Sept. 17, 1935. P. WILSING 2,014,544

CRANE

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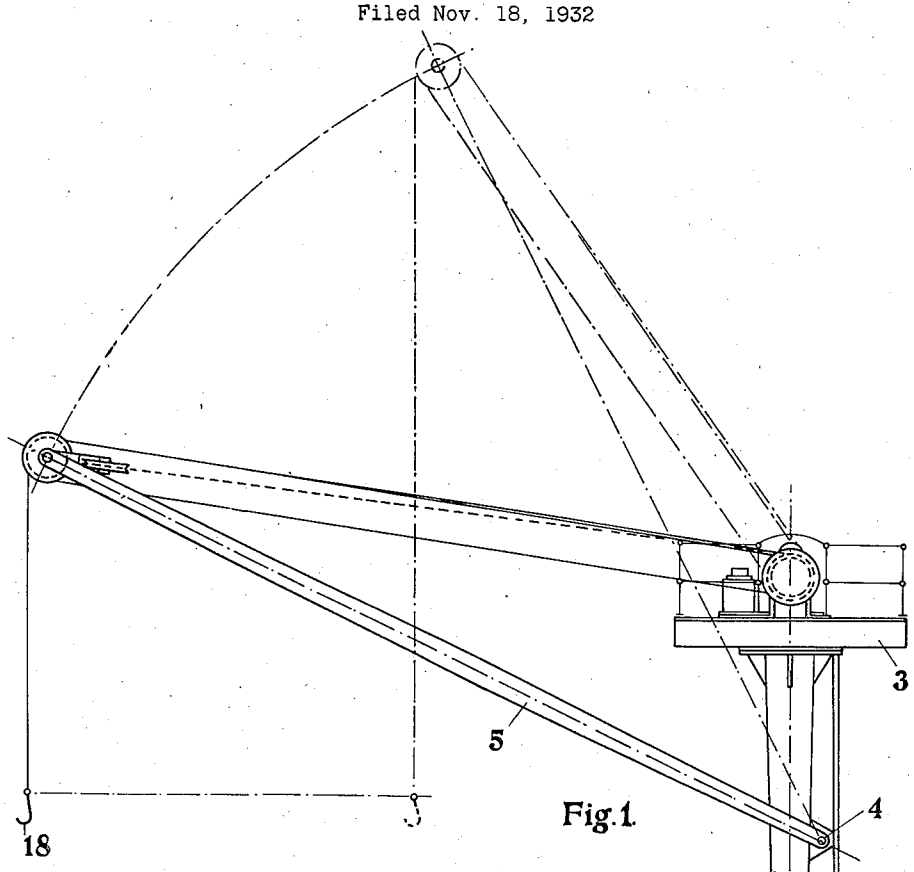



Fig. 1.

Fig. 3.

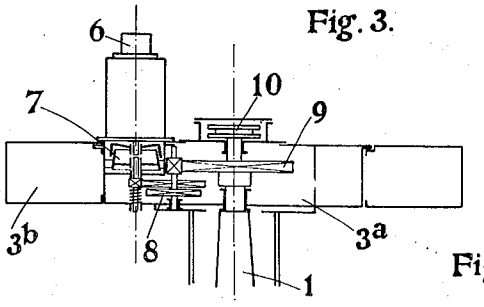
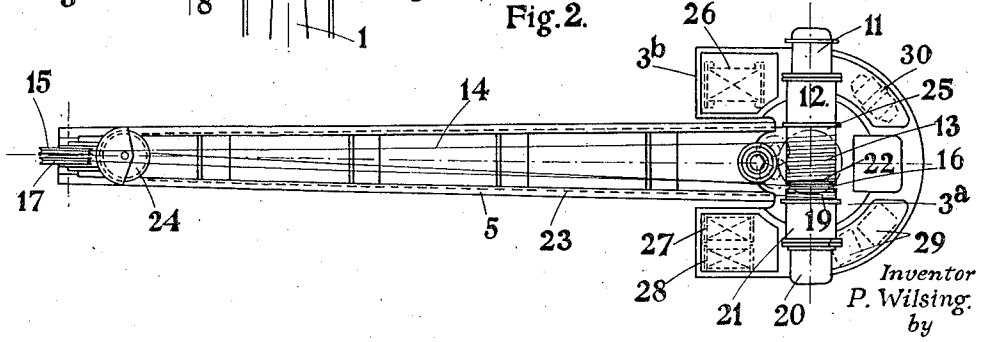



Fig. 2.




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# UNITED STATES PATENT OFFICE

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## CRANE

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2 Claims. (Cl. 212—69)

The invention relates to a luffing crane having a fixed column and a bell casing rotatable about the column. According to the invention a platform having the operator's stand and the driving mechanism mounted thereon is carried at the upper end of the rotatable bell casing, the jib being mounted at the lower end directly thereon upon the said casing; the operator thus has a wide view and can supervise the driving mechanism, which is close beside him. The fixed column does not need to be any higher than the bell casing, and the driving mechanism is disposed at a height above the ground or supporting surface, a fact which is of importance in connection with luffing cranes mounted on ships. The crane according to the invention is simple and effective in operation and needs only a single operator. Moreover, in the construction of crane according to the invention the platform with the important driving and operating elements is disposed at the top end of the column and the advantage is secured that the crane operator can see from his platform right to the bottom of the ship's hold and can keep his eye on the loading operations proceeding there. The cranes are adapted to be mounted near to the edges of the hatchway.

In the usual constructions the crane operator frequently has his view obscured by structures on the ship or by work people and whereas in the hitherto known features of ship's crane the operator of the crane can see only close against the edges of the hatchway, he can now see well below it and is positioned above the other work people so that he can see over them.

Again, the extension of the ship's crane rearwardly does not affect other ship structures or work people so that thus the crane can turn without hindrance and without the fear being present that persons may get injured or goods damaged. The cranes are therefore specially suitable for ships.

The invention is illustrated, by way of example, in the accompanying diagrammatic drawing.

Figure 1 is a side elevation of a luffing crane according to the invention.

Figure 2 is a corresponding plan, and

Figure 3 is a vertical section through the platform, on an enlarged scale.

As will be seen by reference to the drawing, a sleeve 2 is in the form of a bell inverted over the fixed column 1, the sleeve 2 being suitably held at a distance from the column 1 at the upper and lower ends. The platform 3, which comprises a central part 3a and an outer part 3b, is mounted at the upper end of the sleeve 2 (Figure 3). The luffing jib 5 is pivotally connected at 4 to the sleeve 2; the mechanism for effecting rotation is provided, as is the platform 3, at the upper end of the column 1. The platform 3a serves as a housing for the said mechanism; the motor 6 of the said mechanism is secured by a flange directly to the platform 3a and operates through a combined coupling and braking combination 7. The toothed wheel transmission 8 acts on a toothed wheel 9 which is keyed at the upper end of the column 1 and is therefore stationary. Above this stationary toothed wheel of the mechanism for effecting rotation there are provided the slip rings 10 for supplying current to the driving motors. The hoisting mechanism and the luffing mechanism which are both provided with drums, are combined in a driving set in a particular manner, that is to say, the two drums are disposed co-axially as shown in Figure 2. The hoisting motor 11 operates the hoisting drum 13 through gearing which is provided in the gear casing 12. The hoisting cable 14 passes from the drum 13 to the pulley 15 at the end of the jib, thence to the return pulley 16 and back to the jib pulley 17, from which point it hangs in a vertical line weighted by the load hook 18. The drum 19 of the drawing in or luffing gear is driven by the luffing motor 20 through gearing provided in the casing 21. The luffing gear and the arrangement and disposition of the parts of the crane are such that in luffing the load follows a horizontal path. The drums 13 and 19, as also the return pulley 16, are mounted upon a common shaft which is situated between the two casings 12 and 21, the drums 13 and 19 being driven through their respective gears. This common shaft may, for example, be fixed and the two drums will then be driven by an internally-toothed pinion. To render the shaft bearings accessible and capable of being dismantled a multipartite ring 22 is provided between the two drums and if the parts of this ring be removed radially the drums can slide along so that the axle bearings are exposed. The luffing cable 23, coming from the drum 19, is guided over the pulley 24 and back to any suitable point 25 in the casing 12.

The outer part of the platform may serve for the reception of control members in the same way as the central part 3a of the platform is formed as gear casing. The platform is for this purpose in the form of a casing and may be divided up into a number of chambers, these chambers containing the controllers 26, 27 and 28 as well as the resistances 29. In the present case the crane operates with a to and fro switch mech-

anism, that is to say with a special regulating machine set which is also mounted on a platform, namely at 30. As represented in Figure 2, the platform 3 is conveniently formed to a U-shape in plan to provide a suitable recess into which the jib 5 may be luffed to its extreme position, as represented in broken lines in Figure 1.

As before stated, an arrangement that is easy of supervision is provided by disposing the control members in the platform casing, the latter being divided up into compartments. If it is desired to provide better ventilation these compartments may be joined together or provided separately with ventilation openings. Furthermore a ventilator may be combined with the regulating machine set 30 for ventilating the platform casing.

I claim:

1. A luffing crane, more particularly for ships, with a hollow rotatable column concentric with and carried by a fixed column and a luffing jib pivoted to said rotatable column, a platform upon the rotatable column above the pivotal axis of the luffing jib provided at the forward side with a recess into which the jib may be received when being luffed, luffing mechanism comprising means for guiding the load in a horizontal path and hoisting mechanism and an operator's stand, all provided upon the said platform.

2. A luffing crane, more particularly for ships, comprising a rotatable hollow column carried by and concentric with a fixed column, a jib pivotally connected to the lower end of said rotatable column, a platform, comprising a central portion and an outer U-shaped portion, mounted at the upper end of said rotatable column and presenting a recess into which the jib may luff in wide angle movements, mechanism housed within said central portion of the platform for rotating said rotatable column, said jib and said platform, and luffing and hoisting mechanism mounted upon said platform.

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