

Hoisting-Cranes.

No. 157,036.

Patented Nov. 17, 1874.



Inventor

Geo H Starbuck.

by Davenport.

Witnesses: his atty

E. F. Bullard.

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UNITED STATES PATENT OFFICE.

GEORGE H. STARBUCK, OF TROY, NEW YORK.

IMPROVEMENT IN HOISTING-CRANES.

Specification forming part of Letters Patent No. **157,036**, dated November 17, 1874; application filed August 26, 1874.

To all whom it may concern:

Be it known that I, GEORGE H. STARBUCK, of the city of Troy, county of Rensselaer and State of New York, have invented certain Improvements in Hoisting-Cranes, of which the following is a specification:

The principal objects of my invention are to cut away the crane-post and surmount the same with a crane-piece carrying the sheave-bearings; to key the head and crane pieces firmly together through the medium of the sheave-axes; to provide for the ready removal of the sheaves for repairs, and to protect the operator from material thrown off by the revolving sheave—to accomplish all of which the invention consists in certain peculiarities of construction, first to be fully described, and then pointed out in the claims.

Referring to the accompanying drawing, Figure 1 represents a rear view of the crane attachments as assembled; Fig. 2, a detailed view, showing the method of securing the head and crane pieces; Fig. 3, a modification of devices shown in Fig. 2; Fig. 4, a side view, showing the sheave-guard in position.

Previous to my invention it had been customary to attach the sheave-bearings of swinging cranes to the crane-post, allowing so much of the post as remained uncut to extend to and connect with the head-piece. This construction, in order to prevent weakening the crane-post, compelled the use of sheaves so small as to cramp the hoisting-chain too much when the crane was swung from side to side.

To attain the first object of my invention, I cut away the usual crane-post A, as shown, and surmount the same with the crane-piece L, carrying the sheave-axes. This construction enables me to use much larger sheaves without weakening the crane-post, since the center-point, at which the chain bears upon the sheave, is nearly in the axis of the swinging pivot, or usual step and gudgeon S and G, and will thus obviate the cramping of the chain, as before described. The sheave-axes are provided with an enlarged central bearing, K, upon which the sheave plays, and against which the head and crane pieces abut when assembled. This enlargement effectually prevents the said pieces from approaching each other. To prevent their separation I prefer to raise collars

p, Fig. 2, upon the end of the axes, and to clamp the necks of these axes in their boxes upon the head and crane pieces by means of removable cap-squares g. The projections or collars p, Fig. 2, in connection with the enlargement K, firmly secures the head and crane pieces in proper relation to each other. The removable cap-squares enable me to readily replace a broken or worn sheave without unshipping the crane.

The second and third objects of my invention may be accomplished by making the enlargement K separate from the axis, as shown in Fig. 3, passing the axis through bearings in the head and crane pieces, and making use of keys, the projection p upon which insures the immovability of the two pieces with respect to each other, and at the same time permits the dismounting of the sheaves without unshipping the crane, as before.

By reason of the sheaves moving as they do in planes substantially perpendicular to the crane-post A, I find it desirable to protect the operator from the material which is thrown off by the centrifugal force of the wheel, or which drops therefrom. This I accomplish by placing a plate, D, beneath the sheave, immediately over the platform E, and providing the said plate with an upwardly-projecting flange, F. This guard or protector may be secured in any desirable manner to the crane-post or sheave-bearings.

The drawing further shows at X the ordinary vertical guiding or slip sheave in its usual position; M, the yoke whereby the head-piece is secured to the upright frame, or anchored in any of the customary ways; E, the platform, about which, in swinging cranes, the swinging chain is applied; and N and O represent sections of the frames, as in dredging-machines and the like, to which my improvements are applicable. R R are strengthening-ribs, cast with the pieces in the usual way.

I am aware that the step and gudgeon, the yoke, and the vertically-moving slip-sheave are not new. I do not, therefore, desire to lay any claim to such devices; but

Having now fully described my invention, what I do claim, and desire to secure by Letters Patent, is—

1. The crane-post, cut away as described,

and surmounted by the crane-piece provided with sheave-bearings, for the purpose set forth.

2. The combination of the head and crane pieces, united by and held in proper relation to each other through the medium of the sheave-axes and their metallic bearings.

3. In a hoisting-crane, the combination of head and crane pieces with the sheave-axes, made removable in manner substantially as described.

4. In a hoisting-crane, the combination, with

the horizontally-moving sheaves, of the guard or protector located over the turn-table, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

GEORGE H. STARBUCK.

Witnesses:

R. R. OSGOOD,

W. H. SHIRLAND.