

No. 743,577.

PATENTED NOV. 10, 1903.

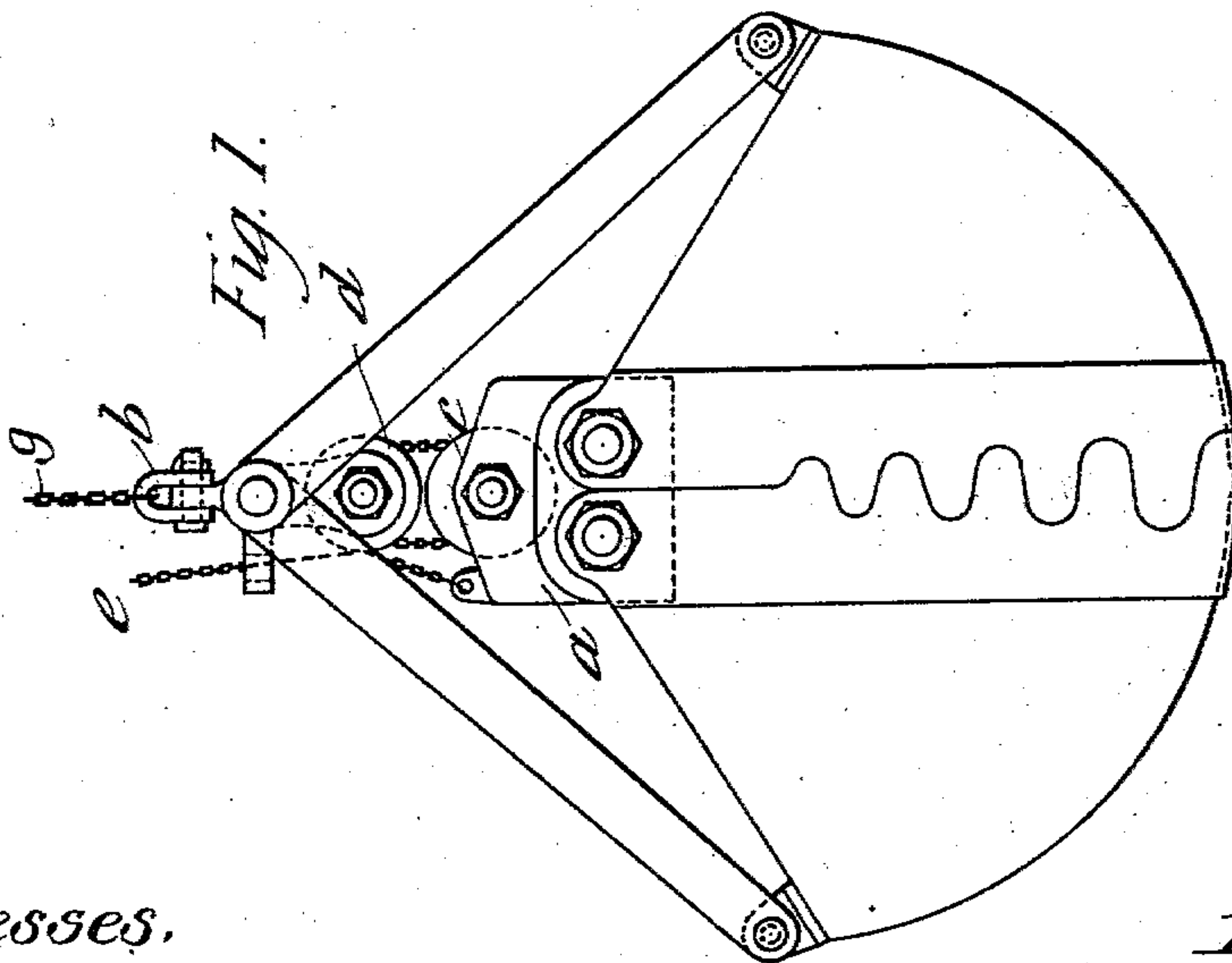
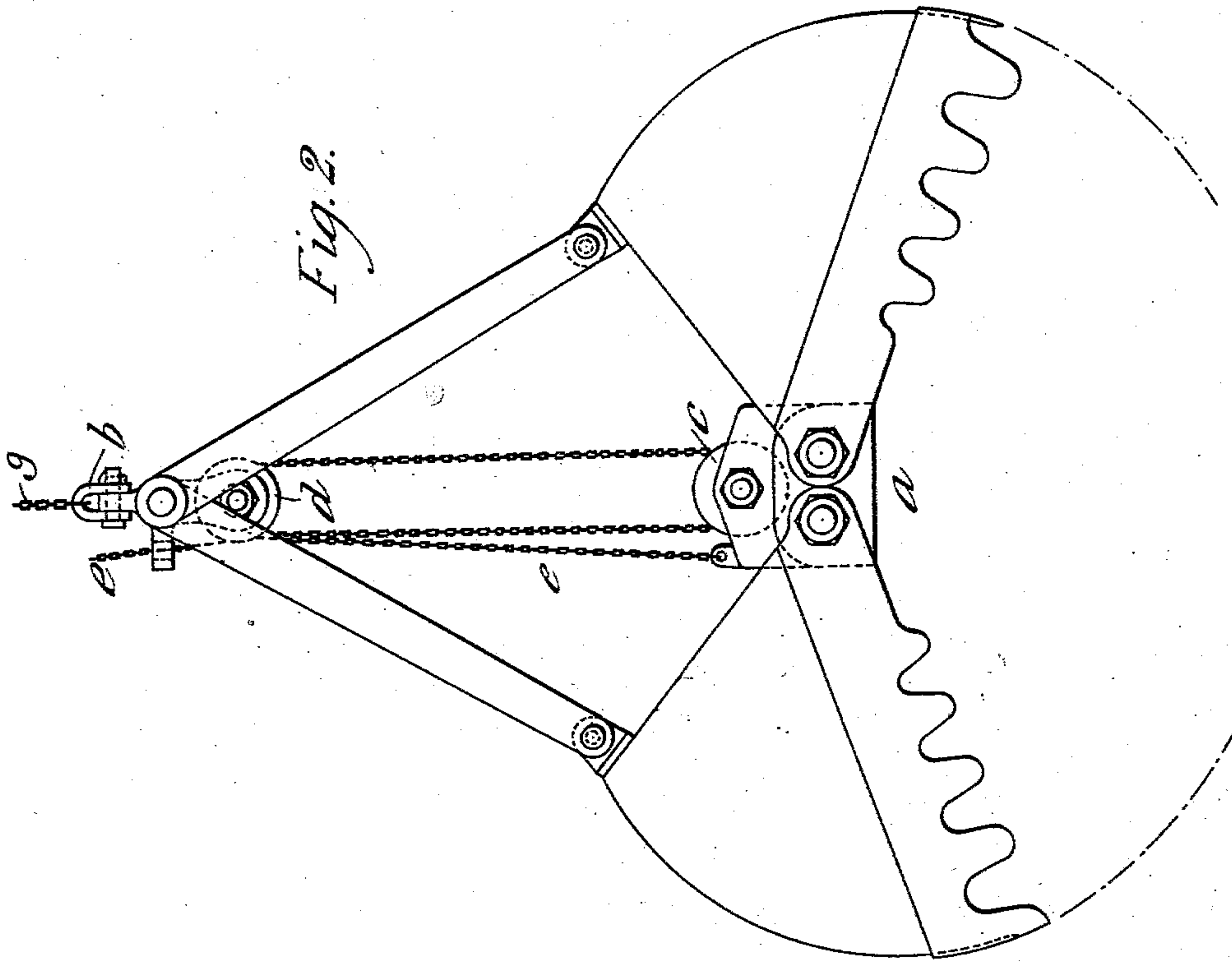
H. SHOOSMITH.

APPARATUS FOR OPENING, CLOSING, RAISING, OR LOWERING GRABS.

APPLICATION FILED SEPT. 15, 1902.

3 SHEETS—SHEET 1.

NO MODEL.



Witnesses.

J. B. Keedy
Samuel Sundry

Inventor

Harry Shoosmith

BY *James L. Norvig*

Atty.

No. 743,577.

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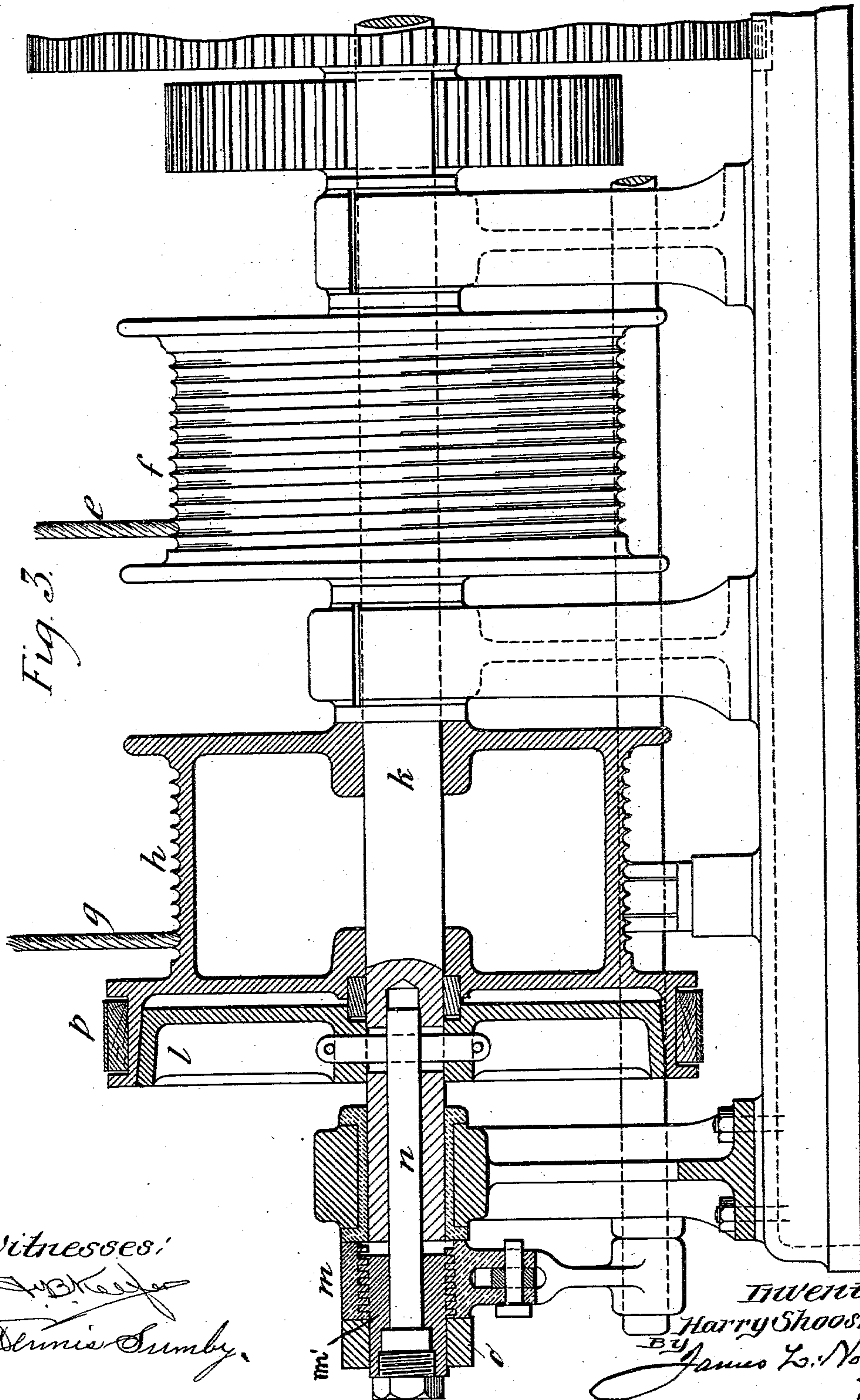
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APPARATUS FOR OPENING, CLOSING, RAISING, OR LOWERING GRABS.

APPLICATION FILED SEPT. 15, 1902.

NO MODEL.

3 SHEETS—SHEET 2.



Witnesses:

J. B. Keefe
Dennis Sumby.

Inventor
Harry Shoosmith
By James L. Norris
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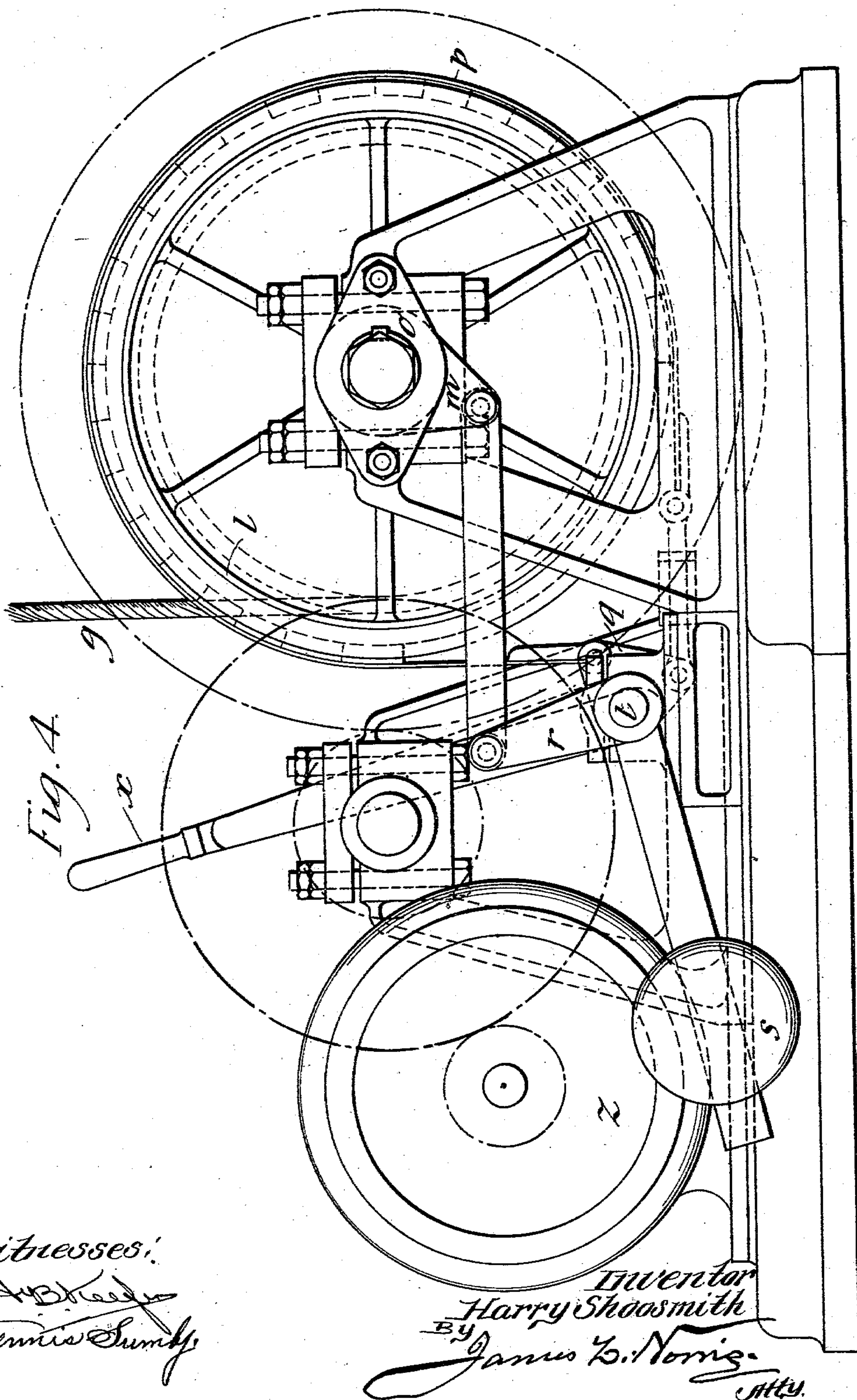
H. SHOOSMITH.

APPARATUS FOR OPENING, CLOSING, RAISING, OR LOWERING GRABS.

APPLICATION FILED SEPT. 15. 1902.

3 SHEETS—SHEET 3.

NO MODEL.



Witnesses:

~~F.B. Keeler~~
Dennis Dumbly

Inventor
Harry Shoosmith
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UNITED STATES PATENT OFFICE.

HARRY SHOOSMITH, OF ERITH, ENGLAND.

APPARATUS FOR OPENING, CLOSING, RAISING, OR LOWERING GRABS.

SPECIFICATION forming part of Letters Patent No. 743,577, dated November 10, 1903.

Application filed September 15, 1902. Serial No. 123,509. (No model.)

To all whom it may concern:

Be it known that I, HARRY SHOOSMITH, a citizen of England, residing at Ormiston, Erith, in the county of Kent, England, have invented certain new and useful Improvements in Apparatus for Opening, Closing, Raising, or Lowering Grabs, of which the following is a specification.

My invention relates to apparatus for opening, closing, raising, and lowering grabs, as I shall describe, referring to the accompanying drawings.

Figures 1 and 2 are elevations showing the grab respectively closed and opened. Fig. 3 is an elevation, partly in section; and Fig. 4 is an end view of the winch-gear for working the grab.

The two sides of the grab are pivoted on a middle piece *a* and are linked to a shackle *b*. Pulleys *c*, mounted on *a*, and pulleys *d*, suspended from the shackle *b*, have passed round them a rope *e*, one end of which is fixed to *a* and the other end is led over suitable guide-pulleys to a barrel *f*, while a rope *g*, attached to the shackle *b*, is led to another barrel *h*. The barrel *f* is fixed on a shaft *k*, driven through suitable winch-gear by any convenient motor *z*. On the shaft *k* the barrel *h* is fitted free to turn; but it can be engaged with it by a cone-clutch *l*, which is advanced into a coned recess at the end of the barrel by turning a nut *m* on a screw-threaded boss *m'*, which is connected to the clutch by a headed bolt *n* and is prevented from turning, being keyed in a cross-head *o*, fixed to the framing. It will be understood that the headed bolt *n* is capable of independent rotation in the screw-threaded boss *m'*. The end of the barrel *h* is embraced by a brake-ring *p*, the ends of which are adjustably fixed to arms *q* of a bell-crank lever, which is pivoted on a shaft *t* and has two other arms, one of which carries a weight *s*, while the other, *r*, is linked to an arm of the nut *m*. The shaft *t* extends along the frame to any convenient position, where it has fixed to it a lever *x*, by which it can be partly turned.

The apparatus operates as follows: Assuming the grab to be closed, as in Fig. 1, and has to be raised or lowered in that condition, then the arm *r* being in the position shown in Fig. 4, holding the clutch *l* engaged and the brake-strap loose, then the shaft *k* being

turned in either direction both the barrels *f* and *h* turn, drawing or paying out both ropes *e* and *g*, and so raising or lowering the grab. When it is desired to open the grab, the shaft *t* is partly turned, moving the arms *q* and *r*, so as to tighten the brake *p* and partly turn the nut *m*, disengaging the clutch *l* and the shaft *k* then being turned so as to pay out the rope *e*, while the rope *g* remains at rest. Then the pulleys *c* separate from the pulleys *d*, allowing the grab to open, as in Fig. 2. It can be closed by reversing the shaft *k*, while the barrel *h* remains unclutched and held by the brake.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim—

1. The combination of a shaft, a drum rigidly mounted thereon, a second drum loosely mounted thereon, a brake for said second drum, a clutch mounted to rotate with said shaft and capable of longitudinal movement thereon, a headed bolt extending longitudinally through said shaft, and connected with said clutch, a screw-threaded boss loosely surrounding the head of said bolt and capable of moving it longitudinally in said shaft to place said clutch in engagement with said loose drum, a nut surrounding said screw-threaded boss, and means for simultaneously operating said nut and said brake.

2. The combination of a shaft *k*, a drum rigidly mounted thereon, a drum *h* loosely mounted thereon, a brake *p* for said drum *h*, a clutch *l* mounted to rotate with shaft *k* and capable of longitudinal movement thereon, a headed bolt *n* extending longitudinally through shaft *k* and connected with clutch *l*, a screw-threaded boss *m'* loosely surrounding the head of said pin *n* and capable of moving it longitudinally in said shaft *k* to place said clutch *l* in engagement with said drum *h*, a nut *m* surrounding said boss *m'*, and a lever-handle *x* connected with said brake *p* and with said nut *m* for simultaneously operating said nut and brake, as described.

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

H. SHOOSMITH.

Witnesses:

GERALD L. SMITH,
EDWARD GARDNER.