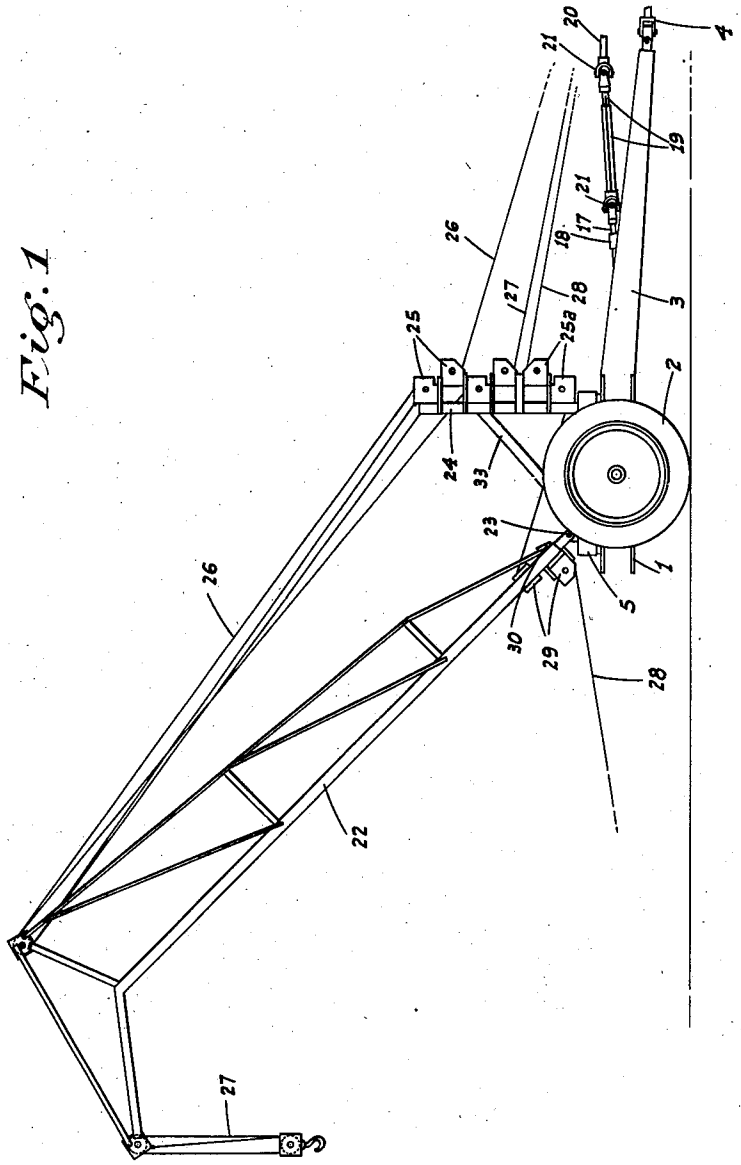
Dec. 12, 1939. R. G. LE TOURNEAU 2,183,263

TRACTOR OPERATED CRANE

Filed June 28, 1938 2 Sheets-Sheet 1

Fig. 1



INVENTOR

R. G. LeTourneau

BY

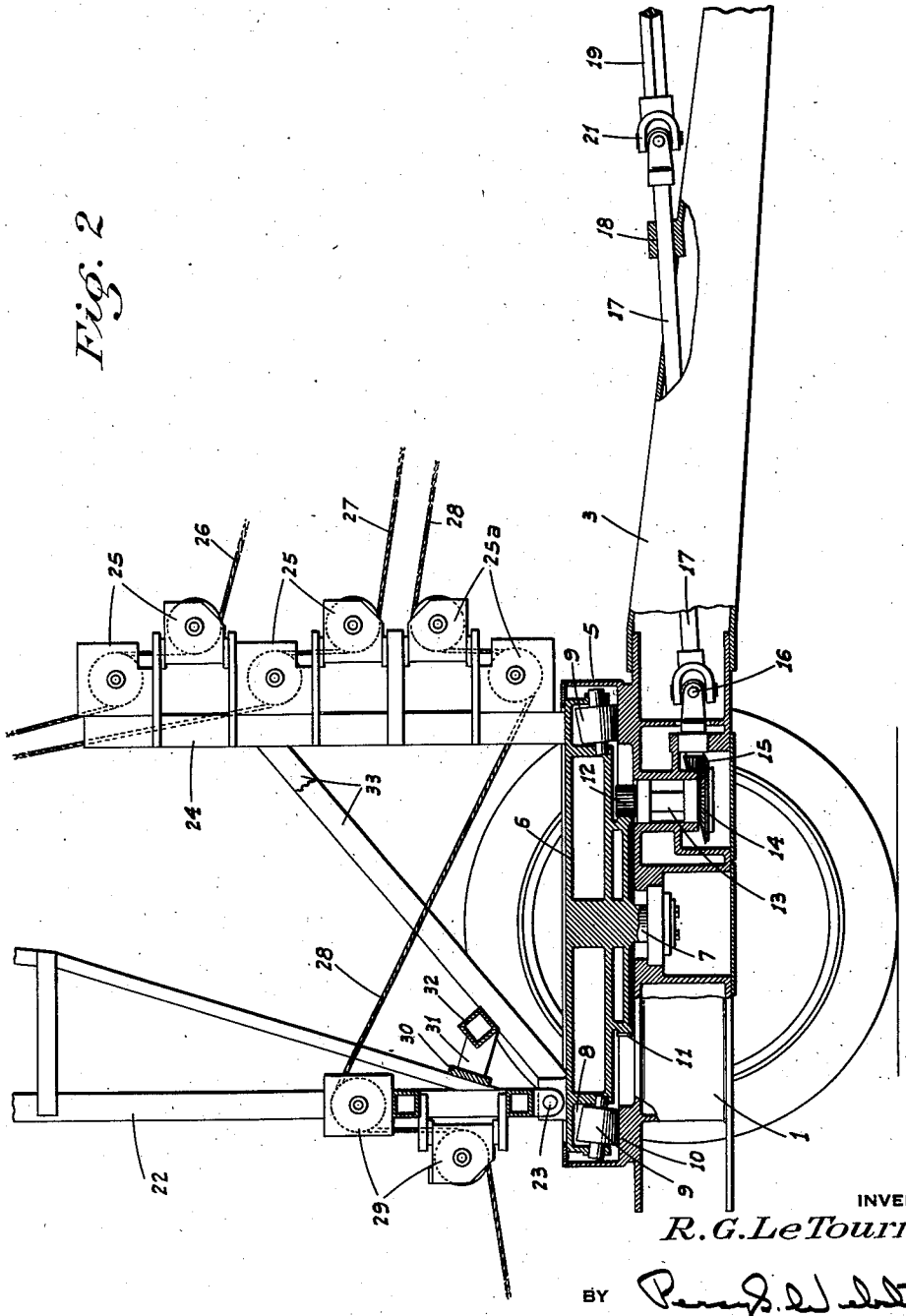
ATTORNEY

Dec. 12, 1939. R. G. LE TOURNEAU 2,183,263

TRACTOR OPERATED CRANE

Filed June 28, 1938 2 Sheets-Sheet 2

Fig. 2



INVENTOR

R. G. Le Tourneau

BY

ATTORNEY

Patented Dec. 12, 1939 2,183,263

UNITED STATES PATENT OFFICE

2,183,263

TRACTOR OPERATED CRANE

Robert G. Le Tourneau, Peoria, Ill., assignor to R. G. Le Tourneau, Inc., a corporation of California

Application June 28, 1938, Serial No. 216,258

4 Claims. (Cl. 212—68)

This invention relates to portable tractor drawn cranes, and particularly represents improvements over the crane shown in my Patent No. 2,078,393 dated April 27, 1937.

In the previous crane, the boom was fixed rigid with the supporting bed or frame and draft tongue, as far as any movement of the boom in a horizontal plane was concerned. As a result, it was necessary to swing the frame, which meant that the tractor had to be turned, when it was desired to lift or deposit loads at different circumferentially spaced points within the possible radius of operation of the boom. This interfered somewhat with the mobility of the crane, and sometimes prevented its full possible efficiency being utilized.

It is therefore the main object of the present invention to provide a crane of the same general character as that above identified, but in which the boom is mounted for horizontal movement on its supporting frame, and having a tractor operated mechanism for thus swinging the boom without any tractor movement being necessary.

In this manner, the crane may be used to pick up or deposit loads within a relatively large area without any movement of the tractor or the boom supporting frame being necessary. At the same time, there is nothing to interfere with the steering of the tractor relative to the crane when traveling.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation of my improved crane.

Figure 2 is an enlarged fragmentary longitudinal section of the crane.

Referring now more particularly to the characters of reference on the drawings, the supporting structure of the crane comprises a hollow horizontal box-like bed 1 supported on opposite sides by a pair of wheels 2 and provided with a rigid hollow tongue 3. This tongue at its rear end alines and communicates with the interior of the bed and at its forward end is adapted for swivel connection with the draft clevis 4 of a tractor in the same manner as the previous crane.

Superimposed on the bed 1 and enclosed about its periphery by a circular flange 5 upstanding from the frame is a turntable 6. This is provided with a depending king pin 7 journaled in the bed. The turntable is formed with a downwardly opening channel 8 about its periphery and mounted in said channel are taper rollers 9 radial with the turntable and riding on a circular track 10 on the bed 1.

The turntable on the bottom is provided with a spur gear 11 concentric with the king pin. This is engaged by a pinion 12 fixed on a depending shaft 13 journaled in the bed, the axis of said shaft lying in a radial plane projected from the king pin centrally of the width of the tongue 3. A bevel gear 14 is secured on the lower end of the shaft 13, which is engaged by a bevel pinion 15 journaled in the bed and whose axis lies in said radial plane.

The shaft of this pinion is connected by a universal joint 16 with another shaft 17 also lying in said radial plane and which projects through the tongue with an upward slope to a termination above the tongue, being engaged by a bearing 18 fixed on the tongue adjacent the point of emergence of the shaft therefrom.

A telescoping shaft unit 19 is interposed between shaft 17 and a drive shaft 20 mounted on and driven under the control of the tractor operator by the tractor mechanism (or the power unit thereon) in any suitable manner. The shaft unit 19 is connected to the shafts 17 and 20 by universal joints 21; the front joint being relatively close to the vertical plane of the draft clevis.

It will thus be seen that the turntable may be rotated from the tractor without any movement of the tractor or crane bed being necessary, and irrespective of the relative alinement of the tractor and crane. This is because of the use of the telescoping shaft unit and universal joints, which also of course enable the tractor to be steered relative to the crane without restraint.

A boom 22, preferably of the same configuration as that shown in said patent, is pivotally mounted on the turntable adjacent its periphery as at 23. Mounted on the turntable at a point diametrally opposed to the boom is a standard 24 which supports a vertical series of fairlead sheaves 25. These receive the boom hoist and load lift cables 26 and 27 respectively, from the power unit on the tractor and pass said lines to the proper members at the top of the boom. The lowest fairlead unit 25a of the series engage a drag cable 28 leading from the power unit, and which extends from the fairlead to and about another fairlead unit 29 mounted on the boom adjacent its lower end.

By means of this arrangement, a load may be pulled from a relatively remote point to a position within range of the boom lift hook without

moving the crane from a predetermined set position. The boom may be raised to a substantially vertical position, and to limit its raising movement I provide a crossbar 30 on the front side of the boom near its base, adapted to engage lugs 31 projecting rearwardly from a crossbeam 32 connecting the diagonal arms 33 which depend rearwardly from and brace the standard 24.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and useful and desire to secure by Letters Patent is:

1. A portable crane comprising a wheel supported bed, a tongue rigid with said bed, means on the front end of the tongue to provide for draft connection with a tractor, the bed and tongue being hollow and the latter projecting from the front side of the bed in communication with the hollow area thereof, a boom supporting turntable mounted on the bed, a gear fixed with the turntable on the under side of the same concentric with the axis thereof, a pinion engaging the gear and journaled in the hollow bed, a drive shaft operatively connected to said pinion within the bed and extending thence along and in the tongue with an upward slope to a forward termination on the outside of the same and drive means applied to the forward end of the shaft and operable from the tractor.

2. A crane comprising a supporting bed, a turntable mounted thereon, a boom pivoted on the turntable to one side of the axis thereof for raising and lowering movement, a rigid standard on the turntable on the opposite side of said axis from the boom, separate boom and load control cables extending to the top thereof and a pair of fairlead sheaves on the standard for each cable about which the cables pass ahead of their connection with the boom, the lead-in sheave of each pair being hung for swivel movement in a horizontal plane.

3. A structure as in claim 2 in which the pairs of sheaves are disposed in vertically spaced relation on the standard.

4. A crane comprising a hollow bed, a boom-supporting turntable on the bed, a gear on the bottom of the bed concentric with the turntable, a pinion engaging the gear, a depending shaft on the pinion journaled in the bed, drive gearing connected to the shaft within the bed, a drive shaft projecting from the gearing radially of the turntable, means supporting the turntable from the bed radially out from the gear, and a guard flange upstanding from the bed radially out from the supporting means and overhanging the periphery of the turntable.

ROBERT G. LE TOURNEAU.