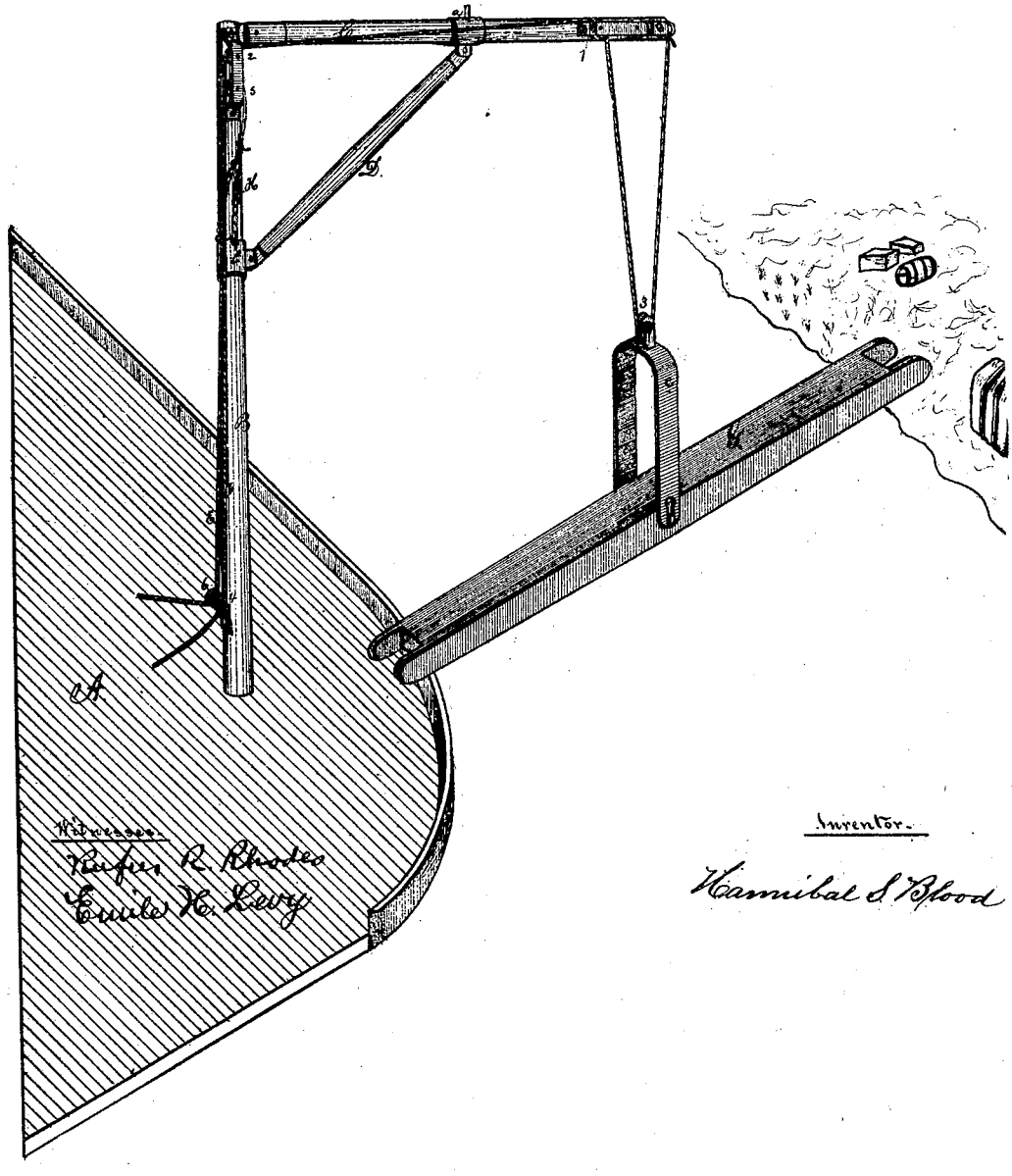
H. S. Blood,

Derrick.

No. 103,834. Patented June 7, 1870.



Witnesses.

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HANNIBAL SEWELL BLOOD, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN DERRICK OR HOISTING-CRANE.

Specification forming part of Letters Patent No. **103,834**, dated June 7, 1870.

I, HANNIBAL SEWELL BLOOD, of the city of New Orleans and State of Louisiana, have invented a certain Improved Derrick or Hoisting-Crane, of which the following is a specification:

The invention relates particularly to a means for avoiding the labor and delay which are incident to the duty of putting out and taking in the heavy "stages," as they are technically called, which are used on steamboats and other vessels, by hand, at every landing they make; but it is equally applicable as a labor-saving instrumentality for a great variety of other purposes which need not be specially mentioned, which means may, in general terms, be said to consist of a sectional folding derrick or crane that is so contrived that the projecting crane-arm may be raised and braced at any angle up to a right angle to the vertical mast or spar, and then lowered or dropped down again in a pendent position against the mast, neither operation requiring more than a few seconds of time to effect it.

But my invention can be better described and understood by referring to the drawing, on which it is illustrated in connection with the section of the deck of a steamboat and stage, such as are used on American river-steamboats and other vessels.

On the drawing, A may be supposed to be a section of the forecastle or front part of the deck of an ordinary steamboat. B is the mast or upright portion of my improvement; C, the crane-arm of the same, and D the shifting-brace, to sustain and strengthen said crane-arm.

The connection between the mast B and the crane-arm C at the top of the former is established by means of an articulating joint of any proper form and construction, which will allow the said arm to be raised until it projects at right angles to the mast B, and then to be brought down until it lies close against the mast A. Under these conditions it will, of course, be understood that the crane-arm may be stopped and held at any intermediate point between a pendent or folded position alongside the mast and a position of extreme elevation.

The brace P is secured to the crane-arm at its upper end by means of a fixed or immovable sleeve-clamp, *a*, to which it (the brace) is connected by a pivot-joint, while at its lower end it is connected with the mast B, either by means of a loose sleeve, *b*, to which it is also pivoted or secured by a pivot-joint.

The sleeve *b* moves easily up and down the mast, and hence allows the foot of the brace D to accommodate itself to the movement of the crane-arm, whether the same is being raised or lowered, and always to occupy a relation which will make it subserve the purpose for which it is designed.

An equivalent alternative arrangement for the sliding sleeve-connection just described would be a rack and pinion, so adjusted that the pinion will be securely held in connection with the rack while traversing the same in the elevation and depression of the crane-arm C. In this latter case the ratchet-bar would, of course, be fastened on the mast, and therefore occupy a vertical position.

At the upper end of the mast B, and also at the outer extremity of the crane-arm C, pulleys 1 and 2 are placed, for carrying a cord or rope, E, which, fastened to the end of the crane-arm C by any proper means, passes through or under a detached block or pulley, 3, to which is attached a bracket or bail, *b*, or to two pendent ropes of equal length, with hooks secured to them at their lower ends, the object being in either case to provide a means for effecting a straddling connection with the stage G.

If the bail *b* be used properly, forward holes are made to slip over projecting pins on each side of the stage, whereas if ropes be used, eyebolts or staples must be substituted for pins in the sides of the stage, in which the hooks will take.

The rope E leads down the mast to a pulley, 4, onto a drum in line thereof, that is provided with a crank, through which it is operated and the stage lifted and thrown out or lowered and drawn on board whenever desired.

Another pulley, 5, at the top of the mast establishes a means for the easy movement of another rope, F, which connects with the loose sleeve *b* through the agency of a chain or other bridle, H, and, after being passed over said pulley 5, leads down to another pulley, 6, or its equivalent, substantially as shown. This rope F lifts and lowers the lower extremity of the brace D in the practice of the invention, and in doing so actuates the crane-arm C and raises

or lowers it according y as the exigency of the case may require.

The ropes E and F may be operated through the medium of the pulleys 4 and 6, or their equivalents, either by hand or by means of small steam-cylinders secured on the mast, and connected by means of proper pipes with the boilers of the boat.

I reserve the right to use any motive power I may choose to employ to work my invention.

The mast B must either have a socket-joint in it or be stepped in a socket in the deck of the boat in such manner as to be freely rotated on its axis, in order that the crane may describe a complete orbit or circle, and thus be brought over any point around the mast at pleasure.

Two of my improved devices are required for every boat, one on each side of the forecastle-deck, but not near enough to the edge of the guards to make them liable to be knocked down by projecting objects, such as trees or the like, from the banks of the river at the landings.

The operation of my invention is very simple. As the boat approaches a landing the crane-arm is elevated by the means herein described, and in being elevated is thrown out beyond the guard of the boat its whole length, if necessary, one man, or at most two, keeping hold of the inner end to guide and keep it in proper position until the boat touches the bank or wharf, as the case may be, when it is instantly lowered to its place, as shown on the drawing.

If necessary, the bail *c*, or the ropes that are used instead thereof, are now disconnected, in order to allow free space for the receipt or discharge of the freight over the stage; but, unless the freight be in packages or bales that extend over the sides of the stage, it will scarcely ever be necessary to disconnect either the bail or the ropes if the latter are used instead of the former. For the landing or reception of passengers no disconnection will ever be necessary.

When the boat is ready to leave the landing the bail or ropes, if they have been disconnected from the stage, are reconnected thereto, and the boat may push off even before the stage is moved, since obviously it can be thrown in afterward with the same ease as if the boat was motionless. Hence it follows that my invention saves time when the boat lands and when it departs again, the full measure of which can be estimated with something like precision when it is understood that the stages of cotton and sugar carrying boats on the Mississippi and other southern rivers have to be from three and a half to four and a half feet wide and from thirty to fifty feet long, that they weigh from fifteen hundred to two thousand pounds, and require at all times from fifteen to twenty men to put them out and take them in, and when they have to be handled from the top of cotton-bales piled on the deck of the boat sometimes as many as thirty men are necessary to perform the duty.

With my invention a stage of any length or weight can be handled or managed by three men, and without the slightest danger or risk, whereas as stages are now managed there is always great risk and danger that some of the men may be knocked overboard or hurt in some way, particularly in the operation of getting out the same, and there is scarcely ever a trip made by the large cotton-carrying boats without an accident from this cause.

My invention, although especially designed for the handling of stages on boats, may plainly be applied to many useful purposes on shore, such as the loading of railroad-cars and drays with cotton and sugar and pork, and other heavy things too numerous to mention. I therefore claim the right of applying it to such purposes.

I claim as my invention—

The combination of the vertical mast B with the articulating and folding crane-arm C, when the same is sustained and strengthened by means of the shifting-brace D, when all the parts are constructed, united together, and operated, as herein described, by means of two ropes E and F and their adjuncts, as specified, for the purpose set forth.

HANNIBAL S. BLOOD.

Witnesses:

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EMILE H. LEVY.