

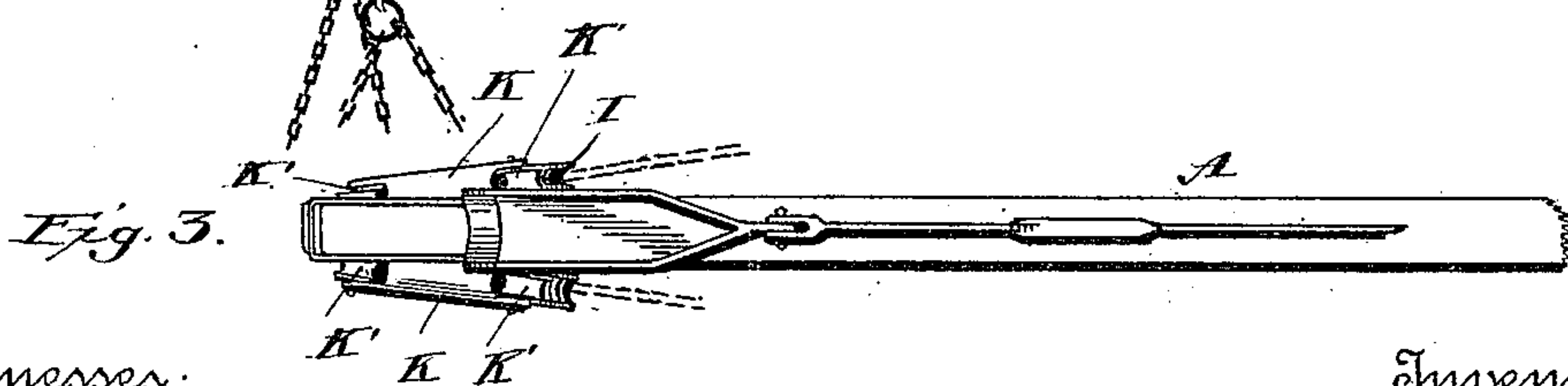
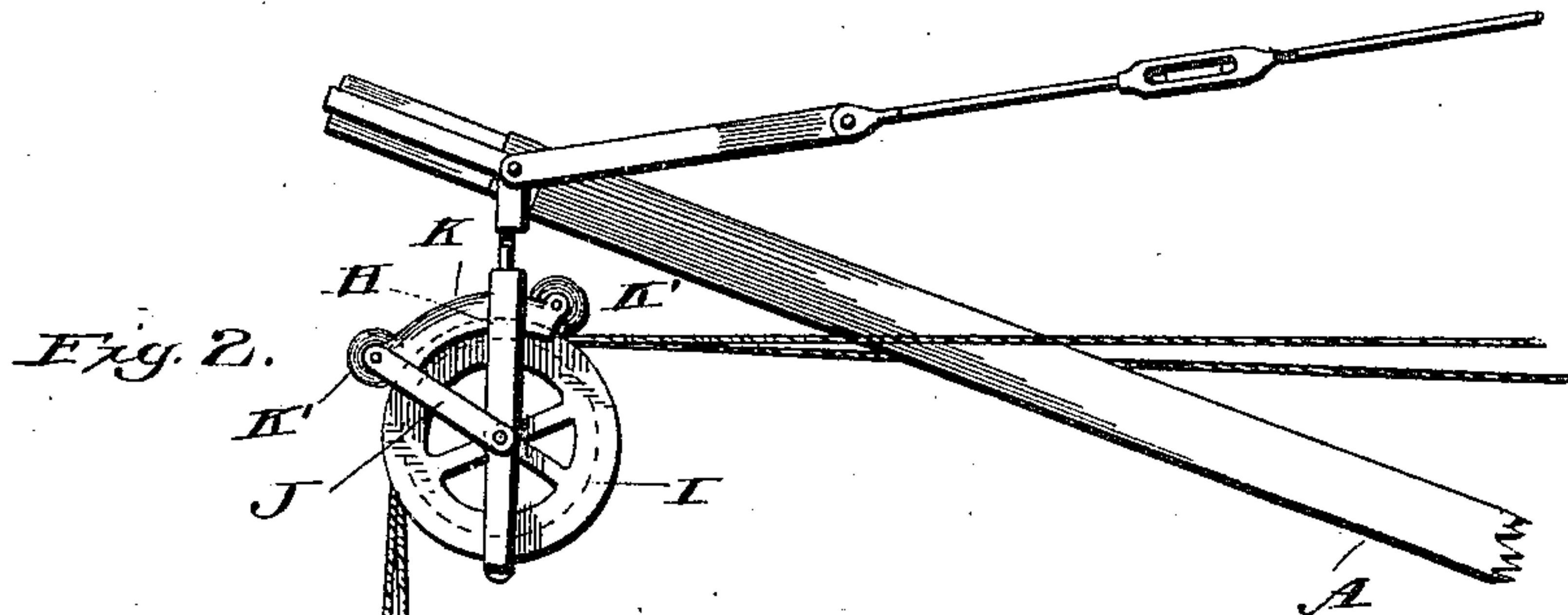
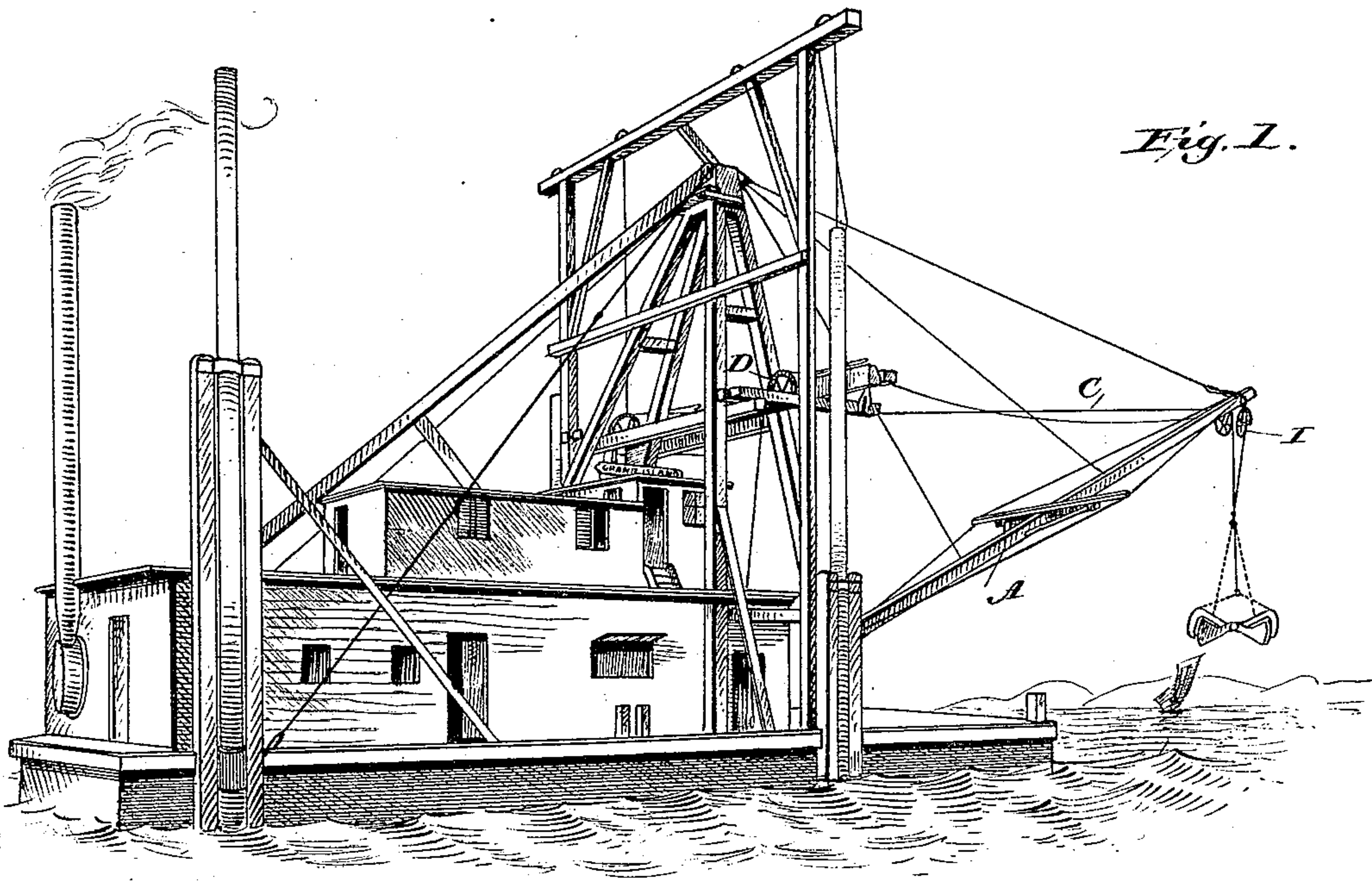
(No Model.)

3 Sheets—Sheet 1.

W. E. TRETHEWAY.
HOISTING DEVICE.

No. 525,875.

Patented Sept. 11, 1894.



Witnesses:

Louis C. Mills.
Edwin H. Bond.

Inventor:

Wm. E. Tretheway,
by *E. B. Stocking* Attorney

(No Model.)

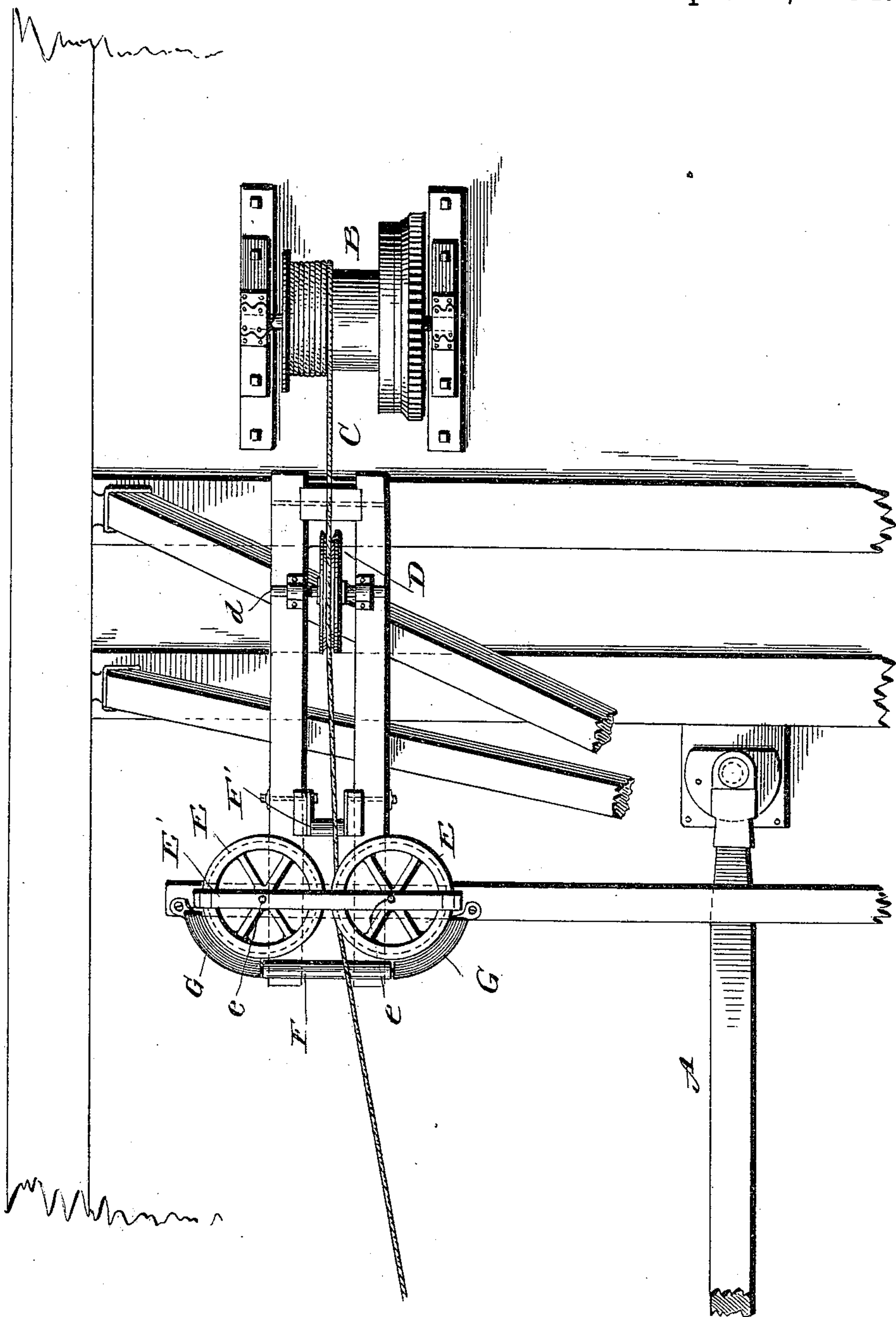
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Fig. 4.



Witnesses:

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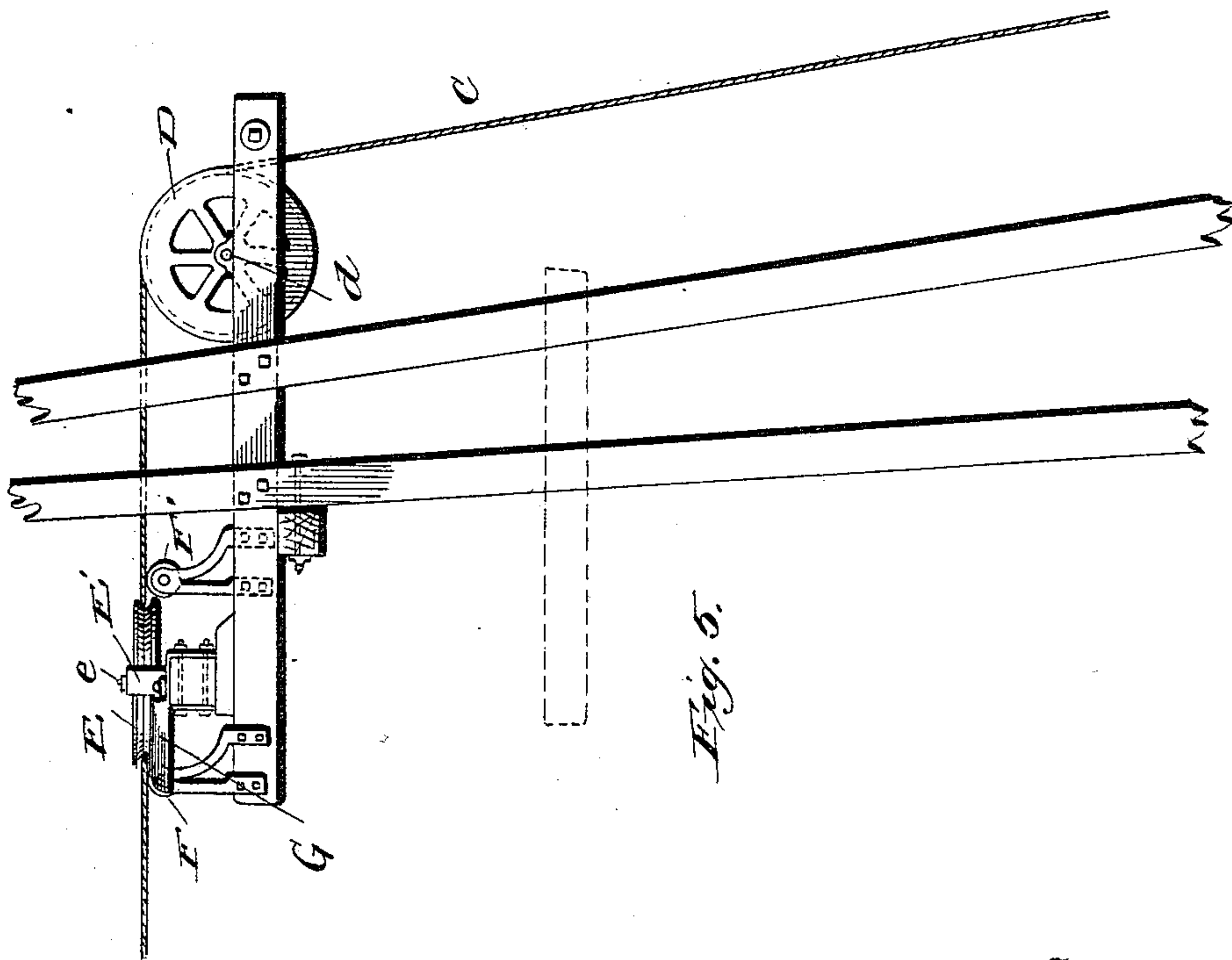
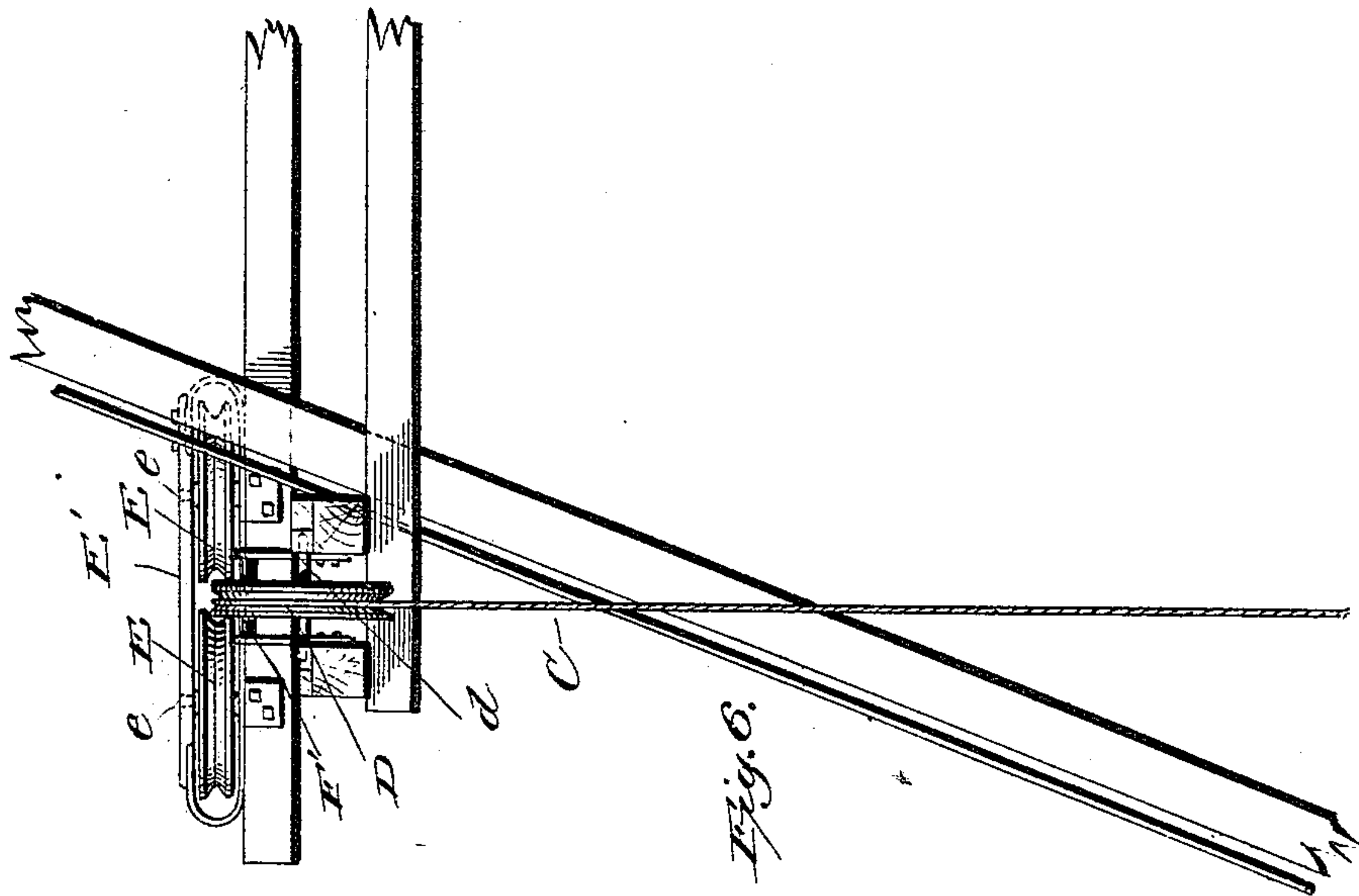
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E. H. Bond

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UNITED STATES PATENT OFFICE.

WILLIAM E. TRETHEWAY, OF STOCKTON, CALIFORNIA.

HOISTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 525,875, dated September 11, 1894.

Application filed April 3, 1894. Serial No. 506,204. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. TRETHEWAY, a citizen of the United States, residing at Stockton, in the county of San Joaquin, State of California, have invented certain new and useful Improvements in Hoisting Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in hoisting devices, and while shown and herein described in connection with a dredger, it is not intended to restrict the invention to such application.

15 The invention has for its object, among others, to provide simple and efficient means for preventing excessive wear on the wire, rope or ropes employed in hoisting and swinging a dredger bucket.

20 Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

25 The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

30 Figure 1 is a perspective view of a dredger embodying my invention. Fig. 2 is an enlarged side elevation of the outer end of the boom with my improvements applied. Fig. 3 is a top plan of Fig. 2. Fig. 4 is a detail in top plan of the drum and the sheaves and rollers, with portions of the frame-work broken away. Fig. 5 is a side elevation of the sheaves and rollers shown in Fig. 4. Fig. 6 is an end elevation of Fig. 5.

35 Like letters of reference indicate like parts throughout the several views in which they appear.

40 The various parts of the apparatus which do not form a part of the present invention may be of any approved form of construction, and, therefore, will not need explanation. Only such parts as are necessary for a proper illustration of my invention, and its application to the apparatus, are shown.

50 Referring now to the details of the drawings by letter: "A" designates the boom which is mounted for movement on the dredger in the usual way. It may be braced or trussed, as may be deemed most expedient.

"B" is the winding drum mounted in any well-known way on the deck or other support.

"C" is the hoisting rope wound upon the drum, and connected with bucket in the usual way. The bucket may be of any well-known form. There may be one or two hoisting ropes, if desired, as seen in Fig. 1, each leading to its own winding drum. The ropes are preferably of wire. The rope passes upward from the drum and over a sheave "D," so mounted on an axle "d" in boxes on the frame work that it revolves in a plane intersecting the drum "B," and thence between two sheaves "E," so mounted on axles "e" that they revolve in the plane in which the rope lies when stretched from sheave "D" to sheave "I," the boom being swung until sheave "I" lies in plane of revolution of sheave "D," the said sheaves being carried in a yoke "E'," as seen best in Fig. 6. This serves to prevent the rope from leaving the grooves of the sheave D when the boom is swung from one side to the other. The sheaves are grooved, and disposed centrally with relation thereto and on each side thereof are the rollers "F" and "F'," preferably of wood, and mounted on axles parallel to axle "d," as shown, to keep the rope up to the sheaves. The sheave "D" is preferably mounted to have free movement upon its axle in the direction of the length thereof to compensate for the change in position of the rope as it is wound upon and unwound from its drum.

"G" are curved shields one at each end of the roller "F," for the purpose of guiding the rope to the groove of the sheaves "E" when working the boom at extreme angles. This will be better understood upon reference to Fig. 5 where the roller is shown as upon a lower plane than the top face of the sheave so as to better guide the rope and prevent binding thereof when working the boom at extreme angles.

At the outer end of the boom is the hanger "H" in which the sheaves "I" are mounted, said hanger being attached to an eye to allow self-adjustment of sheaves to lead of rope.

Mounted on arms J which, at each end, are secured to the stationary shaft on which the sheaves I turn, is the hood or shield "K," at the front and rear ends of which are jour-

naled the small rollers "K'," two over each sheave, "I," as seen best in Fig. 3, to keep the ropes from leaving the grooves of said sheaves.

5 The operation will be readily understood from the foregoing description when taken in connection with the annexed drawings, and a further detailed description thereof is not deemed necessary.

10 Modifications in detail may be resorted to without departing from the spirit of the invention, or sacrificing any of its advantages.

What I claim as new is—

1. The combination, with the winding
15 drum, rope and a sheave mounted to revolve in a plane cutting the winding drum and sheaves mounted to revolve in a plane embracing the rope as it leaves the first mentioned sheave with their axes at right angles
20 to that of said sheave, and the curved shields for guiding said rope, of a roller with its axis parallel to that of the first mentioned sheave and mounted to revolve in a plane substantially the same as and in front of the last
25 mentioned sheaves, substantially as specified.

2. The combination, with the boom and the boom end sheave and the grooved sheaves, so mounted as to revolve in plane of rope as it passes from said sheaves to boom end sheave

of the curved shields for guiding the rope to 30 the grooves of said sheaves, substantially as specified.

3. The combination, with a boom, and the grooved sheaves, of rollers upon opposite sides of said sheaves, and the curved shields, 35 one at each end of the forward roller, substantially as, and for the purpose specified.

4. The combination, with the grooved sheaves mounted on axles and their yoke, of the rollers upon opposite sides of said sheaves, 40 and the self-aligning sheave mounted on an axle, substantially as specified.

5. The combination, with the boom and the grooved sheaves mounted on axles and their yokes, of the grooved sheave mounted on an 45 axle, the rollers arranged upon opposite sides of the sheaves in the yoke, and the curved shields at opposite ends of the forward roller and serving to guide the rope to the grooves of the sheaves when working the boom at ex- 50 treme angles, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. TRETHEWAY.

Witnesses:

JAS. J. GARIGAN,
F. W. WURSTER.