L. BRENNAN.

LIFTING CRANE.

APPLICATION FILED JUNE 22, 1917.

1,250,424. Patented Dec. 18, 1917.

Fig. 1.

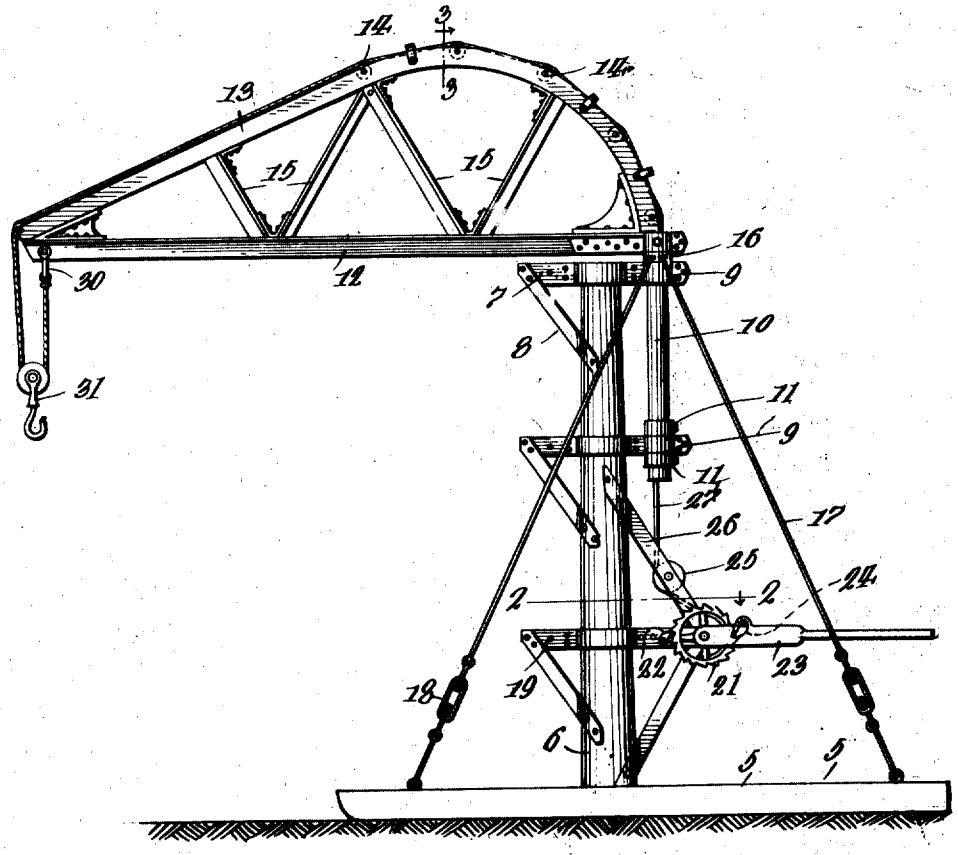
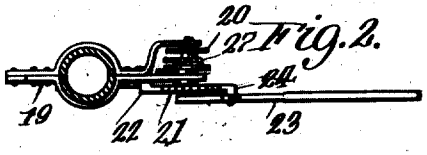


Fig. 3.



Fig. 2.



INVENTOR

Lawrence Brennan

WITNESSES

Guy M. Spring

Dwigan D. Galt.

BY Richard B. Owen.

ATTORNEY

UNITED STATES PATENT OFFICE.

LAWRENCE BRENNAN, OF RED DEER, ALBERTA, CANADA.

LIFTING-CRANE.

1,250,424 Specification of Letters Patent. **Patented Dec. 18, 1917.**

Application filed June 22, 1917. Serial No. 176,412.

To all whom it may concern:

Be it known that I, LAWRENCE BRENNAN, a subject of the King of Great Britain, residing at Red Deer, in the Province of Alberta and Dominion of Canada, have invented certain new and useful Improvements in Lifting-Cranes, of which the following is a specification.

This invention relates to lifting cranes, and aims primarily to provide a crane which shall be of simple and inexpensive construction, which shall possess great strength, and which shall be capable of lifting heavy weights with the expenditure of but a small amount of power.

A further object of the invention is to provide a crane in the form of a cantaliver, and which arm is capable of swinging upon its point of support, whereby the stresses and strains to which the arm will be subjected when the crane is in operation will be borne by the supporting post.

A still further object of the invention is to provide a crane of this character which is capable of rotating upon its supporting standard, so that the crane is capable of operating over a relatively large area.

A still further object of the invention is to provide a crane of this character which may be of a portable nature, which is equipped with manually operable lifting means, which is composed of relatively few simple parts, the said parts being so constructed and assembled as to minimize the opportunity for wear or breakage, and which will prove thoroughly efficient in practice.

With these objects in view together with others which will appear as the description proceeds, the invention resides in the novel formation, combination and arrangement of parts all as will be described more fully hereinafter, illustrated in the drawings and particularly pointed out in the claim.

In the drawings:

Figure 1 is a side elevation of a lifting crane constructed in accordance with the invention,

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1, and

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Referring now to the drawing, 5 indicates a conventional form of skid or truck and upon which the supporting post for the crane is mounted. The post is indicated generally at 6, and may be solid or hollow, or may be formed of metal or any other suitable material. This post is rigidly attached to the skid or truck 5 and is provided adjacent its upper end with a pair of spaced horizontally disposed brackets 7. The brackets project at their ends beyond the sides of the post, and are trussed at one end to the post 6 by braces 8. The opposite ends of these brackets are provided with bearings 9, which bearings are vertically alined. Rotatably mounted in these bearings is a standard 10, the said standard being held against vertical sliding movement by the collars 11. These collars bear upon the upper and lower sides of the lowermost bracket 7.

Secured at its inner end to the upper extremity of the standard 10 is a crane arm indicated at 12. This crane arm is shown in the present instance as being disposed at substantially right angles to the supporting standard 10, and is formed of light and yet durable metal. An arched support 13 connects the ends of the crane arm 12, the said support being substantially U-shaped, and mounted in the channels of this support are rollers or pulleys 14. The support is trussed to the crane arm 12 by the struts 15, so that the weight to which the arcuate member 13 may be subjected will be distributed to and will be borne by the crane arm 12. A collar 16 loosely encircles the upper end of the standard 12, and is interposed between the upper bracket 7 and the crane arm 12. Guy-rods 17 connect this collar with the skid or truck, so that the crane will be braced and held against wavering when subjected to heavy weights. As shown in the drawings, these guy or brace rods are provided with turn-buckles 18.

A third bracket 19 is secured to the post 6 adjacent the lower end thereof, and rotatably mounted in the rear end of this bracket is a drum 20, the shaft of which is provided with a ratchet wheel 21, over which a pawl or detent 22 on the bracket plays. A manually operable lever 23 is pivoted upon the axle of the drum or windlass, and this lever carries a pawl 24 adapted to engage in the teeth of the ratchet wheel 21. A guide pulley 25 is rotatably mounted in a suitable supporting bar 26 adjacent the windlass and this guide roller is in vertical alinement with the standard 10.

A rope or cable 27 is connected at one end to the drum of the windlass, and passes under the guide pulley 25, upwardly through the hollow standard 10, over the pulleys 14 on the arcuate supporting portion of the crane, and to the outer end of the crane arm 12. This outer end of the cable or rope is secured as by a clevis 30 to the crane arm. A fall-block 31 is supported by the slack in the end of the supporting cable, and this fall-block is adapted to support the articles to be lifted.

From the foregoing it is apparent that I have provided an extremely simple yet thoroughly efficient crane, and one which is capable of being readily operated with the expenditure of but a relatively low degree of power. The particular pawl and ratchet arrangement on the windlass enables the latter to be operated with a small amount of exertion. With the use of a crane of this character, great weights may be lifted and stresses delivered thereto will be distributed to the post and guy rods therefor.

While the present disclosure is that of what is believed to be the preferred embodiment of the invention, it is to be understood that the invention is not limited thereto, but that various changes in the minor details of construction, proportion and arrangement of parts may be resorted to if desired without departing from the spirit of the invention as defined by the appended claim.

What is claimed is:

In a crane, a vertically disposed post, brackets on said post, a hollow standard rotatably supported by said brackets in spaced parallel relation to said post, a collar loosely inclosing the upper end of said standard and resting on one of said brackets, a crane arm secured at its inner end to the upper end of said standard and resting on said collar, an arcuate support on said crane arm and extending from one end to the other thereof, rollers on said support, a cable resting on said rollers and being secured at one end to the outer end of said arm, the other end of said cable passing through said standard, a drum rotatably supported in one of said brackets, the said cable being secured to said drum, a ratchet wheel on said drum, a lever on said bracket, a pawl on said lever engaged with the teeth of said ratchet wheel, and a detent on said bracket engaged with said teeth.

In testimony whereof I affix my signature in presence of two witnesses.

LAWRENCE BRENNAN.

Witnesses:
E. J. HANLEY,
F. SWANSON.