L. L. TYRRELL.

STEAM CRAB OR WINCH.

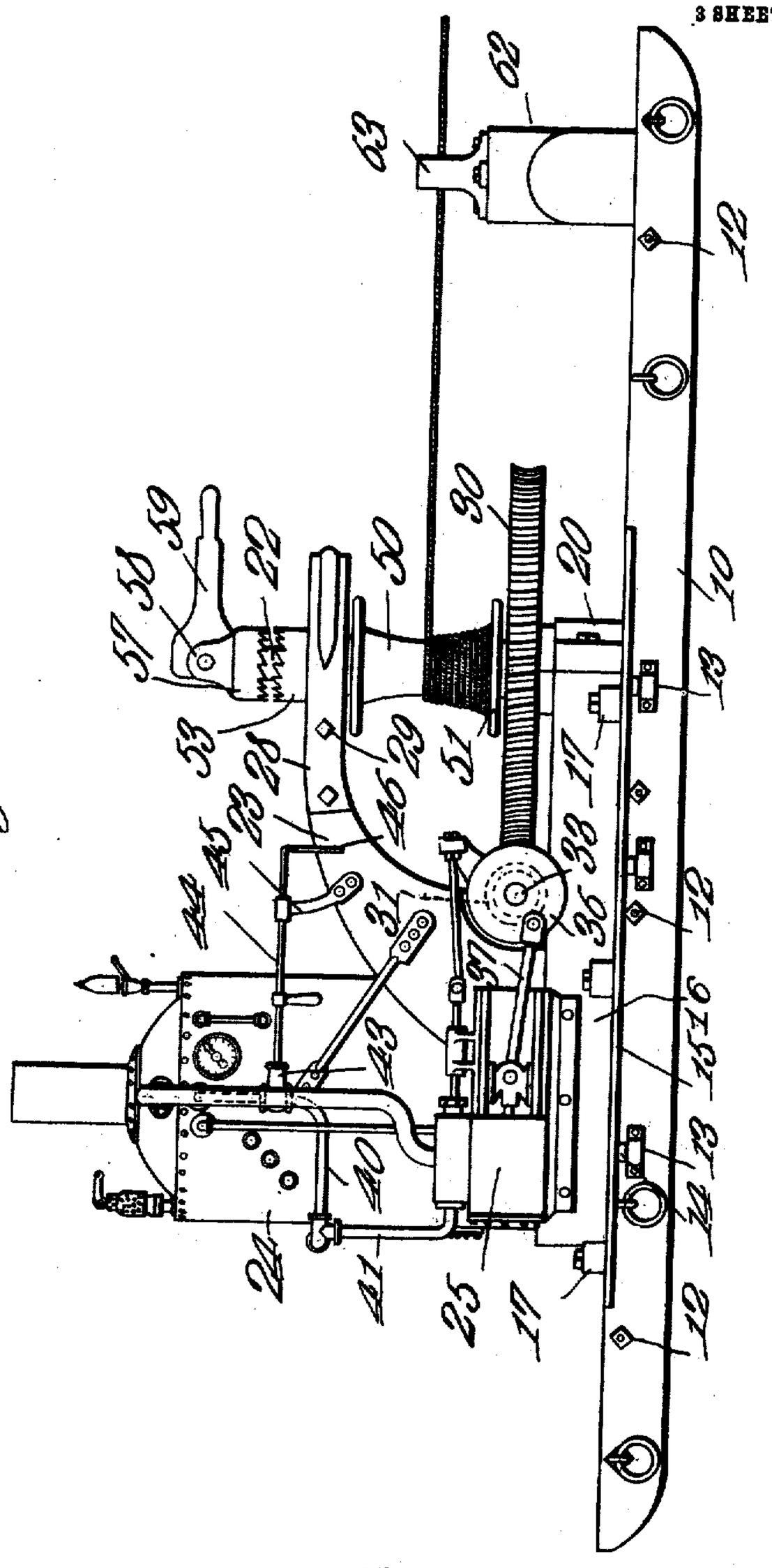
APPLICATION FILED OCT. 17, 1908.

916,633.

Patented Mar. 30, 1909.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

E. F. Holcomb

Jno. E. Parker.

Inventor

Lester L. Tyrrell

By Cachow & Co.

Attorneys.

L. L. TYRRELL.

STEAM CRAB OR WINCH.

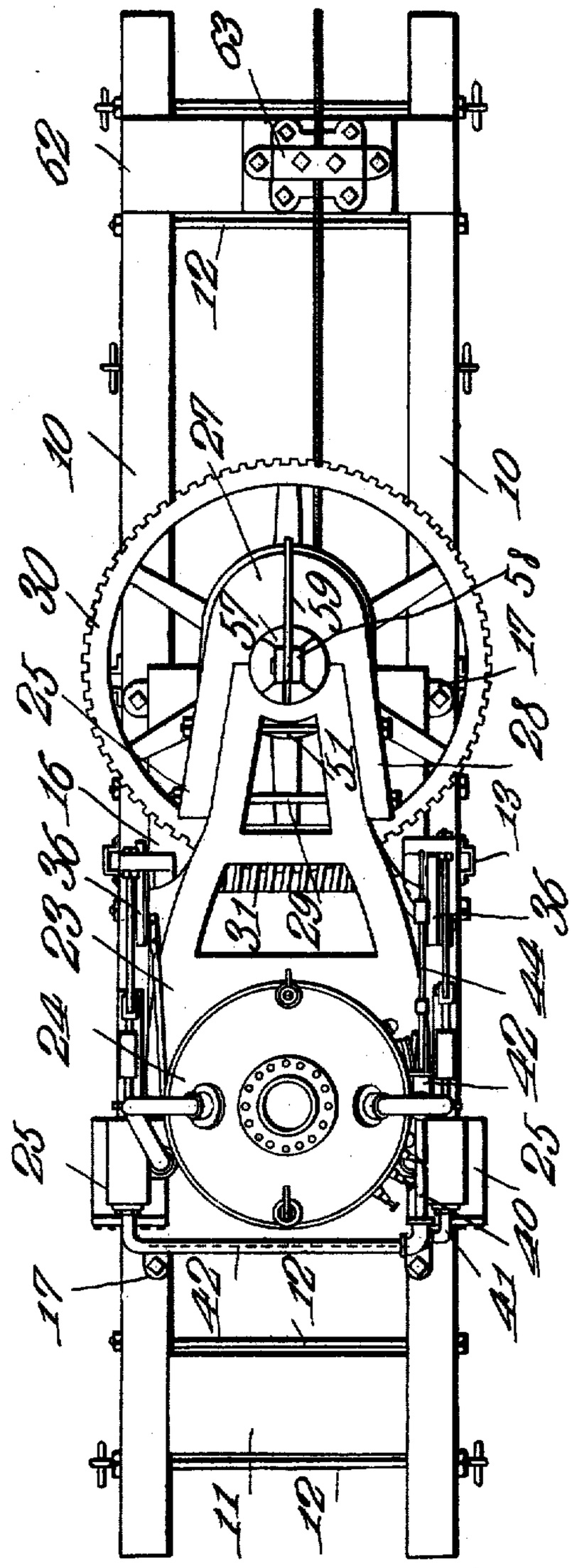
APPLICATION FILED OCT. 17, 1908.

916,633.

Patented Mar. 30, 1909.

3 SHEETS—SHEET 2.

Fig. 2.



Witnesses

E. F. Albert

Jno. E. Parker

Inventor

Lester L. Tyrrell

By Cachow & Co.

Attorneys

L. L. TYRRELL.

STEAM CRAB OR WINCH.

APPLICATION FILED OCT. 17, 1908.

916,633.

Patented Mar. 30, 1909.

3 SHEETS—SHEET 3.

Fig. 3.

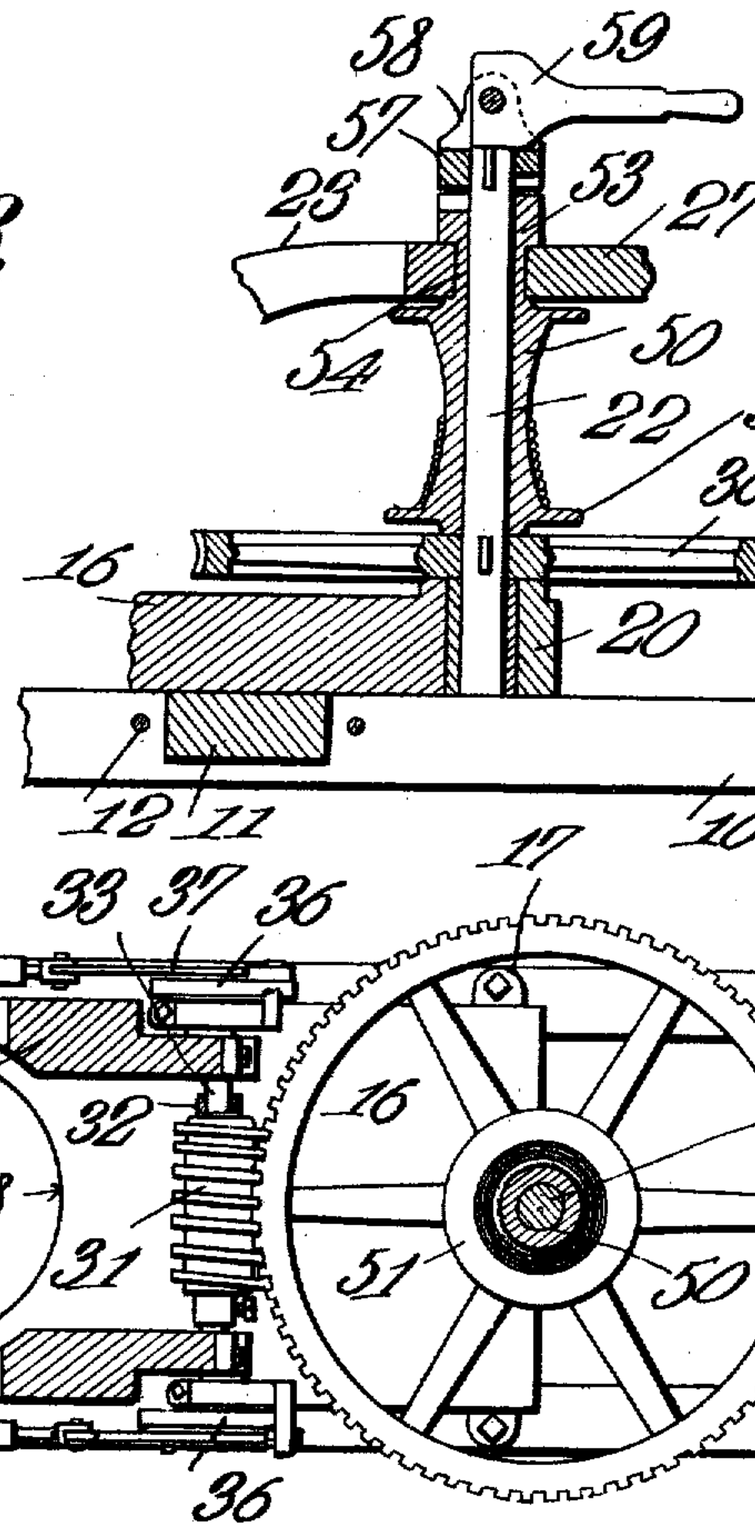
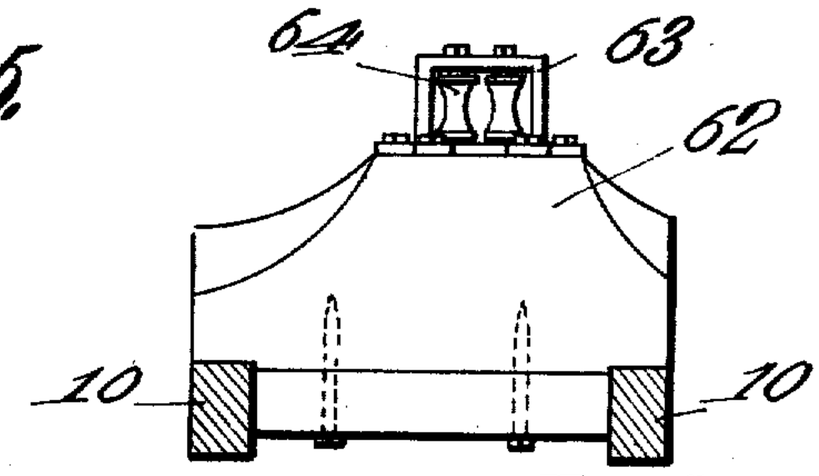


Fig. 4.

Fig. 5.



Witnesses.

E. P. Thurston

Jno. E. Parker

Inventor

Lester L. Tyrrell

By Cachow & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

LESTER L. TYRRELL, OF BUCODA, WASHINGTON.

STEAM CRAB OR WINCH.

No. 916,633. Specification of Letters Patent. Patented March 30, 1909.

Application filed October 17, 1908. Serial No. 458,235.

To all whom it may concern:

Be it known that I, LESTER L. TYRRELL, a citizen of the United States, residing at Bucoda, in the county of Thurston and State of Washington, have invented a new and useful Steam Crab or Winch, of which the following is a specification.

This invention relates to improvements in steam crabs or winches of that general type used for heavy work, such as the moving of houses, logs, heavy masonry, and the like.

The principal object of the invention is to provide a readily portable device of this type in which the parts are compactly arranged and are so disposed as to permit the employment of worm gearing and consequent increase in power.

A further object of the invention is to provide a strong and rigid supporting frame on which the boiler, engines, and winding drum may be compactly arranged.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a side elevation of a steam crab or winch constructed and arranged in accordance with the invention. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal sectional view of a portion of the device. Fig. 4 is a sectional plan view illustrating the worm gearing. Fig. 5 is a detail front elevation of the cable guide.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The device as a whole is mounted on a sled comprising parallel side sills 10 and cross bars 11 which are braced by suitable transverse bolts 12 and on the outer faces of the sills are sockets 13 for the reception of brackets 14 which carry foot boards 15 that may be readily removed when the machine is to be transported.

Mounted on the sled is a combined sole plate and frame 16 that preferably is formed of a single casting. The sole plate 16 is provided with perforated lugs 17 for the passage of securing bolts that extend down into the sill members 10, and near the rear end of the sole plate is an opening 18 through which the ashes from the boiler may fall to the ground. At the forward end of the sole plate is bolted a bearing cap 20 which in connection with the adjacent end of the sole plate forms a bearing for the lower end of a vertically disposed shaft 22, and provision is made for the introduction of Babbitt metal or other anti-friction linings of any desired type.

Extending upward from a point about mid-way of the length of the sole plate is a goose neck frame 23, the base portion of which is bifurcated to straddle the rear portion of an upright cylindrical boiler 24 of ordinary construction. The sole plate 16 carries a pair of steam cylinders 25 to which steam is supplied from the boiler. The forward end of the goose neck 23 is arranged to receive a yoke like bearing member 27 having a pair of arms 28 which straddle the forward end of the goose neck and this bearing member is rigidly held in place by transverse bolts 29 that extend through openings formed in the frame.

Secured to the lower end of the shaft 22 is a large worm wheel 30 with which engages a worm 31 that is carried by a hollow shaft 32 rigidly keyed or otherwise secured to a crank shaft 33 that is mounted in bearings formed in ears projecting from the base of the goose neck 23. At the opposite ends of the crank shaft 33 are secured crank disks 36 which are connected by rods 37 to the cross heads of the engines. The valves of the steam engines are operated in the ordinary manner through suitable eccentrics carried by the crank shaft.

The supply of steam from the engine passes through a downwardly leading pipe 40 that is provided with two branches 41 and 42 leading to the two valve chests, and in advance of this branch connection the pipe 40 is provided with a controlling valve 43 that is carried by a rod 44 mounted in suitable brackets 45 carried by the boiler, and the frame. At the outer end of the rod is an operating handle 46 that is placed

within convenient reach of the engineer, so that both of the engines may be controlled from one side of the crab.

Mounted loosely on the shaft 22 is a winch drum 50 having top and bottom flanges 51 of the ordinary type, and secured to or formed integral with the upper flange is a clutch sleeve 53, the upper face of which is provided with radially disposed ratchet clutch teeth. The sleeve is provided with a reduced neck portion 54 that fits within the bearing formed by the forward end of the goose neck and the yoke 27, so that the top of the sleeve will project above the top of the goose neck frame.

Feathered on the top of the shaft 22 is a clutch 57 having ratchet clutch teeth on its lower face that are arranged to engage with the clutch teeth of the sleeve 53. The sleeve 57 is provided with upwardly extended spaced pivot ears 58 between which is pivoted a cam lever 59 that bears on the top of the shaft. When this cam lever is moved down to an approximately horizontal position the sleeve 57 will be raised out of engagement with the sleeve 53 and the drum will then be free to rotate independently of the shaft. When the lever is raised to vertical position, the sleeve will descend into engagement with the sleeve 53 and the drum will be clutched to and rotate with the shaft. This construction is highly advantageous in that the lever is in vertical position and rotates with the shaft and drum, while the device is in operation, so that said lever is at all times in convenient position to be grasped by the operator and drawn down to horizontal position for the purpose of releasing the clutch, it being noted that the lever is of such construction that it may be swung down in either direction to effect the release of the clutch.

Arranged near the front of the sled frame is a heavy transverse frame 62 to which is secured a bridge 63 that is arranged slightly to one side of the longitudinal center of the frame and in this bridge or drum are two vertically disposed rollers 64 for the passage of the hauling cable or rope.

In practice, the sled frame is anchored in any suitable manner, and the hauling cable or rope is passed between the roller 64 and wound a number of times around the drum. The operator standing at one side of the main frame may take off the end of the rope as the winding operation progresses, while remaining in position within reach of the valve operating handle 46, and the clutch operating lever 59.

What is claimed is:—

1. In a steam crab or winch, a frame including a sole plate and goose neck both provided with bearing members, a vertically disposed winding shaft journaled therein, a winding drum mounted on the shaft, means for connecting and disconnecting the drum and shaft, a boiler seated at the rear of the goose neck, a pair of engines mounted on the opposite sides of the goose neck adjacent the boiler, a crank shaft operated by the engines, a worm on said crank shaft, and a worm wheel mounted on the winding shaft and intermeshing with the worm.

2. In a steam crab, or winch, a frame including a sole plate and goose neck, the latter being bifurcated at its base, a vertical boiler seated on the sole plate and within the bifurcated portion of the goose neck, bearing members carried by the forward ends of the sole plate and goose neck, a vertically disposed shaft, the lower end of which is journaled in the bearing member and sole plate, a winding drum mounted loosely on the shaft, a clutch sleeve carried by the winding drum and having a reduced neck portion journaled in the goose neck bearing, a clutching sleeve mounted at the top of the shaft, a lever for operating said clutching sleeve, a worm wheel secured to the lower end of the shaft, a worm intermeshing therewith, a crank shaft carrying the worm, and engines operating said crank shaft.

3. In a steam crab, or winch, a frame comprising a sole plate and goose neck, the base of the goose neck being bifurcated and the sole plate being provided with an opening, a vertical boiler seated over the opening and within the bifurcated portion of the goose neck, a pair of engines arranged at the opposite sides of the goose neck, a crank shaft operated by said engines, a worm carried by the crank shaft, a vertically disposed shaft mounted in bearings at the forward ends of the sole plate and goose neck, a worm wheel carried by the shaft and intermeshing with the worm, a winding drum mounted loosely on the shaft and provided at its upper end with a clutching sleeve, a clutching member feathered on the upper end of the shaft, and a clutch operating lever carried by said member and arranged to bear on top of the shaft, said lever being movable to a position in vertical alinement with the shaft to effect clutching of the shaft and drum.

4. In a steam crab, or winch, a frame, a boiler supported by the frame, a pair of engines arranged at opposite sides of the boiler, a steam pipe leading from the boiler and having branches leading to the engines, a valve arranged in the steam pipe in advance of the branches, an operating stem connected to said valve and leading along one side of the frame, a vertically disposed winding shaft, a drum carried thereby, a clutching connection between the shaft and drum, and driving connections between the engines and shaft.

5. In a steam crab or winch, a carrying sled, a frame secured thereto, a boiler mounted on the frame, engines carried by the frame, a vertically disposed winding shaft receiving motion from the engines, a winding drum mounted on the shaft, a clutching connection between the shaft and drum, a transverse frame secured to the forward portion of the sled frame, and cable guiding rollers mounted in said transverse frame.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LESTER L. TYRRELL.

Witnesses:

LORENZO TYRRELL,

P. A. KIBBE.