi-steel; straps and shackles are of cast steel welded to extra heavy tubing.
8. Crank pins are forged alloy steel turned and ground. Cranks have straight holes with taper bushing, locking key and castellated nut.

NOTE: For Lufkin Twin Crank Center Bearings see Page 1309.

LUFKIN BRAKE LEVER

Locomotive Type Brake Levers (Fig. 10) are furnished on all twin crank and single crank units. They will be found thoroughly reliable and satisfactory in operation.

FIGURE 10

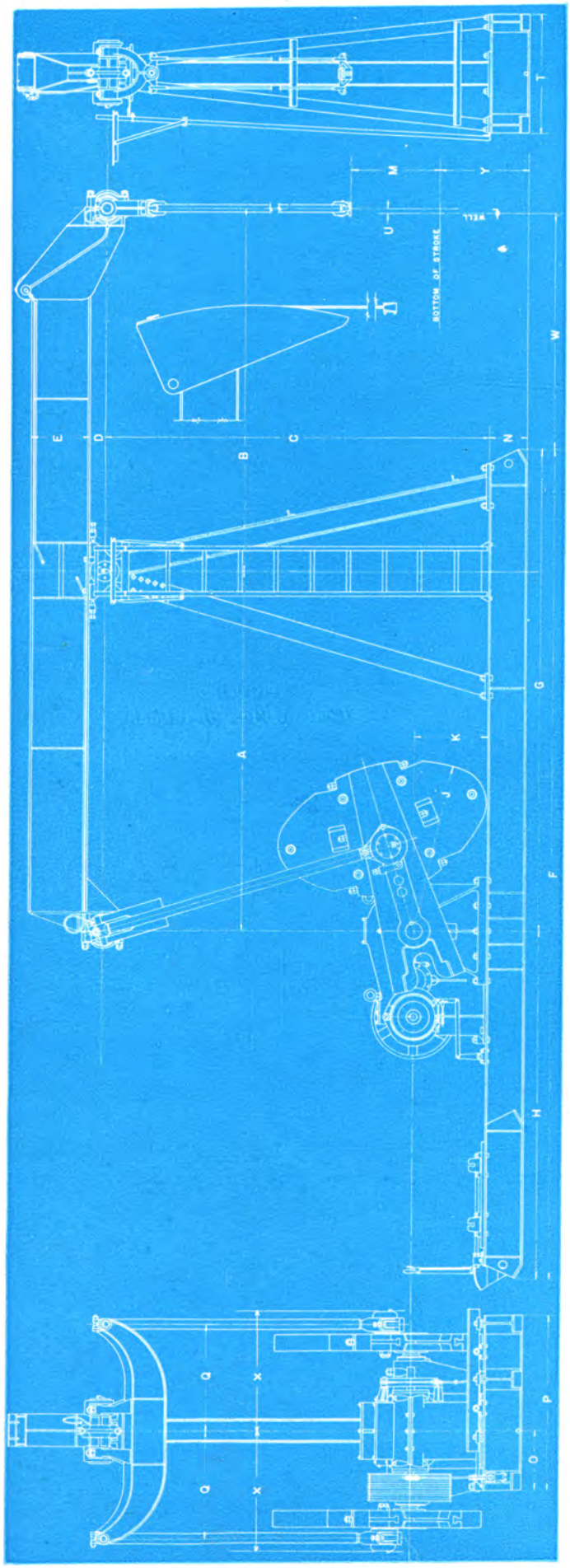

FIGURE 11

DIMENSION SHEET—LUFKIN UNITS TC-0A, 1A & 2A

UNIT	A	B	C	D	E	F	G	H	J	K	M	N	O	P	Q	T	U	W	X	Y
TC-0A-1328-C	14'-0"	14'-2"	13'-3"	7"	24¼"	31'-6"	18'-4"	13'-2"	5'-11½"	2'-6"	3'-1"	16"	2'-1"	6'- 2"	*	4'-2"	2"	9'-8"	†	2'-6"
TC-0A-1325-C	12'-6"	12'-8¼"	13'-3"	7"	24¼"	30'-0"	16'-10"	13'-2"	5'-11½"	2'-6"	3'-1"	16"	2'-1"	6'- 2"	*	4'-2"	2¼"	8'-4¼"	†	2'-6"
TC-1A-1328-C	14'-0"	14'-2"	13'-3"	7"	24¼"	29'-6"	18'-3½"	11'-2½"	5'- 5½"	2'-4"	3'-1"	16"	21½"	5'-11"	3'- 3⅜"	3'-7"	2"	9'-8½"	3'-9¾"	2'-6"
TC-1A-1325-C	12'-6"	12'-8¼"	13'-3"	7"	24¼"	28'-0"	16'-9½"	11'-2½"	5'- 5½"	2'-4"	3'-1"	16"	21½"	5'-11"	3'- 3⅜"	3'-7"	2¼"	8'-4¾"	3'-9¾"	2'-6"
TC-2A-1020-C	10'-0"	10'-2¼"	12'-1"	6"	24"	27'-3"	13'-9"	13'-6"	4'-11½"	2'-3"	2'-8"	16"	18½"	5'-5"	2'-11 1/16"	3'-1"	2¼"	6'-5¼"	3'-5 5/16"	1'-9"

* For dimension "Q"—TC-0A-51A—3'-8⅞", TC-0A-60—3'-4⅞".
† For dimension "X"—TC-0A-51A—4'-3¼", TC-0A-60—3'-11¼".

Dimensions not guaranteed for settings—request certified prints.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN UNIVERSAL TC-0A UNIT ASSEMBLIES
30,000 lbs. Polish Rod Load and 74″ Maximum Stroke

WALKING BEAM: 24″ x 14″ x 130 lbs., 12′-6″ and 12′-6″ working centers.

HANGER: Centerline type, Universal, bronze bushed.

PITMAN: Universal Equalizer with bearings "in line", 4″ pipe connections, Universal lower bearings.

CENTER BEARING: No. 1AS Bronze bushed, 7″ x 20″ oil bath, dust proof.

SAMSON POST: No. 13 Tripod, 13′-3″ high.

BASE: 16″ deep, 49¾″ wide at gear box.

CRANKS: No. 7472, 71½″ radius

CRANK PINS: 5½″ x 5½″, bronze bushed, oil bath.

	TC-0A-51A	TC-0A-60
GEARS	Double Reduction Main Gear, 36″ x 12″	Single Reduction Main Gear, 50″ x 12″
RATING	54.3 A.P.I. H.P. at 20 s.p.m. 268,541 P.T.	65.8 A.P.I. H.P. at 20 s.p.m. 325,000 P.T.
RATIO	28.79	9.54
CRANKSHAFT	6 7/16″	6 7/16″
SHEAVE	34¼″-11C Std. 51¼″ Maximum 3 7/16″ Bore	37¼″-12C Std. 37¼″ Maximum 3 11/16″ Bore
WEIGHT	41,800 lbs.	41,600 lbs.

STATIC COUNTERBALANCE—LBS.:

Stroke	No. 1 Weights	C.I. Auxiliary Weights
34″	32,000	39,900
44″	24,750	30,850
54″	20,150	25,100
64″	17,000	21,200
74″	15,100	18,850

LUFKIN UNIVERSAL TC-1A UNIT ASSEMBLIES
25,000 Lb. Polish Rod Load and 74″ Maximum Stroke

WALKING BEAM: 24″ x 14″ x 130 lbs., 12′-6″ and 12′-6″ working centers.

HANGER: Centerline type, Universal, bronze bushed.

PITMAN: Universal Equalizer with bearings "in line", 4″ pipe connections, Universal lower bearings.

CENTER BEARING: No. 1AS bronze bushed, 7″ x 20″, oil bath, dust proof.

SAMSON POST: No. 13 Tripod, 13′-3″ high.

BASE: 16″ deep, 43″ wide at gear box.

CRANKS: No. 7466, 65½″ radius.

CRANK PINS: 5½″ x 5½″, bronze bushed, oil bath.

	TC-1A-41A	TC-1A-54A
GEARS	Double Reduction Main Gear, 34″ x 10″	Single Reduction Main Gear, 47″ x 10″
RATING	44.0 A.P.I. H.P. at 20 s.p.m. 217,602 P.T.	51.7 A.P.I. H.P. at 20 s.p.m. 255,682 P.T.
RATIO	30.12	9.4
CRANKSHAFT	6 7/16″	6 7/16″
SHEAVE	24¼″-8C Std. 47¼″ Maximum 2 11/16″ Bore	34¼″-11C Std. 34¼″ Maximum 3 7/16″ Bore
WEIGHT	34,300 lbs.	34,100 lbs.

STATIC COUNTERBALANCE—LBS.:

Stroke	No. 1 Weights	C.I. Auxiliary Weights
34″	24,200	30,100
44″	18,700	23,250
54″	15,250	18,950
64″	12,850	16,000
74″	11,150	13,850

LUFKIN UNIVERSAL TC-2A UNIT ASSEMBLIES
20,000 Lbs. Polish Rod Load and 64″ Maximum Stroke

WALKING BEAM: 24″ x 12″ x 100 lbs., 10′-0″ and 10′-0″ working centers.

HANGER: Centerline type, Universal bronze bushed.

PITMAN: Universal Equalizer with bearings "in line", 3″ heavy pipe connections, Universal lower bearings.

CENTER BEARING: No. 2AS, bronze bushed, 6″ x 17″, oil bath, dust proof.

SAMSON POST: No. 12 Tripod, 12′-1″, high.

BASE: 16″ Deep, 37″ wide at gear box.

CRANKS: No. 6460, 59½″ radius.

CRANK PINS: 4¾″ x 4⅝″, bronze bushed, oil bath.

	TC-2A-31C	TC-2A-26C
GEARS	Double Reduction Main Gear 27″ x 11″	Single Reduction Main Gear, 42″ x 8″
RATING	30.8 A.P.I. H.P. at 20 s.p.m., 152,320 P.T.	32.1 A.P.I. H.P. at 20 s.p.m., 158,750 P.T.
RATIO	28.7	10.5
CRANK SHAFT	6″	6″
SHEAVE	24¼″-6C Std. 39¼″ Maximum 2 7/16″ Bore	31¼″-8C Std. 31¼″ Maximum 2 11/16″ Bore
WEIGHT	26,260 lbs.	26,000 lbs.

STATIC COUNTERBALANCE—LBS.:

Stroke	No. 2A Wts	Aux. Wts.	No. 2 Wts.	Aux. Wts.
24″	25,950	31,950	28,800	35,950
34″	18,300	22,550	20,350	25,350
44″	14,150	17,400	15,700	19,600
54″	11,550	14,200	12,800	15,950
64″	9,750	12,000	10,800	13,500

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

ALTERNATIVE SETTINGS—LUFKIN UNIT ASSEMBLIES TC, 0A, 1A, AND 2A

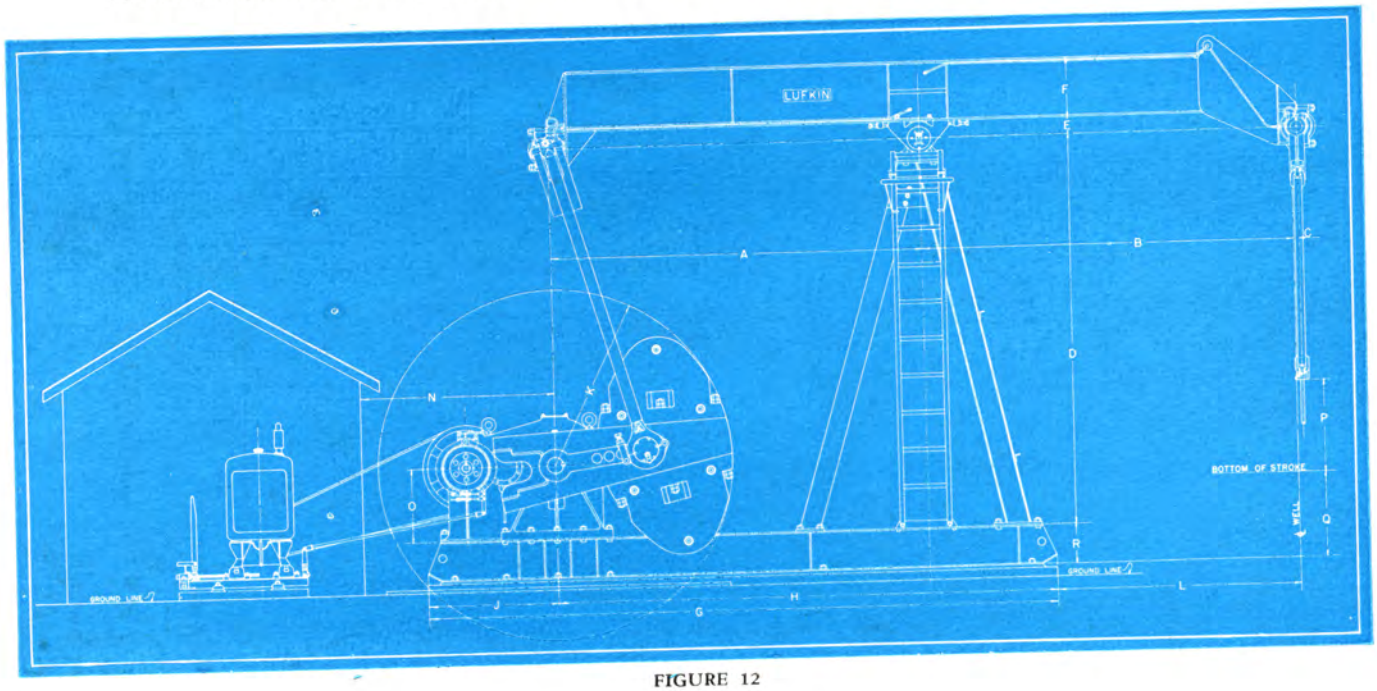

FIGURE 12

Top: 0A-1A and 2A with Stub Base and House for Multi-Cylinder Gas Engine

Below: 0A Unit with Long Bed Plate in Two Sections to Take Single Cylinder Engines

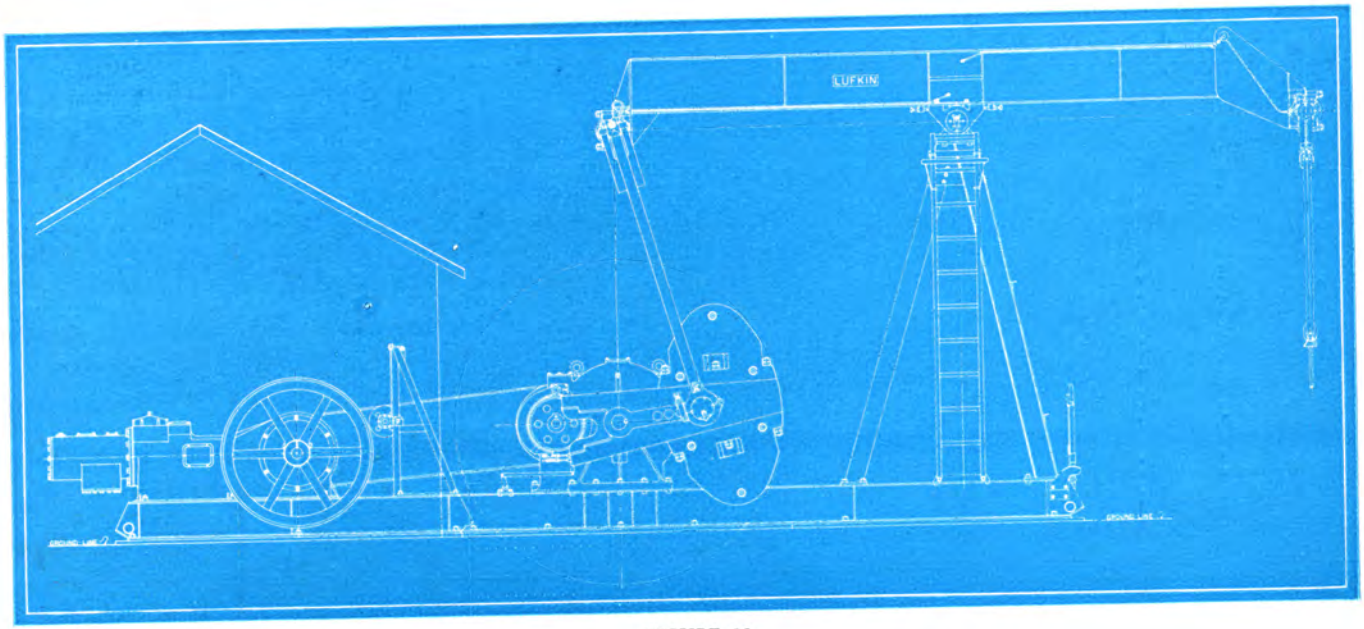

FIGURE 13

LUFKIN UNIT ALTERNATIVES TC 0A-1A & 2A
GENERAL DIMENSIONS

Unit	A	B	C	D	E	F	G	H	J	K	L	N	O	P	Q	R
TC-0A-1328C	14′-0″	14′-0″	2″	13′-3″	7″	24″	22′-9″	18′-4″	4′-5″	5′-11½″	9′-8″	6′-6″	2′-6″	3′-1″	2′-6″	16″
TC-0A-1325C	12′-6″	12′-6″	2¼″	13′-3″	7″	24″	21′-3″	16′-10″	4′-5″	5′-11½″	8′-4¼″	6′-6″	2′-6″	3′-1″	2′-6″	16″
TC-1A-1328C....	14′-0″	14′-0″	2″	13′-3″	7″	24″	23′-7″	18′-3½″	5′-3½″	5′-5½″	9′-8½″	6′-3″	2′-4″	3′-1″	2′-6″	16″
TC-1A-1325C....	12′-6″	12′-6″	2¼″	13′-3″	7″	24″	22′-1″	16′-9½″	5′-3½″	5′-5½″	8′-4¾″	6′-3″	2′-4″	3′-1″	2′-6″	16″
TC-2A-1020C....	10′-0″	10′-0″	2¼″	12′-1″	6″	24″	18′-0″	13′-9″	4′-3″	4′-11½″	6′-5¼″	5′-6″	2′-3″	2′-8″	1′-9″	16″

Ask for Certified Print before making foundations.

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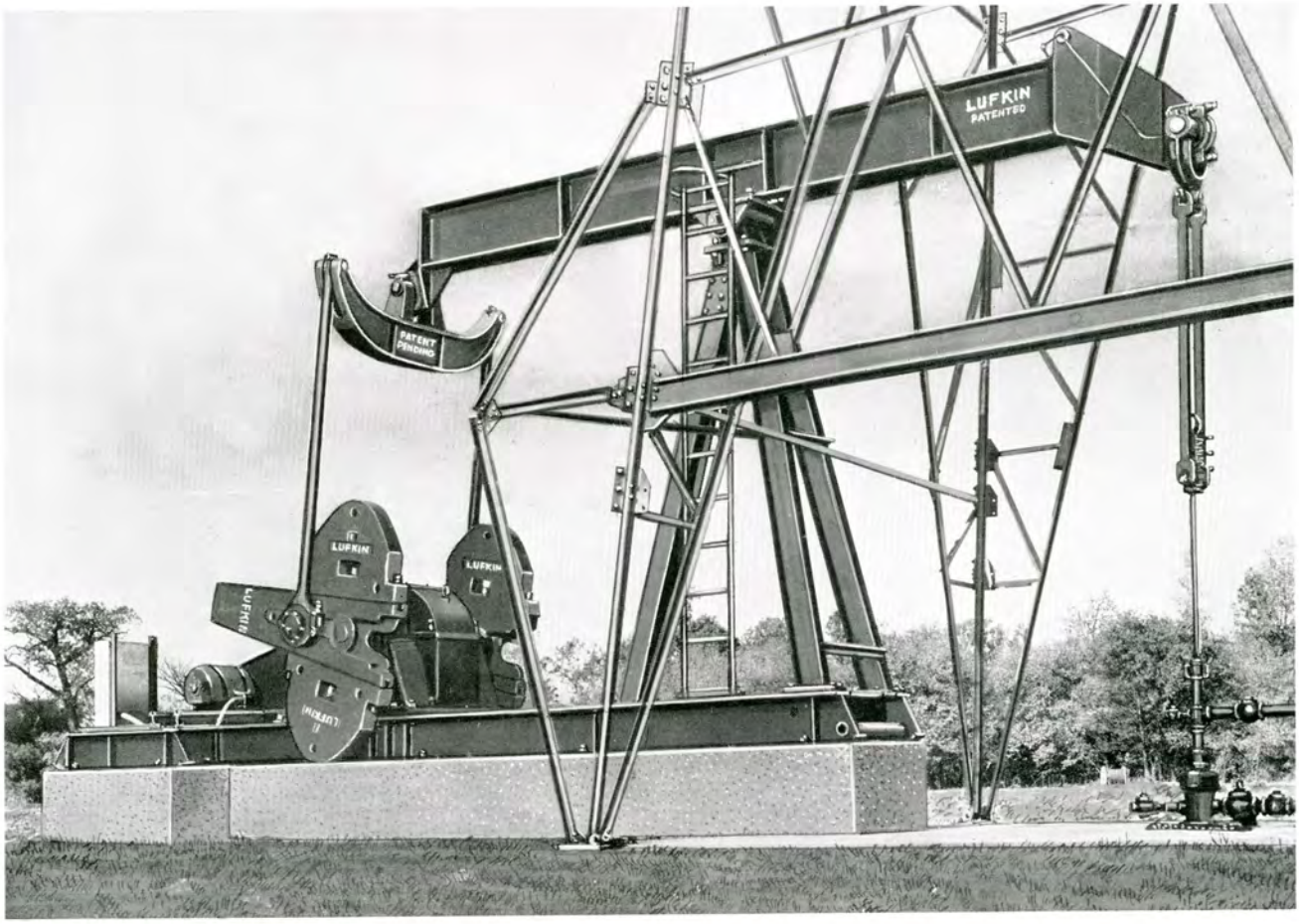
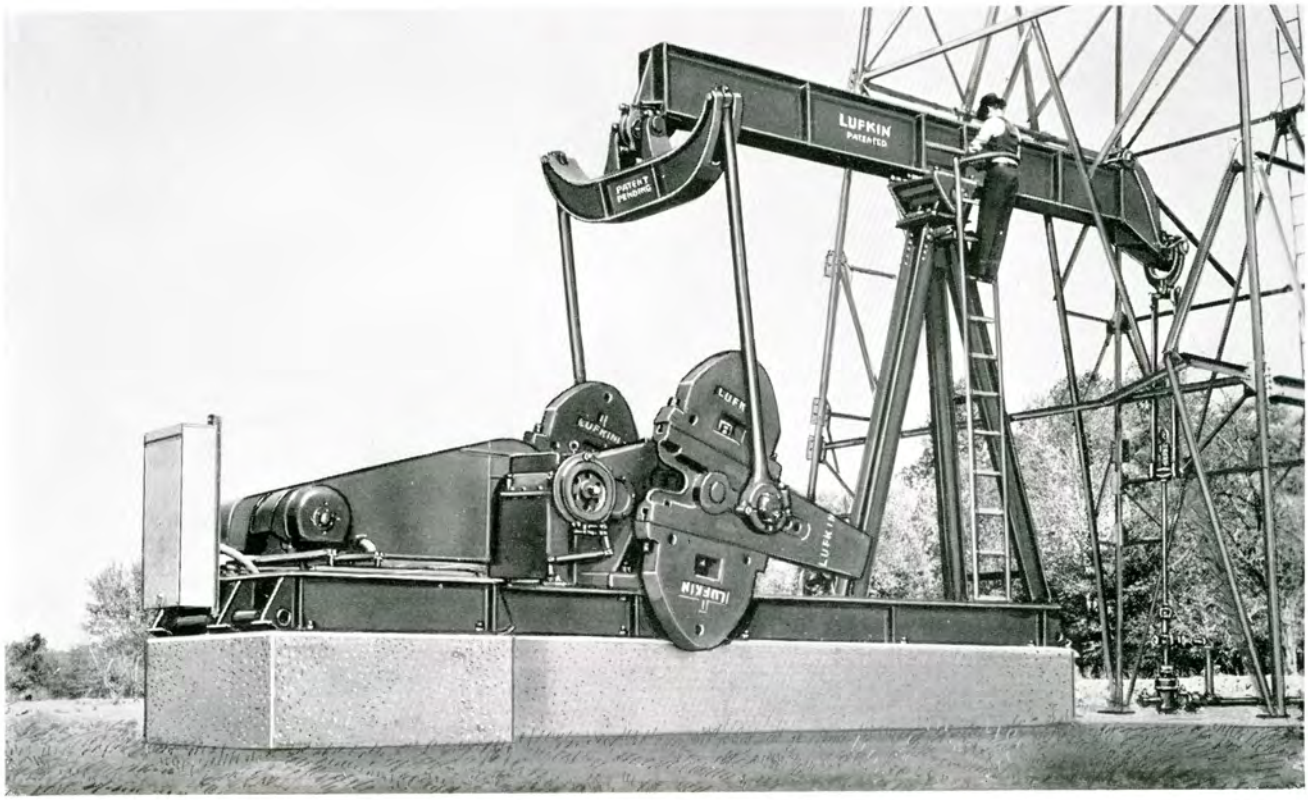


MODERN INSTALLATIONS LUFKIN UNIVERSAL PUMPING UNITS



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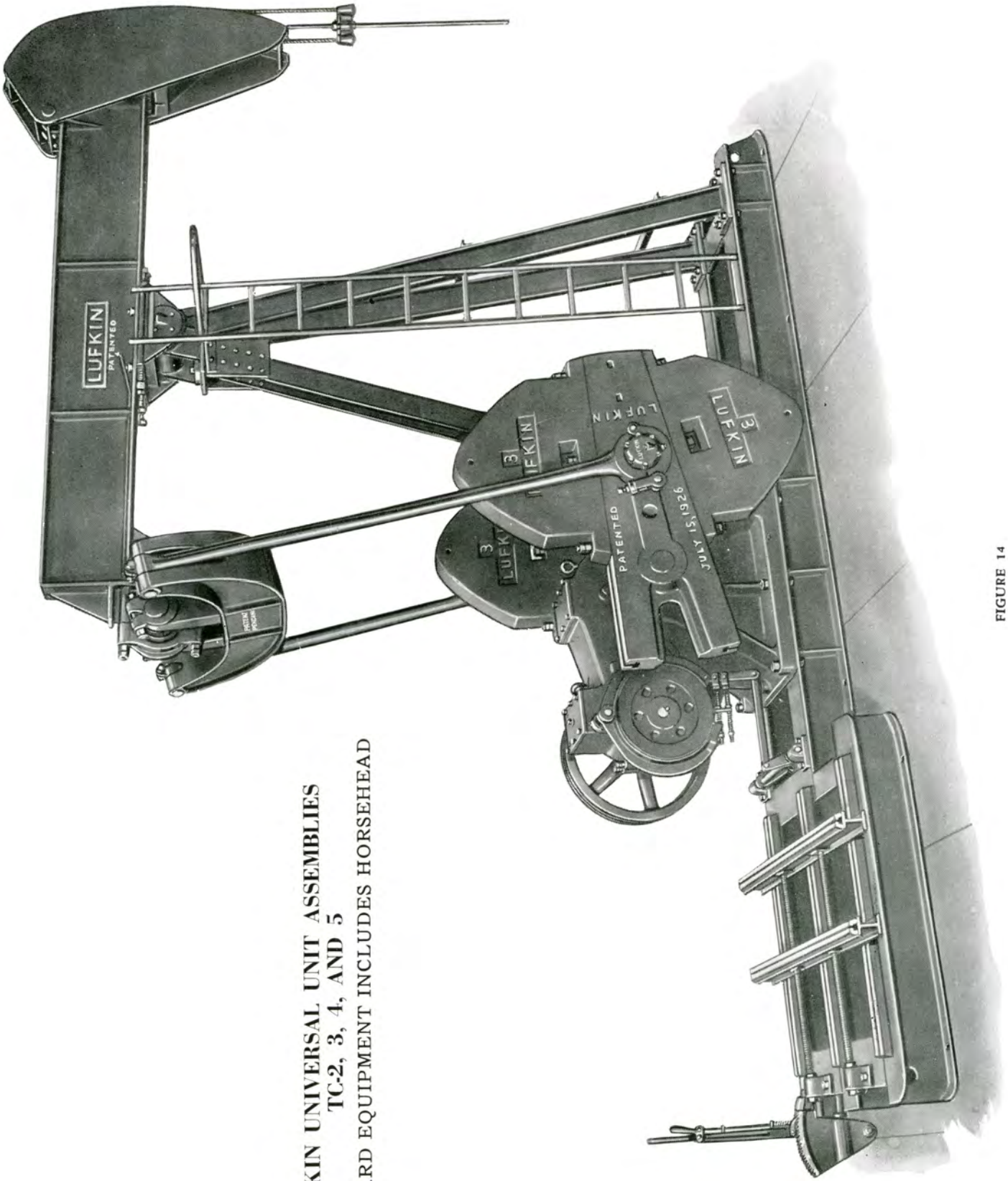

LUFKIN UNIVERSAL UNIT ASSEMBLIES
TC-2, 3, 4, AND 5
STANDARD EQUIPMENT INCLUDES HORSEHEAD

FIGURE 14

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

GENERAL SPECIFICATIONS—LUFKIN UNIT ASSEMBLIES TC-2, 3, 4, AND 5

LUFKIN UNIT UNIVERSAL ASSEMBLY TC-2
20,000 Lbs. Polish Rod Load and 64″ Maximum Stroke

WALKING BEAM: 21″ x 9″ x 82 lbs., 8′-0″ and 8′-0″ working centers.

HANGER: Hinged Horsehead with 1″ wire rope on equalizing sheave.

PITMAN: Universal Equalizer with bearings "in line", 3″ heavy pipe connections, Universal lower bearings.

CENTER BEARING: No. 2AS, bronze bushed 6″ x 17″, oil bath, dust proof.

SAMSON POST: No. 12 Tripod, 12′-1″ high.

BASE: 16″ deep, 37″ wide at gear box, 22′-1″ long.

CRANKS: No. 6456, 55½″ radius.

CRANK PINS: 4¾″ x 4⅝″ bronze bushed, oil bath.

	TC-2-31C	TC-2-26C
GEARS	Double Reduction Main Gear, 27″ x 11″	Single Reduction Main Gear, 42″ x 8″
RATING	30.8 A.P.I. H.P. at 20 s.p.m., 152,320 P.T.	32.1 A.P.I. H.P. at 20 s.p.m., 158,750 P.T.
RATIO	28.7	10.5
CRANKSHAFT	6″	6″
SHEAVE	24¼″-6C Std. 39¼″ Maximum 2 7/16″ Bore	31¼″-8C Std. 31¼″ Maximum 2 11/16″ Bore
WEIGHT	24,500 lbs.	25,500 lbs.

STATIC COUNTERBALANCE—LBS.:

Stroke	No. 2A Wts.	Aux. Wts.	No. 2 Wts.	Aux. Wts.
24″	22,950	28,350	25,420	31,840
34″	16,200	20,000	17,950	22,470
44″	12,500	15,460	13,870	17,360
54″	10,200	12,600	11,300	14,150
64″	8,600	10,630	9,530	11,940

LUFKIN UNIVERSAL UNIT ASSEMBLY TC-3
17,000 Lbs. Polished Rod Load and 54″ Maximum Stroke

WALKING BEAM: 18″ x 8¾″ x 64 lbs., 7′-0″ and 5′-3¼″ working centers.

HANGER: Hinged Horsehead with 1″ wire line on equalizing sheave.

PITMAN: Universal Equalizer with bearings "in line", 3″ heavy pipe connections, Universal lower bearings.

CENTER BEARING: No. 3AS bronze bushed, 6″ x 14″, oil bath, dust proof.

SAMSON POST: Tripod, 10′-4″ high.

BASE: 10″ deep, 32″ wide at gear box, 17′-1½″ long.

CRANKS: No. 4146, 45½″ radius.

CRANK PINS: 4¾″ x 4⅝″, bronze bushed, oil bath.

	TC-3-22C	TC-3-18A
GEARS	Double Reduction Main Gear 25″ x 7⅝″	Single Reduction Main Gear 42″ x 6″
RATING	22.2 A.P.I. H. P at 20 s.p.m., 109,790 P.T.	25.4 A.P.I. H.P. at 20 s.p.m., 125,616 P.T.
RATIO	28.67	10.5
CRANKSHAFT	4 7/16″	4 7/16″
SHEAVE	24¼″-5C Std. 39¼″ Maximum 2 7/16″ Bore	33¼″-6C Std. 33¼″ Maximum 2 11/16″ Bore
WEIGHT	19,300 lbs.	19,300 lbs.

STATIC COUNTERBALANCE—LBS.:

Stroke	No. 3 Reg. Wts.	C.I. Kidney Aux. Wts.
27.9″	12,550	18,050
41.2″	8,500	12,250
54″	6,450	9,300

LUFKIN UNIVERSAL UNIT ASSEMBLY TC-4-11B
12,000 Lbs. Polished Rod Load and 42″ Maximum Stroke

WALKING BEAM: 16″ x 8½″ x 58 lbs., 6′-0″ and 5′-3¼″ working centers.

HANGER: Hinged Horsehead with ⅞″ wire line on equalizing sheave.

PITMAN: Universal Equalizer with bearings "in line", 2½″ heavy pipe connections, Universal lower bearings.

CENTER BEARING: No. 4AS, bronze bushed, 5″ x 10½″, oil bath, dust proof.

SAMSON POST: Tripod, 8′-1″ high.

BASE: 10″ deep, 32″ wide at gear box, 17′-1½″ long.

CRANKS: No. 3646, 45½″ radius.

CRANK PINS: 3¾″ x 3½″, bronze bushed, oil bath.

GEARS: Double reduction, main gear 22″ diameter, 7″ face.

RATING: 14.6 nominal A.P.I. horsepower at 20 s.p.m., 72,204 lb. ins. Peak Torque.

RATIO: 29.24.

CRANKSHAFT: 4 7/16″ diameter.

SHEAVE: 19¼″ dia., 4C grooves standard, 31¼″ maximum, 1 11/16″ bore.

WEIGHT: 14,850 lbs.

STATIC COUNTERBALANCE—LBS.:

Stroke	No. 3A Reg. Wts.	C.I. Kidney Aux. Wts.
18.6″	15,000	20,650
30.5″	9,200	12,700
42.0″	6,650	9,200

LUFKIN UNIVERSAL UNIT ASSEMBLY TC-5-7A
10,000 Lbs. Polished Rod Load and 36″ Maximum Stroke

WALKING BEAM: 12″ x 8″ x 40 lbs., 5′-0″ and 5′-0″ working centers.

HANGER: Hinge Horsehead with ⅞″ wire line.

PITMAN: Universal Equalizer with bearings "in line", 2½″ heavy pipe connections, Universal lower bearings.

CENTER BEARING: No. 4AS bronze bushed, 5″ x 10½″, oil bath, dust proof.

SAMSON POST: Tripod, 8′-1″ high.

BASE: 8″ deep, 25″ wide at gear box, 13′-11″ long.

CRANKS: 3636 cranks, 36″ radius.

CRANK PINS: 3¾″ x 3½″, bronze bushed, oil bath.

GEARS: Double reduction, main gear 20″ diameter, 5″ face.

RATING: 8.5 nominal A.P.I. horsepower at 20 s.p.m., 42,037 lb. ins. Peak Torque.

RATIO: 29.32.

CRANKSHAFT: 4″.

SHEAVE: 19¼″ dia., 3-c grooves standard, 27¼″ dia. maximum, 1 11/16″ bore.

WEIGHT: 11,930 lbs.

STATIC COUNTERBALANCE—LBS.:

Stroke	No. 4 Reg. Wts.	C.I. Kidney Aux. Wts.
16″	10,750	15,350
26″	6,600	9,450
36″	4,800	6,800

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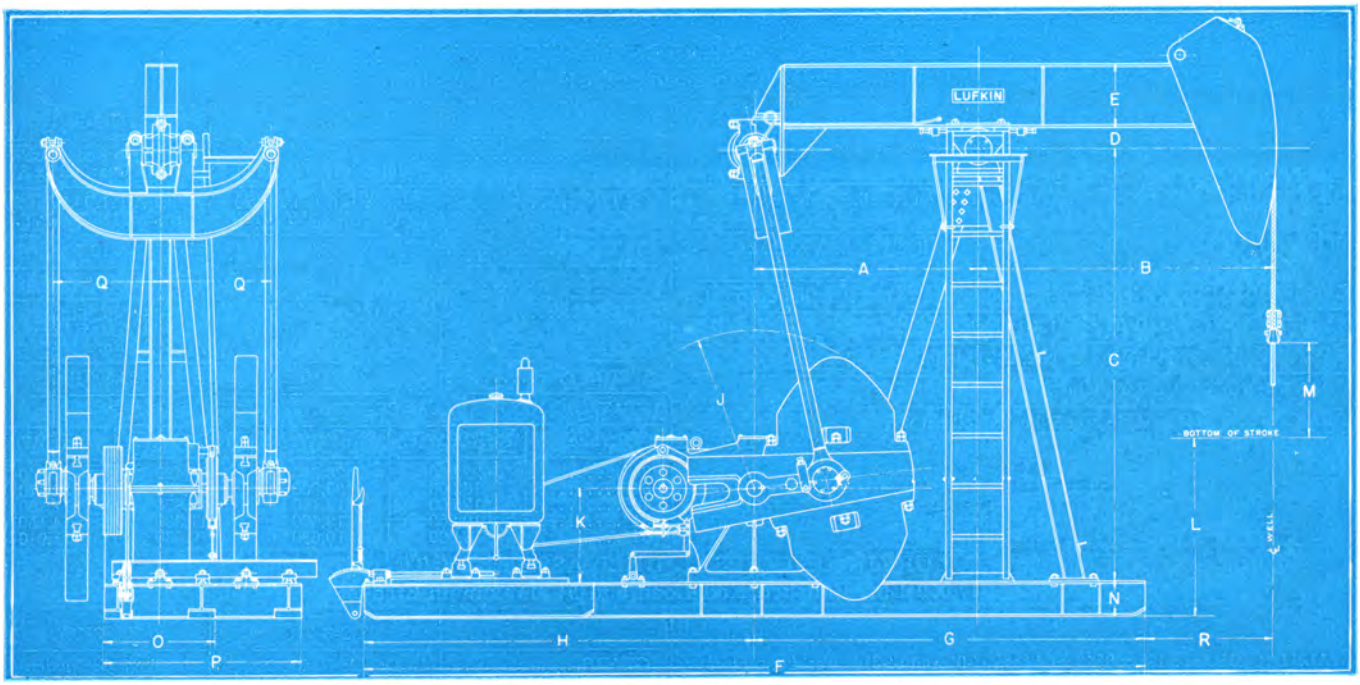

FIGURE 15

LUFKIN UNIT ASSEMBLIES TC-2, 3, 4, & 5

GENERAL DIMENSIONS

UNIT	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S
TC-2	8′-0″	8′-0″	12′-1″	6″	21″	22′-1″	11′-9″	10′-4″	4′-11½″	2′-3″	5′-0½″	2′-8″	16″	3′-1″	5′-5″	2′-11 7/16″	4′-3″	3′-5 5/16″
TC-3	5′-3¼″	7′-0″	10′-4″	6″	18″	17′-1½″	8′-10¾″	8′-2¾″	3′-9½″	2′-3″	5′-2½″	2′-3″	10″	2′-8″	4′-8½″	2′-7 7/16″	3′-4½″	3′-1 5/16″
TC-4	5′-3¼″	6′-0″	8′-1″	6″	16″	17′-1½″	8′-10¾″	8′-2¾″	3′-9½″	2′-3″	3′-6½″	21″	10″	2′-8″	4′-8½″	2′-4 13/16″	2′-4½″	2′-0 13/16″
TC-5	5′-0″	5′-0″	8′-1″	6″	12″	13′-11″	7′-1″	6′-10″	3′-0″	18″	4′-4″	18″	8″	2′-1″	4′-1″	2′-1 5/16″	2′-11″	2′-6 7/16″

Ask for certified print before making foundation.

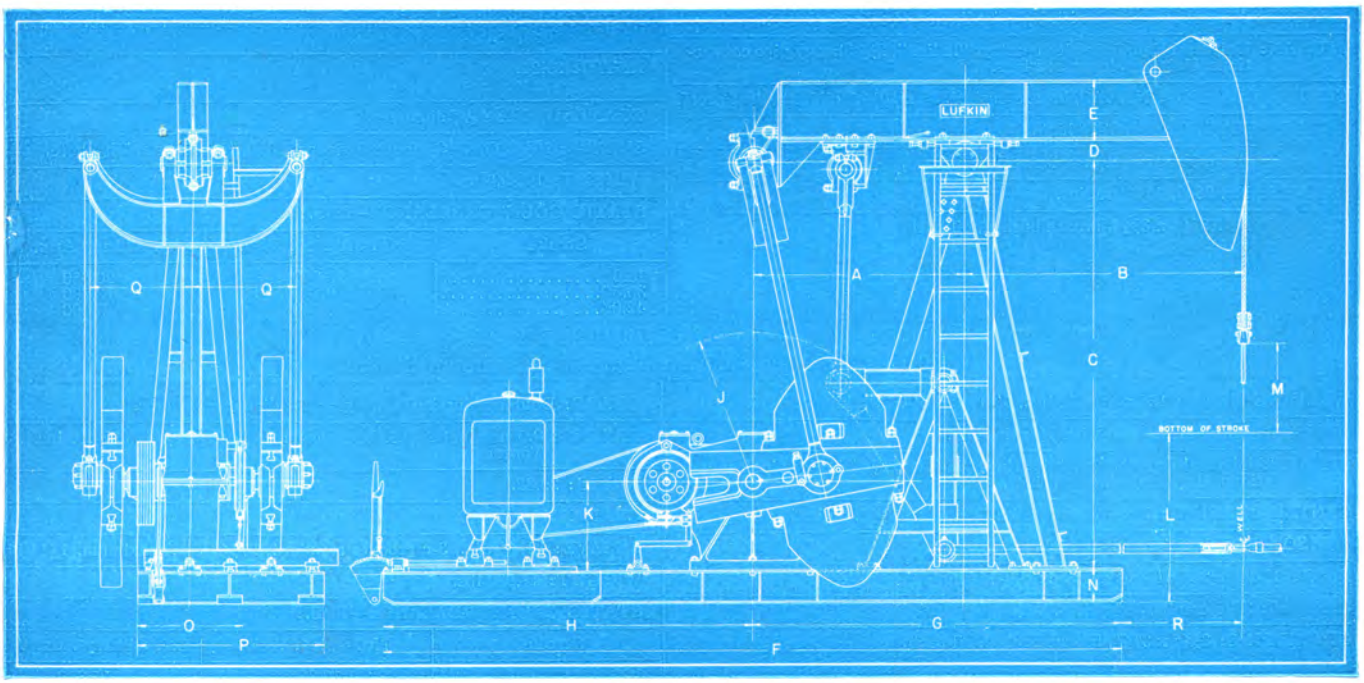

FIGURE 16

Illustrating bell-crank connection to an additional one or two wells which can be applied to any regular Lufkin Unit assembly.

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ALTERNATIVE FEATURES—LUFKIN UNITS TC-2, 3, 4, AND 5

Top: Lufkin TC 3-18 with Stub Base and Gas Engine Drive. Below: Same with Motor Mounted Under Samson Post.

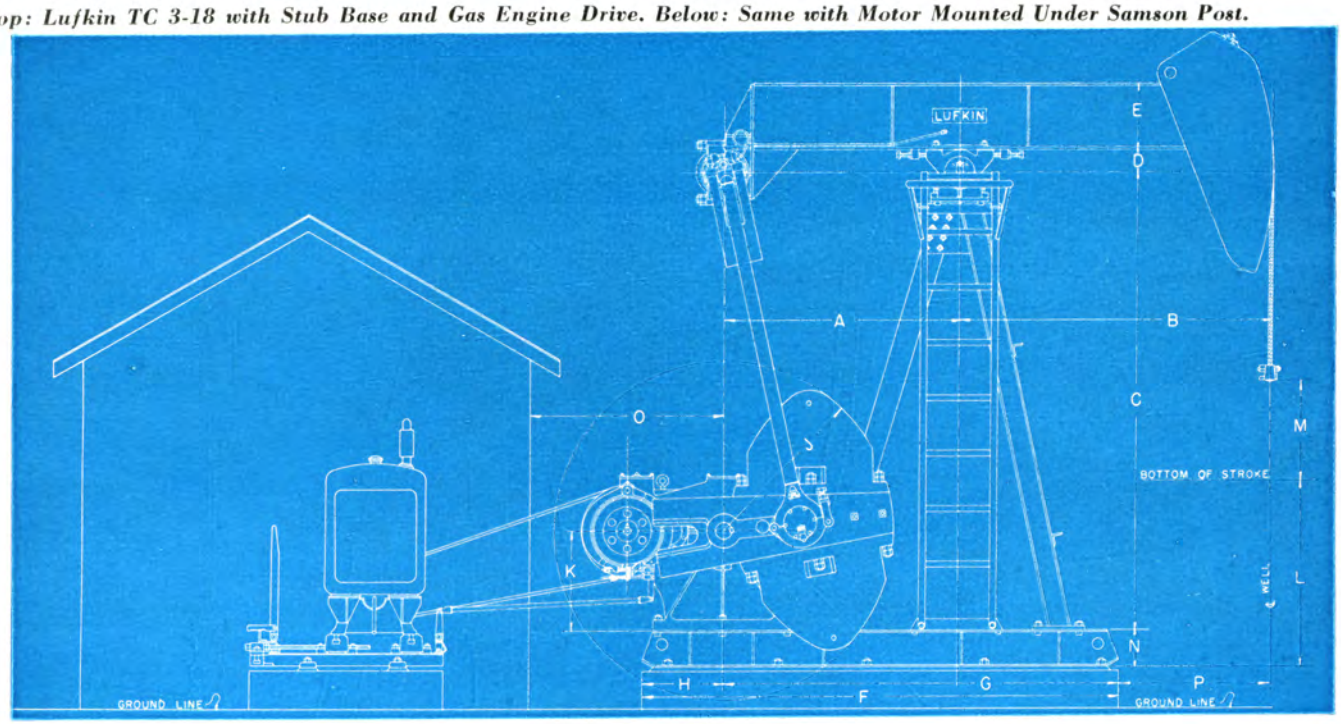

FIGURE 17

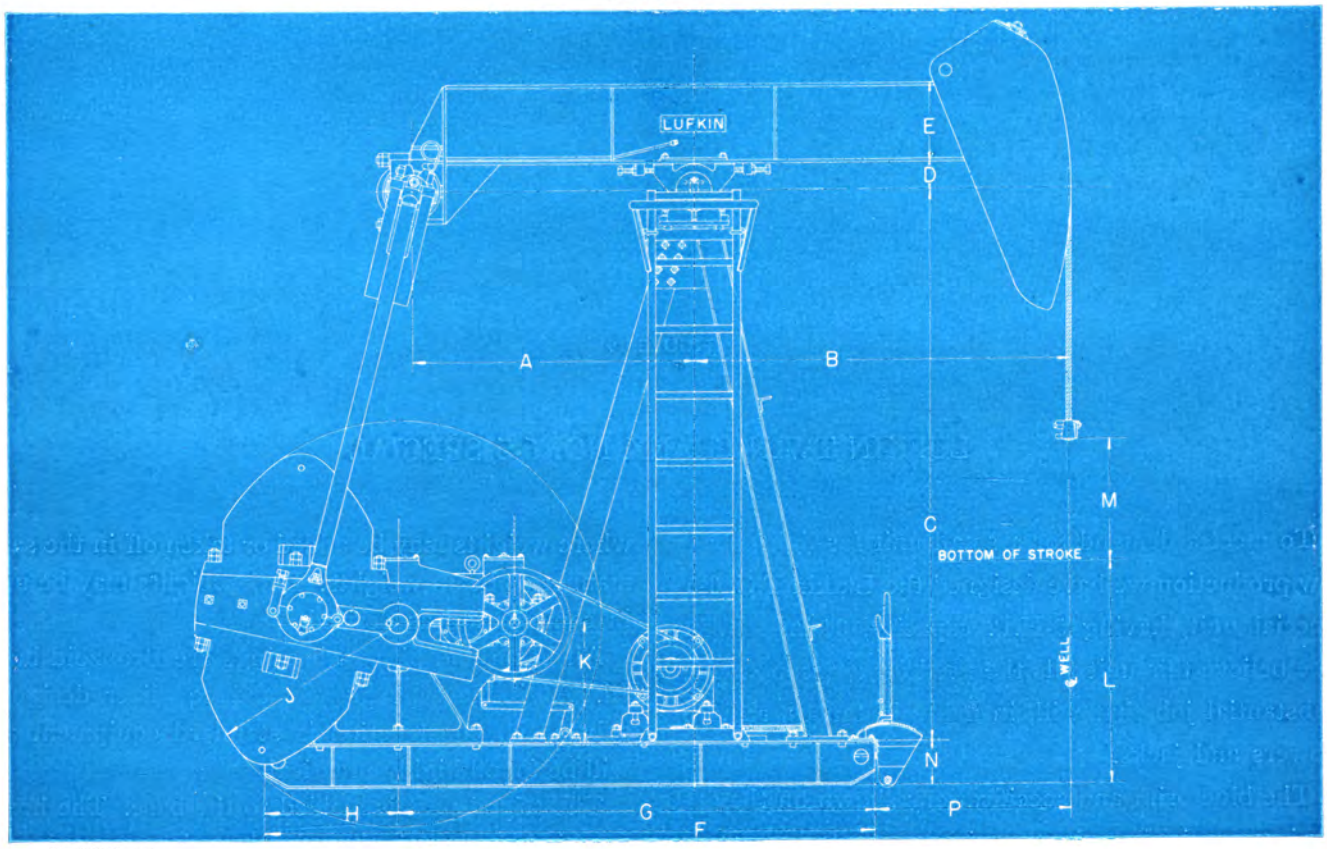

FIGURE 18

GENERAL DIMENSION SHEET—LUFKIN ASSEMBLIES TC-2, 3, 4 and 5

UNIT	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
TC-2	8′-0″	8′-0″	12′-1″	6″	21″	14′-0″	11′-9″	2′-3″	4′-11½″	2′-3″	5′-0¼″	2′-8″	16″	5′-6″	4′-3″
TC-3	5′-3¼″	7′-0″	10′-4″	6″	18″	12′-0″	9′-3¼″	2′-8¾″	3′-9½″	2′-3″	5′-2½″	2′-3″	10″	4′-4″	3′-0″
TC-4	5′-3¼″	6′-0″	8′-1″	6″	16″	12′-0″	9′-3¼″	2′-8¾″	3′-9½″	2′-3″	3′-6½″	21″	10″	4′-4″	2′-0″
TC-5	5′-0″	5′-0″	8′-1″	6″	12″	9′-7¼″	7′-1″	2′-6¼″	3′-0″	18″	4′-4″	18″	8″	4′-0″	2′-11″

Ask for Certified Print before making foundation.

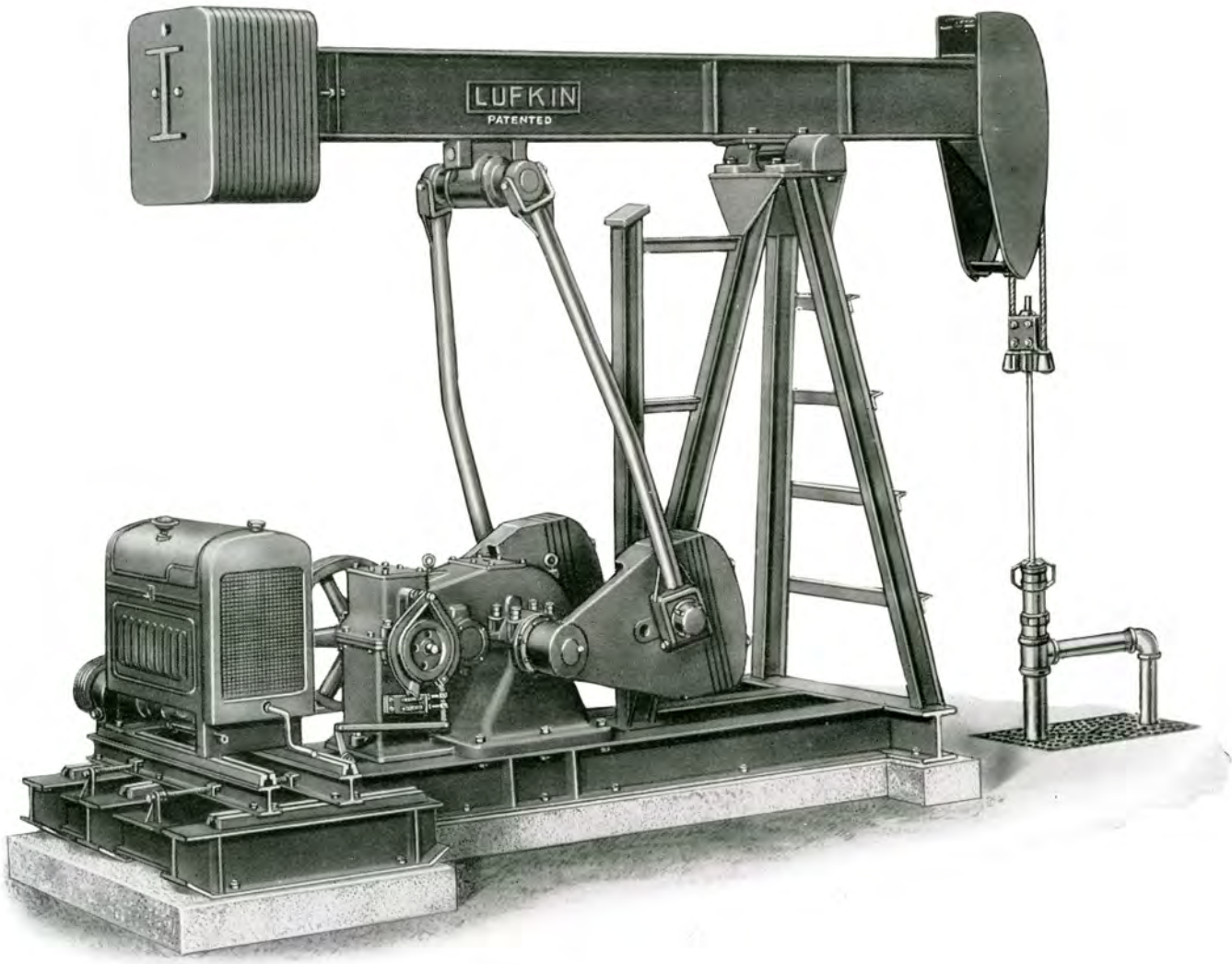

FIGURE 19

LUFKIN TWIN CRANK NO. 6-5 SPECIAL

To meet a demand for a small unit for light, shallow production we have designed the Lufkin T.C. 6-5 Special unit, having 5-H.P. capacity, 34-in. stroke. We believe this unit fills the need for an economical, substantial job that will, in many instances, replace powers and jacks.

The blue print and specifications shown on the opposite page indicate its capacity.

This unit has been designed with a combination beam and crank counterbalance that can be used for moderately fast or slow pumping.

The gear box and gears are built like any other Lufkin unit. The cranks are of the weighted type where weights may be added or taken off in the same manner as beam weights. Both weights may be used in combination as desired.

All beam and pitman bearings are Bronzoid bushed. A simple type pitman and equalizer design of substantial construction is standard equipment and will be found highly practical.

The tripod post is welded to the base. The horsehead is bolted to the beam and can be removed when cleaning out.

A "V" belt drive is provided with motor sheave and belts and cover. Wire line hanger and polished rod clamp are provided. Either electric motor or gas engine can be mounted on Universal slide rails.

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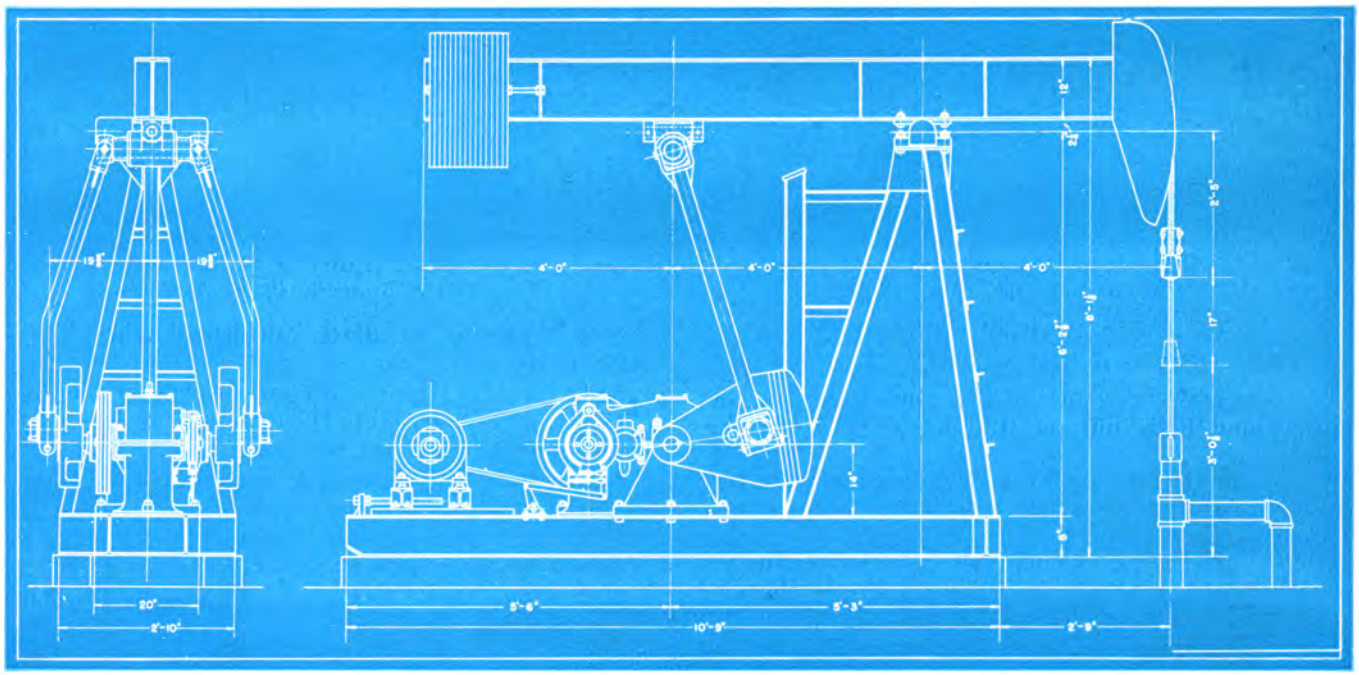

FIGURE 20

GENERAL SPECIFICATIONS LUFKIN NO. 6-5 SPECIAL ASSEMBLY

8,000 lbs. Polished Rod Load and 34″ Maximum Stroke

WALKING BEAM: 12″ x 6½″ x 28 lbs.; 4′ 0″ and 4′ 0″ working centers.

HANGER: Removable horsehead with ¾″ wire line.

PITMAN: Universal equalizer with bronze bushed bearing, 2½″ pipe connections, Universal lower bearings.

CENTER BEARING: 2 15/16″ x10″ bronze bushed, dust proof.

SAMSON POST: Tripod, 6′ -2 7/8″ high.

BASE: 8″ deep, 20″ wide at gear box, 10′ -9″ long.

CRANK: 24″ and 34″ stroke. Adjustable counterbalance by adding or subtracting weights.

CRANK PINS: 2¾″ x 3″, bronze bushed, oil bath,

GEARS: Double reduction, main gear 15″ diameter, 4″ face.

RATING: 4.43 nominal A.P.I. horse power @ 20 s.p.m., 21,900 lb. ins. Peak Torque.

RATIO: 25.

CRANKSHAFT: 3″

SHEAVE: 21″ P.D., 3 B-grooves, 1 7/16″ bore.

WEIGHT: Less beam weights, 4100 lbs.

COUNTERBALANCE: Maximum 5300 lbs

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NOTES ON ORDERING LUFKIN UNITS—OPERATING INSTRUCTIONS

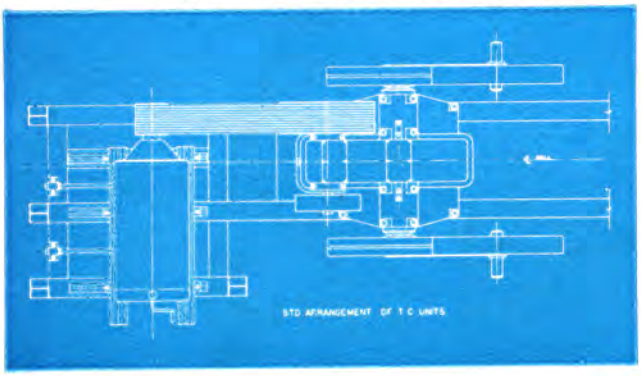


FIGURE 21
Standard Layout Twin Crank Units

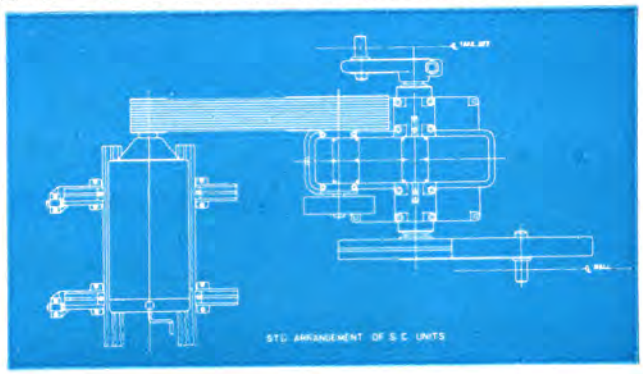


FIGURE 22
Standard Layout Single Crank Units

GENERAL NOTES APPLYING TO TWIN AND SINGLE CRANK UNITS

Drive Sheaves are on the left and Brake on the right, standing behind the unit looking toward the well.

With gas engines double reduction gear units run clockwise, single reduction gear units run counter clockwise.

Unless otherwise specified units will be shipped to operate at 20 strokes per minute. Motor sheaves are furnished for any desired speed.

TWIN CRANK UNITS

Standard Twin Crank Unit Bases are made as per print above, extension for gas engine or motor is on the right standing behind unit facing the well. Bases are the same for gas engine or electric motor. Any motor or multi-cylinder gas engine will fit. Also on large sizes some makes of 2 cylinder, slow speed engines fit without changes. However with some engines having large fly wheels special designs are necessary for the base for which we make slight extra charge.

Standard bases are regularly in stock, special bases delay shipments, but usually can be made promptly.

Assemblies Nos. 0A, 1A, 2A, have long beams and are usually furnished with a hanger and rod connection to polished rod. Horseheads may be substituted if desired. Assemblies No. 2, 3, 4, 5, have shorter beams and are regularly furnished with hinged horseheads.

Lufkin Twin Crank Units are priced complete except Prime Mover, Foundation Bolts and Polish Rod Clamps, which are extra.

Note: Bolts are provided for bolting gas engine or motor to our Universal rails.

With each Unit we furnish Crank Pin Wrench and Wrench for counter weight bolts.

Complete guards around cranks can be furnished at extra price.

SINGLE CRANK UNITS

Single Crank Units are quoted complete except Prime Mover, Foundation Bolts, Brake Levers and Connections, Belt Cover and Polish Rod Clamps, as these items are only furnished when specified.

Units include Drive with Motor Sheave having bore and K.S. to suit Prime Mover, "V" Belts, Brake and Brake Band (only), Crank, Crank Pin and Counter Weights. Back Cranks are extra.

Headache posts between sampson post and well are extra.

Electric Motors, include overload relay and push button station.

Gas Engines (multi-cylinder type) are complete except Volume Tank, Scrubber and Regulator.

ERECTING AND OPERATING INSTRUCTIONS

NOTE: For ready office reference we include operating instructions herewith as they appear on our name plates—which have of course identification information for each unit as follows: Type, Order No., Gear Ratio, Serial No., H.P. Ratings, Peak Torque in accordance with A.P.I. requirements.

1. When erecting a unit, special attention and care should be taken to see that crank pins and bearings, equalizer pins and holes for same are well cleaned.
2. When applying counterweights see that ways and slots are clean. Use wrench furnished to tighten bolts thoroughly.
3. Be sure that pulley and brake keys are tight before starting.
4. Do not jam on brake. Apply gradually.

Lubrication—Most Important

GEAR BOX

Use S.A.E. 50 motor oil for temperatures 70°F. and above.
Use S.A.E. 40 motor oil for temperatures 70°F. and below.
Fill gear box until oil runs out top pet cock.
NOTE: Do not fill above top pet cock.
Change oil semi-annually. This unit requires — gallons.

PITMAN

Fill with 120 to 150 S.A.E. (steam cylinder oil) to oil level plug in cover. Check weekly. Change every three months. Too much oil causes leaks. For roller bearings use No. 3 grease.

CENTER BEARINGS

Use same oil as in gear box. Be sure center bearing is full to gauge. To insure this, remove plugs from both ends of bearing, fill and replace.

ROD HANGER AND EQUALIZER BEARINGS

Use No. 3 gun grease. To insure filling remove small plugs to let air out. See that grease comes thru before replacing plugs. Check weekly.

GENERAL

The above instructions are for average operating conditions. However, for unusually heavy wells in cold weather, lubrication should be watched closely, especially the pitman, center bearings, and beam bearings.

When ordering parts, give serial number of unit.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN LONG STROKE UNIT

FIGURE 23

GENERAL CHARACTERISTICS

There are undoubtedly well conditions under which long stroke pumping will prove decidedly advantageous.

We offer what we believe to be a very practical unit for this service. In the main this unit is designed like our regular line of units, except the gear box is on the well side and a shorter base is used so that the unit may be set on the derrick floor or over water with a minimum of expense for foundation.

The accompanying illustrations show the design and the special features of this unit. In general the characteristics of the Lufkin Long Stroke Unit are:

FIRST: Wide, deep base, making a self-contained unit.

SECOND: A four-legged samson post of the most rigid design.

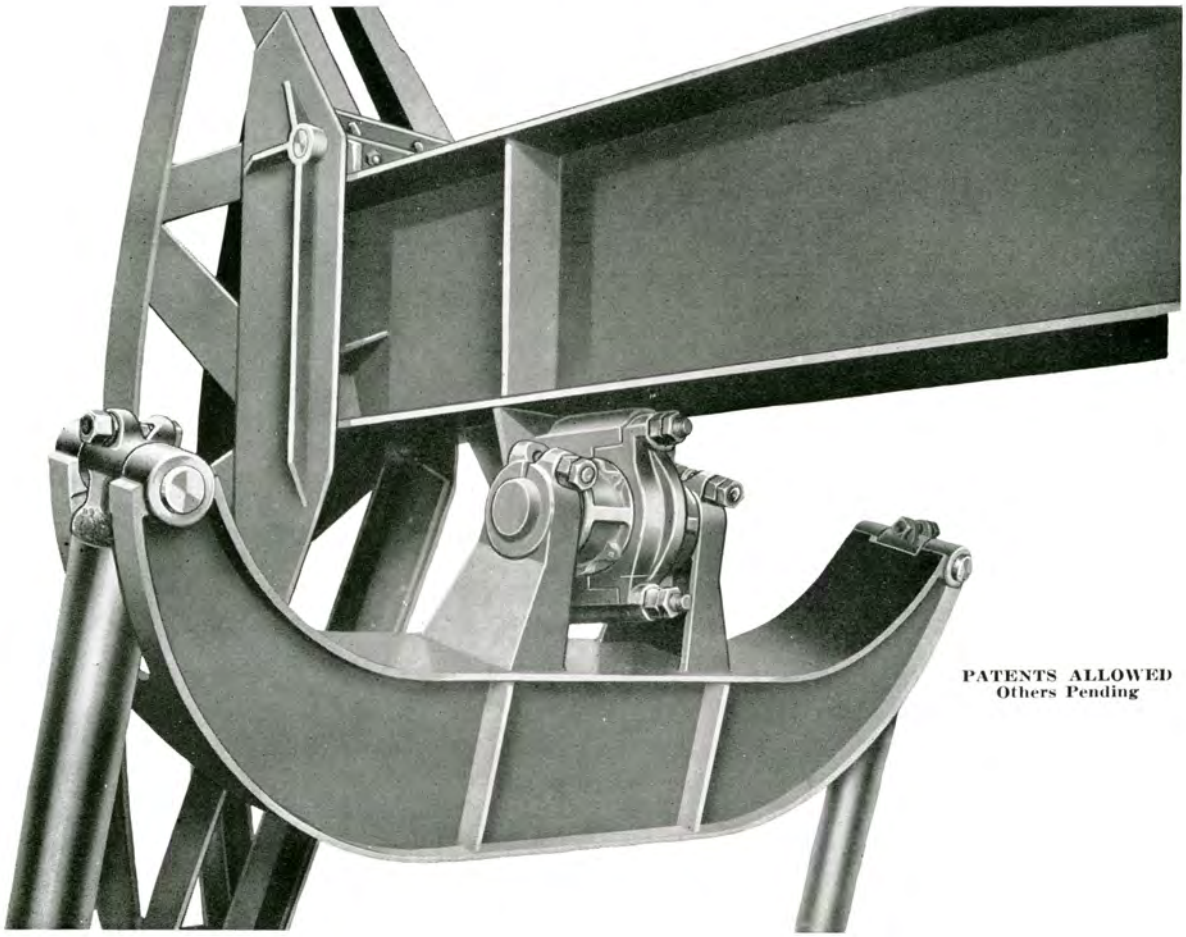
THIRD: A suitable walking beam with duplicate, removable horseheads at each end and with wire line hangers that maintain absolute straight line motion, not only for the polish rod but for the counterbalance as well.

FOURTH: Only two working bearings are required except crank pins. The main center bearing and the equalizer bearing on the beam have renewable bronzoid liners, oil tight, with ample bearing surfaces to withstand the heaviest load.

FIFTH: The unit operates like any of our 6′ stroke units; there is no surge or undue strain at the bottom of the stroke—just a steady, even motion.

SIXTH: Strokes of 40″, 60″, 80″ and 120″, with suitable speeds, can be had by changing motor sheaves (10 to 20 s.p.m.), making it a very flexible unit and most desirable for testing as well as for permanent installation.

LUFKIN LONG STROKE UNIT



PATENTS ALLOWED
Others Pending

FIGURE 24

The New Lufkin "Universal" equalizer. This equalizer is self-aligning with full "harmonics" motion from unit to beam. This is a completely machined job of steel with bronzoid, oil tight, universal bearings on beam proper with every adjustment for wear provided for, thus eliminating wear and lost motion. Bearings are extra large and all parts are of the most substantial construction.

GENERAL SPECIFICATIONS

This assembly is built in one size, 10-Foot Maximum Stroke, with No. 51A Reduction Gears. 34 H.P. at 12 R.P.M., weight 30,200 lbs, less counterweights.

Polished rod load capacity 30,000 lbs.

Strokes 40″, 60″, 80″, 100″ and 120″.

Walking beam centers 24′.

Post, 4-legs 14′ 3″ above base.

Base 9′ wide, 14′ 6″ long, 16″ deep.

Bronzoid center bearing 7″ x 20″.

Bronzoid equalizer bearing 5″ x 12″.

Connection rods of 5″XX tubing.

No. 51 unit sheave 43″, 11-C grooves.

Motor sheave to suit.

COUNTERBALANCE WEIGHTS

Basket 3′ x 4′ 10″.

4″ thick, 4 weights wide—450 lbs. each.

2″ thick, 4 weights wide—215 lbs. each.

1″ thick, 4 weights wide—105 lbs. each.

Driven by electric motor or multi-cylinder gas engine.

LUFKIN LONG STROKE UNIT—SPECIAL FEATURES

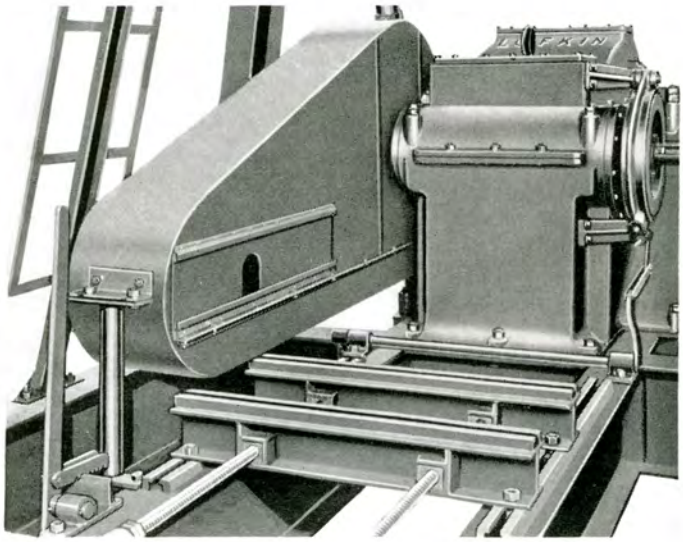


FIGURE 25

Motor rails are adjustable for either multi-cylinder gas engines or electric motor drives. The belt covers and brake mechanism are also adjustable to suit conditions.

FIGURE 27

Weight basket and weights

Showing substantial design of horsehead. Both ends of beam are built alike

FIGURE 26

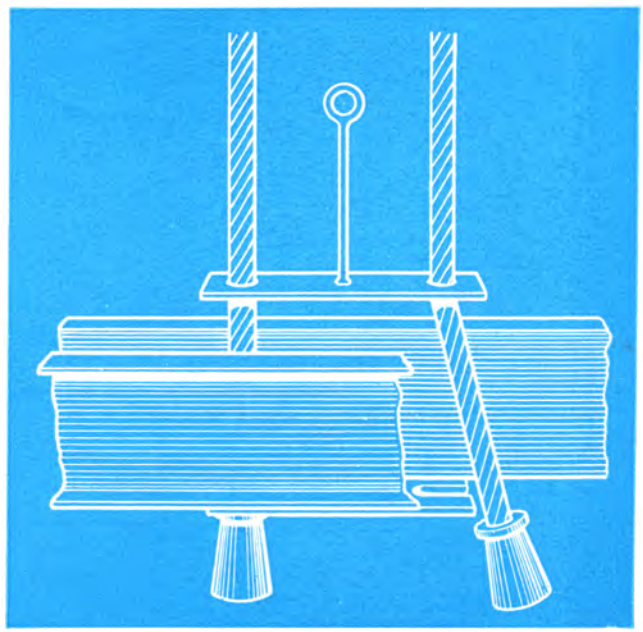


FIGURE 28

Sketch showing simple design of latch on weight basket which may be released in one minute

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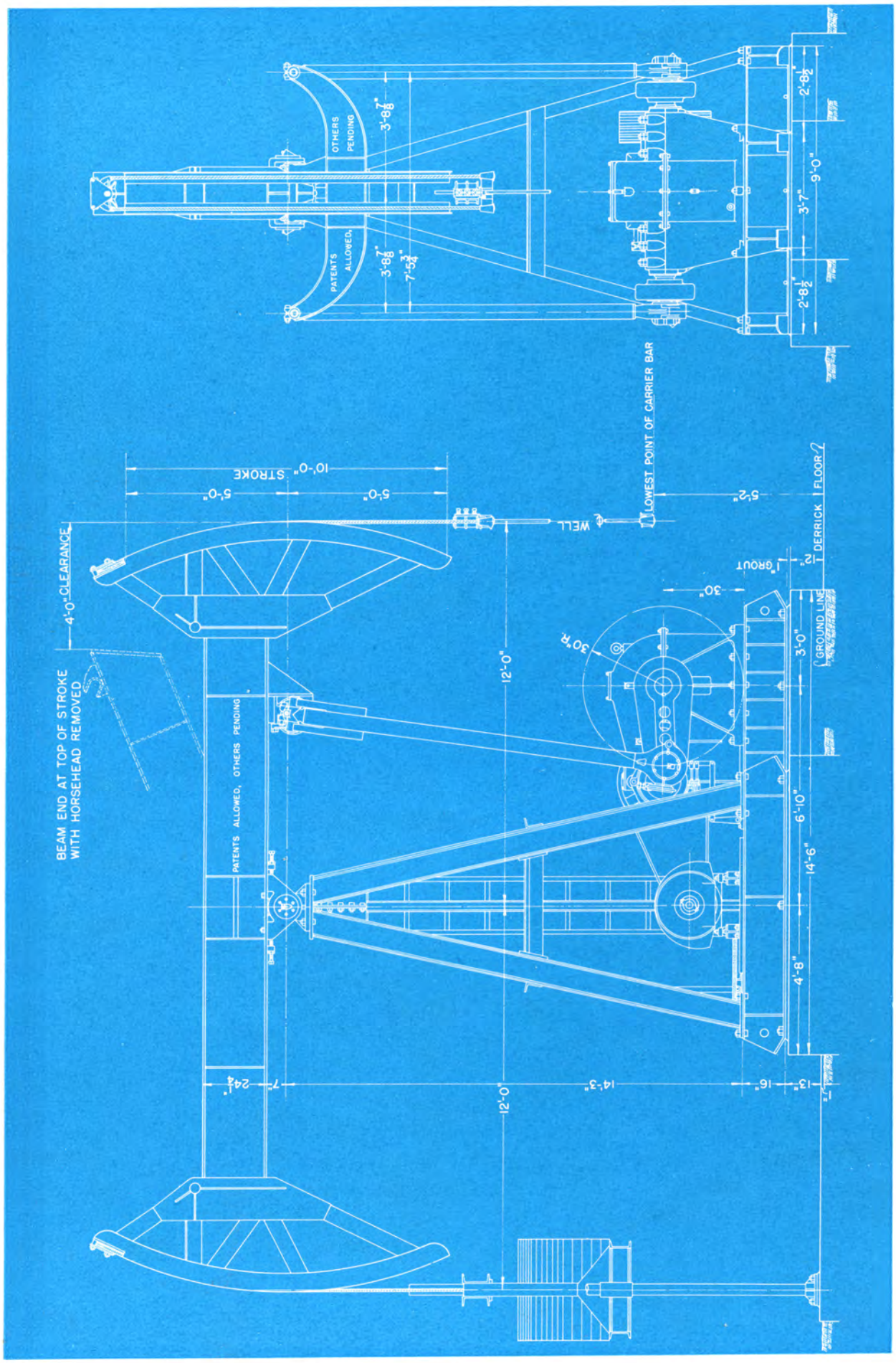

FIGURE 29

Line Drawing Showing General Dimensions Lufkin Long Stroke Unit

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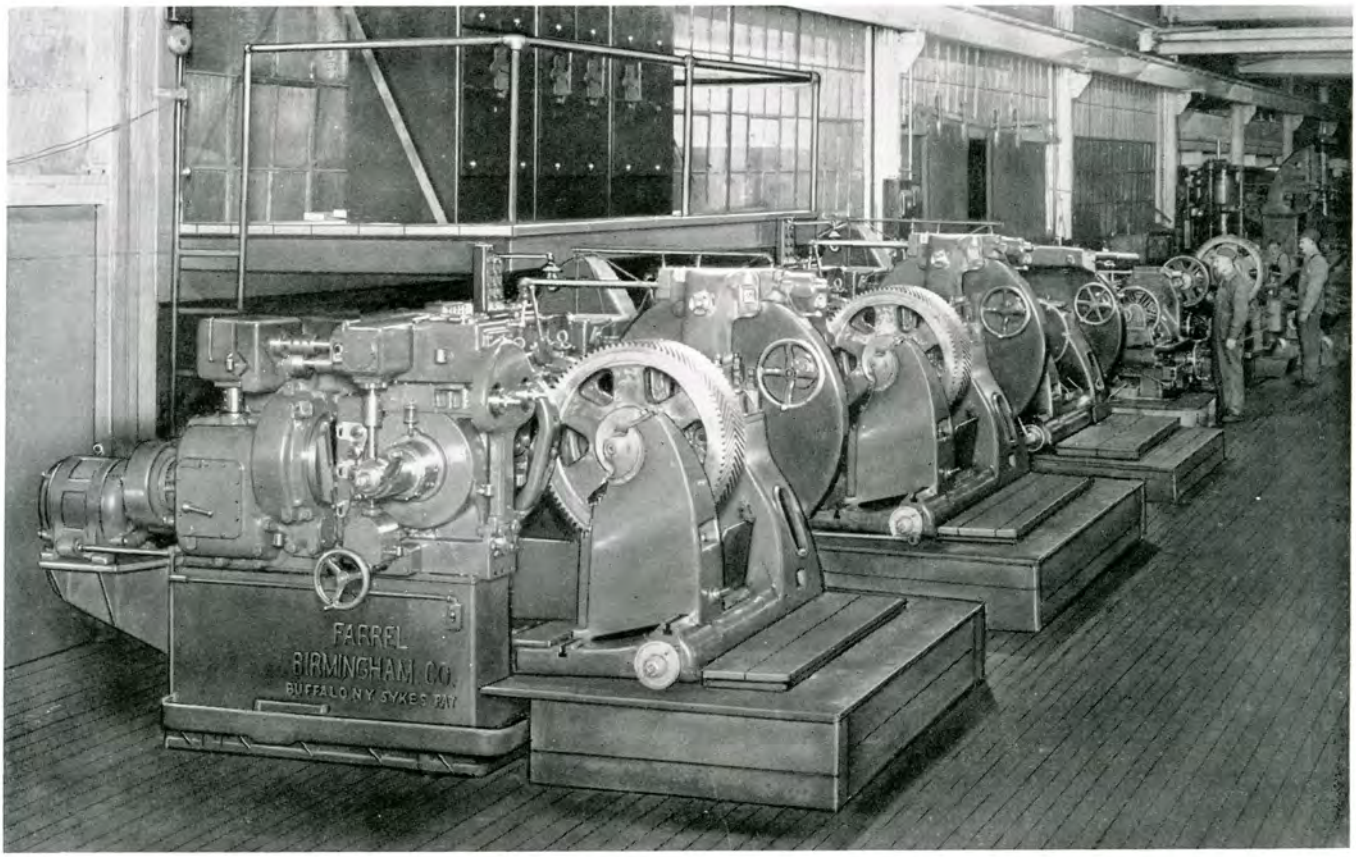
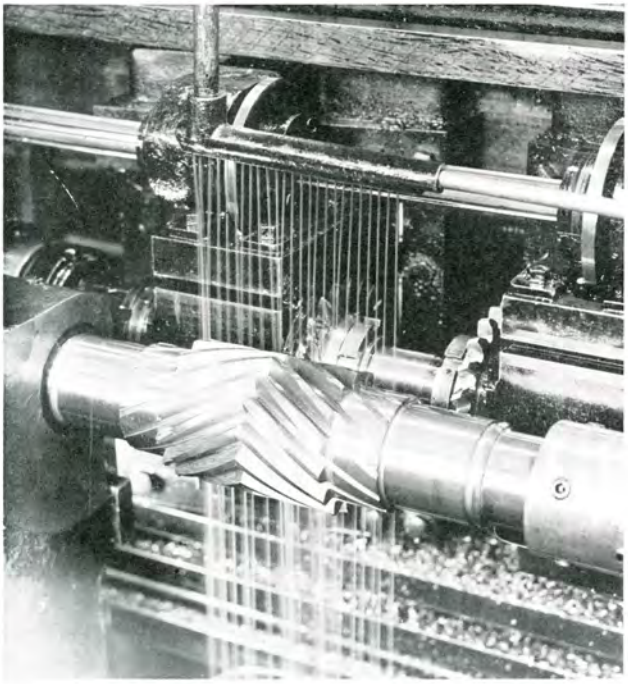


Gear Cutting Department of our Lufkin Plant.

MODERN TOOLS MEAN PRECISION EQUIPMENT

Pictured above is one section of our gear cutting department. Four Sykes gear cutting machines are visible in the foreground, with a battery of lapping machines in the distance. These machines are of the latest type Sykes patent gear cutters and are the largest assembly of such machines in the South.



All gears and pinions that go with the manufacture of Lufkin Pumping Units are cut in our own plant, under our own control and supervision. A most rigid inspection is therefore possible, insuring absolute precision mating of each assembly.

THE BACK-BONE OF A LUFKIN UNIT

Lufkin-Sykes Herringbone gears are often called "The Gears with a back-bone". All gears used in Lufkin Units are generated on machines in our own plant under a most rigid inspection system. The gear and its mating pinion are "lapped in" by running together for several hours using lapping compound on the teeth, to insure smooth and silent operation.

Lufkin-Sykes Herringbone gears have many distinct advantages over other types of gearing: The teeth are stronger due to arch-like construction; uniform load across face due to balanced thrust of the opposing helices; no thrust bearings necessary; smoother action due to absence of distortion; better lubrication due to oil film formed by "wedge action" of the teeth; and due to the accuracy of their cutting they are more silent.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

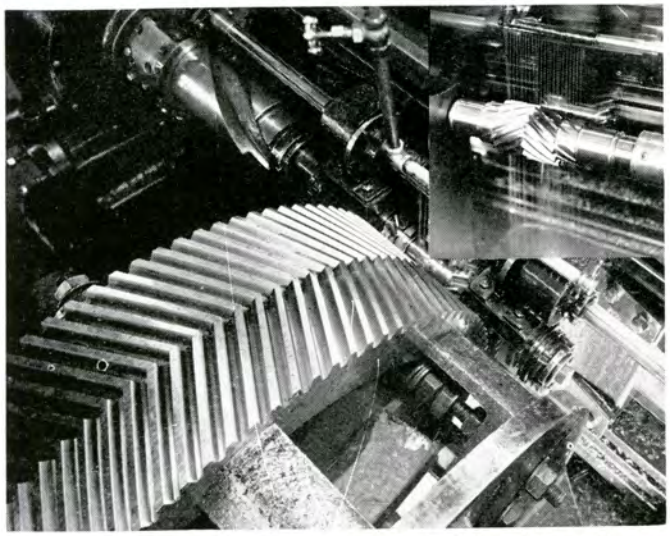
LUFKIN FOUNDRY & MACHINE COMPANY, LUFKIN, T

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

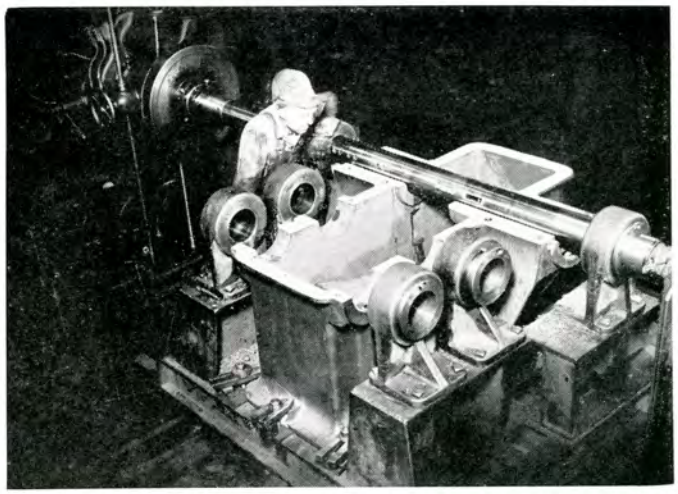
LUFKIN, TEXAS—*"Quality Machinery Since 1900"*

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

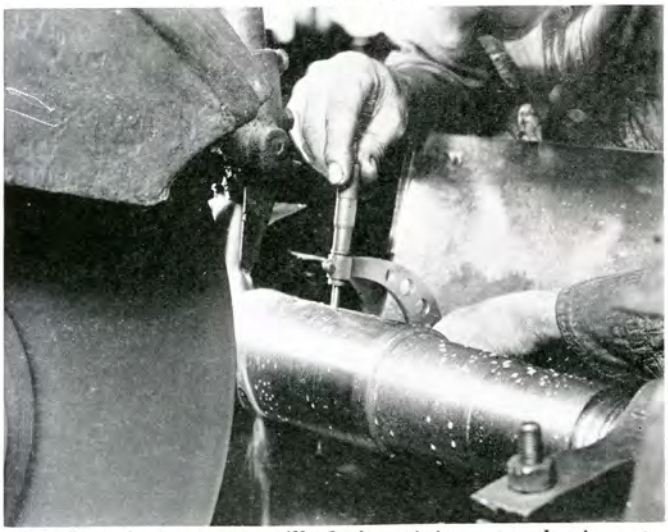
MODERN TOOLS MEAN PRECISION EQUIPMENT



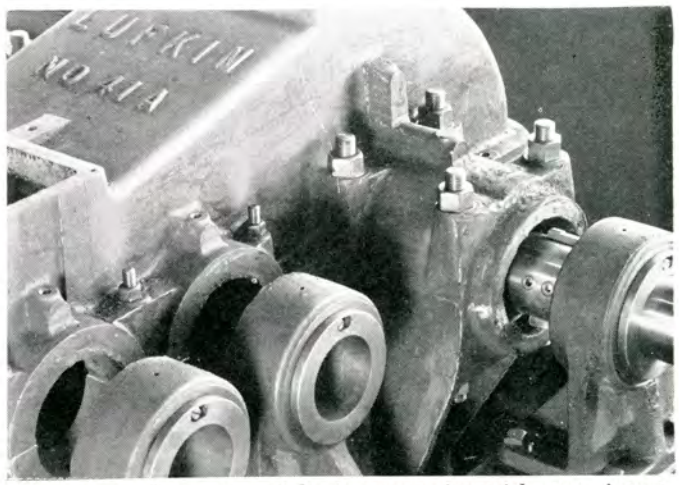
All herringbone gears are generated on Sykes Patented gear generators in our own plant and under the most rigid inspection system. Photos show cutters in action generating gear and pinion.



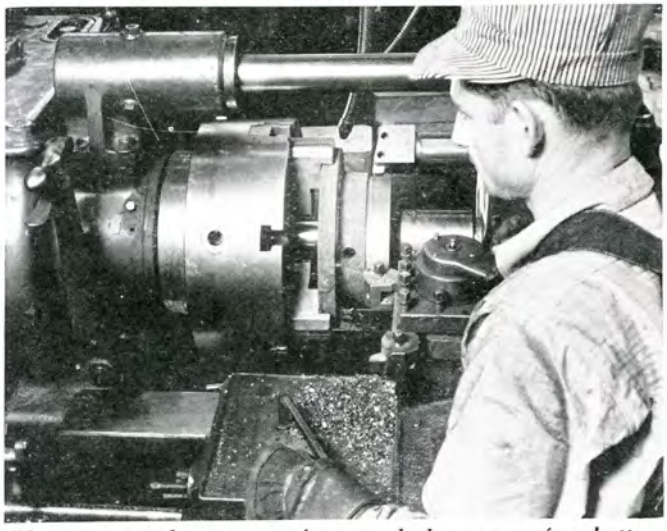
Without doubt the most expensive and the most accurate bar yet built for precision boring of parallel bearings. This photo shows cover removed, revealing entire operation of bar.



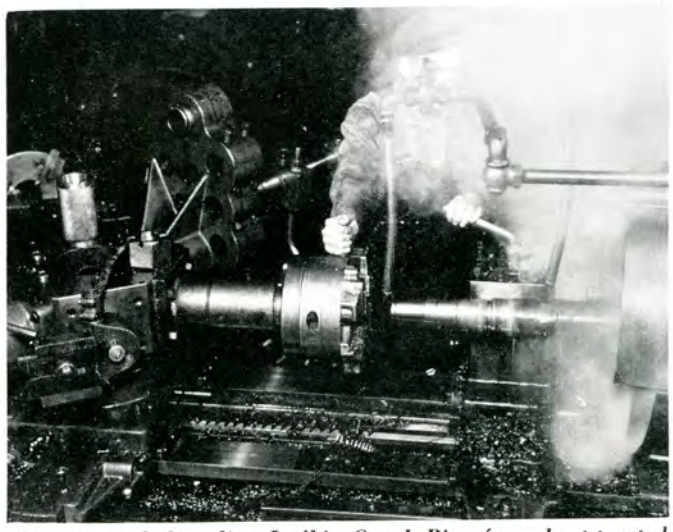
Grinding for accuracy. All shafts, pinions, crank pins, etc., are ground to absolute micrometer size.



This photo shows start of boring operation with cover intact. Every Lufkin Unit is bored to absolute accuracy on equipment such as is described above.



The most modern type of turret lathe—one of a battery performing similar operations. Note that boring, facing and turning rough and finish cuts are completed in one operation.



Turning and threading Lufkin Crank Pins from heat-treated alloy bar stock on one of the most modern types of turret lathes.

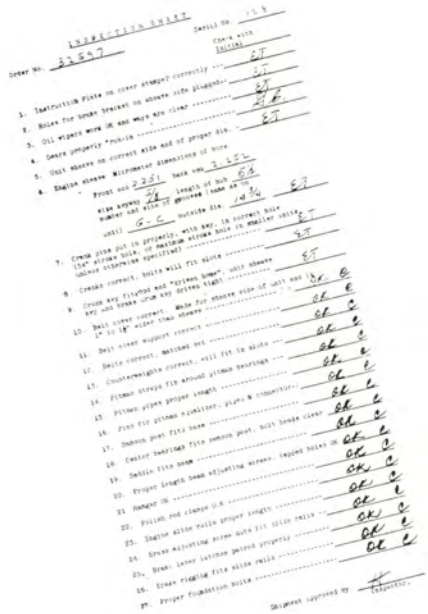
ONLY THE FINEST GO INTO THE MANUFACTURE OF LUFKIN PUMPING UNITS

Only materials of the finest character — the very best now obtainable — go into the manufacture of Lufkin Units.

The finest and most modern tools — marvels of mechanical science—produce parts to precision for Lufkin Units.

Skilled workmen—specialists with years of mature experience—men with their hearts in their jobs—assemble and construct Lufkin Units.

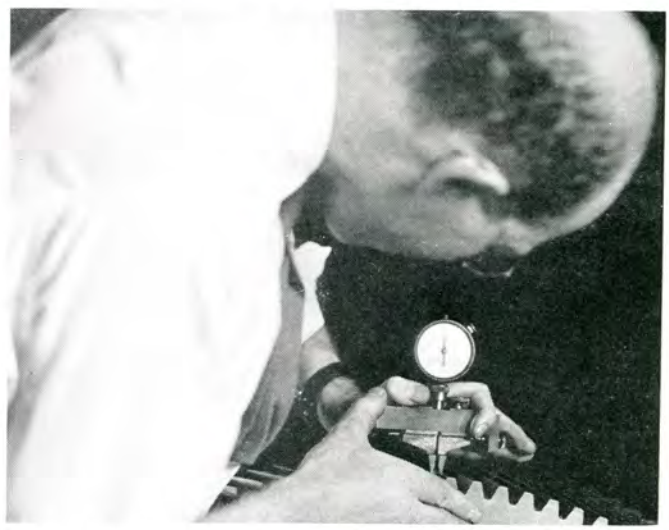
It is little wonder, then, that Lufkin, pioneer in the development of geared units for oil well pumping, has always maintained leadership in this field.



After the Unit has been "run in" and passed numerous inspections along the assembly line, it now receives the final "OK" and is ready for shipment to the customer. Lufkin inspectors answer to no one except the customer.

Testing pinion shaft blank for eccentricity before cutting herringbone teeth. Accuracy here is of extreme importance.

Testing gear teeth for hardness.



Teeth of herringbone gears must pass rigid inspection for accuracy of formation.

POLISH ROD CAPACITIES OF LUFKIN WALKING BEAMS FOR SINGLE AND TWIN CRANKS

Walking Beam Number	Section	Working Centers	RATING, LBS.		Where Used
			A.P.I.	A.I.S.C.	
1328-CU	24″ x 14″ 130 lb	28′	20,375	30,565	TC-0A SC-100 and 200
1325-CU	24″ x 14″ 130 lb	25′ A.P.I. Std.	23,900	35,860	TC-0A and 1A SC-100
1025-CU	24″ x 12″ 100 lb	25′	16,855	25,285	SC-200
1020-CU	24″ x 12″ 100 lb	20′	23,045	34,570	TC-2A
1020-CUH	24″ x 12″ 100 lb	20′	23,045	34,570	TC-2A
8216-CUH	21″ x 9″ 82 lb	16′	19,000	28,500	TC-2
6412-CUH	18″ x 8¾″ 64 lb	12′—3¼″	16,270	24,400	TC-3
5811-CUH	16″ x 8½″ 58 lb	11′—3¼″	15,470	23,200	TC-4
4010-CUH	12″ x 8″ 40 lb	10′	10,365	15,550	TC-5

ENGINEERING DATA FOR THE PRACTICAL ENGINEER

WELL LOADS

Weights as listed are based on a specific gravity of 1. To correct for individual condition multiply the figures in the following columns by the specific gravity of the fluid produced.

Size Plunger	Size Rods	Weight To Be Lifted Per 1000 Feet				
		½ Fluid	All Fluid	Rods	½Fluid Plus Rods*	All Fluid Plus Rods
1 ¼″	⅝″	125	250	1150	1275	1400
1¾″	⅝″	442	884	1150	1592	2034
1¾″	¾″	429	858	1690	2119	2548
2¼″	⅝″	793	1586	1150	1943	2736
2¼″	¾″	780	1560	1690	2470	3250
2¼″	⅞″	730	1460	2270	3000	3730
2¾″	¾″	1195	2390	1690	2885	4080
2¾″	⅞″	1170	2340	2270	3440	5610
3¾″	⅞″	2290	4580	2270	4560	6850

* Weight of one-half the fluid plus the rods equals the required counterbalance.
Weight of rods per 1000 Feet—⅝″ = 1150 lbs.; ¾″ = 1690 bs.; ⅞″ = 2270 lbs.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN SINGLE CRANK UNITS

Typical Installation Lufkin "Universal" Single Crank Assembly

LUFKIN SINGLE CRANK UNITS

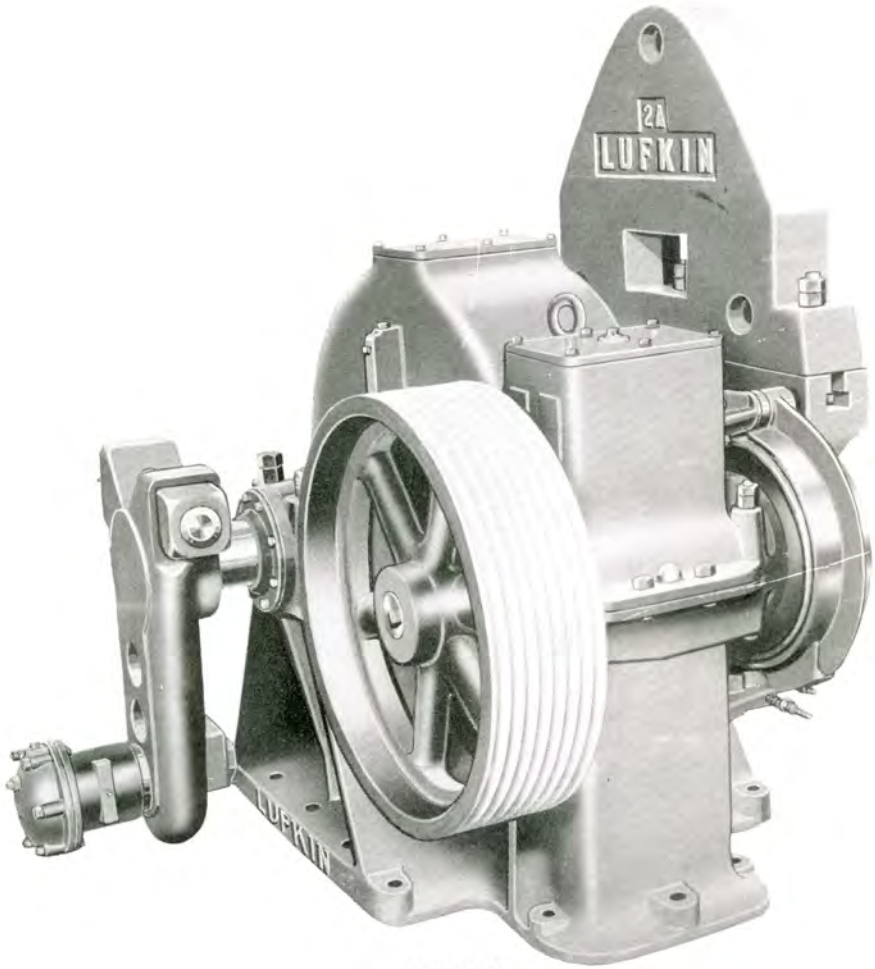


FIGURE 31

All Lufkin units, both single and double reduction types are built as illustrated with the sheave on the left side and brake on the right. The main counterbalance, of course, is on the right. The back-side crank is on the left. The sheave and brake can be reversed, if necessary, to suit special requirements. The cut to the left illustrates a complete and standard unit with the exception of the back-crank, which is extra and considered special.

Horsepower and peak torque ratings are based on the A.P.I. tentatively adopted formula on a gear hardness of 210 Brinell and pinion hardness of 270.

GENERAL SPECIFICATIONS SINGLE CRANK UNITS.

UNIT NO.	Type of Gears	Nom. H.P. A.P.I. at 20 s.p.m.	Peak Torque in Lb. Inches	Ratio	Diam. Face Main Gear	Crank Shaft Dia.	Bore Drive Sheave	Sheave P.D. and No. Grooves	Center of Crank to Base of Unit	Crank and Wts.	Stroke	Static Center-Balance, Lbs.	
												Reg. Wts.	Aux. Wts.
60	SR	65.8	325,000	9.54	50″x12″	6 7/16″	3 13/16″	37¼″–7D Std. 37¼″–Max.	30″	7472 and No. 1	34″	16,000	19,950
54-A	SR	51.7	255,682	9.4	47″x10″	6 7/16″	3 7/16″	34¼″–11C Std. 34¼″–Max.	28″		44″	12,350	15,400
											54″	10,100	12,550
51-A	DR	54.3	268,541	28.79	36″x12″	6 7/16″	3 3/16″	34¼–11C Std. 51¼″–Max.	30″		64″	8,500	10,600
41-A	DR	44.0	217,602	30.12	34″x10″	6 7/16″	2 13/16″	24¼″–8C Std. 47¼″–Max.	28″		74″	7,550	9,400
31-C	DR	30.8	152,320	28.7	27″x11″	6″	2 7/16″	24¼″–6C Std. 39¼″–Max.	27″	6466 and No. 2	34″	12,100	15,050
											44″	9,350	11,650
26-C	SR	32.1	158,750	10.5	42″x8″	6″	2 13/16″	31¼″–8C Std. 31¼″–Max.	27″		54″	7,650	9,500
											64″	6,450	8,000
21-C	DR	22.2	109,790	28.67	25″x7⅝″	5 7/16″	2 3/16″	24¼″–5C Std. 35¼″–Max.	22″	5460 and No. 2	24″	14,400	17,950
											34″	10,150	12,700
											44″	7,850	9,800
											54″	6,400	8,000
11-B	DR	14.6	72,204	29.24	22″x7″	4 7/16″	1 13/16″	19¼″–4C Std. 31¼″–Max.	27″	4456 and No. 2A	24″	11,500	14,150
											34″	8,100	10,000
											44″	6,300	7,750

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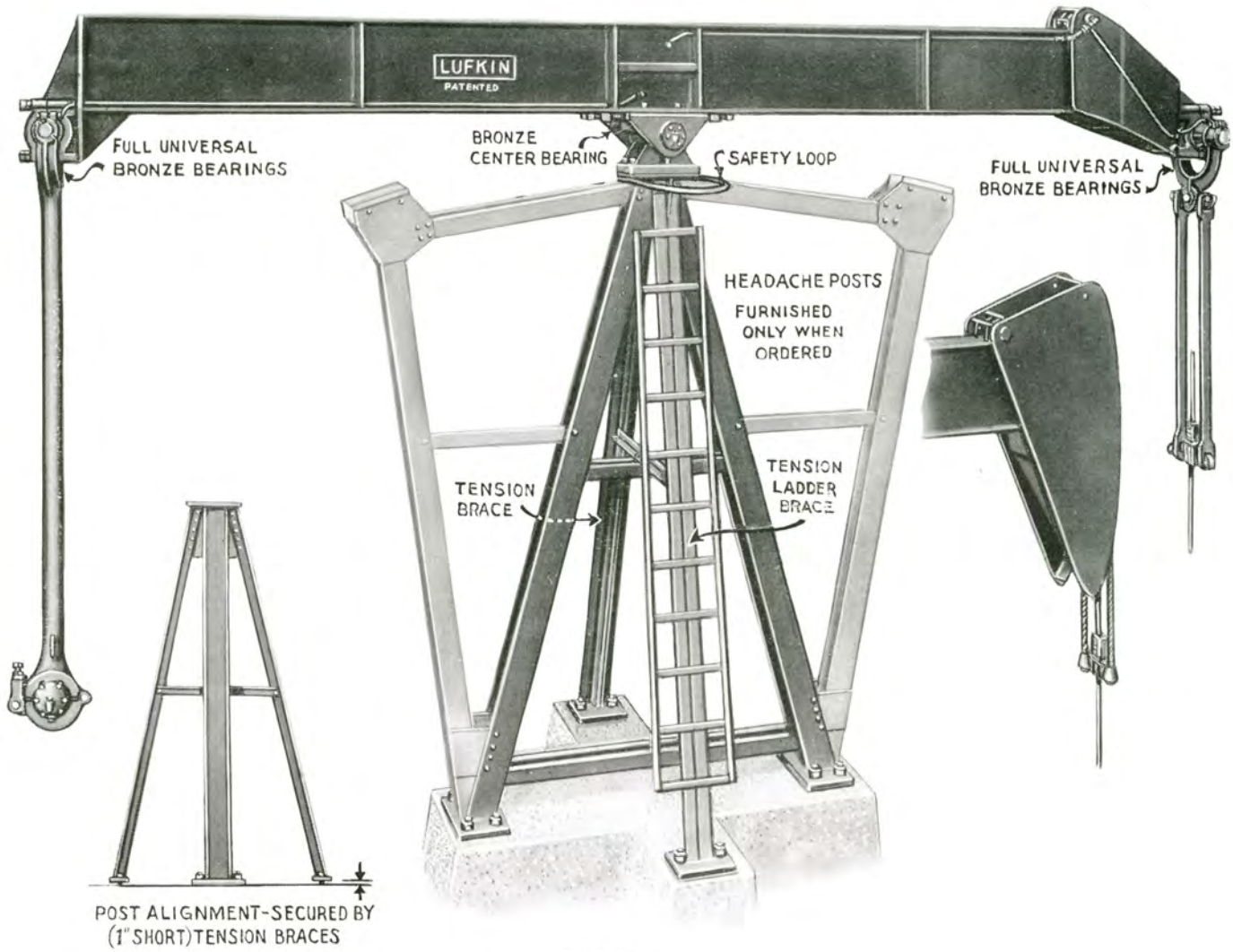


FIGURE 32

LUFKIN UNIVERSAL SAMSON POST ASSEMBLIES

GENERAL SPECIFICATIONS

Assembly	Units Generally Used	BEAM SPECIFICATIONS						Post Specifications			Center Brg. No. & Size	PITMAN		Crank Pin Size	Tail & Hanger Bearing Size	Foundation Bolts *
		No.	Depth	Width Flange	Weight per Ft.	Centers	A.P.I. Rating	Height	Type	Cap.		Pipe Size	Centers			
100	51-A, 60 41-A, 54-A	1328CU	24″	14″	130	28′	20,375	17′-6″	AT	40,750	1-AS 7″x20″	5″		5½″x5½″	5″x12″	24-1¼″
200	41-A & 54-A	1325CU	24″	14″	130	25′	23,900	15′-7″	AT	47,800	1-AS 7″x20″	5″	See Table	5½″x5½″	5″x12″	24-1¼″
300	41-A, 54-A 31-C, 26-C	1025CU	24″	12″	100	25′	17,855	15′-5″	AT	47,800	2-AS 6″x17″	4″	On	5½″x5½″	5″x 9″	24-1¼″
400	31-C, 26-C, 21-C, 11-B	8216CUH	21″	9″	82	16′	19,000	13′-6″	AT	46,090	2-AS 6″x17″	4″	Page 1310	5½″x5½″	5″x 9″	31-C & 26 C-24-1¼″, 21 C-22-1¼″, 11 B-8-1″ & 12-1¼″

*Foundation Bolts for Unit and Samson Post only.
Note: Headache Posts and Foundation Bolts furnished at Extra Price when specified.

FIG. A

HANGERS, PITMANS AND CRANK PINS

Fig. A. Complete all-steel pitman connection. For single crank units with extra heavy pipe.

Fig. B. "Universal" hanger with flat bar connections, regularly furnished on single crank units.

Fig. C. Special "Kansas Potential" hanger with two 2″ hanger rods furnished at extra price.

Fig. D. Universal crank pins and journals. For description see Page 1283.

Fig. E. Lufkin straight front posts built only on special order.

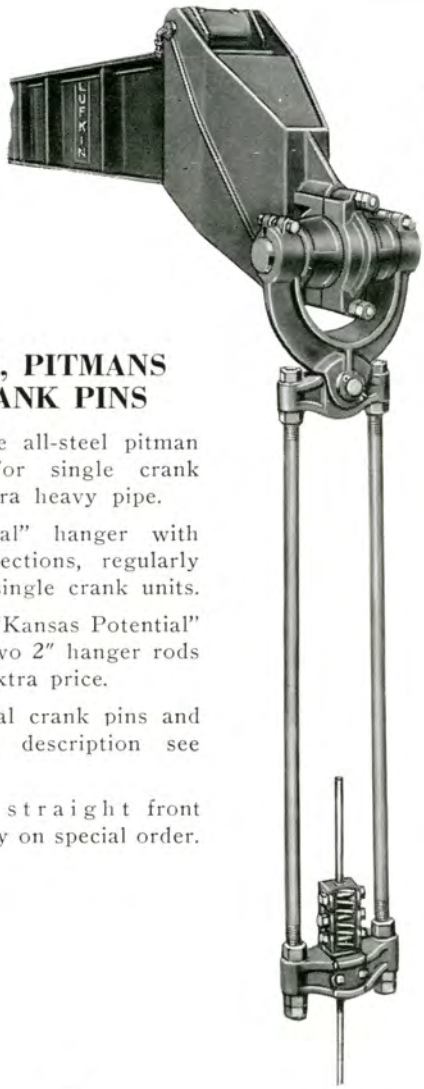


FIG. C

FIG. B

FIG. E

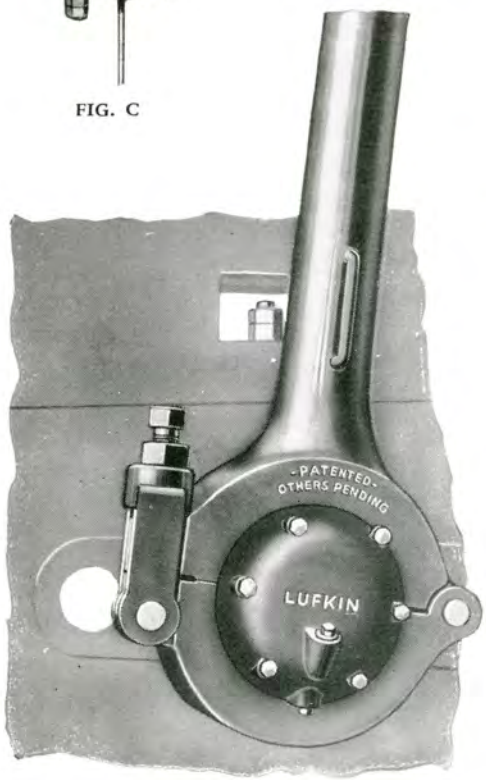


FIG. D

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

OIL TIGHT—BRONZE BUSHED CENTER BEARING

Patents Pending

FIGURE 33

Series "A" Center Bearings are full Bronzoid bushed, with patent oil seals and are designed to allow beam to headache to about 40° either front or back and as usual with Lufkin center bearings, beams can be swung sideways about 25° from center line. We believe this is a superior bearing in every respect, being dust proof, oil tight with renewable bronzoid bushing. They have ample bearing surface.

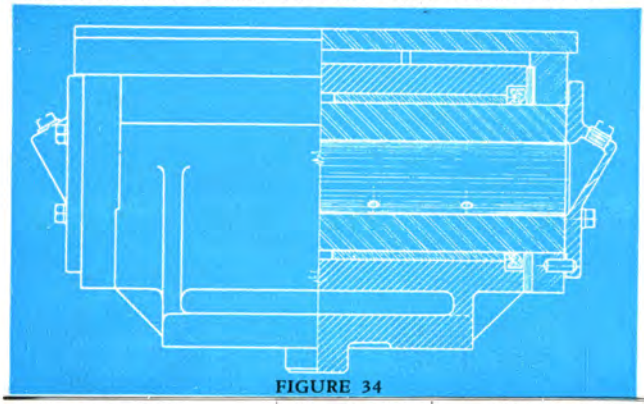


FIGURE 34

Center Iron No.	Size Bearing	Where Used
1-AS	7″ x 20″	TC No. 0 and No. 1 TC No. 0-A and No. 1-A SC No. 100 & 200 Long Stroke
2-AS	6″ x 17″	TC No. 2 and No. 2-A SC No. 300 & 400
3-AS	6″ x 14″	TC No. 3
4-AS	5″ x 10½″	TC No. 4 TC No. 5

BABBITTED OIL BATH CENTER BEARINGS, SERIES B & C

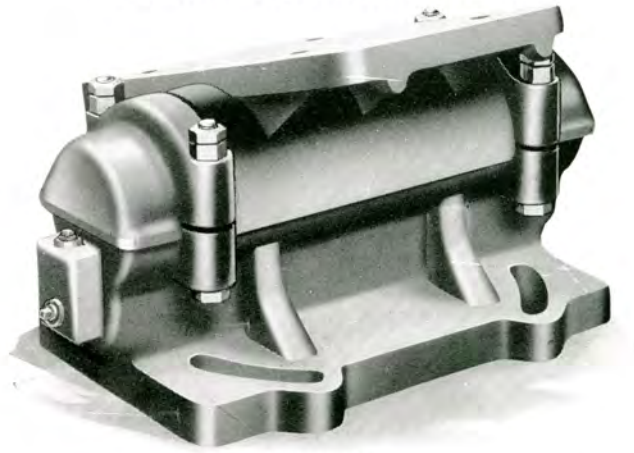


FIGURE 35

Series "B and C" Bearings listed below show our babbitted center bearings which are oil bath, but only reasonably dust proof, as blue print shows. This bearing is lined with a special high grade tin base metal to withstand the severe service of heavy loads and has ample oil capacity.

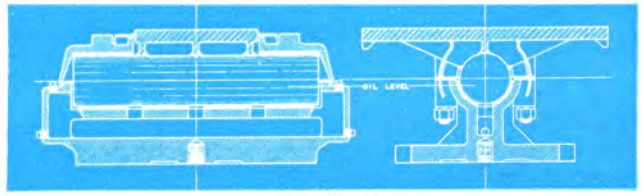


FIGURE 36

Center Iron No.	Size Bearing	Where Used
1-B	5″ x 24″	TC No. 1 and No. 1-A SC No. 1
2-B	5″ x 18″	TC No. 2 and No. 2-A SC No. 2
2-C	5″ x 24″	TC No. 2 and No. 2-A SC No. 2
3-B	4″ x 18″	TC No. 3 TC No. 4 SC No. 3 TC No. 5
3-C	5″ x 18″	TC No. 3

THE ORIGINAL TROUT PITMAN

Made in three sizes—No. 1: 4″ x 6″ pin; No. 2: 3½″ x 5″ pin; No. 3: 2¾″ x 4″ pin.

These pitman journals are self-aligning, oil tight and dust proof, with lower half bronze bushed and upper half cast iron, adjustable. We will continue to furnish these pitman heads to those who desire them for standardization reasons. On all Universal units, however, the pitman journals shown on page 1308 will be furnished.

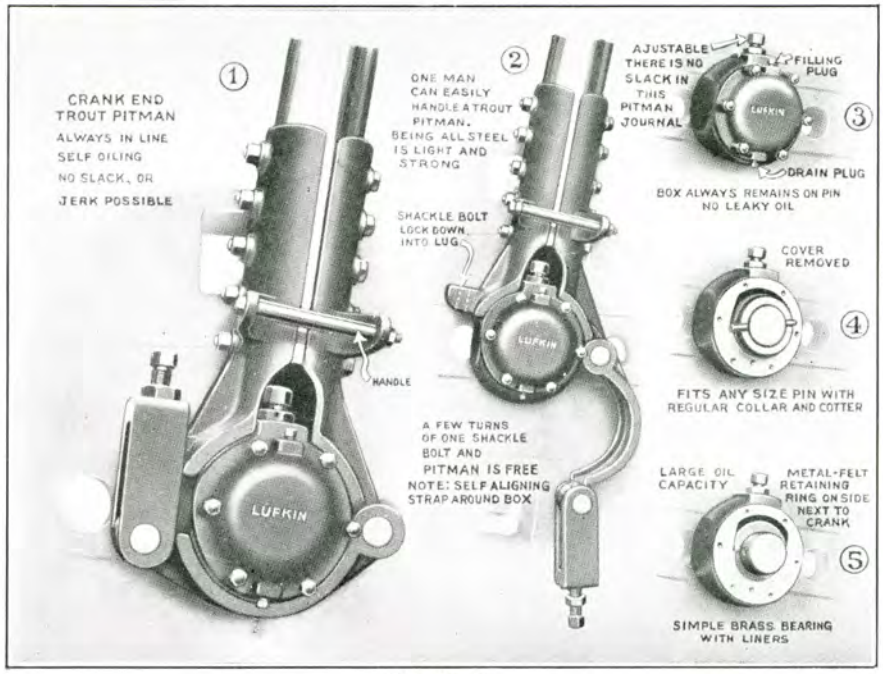


FIGURE 37

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

SINGLE CRANK UNITS—DIMENSION SHEET

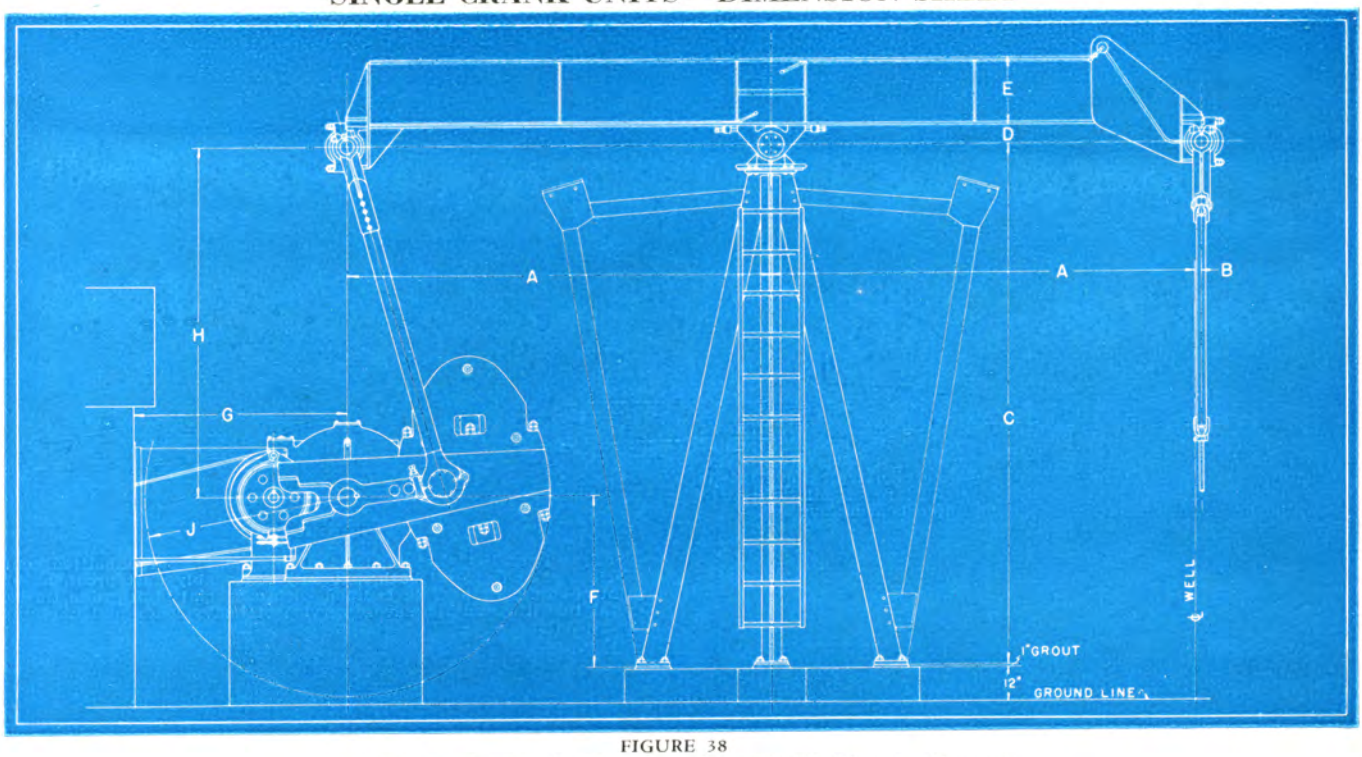


FIGURE 38

Lufkin Single Crank Unit Assembly—Crank Clearing Ground

GENERAL DIMENSIONS

Assembly	A	B	C	D	E	F	G	H	J
100	14′-0″	2″	17′-6″	7″	24″	5′-1″	6′-6″	12′-5″	5′-11½″
200	12′-6″	2¼″	15′-7″	7″	24″	5′-1″	6′-6″	10′-6″	5′-11½″
300	12′-6″	2¼″	15′-5″	6″	24″	4′-7″	6′-3″	10′-10″	5′-5½″
400*	8′-0″	*	13′-6″	6″	21″	4′-1″	5′-6″	9′-5″	4′-11½″†

* No. 400 furnished with Horsehead Beam Only. † No. 11B Unit furnished with 4′-7½″ Radius Crank.

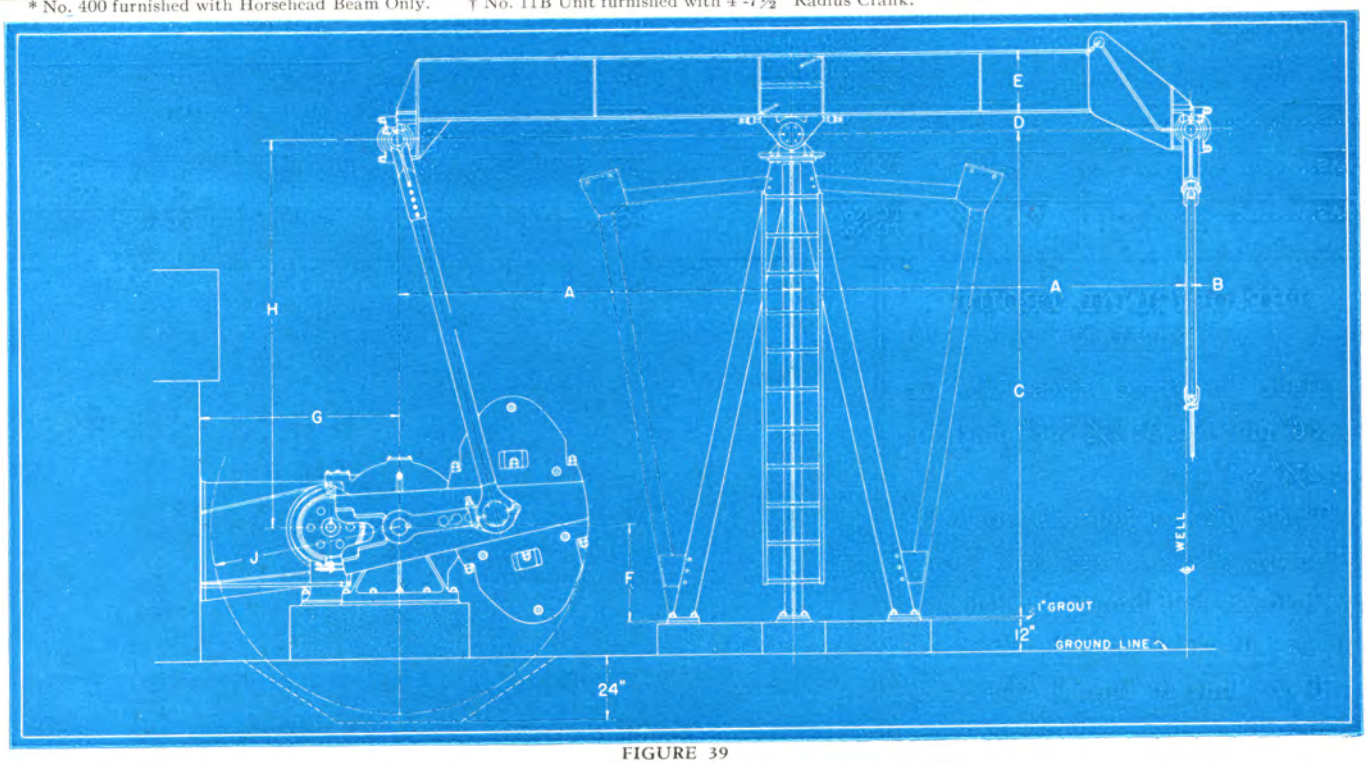


FIGURE 39

Lufkin Single Crank Unit Assembly—Crank in Sump

GENERAL DIMENSIONS

Assembly	A	B	C	D	E	F	G	H	J
100	14′-0″	2″	17′-6″	7″	24″	3′-1″	6′-6″	14′-5″	5′-11½″
200	12′-6″	2¼″	15′-7″	7″	24″	3′-1″	6′-6″	12′-6″	5′-11½″
300	12′-6″	2¼″	15′-5″	6″	24″	2′-7″	6′-3″	12′-10″	5′-5½″
400*	8′-0″	*	13′-6″	6″	21″	2′-1″	5′-6″	11′-5″	4′-11½″†

* No. 400 furnished with Horsehead Beam Only. † No. 11B Unit furnished with 4′-7½″ Radius Crank.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

FIGURE 40

SPECIAL SINGLE CRANK UNITS

We have built a great many of these units for light production and slow pumping, both for domestic and foreign fields.

They are very substantially built, with well-proportioned bases, posts and beams; with Bronzoid bearings throughout; and with Universal pitmans to push and pull. They can be back-cranked if desired.

We can furnish a weighted crank in combination with beam weight on special order.

These units are built special, on order only; consequently, the base can be arranged to suit motor behind the unit—either electric motor or gas engine, as desired.

To those who want a substantial unit, these will be found to give satisfaction and operate at minimum upkeep expense.

TWO SIZES

SC No. 4-11B Unit—42″ stroke, 14.6 H.P., 10″ base, post 8′ high, 16″ x 8½″ walking beam, 11′ 3¼″ working centers, No. 4AS center bearing, Universal pitman. For gas engine or electric motor.

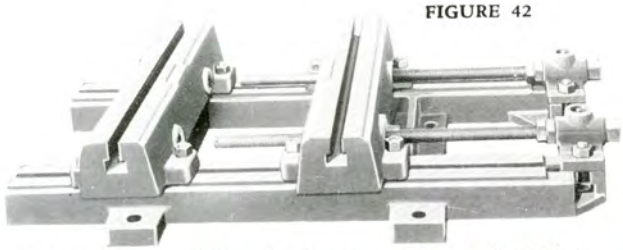
SC No. 5-7A Unit—36″ stroke, 8.5 H.P., 8″ base, post 7′ high, 12″ x 8″ beam, 10′ working centers, No. 4AS center bearing and Universal pitman. For gas engine or electric motor.

FIGURE 41
Lufkin Special Single Crank Units on Production Line

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

UNIVERSAL RAILS—FOR MOTORS OR GAS ENGINES

FIGURE 42



Dimensions of 32" rails shown on blue print below

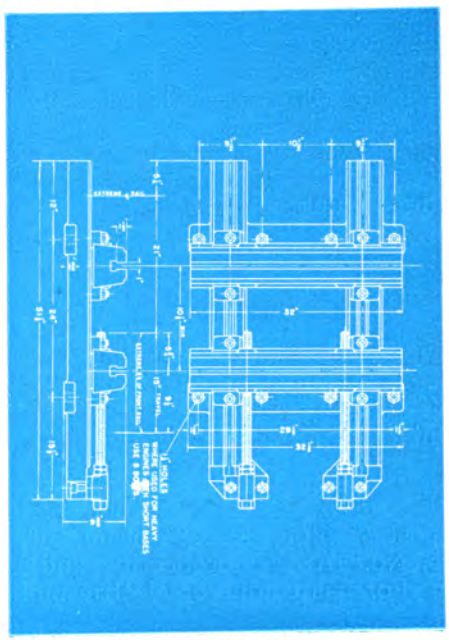
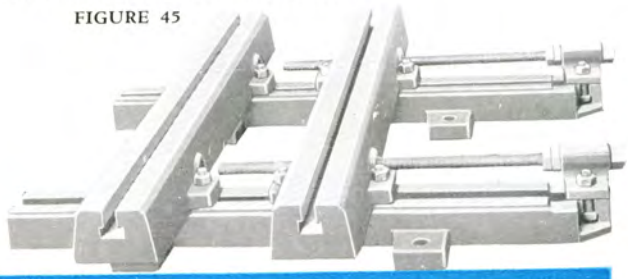


FIGURE 43

FIGURE 45



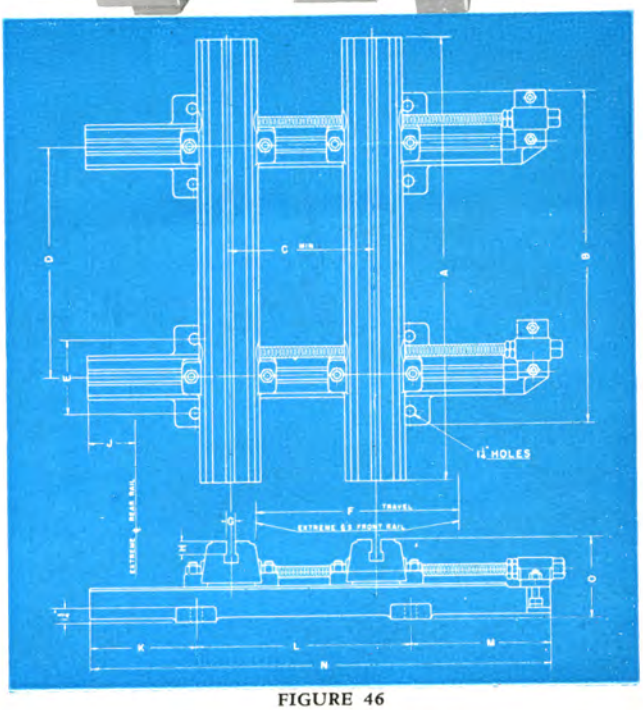


FIGURE 46

UNIVERSAL RAILS are thoroughly made. Base skids are planed and grooved—top skids planed to fit slots in base—top of skids and grooves are planed. Each set has double adjusting screws, all of substantial design.

UNIVERSAL GAS ENGINE RAILS													
DESCRIPTION	A	B	C	D	E	F	G	H	J	K	L	M	N	O
50" ENG. RAILS	50"	37½"	10½"	26"	8½"	23½"	1"	1½"	5¼"	12"	24"	15½"	51½"	9⅜"
69" ENG. RAILS	69"	47½"	10½"	36"	8½"	38½"	1"	1½"	5¼"	12"	36"	15½"	63½"	9⅜"

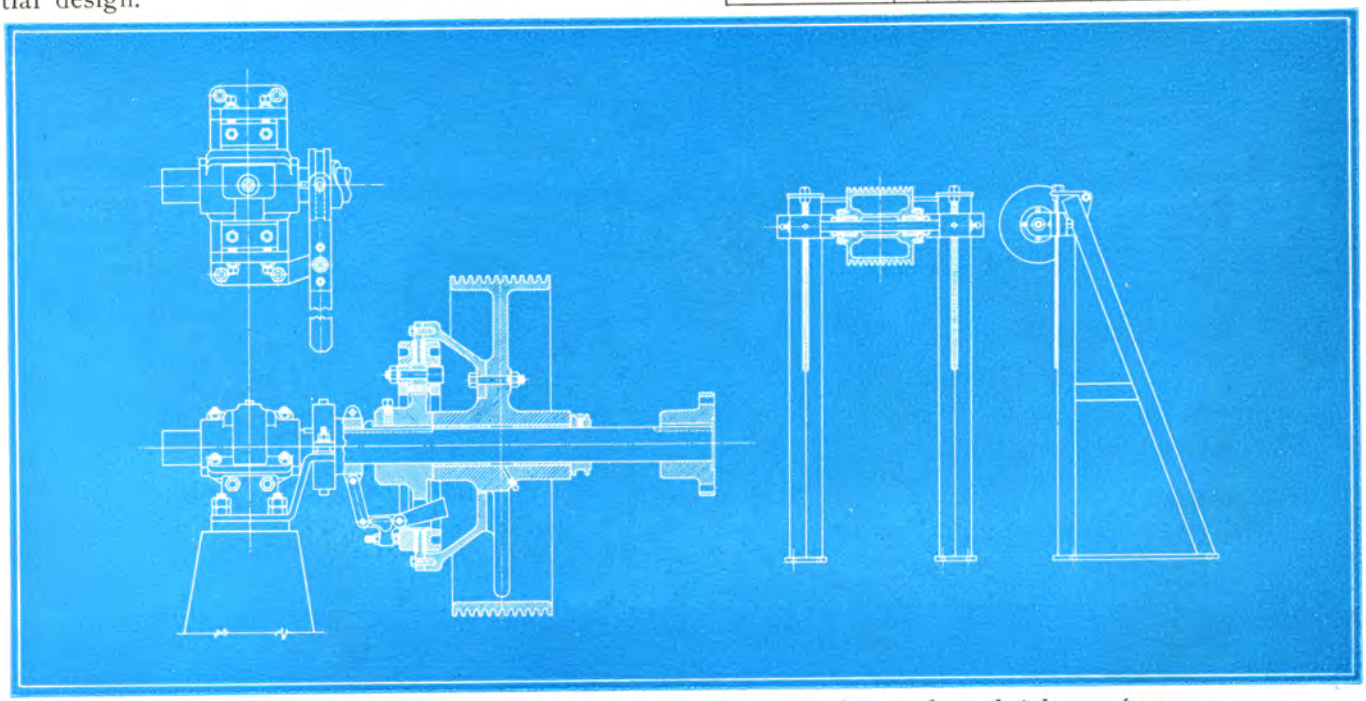


FIGURE 44—*CLUTCH shaft for single cylinder gas engine drive and usual tightener for same*

LUFKIN CENTRAL PUMPING POWERS

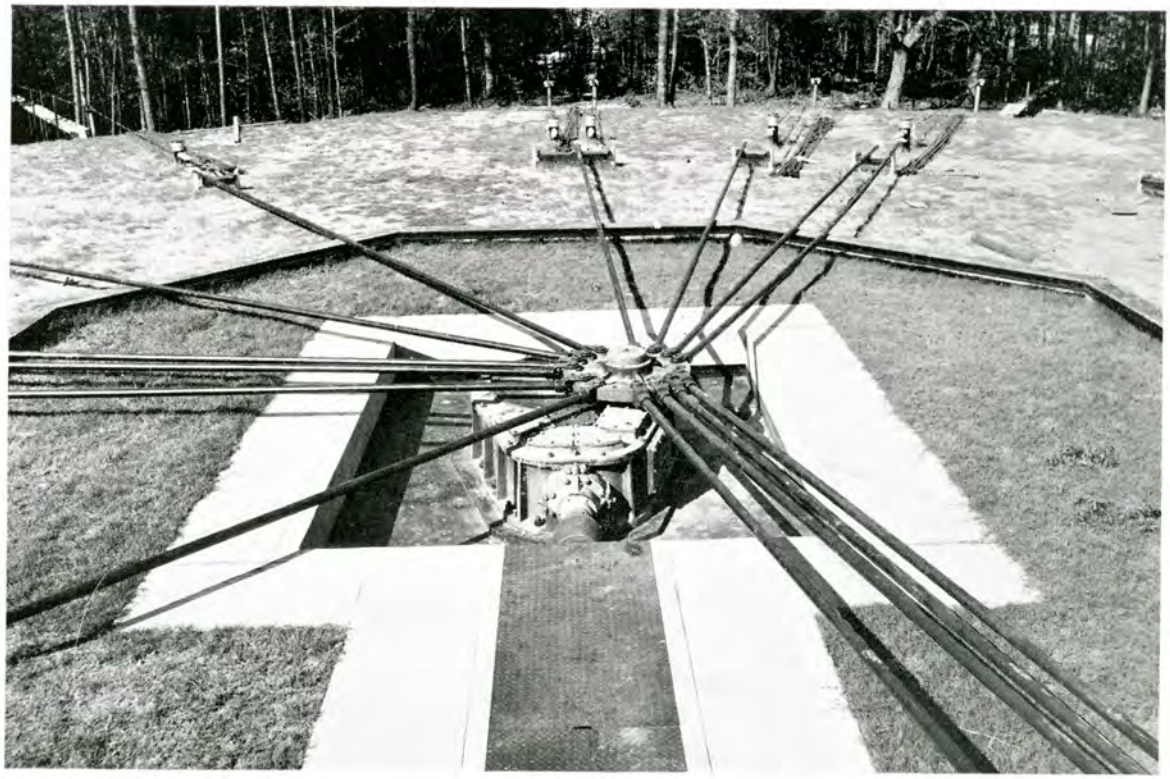


FIGURE 47

Lufkin Herringbone Geared Central Power installation in East Texas pulling 14 wells

GENERAL CHARACTERISTICS LUFKIN HERRINGBONE CENTRAL PUMPING POWERS

In general design this Power has eleven years of successful operation and experience behind it. We adopted the design of the stationary center trunnion of our worm gears and LUFKIN POWERS are now carrying pumping loads that were hardly believed possible.

While pumping units are subject to high peaks and overloads, in **Central Powers** this is accentuated almost in proportion to the number of wells. This, with the "unbalanced load" so often regarded by operators as impractical to overcome, challenges the manufacturer of Central Powers to meet these unusual conditions. Through experience LUFKIN designs have been developed and are successfully meeting these generally unlooked-for variable loads, inherent in their operation.

Experience teaches us also that the "power required" on most installations is underestimated, especially under proration; then too often, more wells are hooked on not only overloading the power itself, but using the motive power to its limit.

Economic conditions are largely responsible for this policy, to which there is a limit of course, but we believe LUFKIN POWERS have the "background and the backbone" to withstand the greatest loads of any Power offered for this service.

We believe any engineer who investigates these Powers will conclude that, being of the Herringbone type there is no end thrust, such as is experienced with single helical gears; that the gears, bearings, and general rugged design of the power itself is much stronger than other designs.

While every possible adjustment for gears and bearings is provided to take up wear, experience proves factory adjustments are seldom altered; once set, they require no further attention. All parts are immediately accessible for inspection and cleaning when cover is removed.

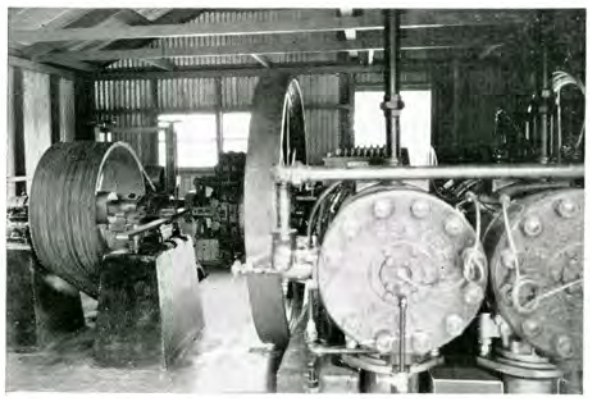


FIGURE 47

Typical Gas Engine Drive for Lufkin Herringbone Central Power Installation

LUFKIN HERRINGBONE CENTRAL PUMPING POWERS

Patented

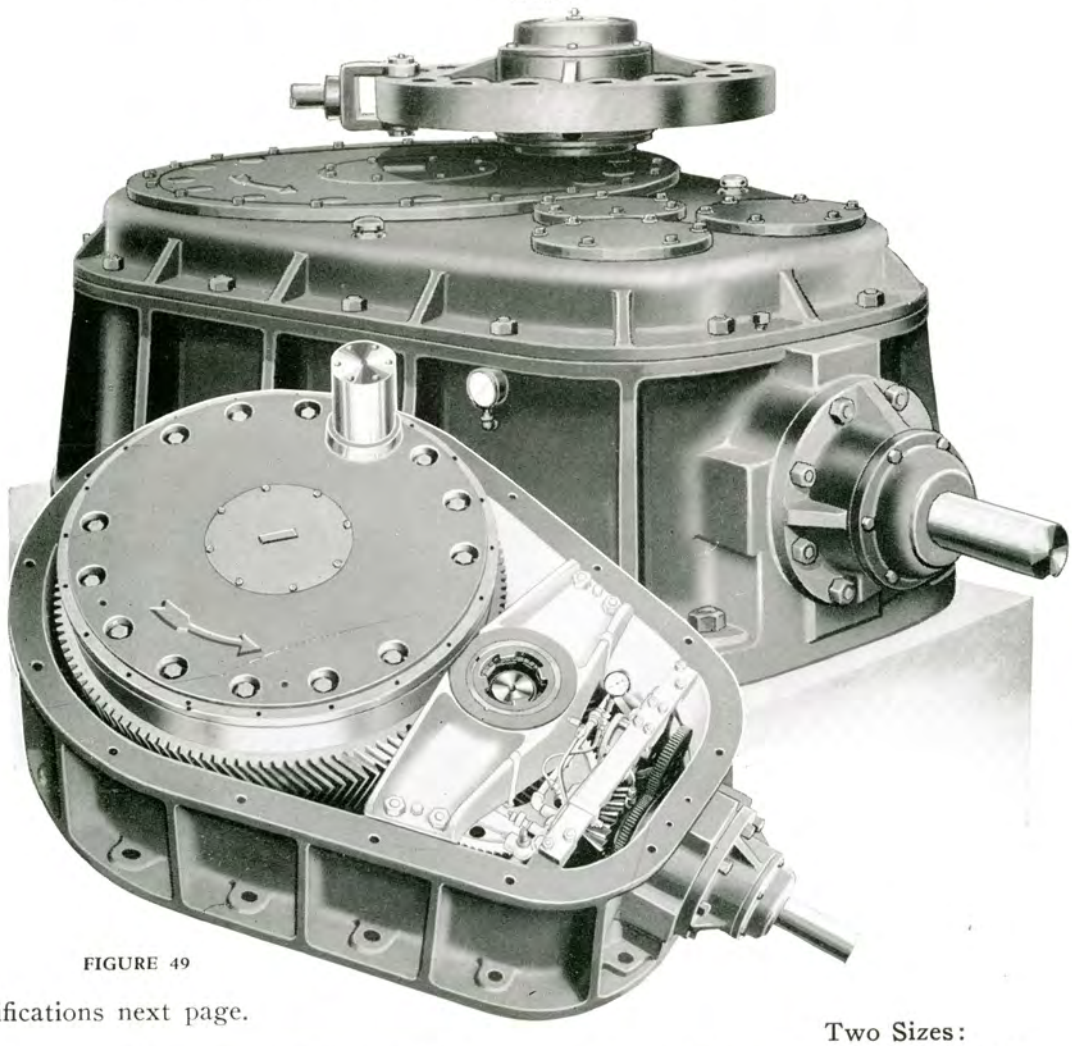


FIGURE 49

See specifications next page.

NOTE: Gears and Bearings self-contained in lower gear case.

No strain on cover which is easily removable for inspection.

Two Sizes:

No. 100—121.7 H. P. at 20 R.P.M.
No. 150—182.7 H. P. at 20 R.P.M.

Cross Section, Improved Power

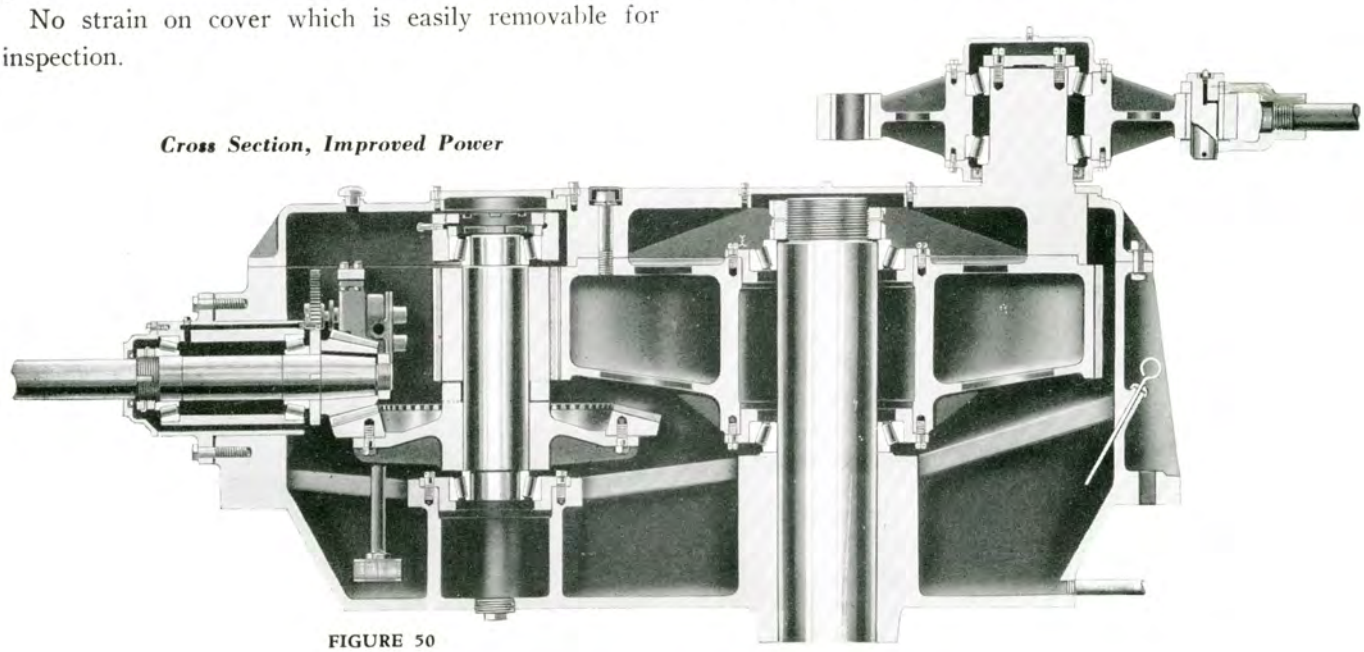
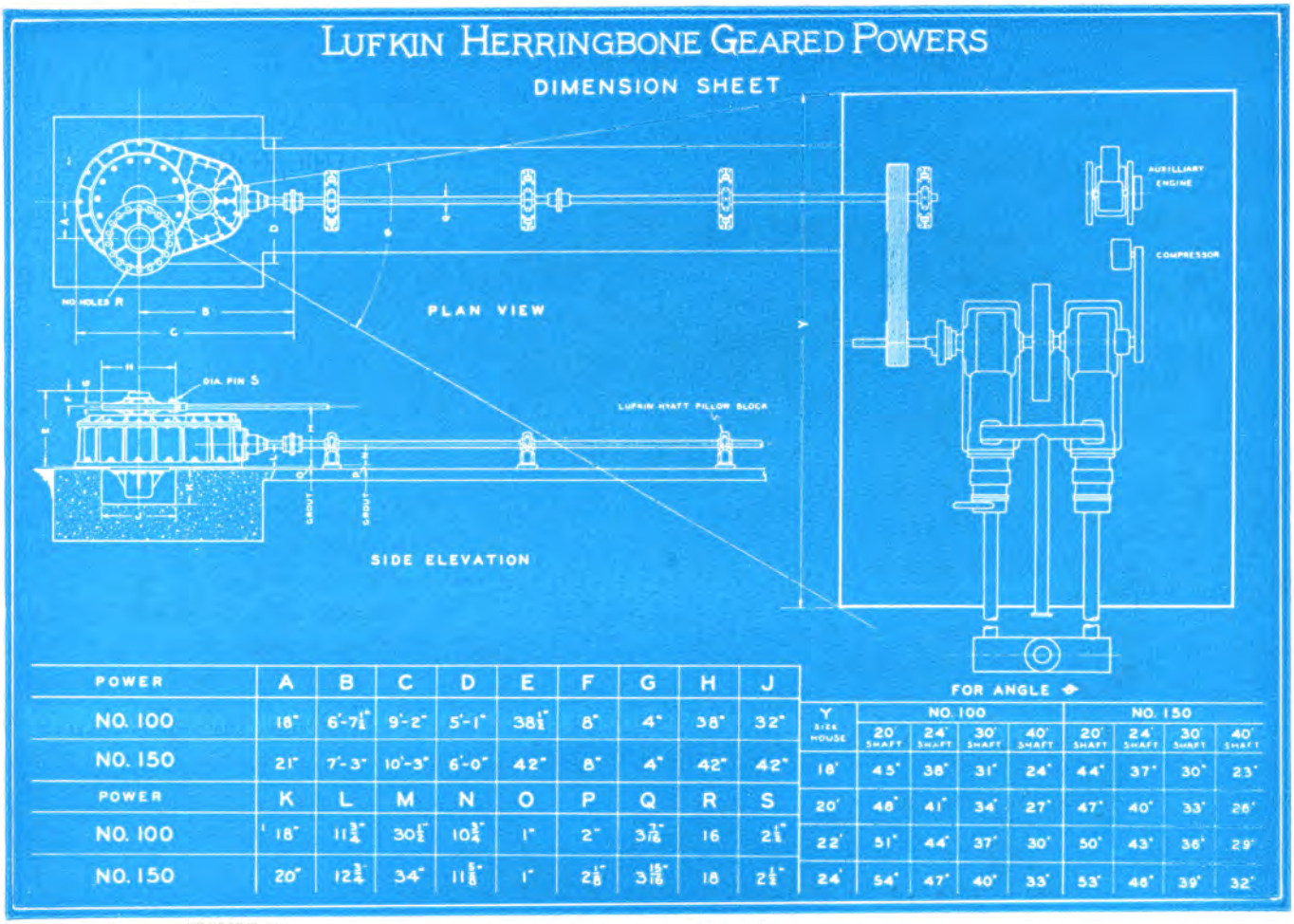


FIGURE 50

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS



POWER	A	B	C	D	E	F	G	H	J
NO. 100	18"	6'-7½"	9'-2"	5'-1"	38½"	8"	4"	38"	32"
NO. 150	21"	7'-3"	10'-3"	6'-0"	42"	8"	4"	42"	42"
POWER	K	L	M	N	O	P	Q	R	S
NO. 100	18"	11¾"	30½"	10¾"	1"	2"	3 7/16"	16	2½"
NO. 150	20"	12¾"	34"	11⅝"	1"	2⅛"	3 15/16"	18	2½"

Y SIZE HOUSE	NO. 100				NO. 150			
	20' SHAFT	24' SHAFT	30' SHAFT	40' SHAFT	20' SHAFT	24' SHAFT	30' SHAFT	40' SHAFT
18'	45°	38°	31°	24°	44°	37°	30°	23°
20'	48°	41°	34°	27°	47°	40°	33°	26°
22'	51°	44°	37°	30°	50°	43°	36°	29°
24'	54°	47°	40°	33°	53°	46°	39°	32°

FIGURE 51

GEAR RATINGS

Lufkin Herringbone Central Powers

Power No.	A. P. I. Rating	Type Gears	Ratio	Drive Sheave Bore	Stroke	Dia. and Face Main Gear	Base To and Pull Rods	Weight
100	121.7 H. P. 710,000 PT.	Herringbone & Spiral Bevel	19.1	3 7/16"	36"	50"x10"	34"	13,500
150	182.7 H. P. 1,138,000 PT.	Herringbone & Spiral Bevel	17.5	3 11/16"	42"	57"x12"	36½"	18,000

HERRINGBONE GEAR ELIMINATES THRUST LOAD

EASY ADJUSTABILITY

The Herringbone gear equalizes all thrust loads insuring longer bearing life. A Lufkin patented feature permits easy adjustability, in the field, of both Herringbone and Gleason Helical bevel gears.

ANTI-FRICTION BEARINGS THROUGHOUT

All bearings are Timken Roller Bearings of generous size with high load carrying capacities.

GENERAL SPECIFICATIONS

Herringbone Units

1. Lufkin-Sykes Herringbone Main Gears.
2. Gleason Helical Bevel Gears.
3. Nickel-Alloy Massive Steel Trunnion.
4. Low Center of Gravity—Compact.
5. Pressure Pump Lubrication—Positive.
6. Large Oil Reservoir.
7. Timken equipped throughout.
8. Crank Pin cast integral with crank.
9. No housing expense except for prime mover.
10. Rugged design for long, lasting service.

DISTINCT FEATURES

A distinct feature characteristic of both the Lufkin Worm Gear and Herringbone Gear Powers is the design of the **center trunnion.** This massive center trunnion is an exclusive patented Lufkin feature found in no other type of geared central power. All the shocks and strains due to unbalanced well conditions are transmitted through this center trunnion, directly to the solid concrete foundation. The Lufkin center trunnion is the result of eleven years operating experience with various designs of geared central powers.

Most engineers are familiar with these problems and can arrive at a close approximation of horsepower required for a number of wells, however, if you wish our help or suggestion in determining size of power, engine or motor, please mail us the following information:

Make a diagram of the wells to be pumped, preferably to scale, locating your idea of where Power should set, marking the length of pull rods to each well. Then letter or number each well giving depth pumped; size of tubing; size of rods; gravity of oil; production, if known; water, if any; any general information as to ground conditions, etc.; or better, have our engineer call and make up an estimate.

Lufkin Powers may be adapted to any type of prime mover.

LUFKIN WORM GEAR CENTRAL POWERS

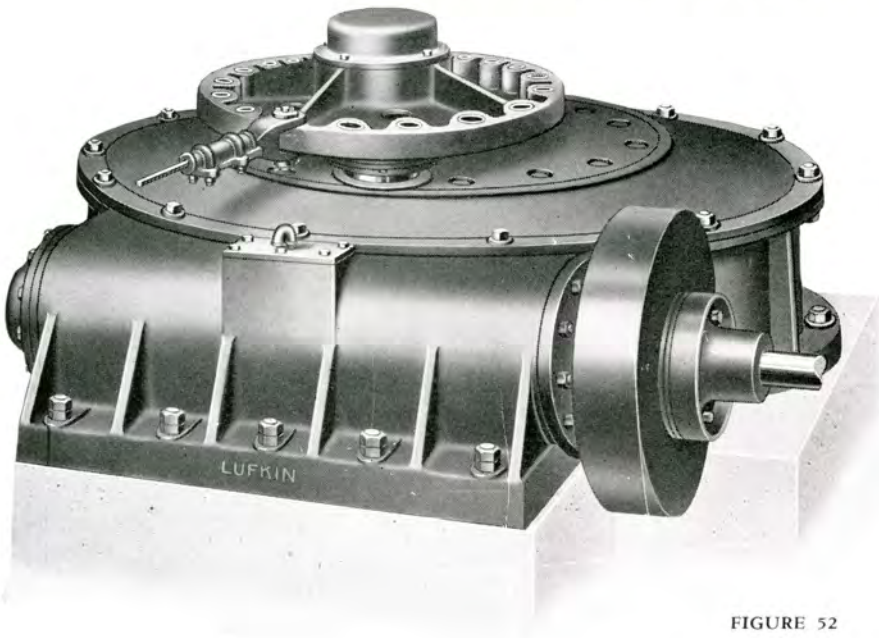


FIGURE 52

The Lufkin Worm Gear Central Power—Two sizes, 50 and 125 H.P.

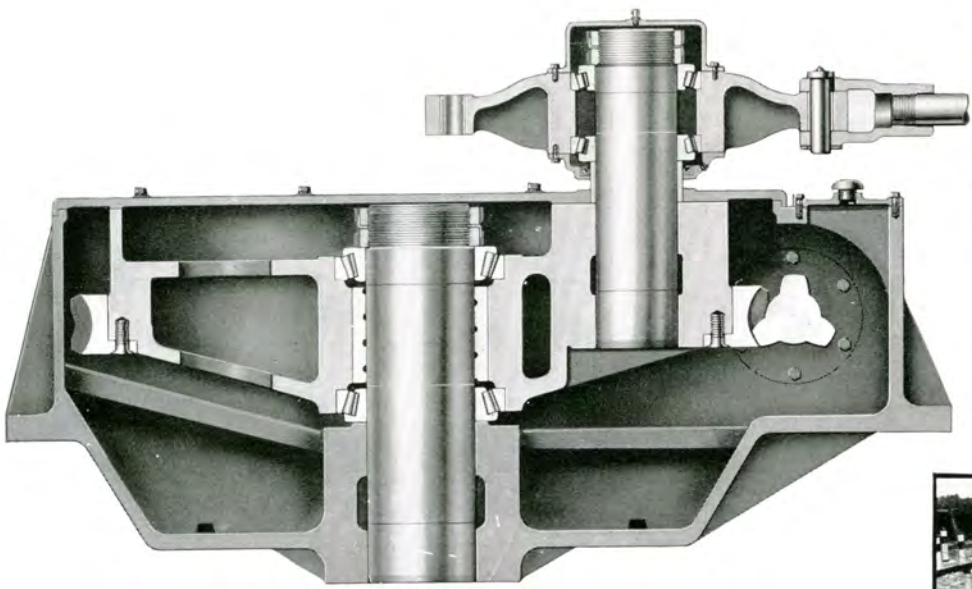


FIGURE 53
Cross-Section Lufkin Giant Power

Mechanical Characteristics

The first Lufkin Geared Powers were of the Worm Gear type. The earliest installations are today operating as efficiently as when first installed—an operating characteristic of Worm Gears, namely, sustained efficiency throughout the life of the gears.

Lufkin Worm Gear and Herringbone Gear Powers are comparable in many operating characteristics. Lufkin Worm Gear Powers, with fewer wearing parts, other mechanical features may be summed up in the following:

1. Center Trunnion of Nickel Alloy Steel.
2. Center and Crank Pin Bearings: Timken.
3. Worm Bearings: Timken thrust, Hyatt radial.
4. Gear is of alloy bronze.
5. Worm of alloy steel, heat treated.

Lufkin worm gear powers are of heavy rugged construction designed for life-time service.

Typical Lufkin Central Power Installation

GEAR RATINGS

Lufkin Worm Gear Powers

Number	H.P. @ 20 S.P.M.	Type Gears	Ratio	Drive Sheave Bore	Stroke	Dia. and Face Main Gear	Base To and Pull Rods
Standard	50	Worm	29 3/8	3 1/16"	24"	51"x4 1/2"	24"
Giant	125	Worm	29 3/8	3 11/16"	30"	71"x6"	34 5/8"

TRANSMISSION—CENTRAL POWER DRIVES

FIGURE 54

Electric Motor Central Power Drive—Motor is mounted on Lufkin Universal Motor Rails. Timken journals on Lufkin Adjustable Sole Plates.

FIGURE 55

Lufkin-Hyatt Self-Aligning Bearings with Adjustable Sole Plates.

FIGURE 56

Type "C", "B" and "S"—Dodge-Timken non-expansion type, self-aligning, oil and dust-proof pillow-block.

FIGURE 57

Type S-I-C—Dodge-Timken, expansion type, self-aligning, oil and dust-proof pillow-block.

We also furnish self-aligning ball and socket babbitted journals if desired.

We manufacture and carry in stock, couplings, shaft bearings of both plain and frictionless types, "V" belt sheaves (especially for central power drives), and at all times maintain adequate stocks of "V" belts and turned and ground shafting. We are in position to furnish "V" belt drives for any purpose and solicit your inquiries.

Lufkin "V" belt sheaves will be found heavier than the usual sheaves and well designed for the job.

FIGURE 58

HEAVY DUTY "V" BELT SHEAVES

FIGURE 59

Flexible couplings always in stock.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN ARC-WELDED IMPROVED PUMP JACKS

TWO SIZES

No. 17B.....17,000 Lb. Capacity
No. 10B.....10,000 Lb. Capacity

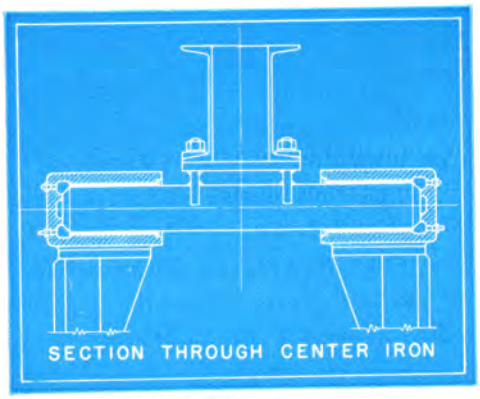


FIGURE 60

Cross Section Showing Shaft and Bronzoid Bearings Oil Seals.

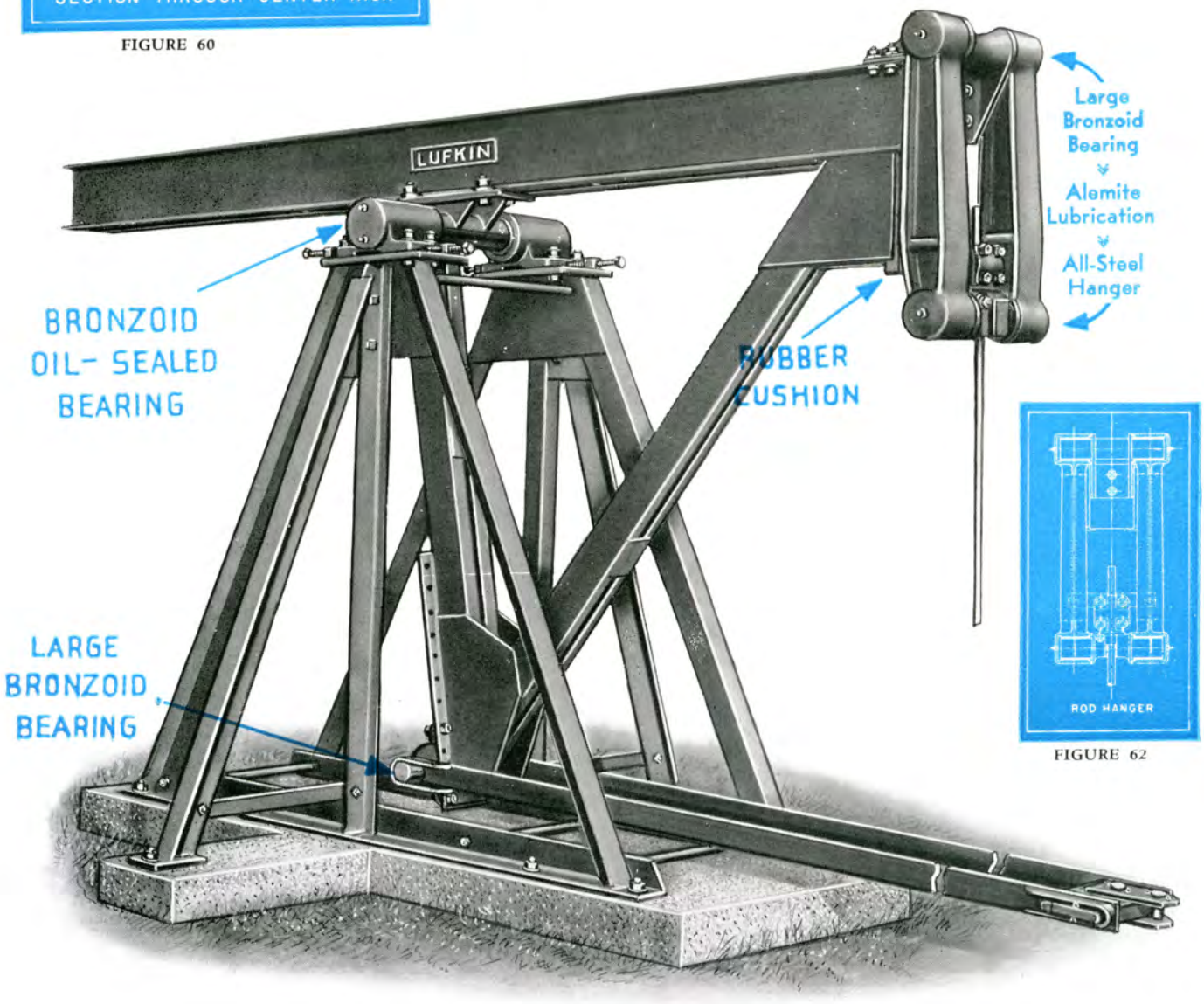


FIGURE 62

FIGURE 61

LUFKIN IMPROVED ARC-WELDED PUMP JACK

After years of experience and research Lufkin offers an improved design in jack construction that we believe will appeal to particular buyers of this class of equipment.

1. **The whole structure has increased strength and rigidity.**
2. **Side frames and walking beams are unusually heavy and welded in jigs, with special care to secure ample welding area in all members.**
3. **Side frames have unusual spread and are well tied together top and bottom.**
4. **Pivot shafts are extra large and thoroughly welded to saddle.**
5. **Main bearings are oversize and Bronzoid bushed, with patented seals.**
6. **All-steel hanger, that can be thrown over on top of jack; Bronzoid bushed bearings; Alemite lubricated and easily renewable.**
7. **Straight line action on polished rod is maintained. See diagram at right.**
8. **Lower adjustable beam bearings to pull rods are oversize and Bronzoid bushed with oil seals and are Alemite lubricated.**
9. **Foundation bolts and polished rod clamp are extra.**
10. **Lufkin jacks will convince and satisfy the most exacting individual looking for practical, substantial equipment with lowest maintenance cost.**

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN ARC WELDED IMPROVED PUMP JACKS

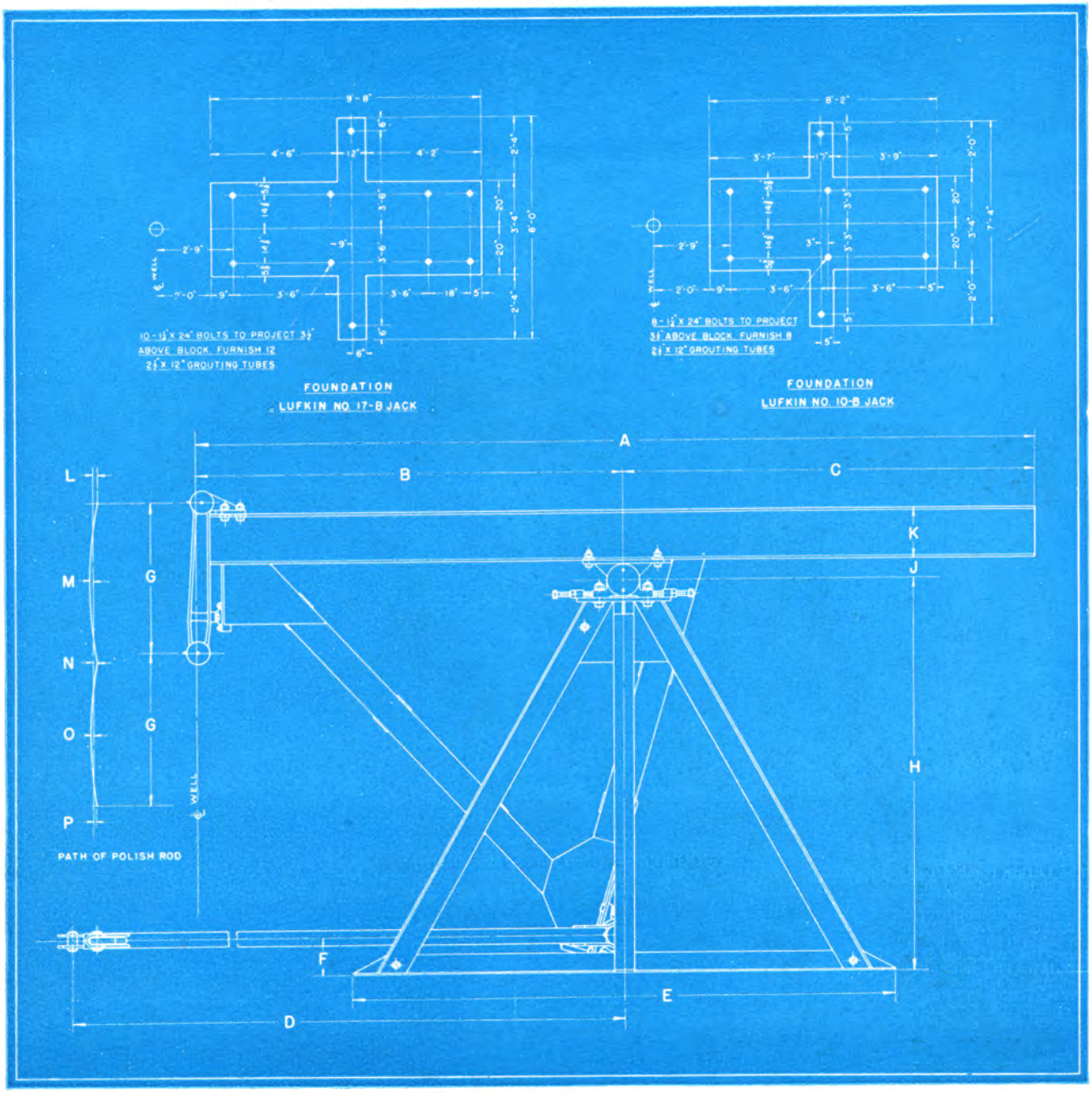


FIGURE 63

DIMENSION SHEET—LUFKIN PUMP JACKS

Jack No.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
10-B.....	12′-10″	6′-0″	6′-10″	10′-2½″	7′-11″	8½″	2′-0″	5′-6″	2¼″	8″	1⅛″	5/16″	5/16″	1/4″	¼″
17-B.....	14′-8″	7′-0″	7′-8″	12′-3¾″	8′-11″	8½″	2′-6″	6′-6⅜″	2¾″	10″	1⅛″	⅞″	⅝″	3/8″	7/16″

GENERAL SPECIFICATIONS

	No. 10 B	No. 17 B
Rated Polish Rod Load	10,000 Lbs.	17,000 Lbs.
Stroke	48″	60″
Maximum Ratio Polish Rod to Pull Rod Stroke	1.71 to 1	1.70 to 1
Minumum Ratio Polish Rod to Pull Rod Stroke	1.24 to 1	1.19 to 1
Depth Walking Beam	8″	10″
Diameter and Length Saddle Bearing	2 1/16″x10½″	3 1/16″x15″
Bearing Surface Saddle Bearing (Bronze)	31.5 Sq. In.	60 Sq. In.
Bearing Surface on Hanger (Bronze)	16 Sq. In.	25 Sq. In.
Base to Bottom of Hanger at Mid-Stroke	4′—3⅞″	5′—0½″
Stirrup Bearing Size	2 1/16x8″	3 1/16x10″
Number and Size Foundation Bolts	8—1¼x24″	10—1¼x24″

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN COMBINED VERTICAL SWING TAKE-OFF AND KNOCK-OUT

FIGURE 64—*Patents allowed and others pending*

The Lufkin combined vertical swing takeoff and knockout attachment is a great improvement over the earlier designs. Most important is the method of rolling the weight to any desired point simply by loosening two bolts on the weight saddle and turning the crank. Both operations can be accomplished by one man on the ground in a few minutes.

Hooking on and off wells is accomplished by one lever with no chance of injury to the operator.

The whole structure is thoroughly and substantially built of heavy structural steel with a view to rigidity and steady operation. As will be noted on page 1321, Fig. 68, crank pin and bearing are of the improved type, adjustable for wear, and dust proof. The same bearing is in the swing takeoff, the connection being made of 4″ pipe. Saddle bearings are bronze bushed and oil tight. Knockoff arrangement is of all steel forgings and thoroughly made to give efficient lasting service.

This counterbalance will be found more effective and practical than a crank balance, which can be furnished if preferred.

FIGURE 65

Four well hook-up in Southwest Texas

FIGURE 66
Vertical Swing "A" Frame Take-Off

This take-off for back cranking is sturdily built and gives a more perfect motion to the rods than the sub; single arm type shown on the right. Both have the underslung feature keeping the rods on the ground. Both types have ample bronzoid bushed bearings with Garlock seals and are provided with Alemite fittings. The pipe connection to crank is not furnished unless specified.

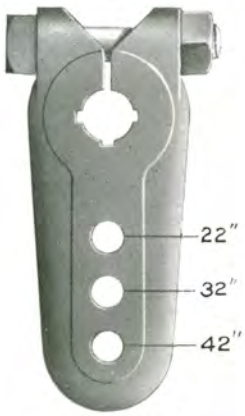


FIGURE 67

FIGURE 68
Single Take-off Connector.

LUFKIN BACK-SIDE CRANKS

3 Hole 42" stroke—
Max. Bore 6-7/16"—No. 1910-W
3 Hole 36" stroke—
Max. Bore 5-7/16"—No. 2059-W
3 Hole 30" stroke—
Max. Bore 4-7/16"—No. 2060-W

All back crank pins have taper shanks. The bearings, however, are 5½" x 5½" with oil seals and bronze bearings, made adjustable to take up lost motion. Connection is 4" pipe.

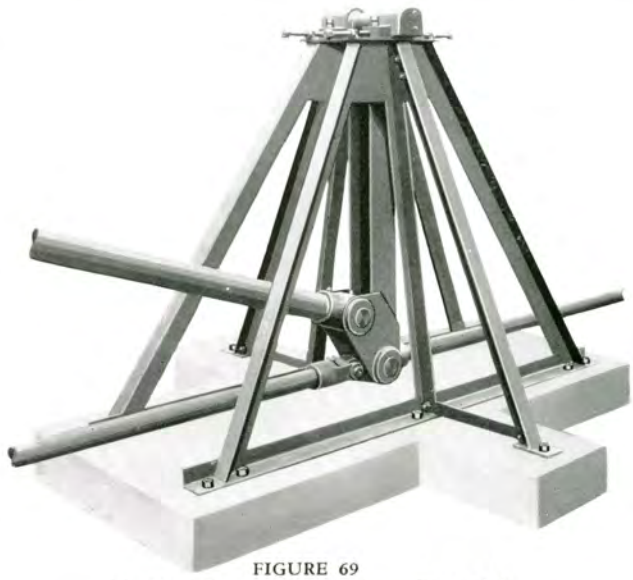


FIGURE 69
Vertical Swing Single Arm Take-Off

This take-off is made of the side frames of our No. 10-A Jack; with bronzoid center bearings, with the pendulum swinging between them. The lower bearing is likewise bronzoid bushed and fitted with Garlock seals.

LUFKIN BACK CRANKS

Lufkin back cranks (left) are extra heavy and, while carried in stock to suit our units, we can furnish and bore to suit requirements on short notice. Crank Pins are taper hole type. Take-off connector bearings are bronzoid bushed with oil seals.

LUFKIN KNOCK OUT POST
(Shown Below)

Lufkin knock-off posts are especially handy. Lifting weight lever knocks the well off; lifting double connection under hook (which is the extension from a twin crank unit in this case) automatically puts the well in operation. The same knock-off is used on central power and back-crank jobs. The knockout bar notches are on the upper edge allowing a smooth lower surface to ride on a renewable wood block end grain inserted in cast iron shoe and spreader plate.

FIGURE 70

LUFKIN SURFACE EQUIPMENT

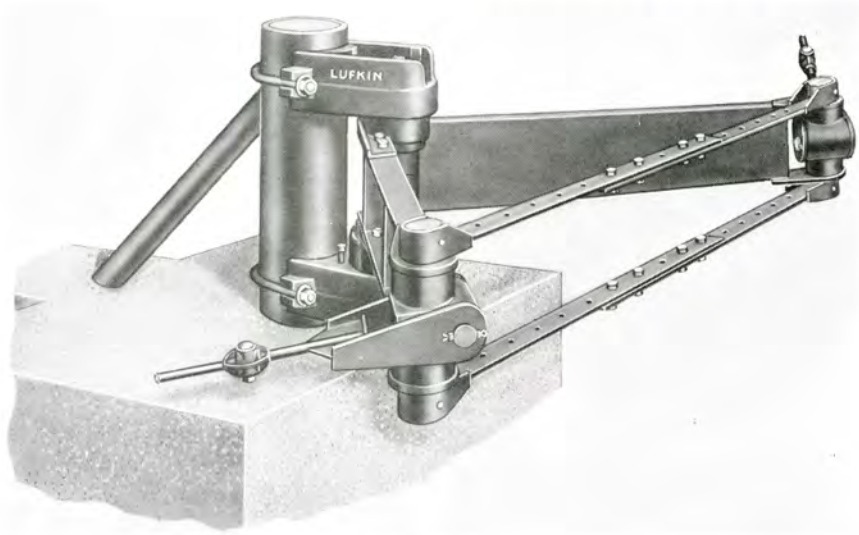


FIGURE 71

LUFKIN IMPROVED POST SWING

Fig. 71 shows the Lufkin improved swing. Bearings in pivot shaft are dust-proof and bronze bushed. Each bearing is 6½" diameter, 3" long, with vertical thrust running in oil bath. Bearing bushings are easily renewable.

Rod line bearings are "Universal" and are bronze bushed and oil tight.

Fig. 74 shows arrangement up to 90 degrees.

Fig. 72 shows extra strut for larger angles. Angles are adjustable within limits, as shown.

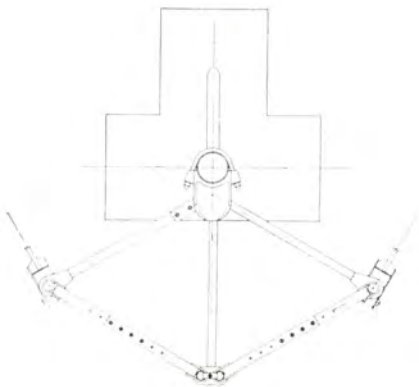


FIGURE 72
Showing Standard Arrangement Lufkin Structural Swing for Large Angles.

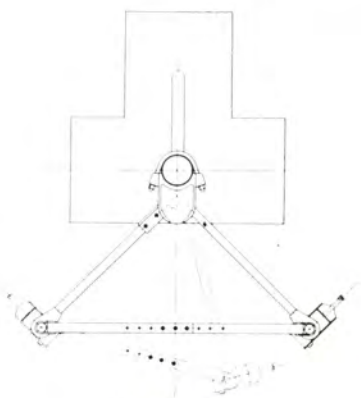
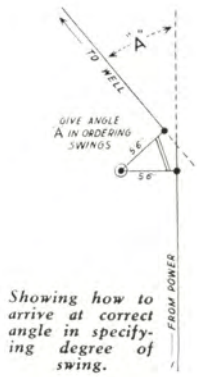


FIGURE 74
Showing how adjustment in angle may be accomplished.



Showing how to arrive at correct angle in specifying degree of swing.

FIGURE 75

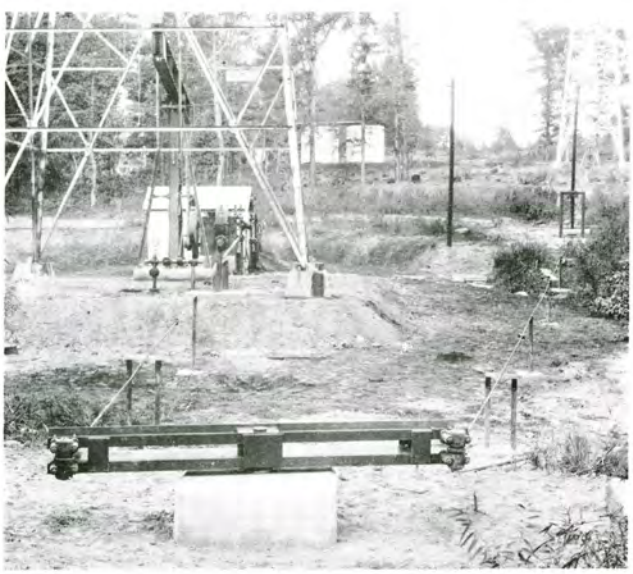


FIGURE 73
Installation of Lufkin 180-degree structural steel swing

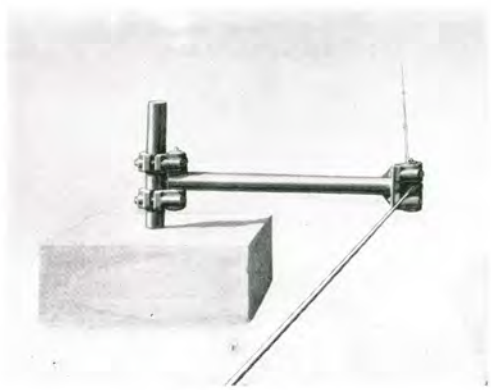


FIGURE 76
Hold-Up used for Swing where small angles are encountered

LUFKIN ROD LINE EQUIPMENT

FIGURE 77

Lufkin Roller hold-down in structural frame. Note roller hold-up in distance

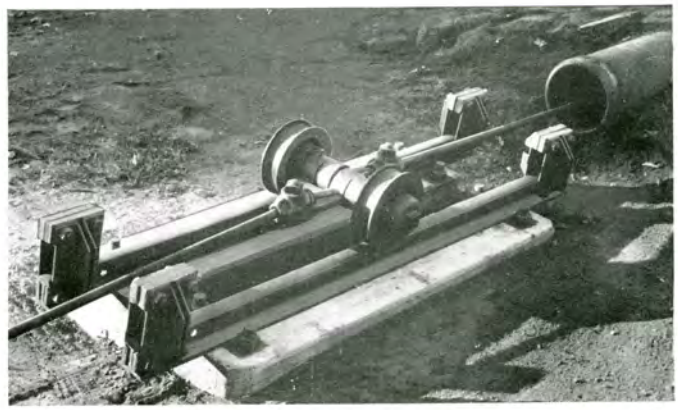


FIGURE 79

Lufkin Roller hold-up. Carriage operates on rail frame

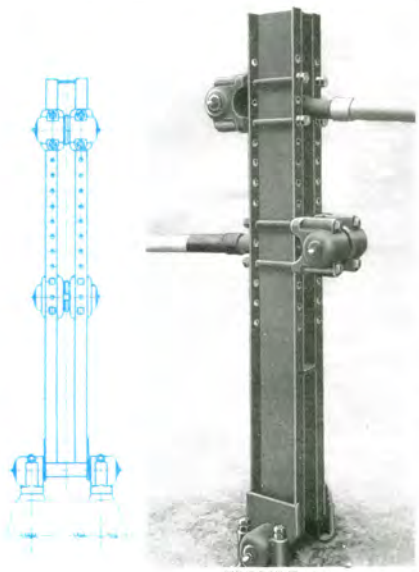


FIGURE 80

LUFKIN STROKE OR MULTIPLIER POST

This type post is commonly used when change in stroke is desired near unit. The bearings on this post, both rod connections and ground bearings are interchangeable with Lufkin hold-up and hold-downs.

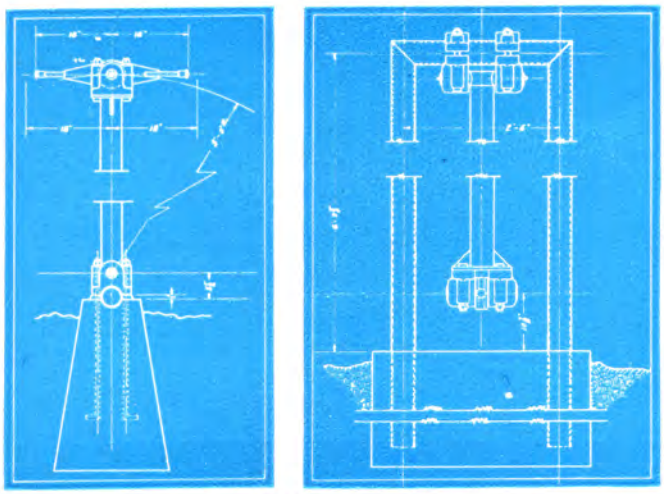


FIGURE 78

Blue print cross section of Lufkin hold-up and hold-down illustrated to the right

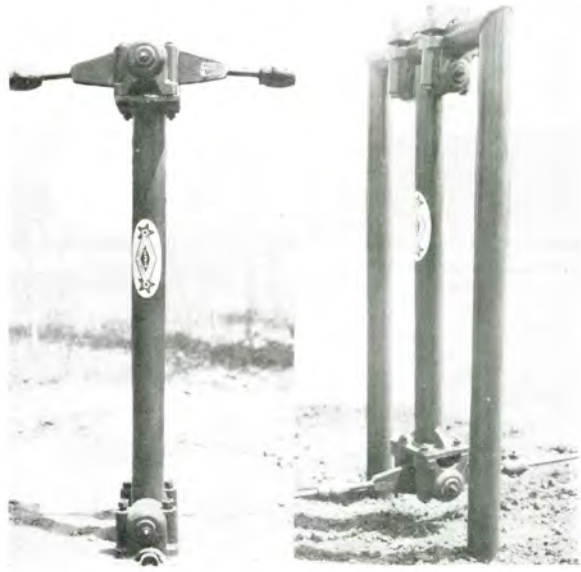


FIGURE 81 FIGURE 82

Lufkin hold-up and hold-down. All bearings interchangeable and Alemite lubricated

LUFKIN SURFACE EQUIPMENT

All types of rod line equipment are available. Illustrated on this page are some of the more common appliances which are, at all times, carried in stock.

FIGURE 83

FIGURE 84

FIGURE 85—Lufkin 10″ supporting sheave for 2½″ pipe, commonly used with back crank take-off. The shank is made for 2″ pipe and the sheave has a paraffined maple bushing.

FIGURE 86
Plain Safety CC Clamp, also furnished with rod ends countersunk.

FIGURE 87
Lufkin C-Link

LUFKIN PULL ROD CARRIERS

Figure 83 and cross-section 84 illustrate the Lufkin 5″ sheave pull rod carrier with renewable paraffined maple bushing. The shank of this carrier is designed to fit 2″ pipe. The rollers run free and require no lubrication. The bolt is shouldered to prevent clamping.

FIGURE 89
Knock-out block, heavy construction.
Electric welded.

FIGURE 88

Pull Rods and Pull Rod Coupling—any standard size available.

VOLUME TANK AND REGULATOR FOR GAS ENGINES

FIGURE 90

Double chamber volume tanks are usually furnished with multi-cylinder engines. They are carried in stock, fitted with Fisher regulators and flexible hose connection to engine as shown. The tank is 8″ diameter and 48″ long with partition in center. They are well made and have ¾″ pipe coupling connections. Center of tank to base is 10″.

LUFKIN FOUNDRY & MACHINE CO. LUFKIN, TEXAS

LUFKIN EQUIPMENT USERS IN THE UNITED STATES

Ajo Oil Corporation
Alford Oil Company
Allison & George
Amerada Petroleum Corp.
American Liberty Oil Co.
Amy Oil Company
Jack Appel
Arkansas Fuel Oil Corp.
Associated Oil Co.
Atlantic Oil Producing Corp.

Bankline Oil Co.
Barnsdall Oil Co.
Basin Oil Properties
O. V. Beck
Begol Oil Co.
Berry Asphalt Co.
Bill and Dave Oil Co.
Black & Case Oil Co.
Boone Brothers
Boonie Oil Co.
Bradley & Fochee
Bradley, W. W.
British American Oil Co.
Burton Drilling Co.
Burwyn Oil Corp.

C. B. Oil Co.
California Company
Camaroo Oil Co.
Capadalsis, Jos.
Capitol Oil Producing Co.
Capps, L. W.
Carter & Baggett
Carter Oil Company
Chandler, Wm.
Cherokee Chief Oil Co.
Circle Oil Co.
Clark, S. W.
Columbia Oil & Gas Co.
Cooper & Falvey
Constantin & Co.
Continental Oil Co.
Cook Drilling Co.
Corbett Oil Co.
Cosden & Co.
Cox & Hamon
Crail Bros.
Cranfill & Reynolds
Crude Oil Purchasing Co.
Culp, H. C.
Cunningham Production Co.

Dalport Oil Corp.
Darby Petroleum Co.
Doran, Paul
Davis, Smith & Bradley
Dearing, R. H. & Son
Deep Rock Oil Corp.
Deep Sand Oil Co.
Devonian Oil Co.
Dial, J. B.
Dowlearn, G. L.
Duncan & Holt
Dyck Oil Co.
Dye, W. O.

E.C.R. Oil Co.
Eason Oil Co.
East Santa Fe Oil Co.
Empire Gas & Fuel Co.
Enniscrane Oil Corp.
Everett & Phillips
Exchange Oil Co.

Falcon Oil Co.
Falcon Seaboard Oil Co.
F. H. & E. Oil Co.
Fifty-Five Oil Co.
Flannery, L. S.
Florence Oil Co.
Ford, Schmulen & Sweeney
Fort Bend Oil Co.

Gaskill & Godlin
General Petroleum Corp.
Glasscock, Lonnie
Golden Bear Oil Co.
Bordon, Folwell & Dickson
Groneman & Acme
Gulf Production Co.
Gypsy Oil Co.

Hammil Oil Co.
Hampton, Lewis
Harcher Oil Co.
Hawkeye Petroleum Co.
Hearrell & Burnet
Henderson Oil Properties
Hinton, W. B.
Hogan Petroleum Co.
Honolulu Oil Co.
Housh & Thompson
Houston Oil Co.
Howard County Oil Co.
Huber Petroleum Co.
Humble Oil & Refining Co.
Humphreys Oil Co.
Hunt, H. L. Production Co.
Hyland Oil Co.

Illinois Oil Co.
Imperial Petroleum Co.
Indian Territory Illuminating Oil Co.
Iron Mountain Oil Co.
Ironrock Oil Co.

Jay Simmons Oil Co.
Jergins Co., A. T.
Johnson, T. A.
Johnson, T. C.
Johnston, E. C.
Johnston & Owens
Jones, F. D.

K & A Oil Co.
Kathleen Oil Co.
Kelley, C. D.
Kiowa Petroleum Co.
Knox, Charles E.
Knox, Powell & Stockton

Laurel Oil Co.
Lawson, E. C.
Lechner & Hubbard
Lee & Burnett
Leidecker & Vaughn
Lide-Rowe Oil Co.
Lincoln Oil Co.
Lion Oil & Refining Co.
Littleton Herrin
Locke, N. E.
Loring Oil Co.
Louisiana Oil & Refining Co.
Luling Oil & Gas Co.
Luse & Fosdick
Luse, Hager & Russ

Magna Production Co.
Magnolia Petroleum Corp.
Manson Oil Co.
Manziel, Bob
Marcus Oil Co.
Mar-La-Fay Oil Corp.
Marland Oil Co.
Martin, L. B.
Massey, J. H., Oil Co.
Massengill, R. E.
McAlester Fuel Co.
McCutcheon, Alex.
McVey, W. M.
McVicar & Rood
Mecon Oil Co.
Menke, John G.
Merco Oil Co.

Merren, K. E.
Merrick, J. F.
M & H Oil Co.
Mid-Continent Production Co.
Mid-Kansas Petroleum Corp.
Miller-Lacy Oil Co.
Mills-Bennet Production Co.
Miramar Corporation
Moore, E. H., Inc.
More & Shanks
Mortex Petroleum Co.
Morton & Elder
Moss, H. S.
Mul-Berry Oil Co.
Mullins, O. V.
Murdock, C. E., Inc.
Murray & Goode
Murray, T. W.

Nathan Oil Co.
National Oil Co.
Navarro Oil Co.
Naylor, H. M.
Nelms, H. G.
Nennery, W. F.
Nicholson-Terrell Oil Corp.
Nile Oil Co.
Normandy Oil Co.

Oceanic Oil Co.
Ohio Oil Co.
O'Kain & Brain
Oliver, L. C.
Omega Oil Co.
Orchard, Chas.
Osteen, J. W.
Owen & Sloan Oil Co.

P. & G. Producing Co.
Pace, Geo. L.
Paluxy Oil Corp.
Pan American Petroleum Co.
Pansy Oil Co.
Pencole Petroleum Co.
Perot Oil Co.
Pettit, Chas.
Petroleum Pipe Line & Storage Co.
Petroleum Securities
Pewitt, E. P.
Pewitt, P. H.
Phillips, Loyce
Phillips Petroleum Co.
Pilot Oil Co.
Powell, L. S.
Prairie Lea Production Co.
Producers Petroleum Co.
Pure Oil Co.

Red Iron Drilling Co.
Reese, J. T.
Reeves, G. I.
Republic Production Co.
Retsel Drilling Co.
Rex Oil Co.
Richfield Oil Co.
Rio Bravo Oil Co.
Rio Grande Oil Co.
Riverside Oil Co.
Roberts, J. J.
Roberts Brothers
Roberts, J. L., Drilling Co.
Robin, M.
Roeser & Pendleton, Inc.
Roosth & Genecove
Rosemar Oil Co.
Rovenger Oil Co.
Royal Petroleum Co.
Royalty Service Corp.
Rush, J. M.
Rushwold Oil Co.
Ryan Oil Co.

Saxet Oil Corp.
Sell Petroleum Co.
Sessions Oil Co.
Seward Oil Co.
Shaffer Oil & Refining Co.
Shaw, T. G.
Shell Petroleum Co.
Shmulen, H. A.
Showers & Moncrief
Signal Oil & Gas Co.
Simms Oil Co.
Sinclair-Prairie Oil Co.
Skelly Oil Co.
Smith, J. R., Oil Properties
Smith, R. E.
Smith, Sidney
Smith, Victor C.
Smith, Walter R.
Smitherman & McDonald
Sonron Oil Corp.
South Texas Oil Co.
Southern Development & Prod. Co.
Spear, H. K.
Stagal Oil Co.
Standard Oil Co. of La.
Standard Oil Co. of California
Standard Oil Co. of Kansas
Stanolind Oil & Gas Co.
Sterling Oil & Refining Co.
Stewart, H. G.
Strake Oil Corp.
Stroube & Stroube, Inc.
Sullivan, Joe
(Receiver for J. E. Carroll)
Summit Drilling Co.
Sun Oil Co.

Tarver, A. H.
Teat, A. H.
Terminal Oil Co.
Texas Canadian Oil Corp.
Texas Gulf Oil Corp.
Texas Trading Co.
Texokana Oil Co.
The Texas Company
Texas Division
California Division
The Tidal Osage Companies
Thompson, W. L. & Will
Tide Petroleum Co.
Tide-Water Companies
Tidwell, Harris
Tipplehorn, J. W.
Top Oil Co.
Torrey & Feaster
Trentman Oil Co.
Turman, L. C.
T.W.M. Oil Production Co.

United Gas Co.
United North & South Co.
United Oil Well Supply Co.
Unity Oil Co.
Usean Oil Co.

Vacuum Oil Co.
Vanguard Oil Co.

Weaver-Crim Oil Co.
Western Gulf Oil Co.
Whittington, J. O.
Wil-Daw Oil Co.
Wilshire Oil Co.
Wilson Broach Oil Co.
Winfree Oil Co.
Witherspoon Oil Co.
Woodley Petroleum Corp.
Woods, J. W.
Worsham Oil Co.

Yost & McDowell

FOREIGN

Anglo-Mexican Petroleum Corp.
Argentine Government Oil Fields
Asiatic Petroleum Co.
Burmah Oil Co.
Cia Mexicana de Petroleo "El Aguila"
Concordia
Creditul Minier
International Petroleum Co., Ltd.
Lago Petroleum Corp.
Lucey Export Corp.
Mitsubishi Shoji Kaisha, Ptd.
North Saghalien Petroleum Co.
Oil Well Engineering Co.
Romano Americana
Roumanian Consolidated Oilfields
Steaua Romana
Standard Oil Co. of New Jersey
Standard Oil Co. of Argentine
Standard Oil Co. of Venezuela
Tropical Oil Co.
Unirea
Venezuela Gulf Oil Co.

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EQUIPMENT OF ADVANCED DESIGN