No. 746,566.

PATENTED DEC. 8, 1903.

R. R. OSGOOD.

DREDGE.

APPLICATION FILED JUNE 25, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

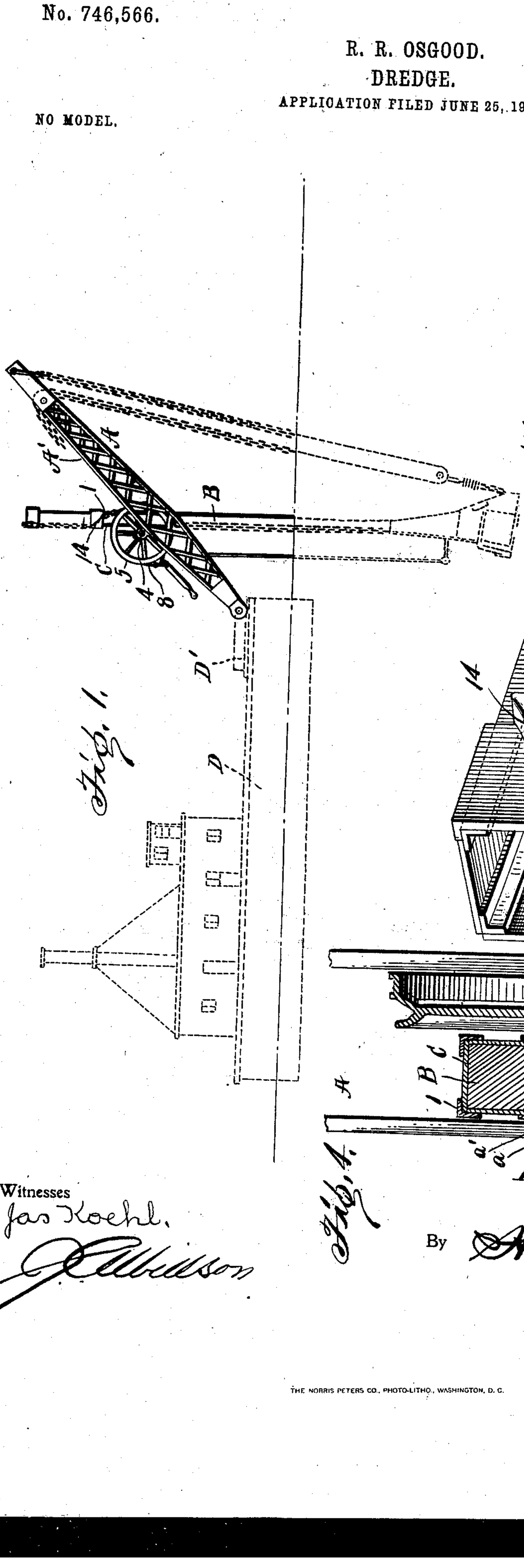

Fig. 1.

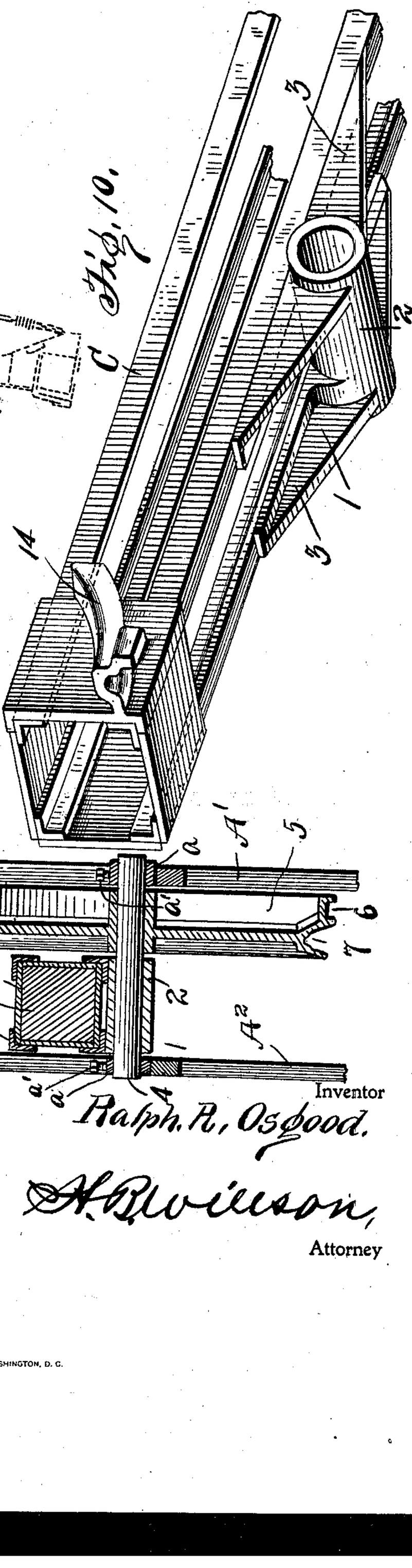

Fig. 10.

Fig. 4.

Witnesses
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NO MODEL. 3 SHEETS—SHEET 2.

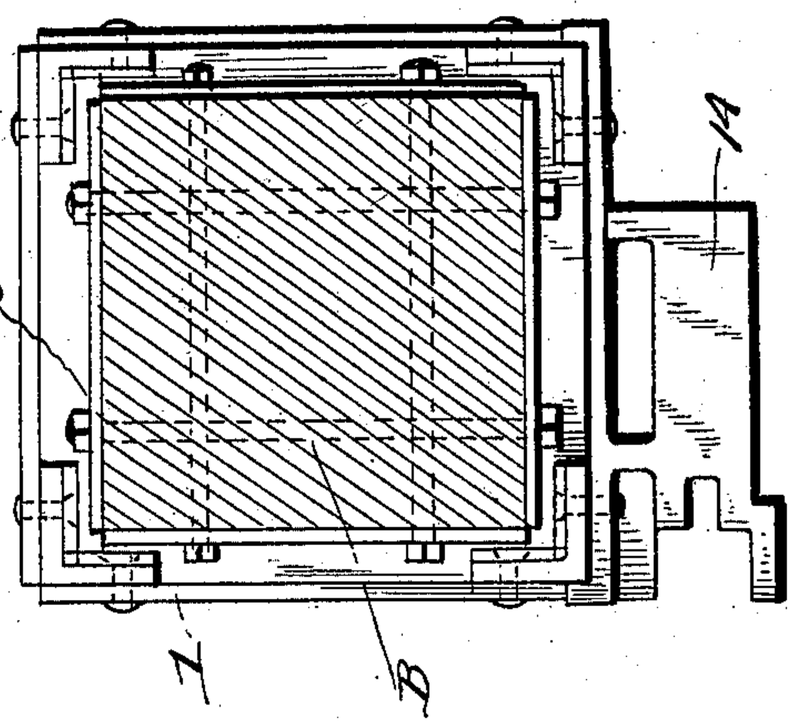

Fig. 5.

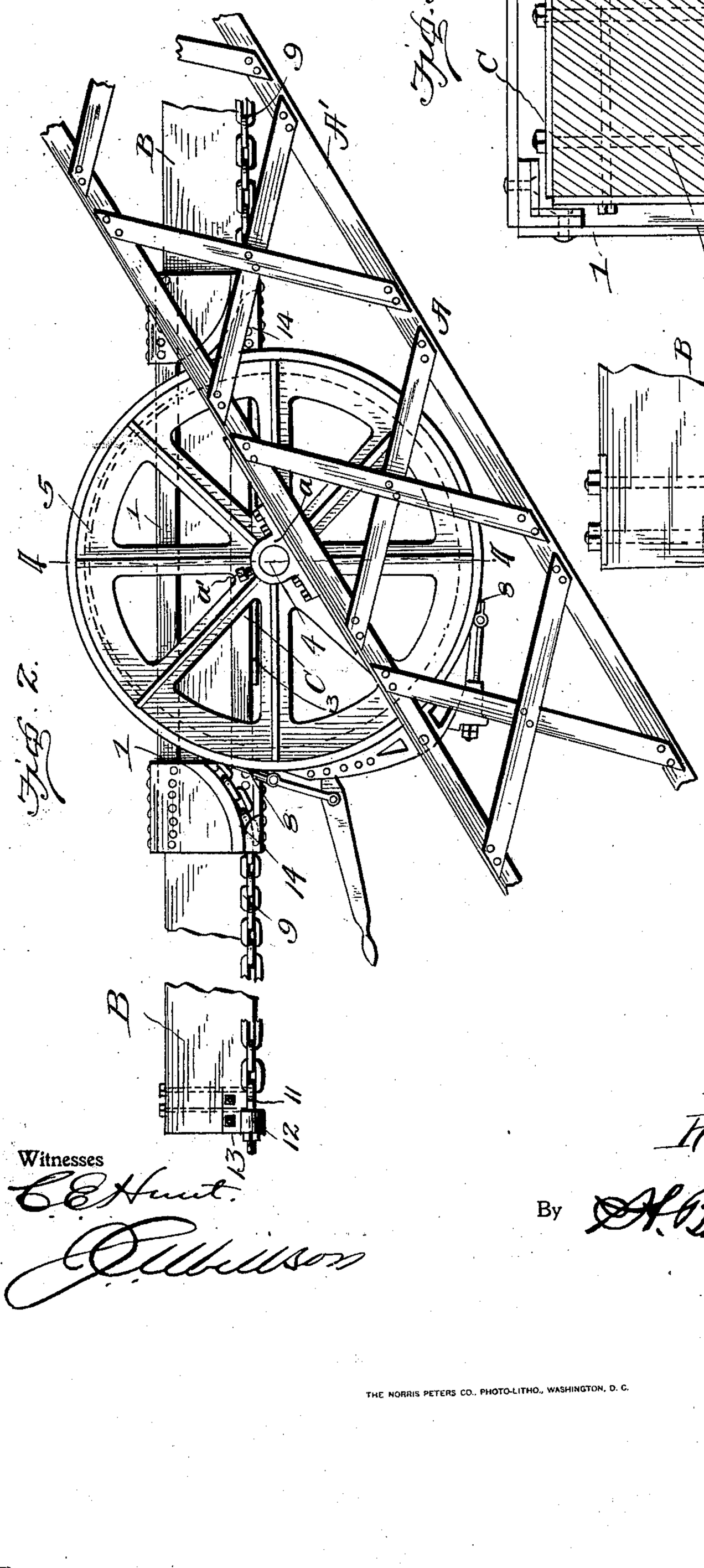

Fig. 2.

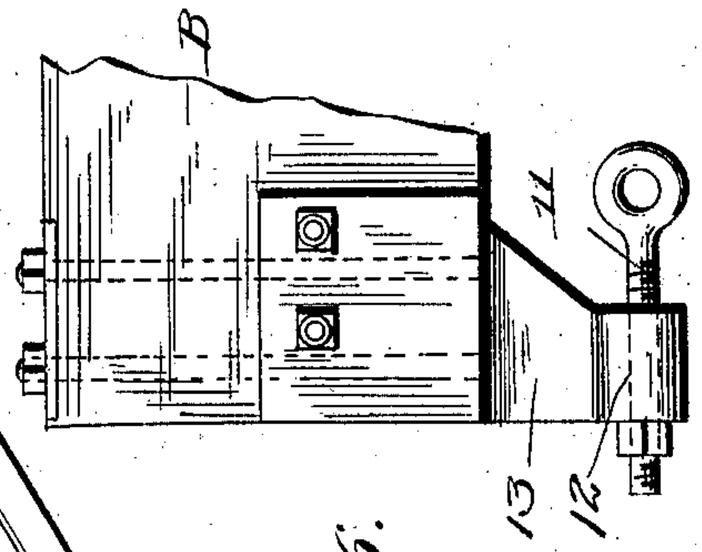

Fig. 6.

Witnesses

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No. 746,566. PATENTED DEC. 8, 1903.

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NO MODEL. 3 SHEETS—SHEET 3.

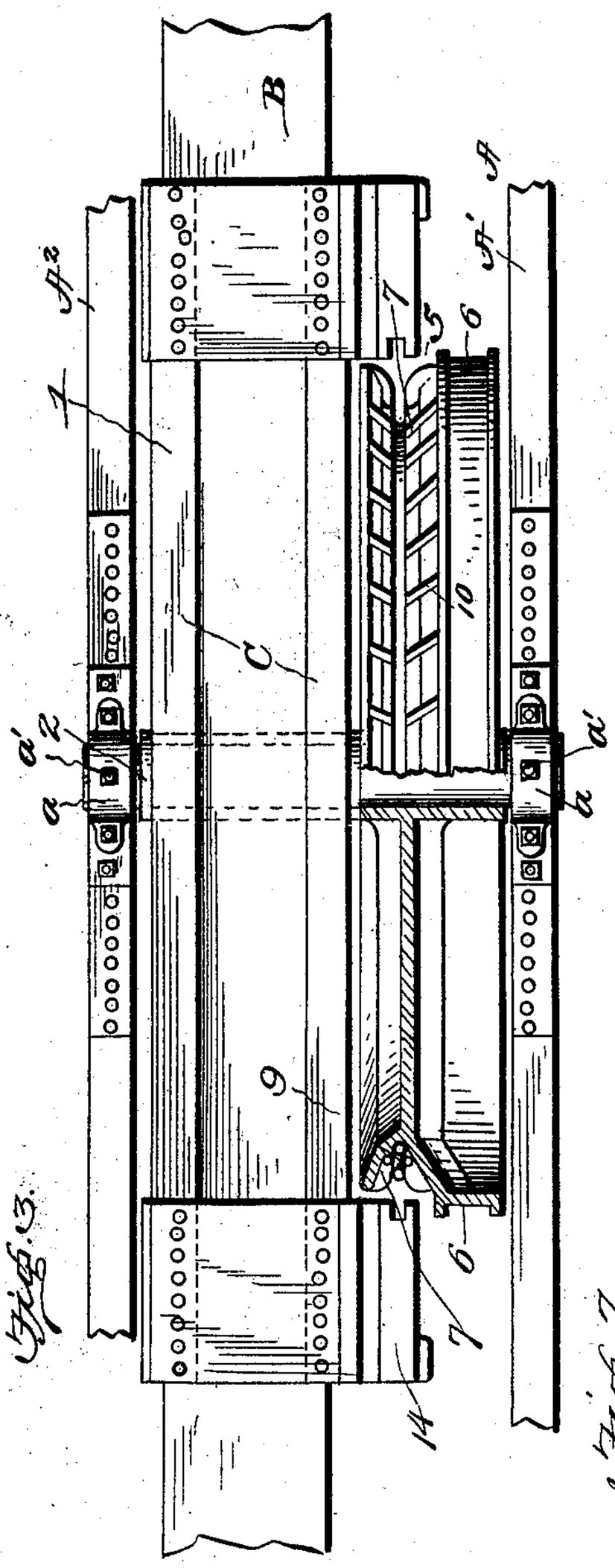

Fig. 3.

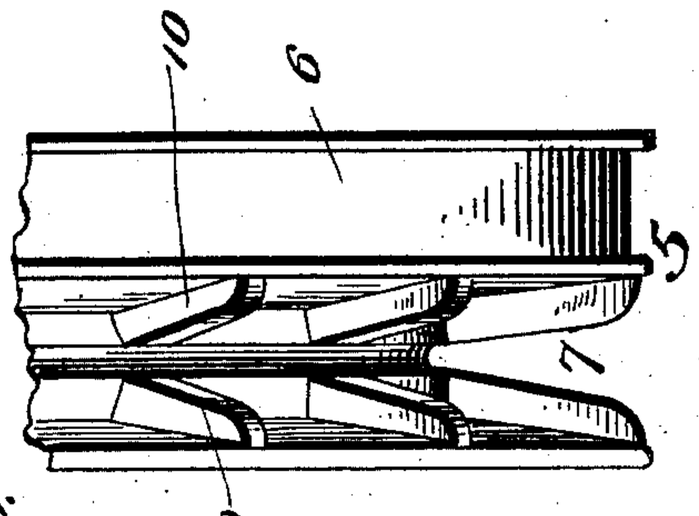

Fig. 9.

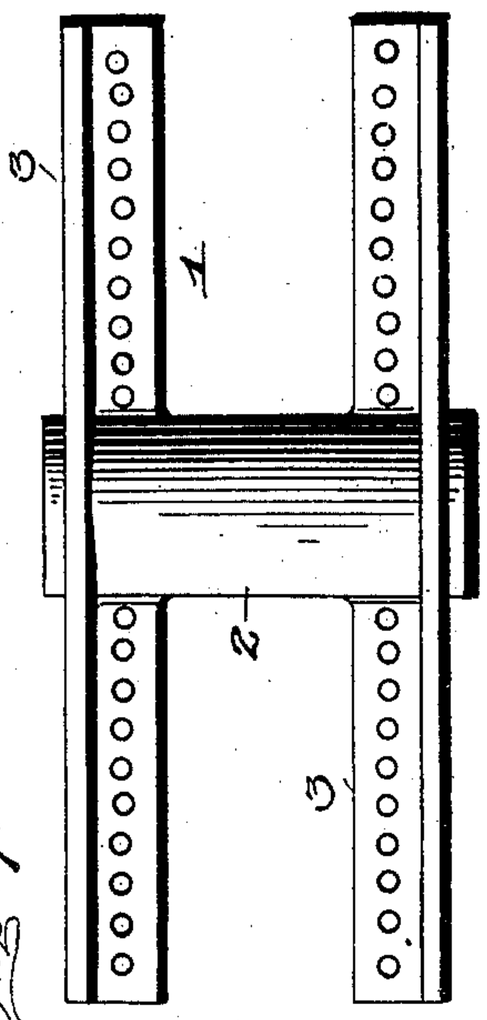

Fig. 7.

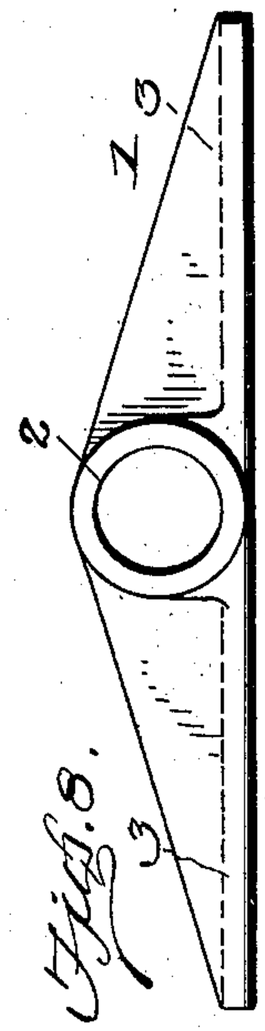

Fig. 8.

Witnesses

C. E. Hunt.

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Ralph R. Osgood.

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Attorney

No. 746,566. Patented December 8, 1903.

UNITED STATES PATENT OFFICE.

RALPH R. OSGOOD, OF TROY, NEW YORK.

DREDGE.

SPECIFICATION forming part of Letters Patent No. 746,566, dated December 8, 1903.

Application filed June 25, 1903. Serial No. 163,087. (No model.)

To all whom it may concern:

Be it known that I, RALPH R. OSGOOD, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Dredges; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in dredges, and particularly to means for controlling the operation of the dipper-handles of dredges.

The present invention has for its object to improve upon the construction of dipper-controlling mechanism shown in my prior patents, No. 659,489, dated October 9, 1900; No. 662,462, dated November 27, 1900, and No. 708,658, dated September 9, 1902; and it consists of the features of construction and combinations of parts hereinafter fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a view in side elevation of the dipper-handle and its supporting and operating connections, the boat and submerged parts being indicated in outline in dotted lines. Fig. 2 is an enlarged side elevation of a portion of the boom, the dipper-handle, slideway-support, brake-wheel, and associated parts. Fig. 3 is a top plan view of the same, a portion of the brake-wheel being broken away to better show the construction. Fig. 4 is a cross-section on line 4 4 of Fig. 2. Fig. 5 is a cross-section through the dipper-handle and an end view of the slideway-support. Fig. 6 is a detail view showing the chain-fastening. Fig. 7 is a top plan view of the swinging frame carrying the slideway-support. Fig. 8 is a side view of the same. Fig. 9 is a detail fragmentary view of the brake-wheel, showing the form of the chain-teeth; and Fig. 10 is a perspective view of the slideway-support and swinging frame.

Referring now more particularly to the drawings, the letter A represents the boom; B, the dipper-handle; C, the slideway-support, and D the boat, provided with the turn-table D′, which supports the boom A, which carries the dipper mechanism. The top of the dredge and immersed portions of the mechanism are represented in outline by dotted lines in Fig. 1.

The dipper-handle B, which may be of any approved form and construction, is mounted in the slideway-support C, which consists of a box or sleeve carried by a swinging frame 1. This frame 1 comprises in its construction a hub or sleeve 2, provided with opposite parallel arms 3, each arm extending in opposite directions beyond and at right angles to the said sleeve 2. Each of said arms 3 is also of angular form, and its horizontal web forms an attaching-flange by means of which it is bolted or riveted to the slideway-support, as shown clearly in Fig. 4. The hub or sleeve 2 is loosely mounted upon a shaft 4, which extends between the sides A' A^2 of the boom A, being fitted at its ends in bearings or supports a, carried by the said sides A' A^2. The said shaft 4 is held from rotation in the supports a by means of set-screws a', and hence does not turn, but the hub or sleeve 2 is adapted to turn or rotate thereon to adapt the dipper-handle to oscillate in a vertical plane upon the boom. In my former patents, hereinbefore mentioned, I have shown the slideway-supporting sleeve provided with trunnions mounted in bearings in the boom, with the handle sliding in the sleeve between the trunnions and with its center line substantially coincident with the axes of the trunnions. This construction is of very great efficiency and in many respects superior to prior supports, but in some cases, where the dipper and its handle are of great weight, may be found somewhat objectionable, owing to the spaced relation of the trunnions and to the weight being sustained by the slideway-support intermediate the same. In the present construction by providing the swinging frame 1 the slideway-support and handle are removed to a point eccentric to or remote from the axes of the trunnions on which they turn, and the shaft or supporting element 4 extends entirely across the boom, and the weight and strain are transmitted thereto and thence to the boom, whereby the construction is made materially stronger. Also by the form of swinging frame herein employed a greater length of bearing for the slideway-support is provided, and said sup-

port is strengthened and reinforced to a greater degree. As shown in the present instance, the swinging frame 1 holds the slideway-support and dipper-handle supported below the shaft 4; but it will of course be understood that this arrangement might be reversed—that is to say, the swinging frame may be arranged so as to support the dipper-handle and slideway-support above the shaft without materially affecting the operation of the parts.

Also loosely mounted on the shaft 4 is a brake-wheel 5, which is disposed alongside the slideway-support and which is provided with a friction-surface 6 and a toothed surface 7. The friction-surface 6 is adapted to be engaged by a brake-band 8, which may be constructed and operated as set forth in my prior patent, No. 708,658, or in any approved way. The toothed surface 7 of the brake-wheel is in the form of a groove to receive the link chain 9, the side walls of which groove are provided, as shown in Fig. 9, with flanges 10, acting as teeth to engage the link chain, thus forming, in effect, a chain-and-sprocket connection. The ends of a chain 9 are attached to the ends of the dipper-handle B, whereby when the dipper-handle is oscillated on the shaft 4 and the friction-brake released the dipper-handle may be permitted to reciprocate in its slideway-support and by the application of the brake to the brake-wheel may be arrested in its reciprocating movement, thereby adapting the dipper and its handle to be conveniently controlled. Preferably the ends of the chain are attached to the dipper-handle in the manner shown in detail in Fig. 6, showing that the chain is attached to an eyebolt 11, adjustably mounted in an eye or bearing 12 on a bracket 13, bolted or otherwise secured to the dipper-handle. The chain is guided in its movements and maintained in contact with the toothed surface of the brake-wheel by the provision of guides 14, consisting of castings connected to or forming part of the sides of the slideway-support, said castings being grooved or recessed to form guideways in which the chain slides, as will be readily understood.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an excavator, the combination with a boom, of a swinging frame pivotally mounted on said boom, a slideway-support carried by the swinging frame eccentric to the axis of the pivot, and a dipper-handle in said slideway-support, substantially as described.

2. In an excavator, the combination with a boom or like support, of a shaft mounted therein, a slideway-support, a dipper-handle reciprocatory in said support, and a swinging frame comprising a hub or sleeve mounted on said shaft and provided with attaching-arms secured to said slideway-support, substantially as described.

3. In an excavator, the combination with a boom or like support, of a shaft mounted therein, a slideway-support, a dipper-handle reciprocatory in said slideway-support, and a swinging frame mounted upon the shaft and carrying the said slideway-support, said frame comprising a hub or sleeve having projecting pairs of arms of an angular form, the horizontal web of said arms forming attaching-flanges bolted or riveted to the slideway-support.

4. In an excavator, the combination with a boom or like support, of a slideway-support mounted to oscillate upon the boom, a dipper-handle reciprocatory in said slideway-support, a brake-wheel, a chain engaging the brake-wheel, and fastenings connecting the ends of the chain to the dipper-handle, said fastenings comprising brackets secured to the dipper-handle and eyebolts carried by said brackets.

5. In an excavator, the combination with a boom or like support, of a brake-wheel, a dipper-handle, a slideway-support in which the dipper-handle reciprocates, said support being provided with side castings forming guideways, and a controlling-chain engaging the brake-wheel, secured at its ends to the dipper-handle, and running through said guideways, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RALPH R. OSGOOD.

Witnesses:
CLARK M. PEASE,
LILLIAN LINEY.