

(No Model.)

R. J. CRAM.

DEVICE FOR CONTROLLING THE SPUD OF DREDGES.

No. 261,587.

Patented July 25, 1882.

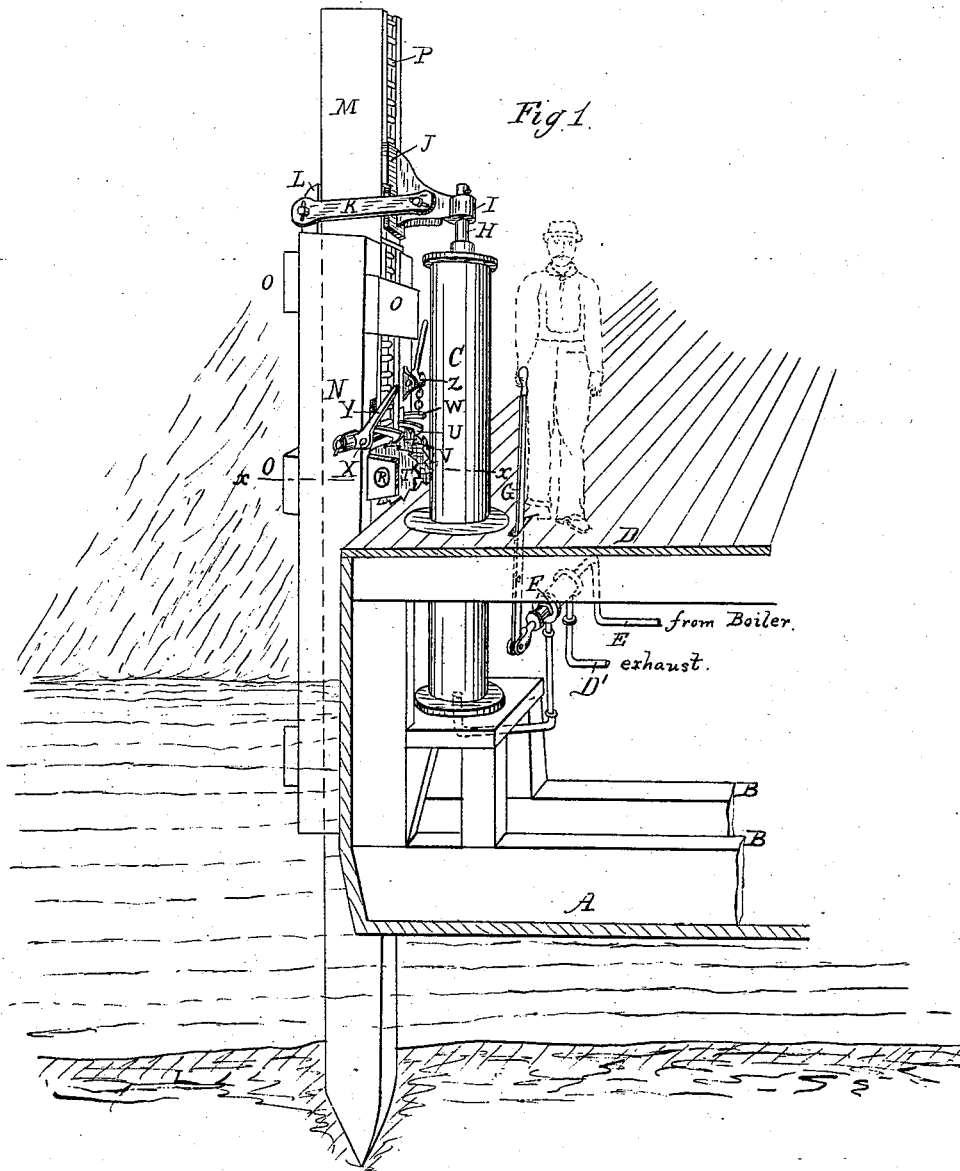
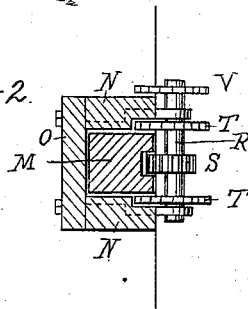


Fig. 2.



West:
J. Sprague
C. Sully

Inventor
Rorys J. Cram
By Mark A. Sprague Att'y.

UNITED STATES PATENT OFFICE.

ROYS J. CRAM, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO A. B. CRAM, OF SAME PLACE.

DEVICE FOR CONTROLLING THE SPUDS OF DREDGES.

SPECIFICATION forming part of Letters Patent No. 261,587, dated July 25, 1882.

Application filed March 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROYS J. CRAM, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in a Device for Controlling the Spud of a Dredge; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of this invention relates to certain new and useful improvements in a device for operating the spud of a floating dredge; and the invention consists in the peculiar construction, combination, and operation of the various parts, as more fully hereinafter described.

The spud of a float-dredge is a heavy wooden beam sharpened at its lower end and supported vertically at one side of the dredge-float in suitable guides, and when the dredge is in place is dropped so that its pointed end enters the bed of the river, and by this means the dredge-float is anchored in its place. The work of controlling, especially that of hoisting, this spud has heretofore been one of great difficulty; and the object of this invention is to provide means for controlling and operating said spud.

Figure 1 is a perspective view of my improvement attached to a section of a dredge float, barge, or scow. Fig. 2 is a cross-section on the line X X in Fig. 1.

In the accompanying drawings, A represents the foot or bottom of a dredge-scow provided with suitable timbers, B, to support the weight of the steam-cylinder C, which projects through the deck D, and is provided with a steam-inlet pipe, E, from the boiler, (not shown,) and with an exhaust-pipe, D', both of which connect with a steam-chest, F, provided with suitable valves operated from above the deck, by means of the lever G. This cylinder, with its steam chest and valves, is so arranged as to take and exhaust steam from the lower end thereof, as shown. The cylinder is provided with a piston, the rod H of which projects through a suitable stuffing-box in the upper head thereof. Secured upon or near the upper end of this piston-rod H is the arm I, which carries the

plate J. Upon each side of this arm are pivotally secured the links K, their opposite ends being secured to another plate, L, the length of the links being sufficient to allow a slight play, so that when parallel and on a horizontal plane the links and plates surround the spud M without closely embracing the same. This spud M is of the usual construction, and has a vertical reciprocating movement in the box-guide, which consists of two sides, N, and the cross girts or ties O, secured upon opposite sides of the side pieces, N. Let into the inner face of the spud is the rack P.

R is a shaft supported in boxes secured to the edges of the sides, upon which is secured a pinion, S, which engages with said rack. Secured upon the same shaft are the ratchet-wheels T, with which the pawls U engage, and also another ratchet-wheel, V, with which the stub-pawl W engages, the teeth of this latter-named ratchet-wheel projecting in the opposite direction from those of the first-named two ratchet-wheels.

X is a shaft provided with a cam-lever, Y, and this shaft passes underneath the pawls U, and is so constructed that when the lever is thrown over it will disengage said pawls from the ratchets T.

The stub-pawl W is provided with a lever, Z, cam, and chain, or other equivalent devices, for disengaging it from the ratchet-wheel V.

In practice, the scow being anchored by means of the spud in the usual way, and it being desired to raise the same, the engineer standing upon the deck operates his lever to admit steam to the lower end of the cylinder. The pressure upon the under side of the piston forces it upward until the adjoining ends of the link are raised sufficiently to compel the plate J and plate L to clamp the two opposite sides of the spud. As the piston is forced upward it gradually raises the spud from its bed or seat in the ground. When raised as far as the upward stroke of the piston will carry it the pawl W is engaged with the ratchet V to hold the spud in place through the engagement of the pinion S with the rack of the spud while the operator reverses his lever, allowing the piston to fall with its clamp attachments, and

on completing its downstroke the operation already described is repeated as often as necessary to raise the spud to the required distance, when the stub-pawl W is employed to hold the spud in place until the use of the spud is further required. The pawls U, engaging with the ratchet-wheels T, are employed when the scow is anchored to the spud, the lower end of which is in the ground to prevent the spud from being accidentally withdrawn by the buoyancy of the vessel under inequalities of the surface of the water, created by swells or by the accidental tipping to one side of the scow.

15 What I claim as my invention is—

1. In combination with the spud of a steam-dredge, a steam-cylinder and clamping device, substantially as herein described, for raising said spud, as shown.

20 2. In combination with the spud of a steam-dredge, the clamp composed of the arm I, plates J L, and links K, and the piston of a steam cylinder and connections therewith, substantially as and for the purposes set forth.

3. In combination with the spud adapted to a vertically-reciprocating motion within guides, and provided with a rack upon one side, a clamping device, a steam-piston, connections between the piston and the clamping device, the shaft R, carrying the pinion S and ratchet-wheels T, the pawls U, and devices, substantially as described, for disengaging said pawls, for the purposes set forth.

4. In combination with the spud adapted to vertically reciprocate between guides, and provided with a rack upon one side, a clamping device, a steam-piston, connections between the piston and the clamping device, the shaft R, pinion S, ratchet V, and pawl W, and device Z for engaging or disengaging said pawl, substantially as and for the purposes specified.

ROYS J. CRAM.

Witnesses:

H. S. SPRAGUE,
E. SCULLY.