

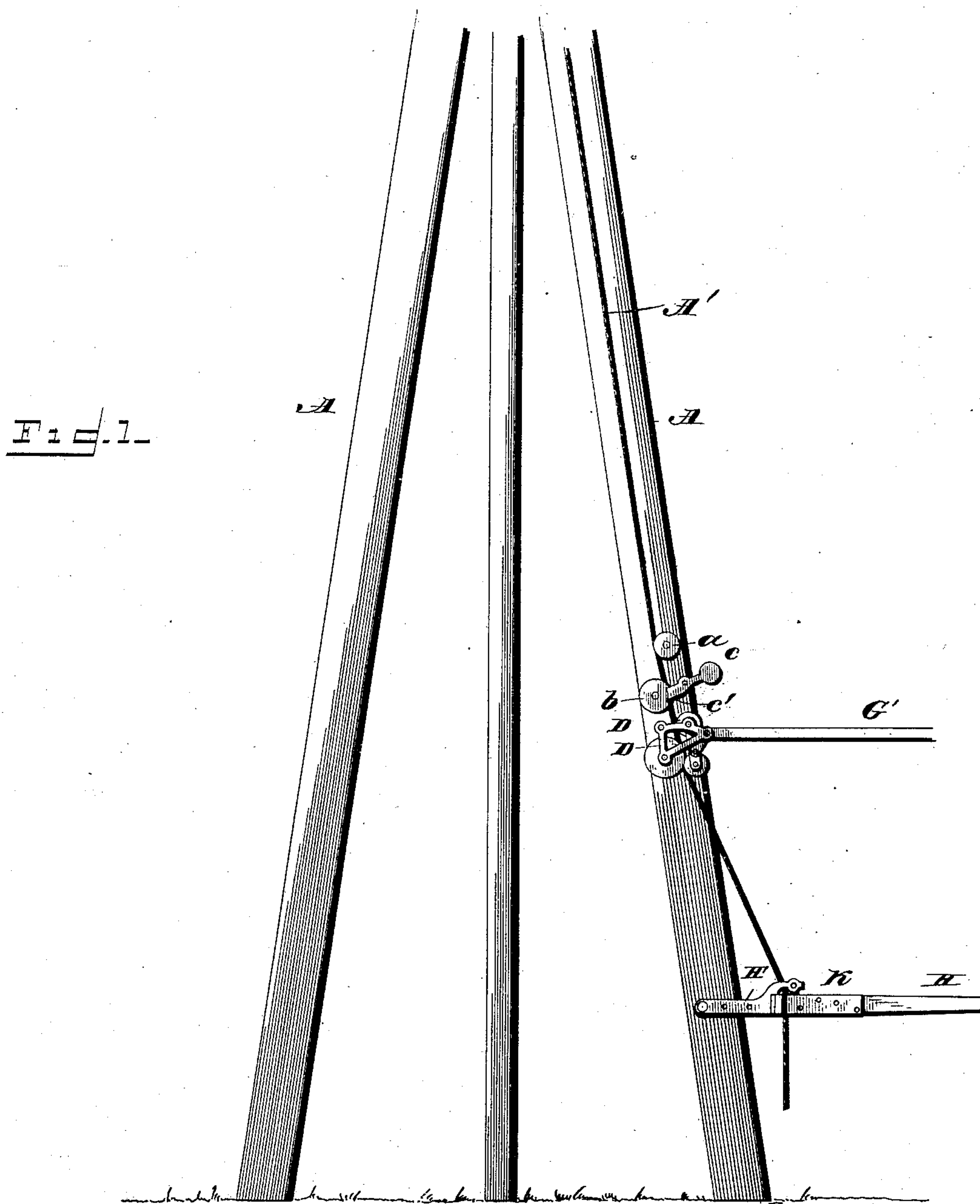
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4 Sheets—Sheet 1.

J. Q. DICKINSON.  
ATTACHMENT FOR DERRICKS AND CRANES.

No. 375,610.

Patented Dec. 27, 1887.



James Q Dickinson.

WITNESSES

G. S. Elliott,  
E. M. Johnson

INVENTOR

*[Signature]*

Attorney

(No Model.)

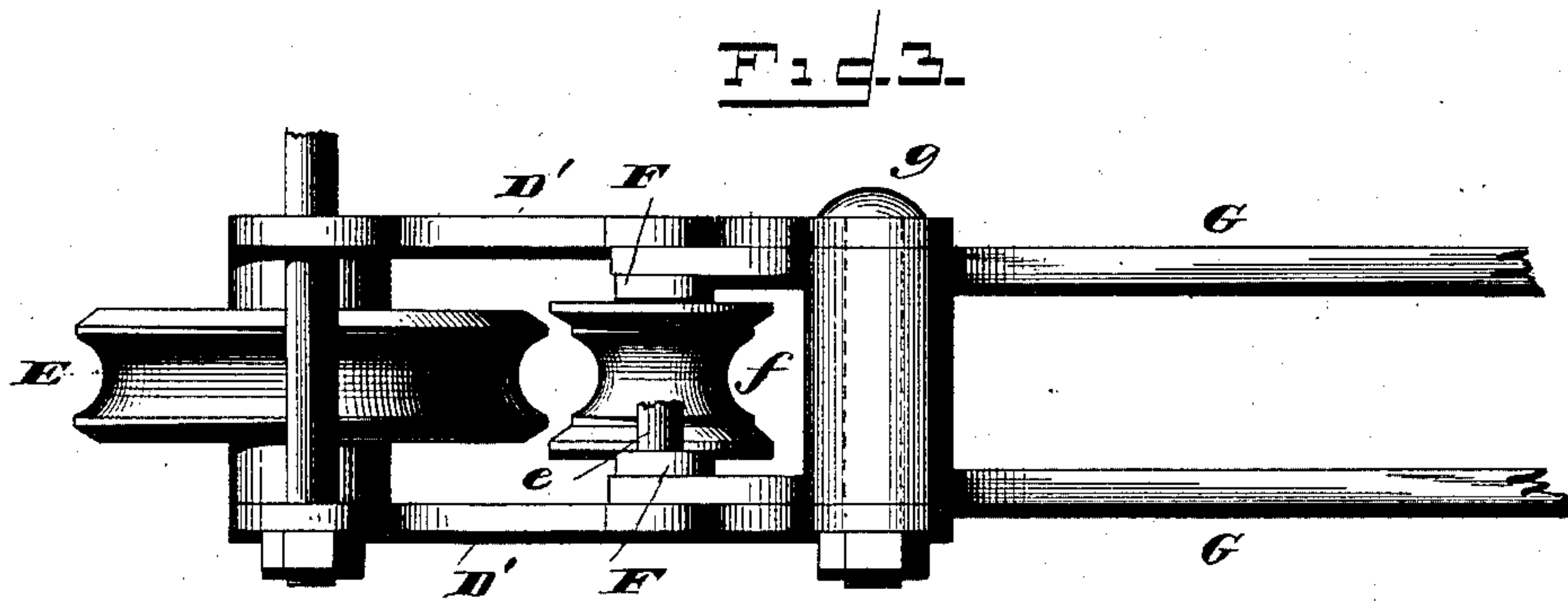
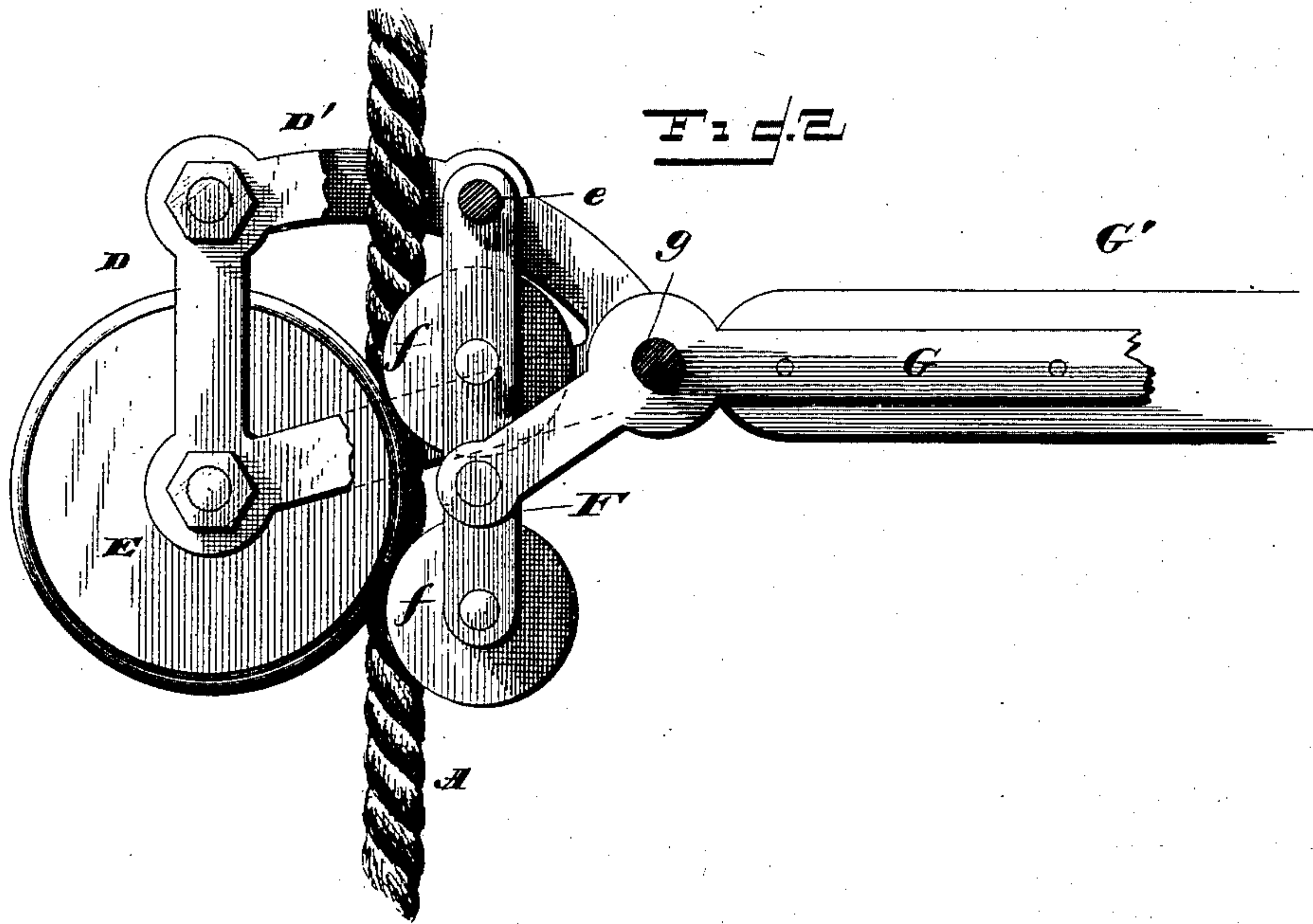
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C. Johnson

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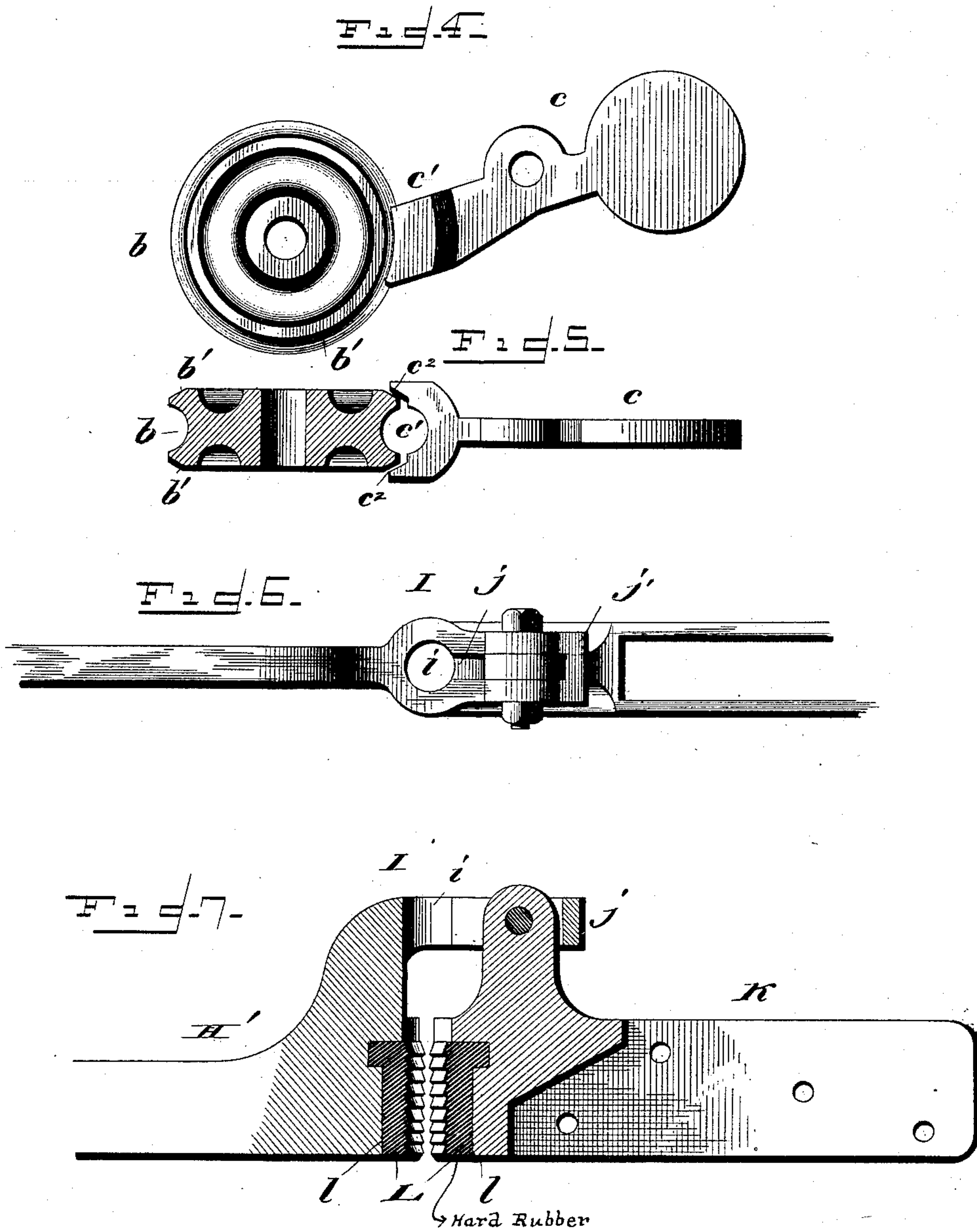
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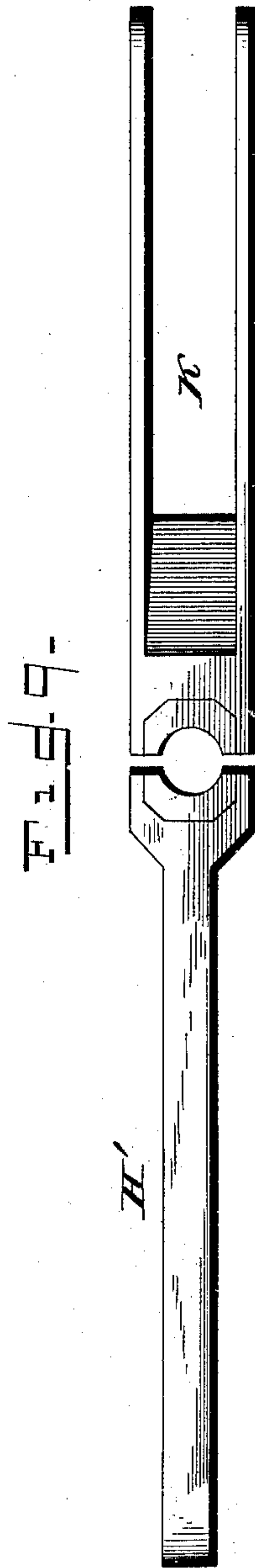
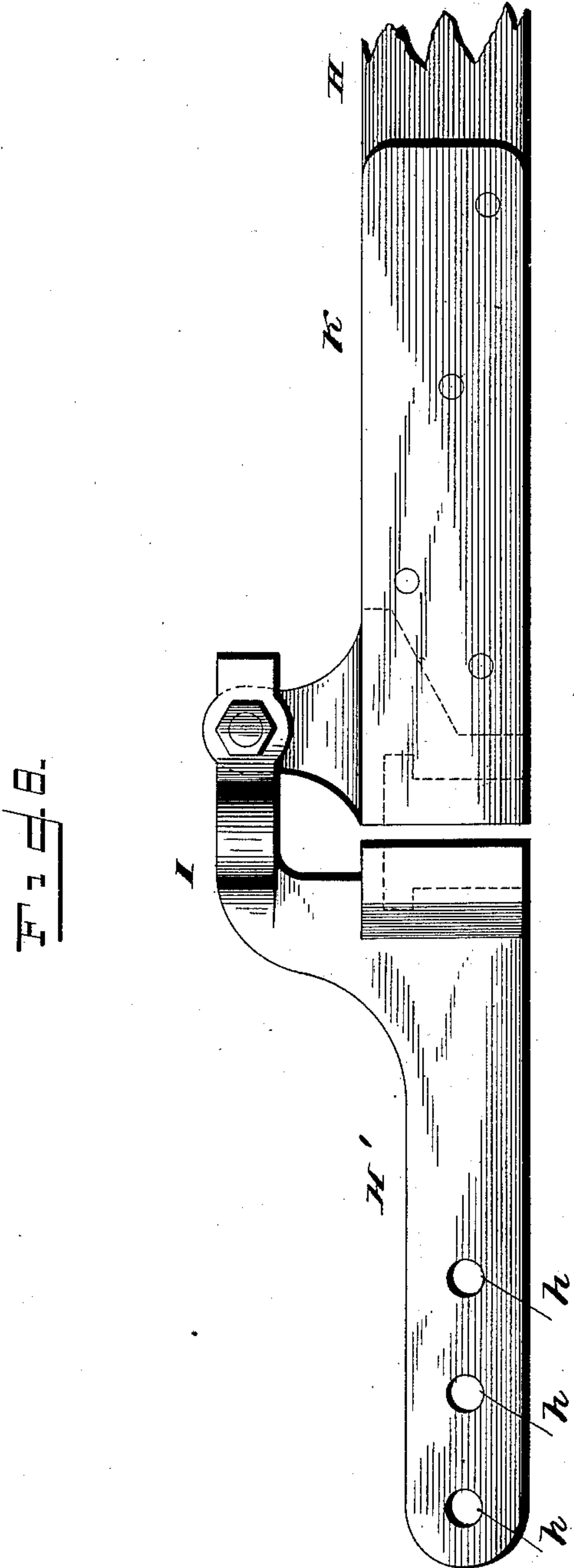
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E. M. Johnson

James Q. Dickinson

INVENTOR

*[Signature]*  
Attorney



# UNITED STATES PATENT OFFICE.

JAMES Q. DICKINSON, OF RICHMOND, VIRGINIA.

## ATTACHMENT FOR DERRICKS AND CRANES.

SPECIFICATION forming part of Letters Patent No. 375,610, dated December 27, 1887.

Application filed May 5, 1887. Serial No. 237,248. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES Q. DICKINSON, a citizen of the United States of America, residing in Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Attachments for Cranes and Derricks; and I do hereby 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in hoisting and lowering attachments for cranes and derricks, the object of my invention being to provide a cheap, simple, and effective means which can be readily attached to one of the legs or supporting-arms of a crane or derrick for hoisting and lowering weights; and with the above end in view my invention consists in providing a crane or derrick with a pulley for holding the hoisting-rope stationary, beneath which is located a lever having friction devices, so that the rope can be lowered gradually, beneath which is a lever which is adapted to clamp the rope when it is desired to hoist weights or other objects.

With the above ends in view my invention consists in the construction and combination of the parts, as will be hereinafter fully set forth, and specifically pointed out in the claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side view of a part of a crane or derrick of ordinary construction, showing my improvements applied thereto. Fig. 2 is a side view of the friction-wheels and lever for gradually lowering the rope. Fig. 3 is a plan view of the same. Fig. 4 is a side view of a pulley and pawl for holding the rope stationary against an upward movement. Fig. 5 is a plan view of a pawl and a sectional view of the pulley. Fig. 6 is a plan view looking from the upper side of the hoisting-lever. Fig. 7 is a sectional view of the same. Fig. 8 is a side view of said hoisting-lever, and Fig. 9 is a plan view of the under side of the same.

A refers to the legs or supports of an ordinary derrick, and to one of said legs my improvements are suitably attached.

*a* refers to a guide pulley, which is attached to one of the legs A at a suitable point by means of a bolt or other connection, upon which the pulley or guide-wheel *a* will turn.

*b* refers to a similar pulley, which is also provided with a grooved face or edge, over which the rope A' passes, which rope passes through suitable blocks at or below the junction of the legs A. At a point a slight distance above the center of the pulley *b* is secured, by a bolt, a gravity-pawl, *c*, the end of which pawl is provided with a grooved end, *c'*, and beveled edges *c''*, which are adapted to lie over the beveled edges *b'* of the pulley *b*. This gravity-pawl *c* is pivotally attached to the support A by a suitable bolt, which passes through a perforation therein, and the outer end of this pawl is enlarged, so as to provide a weighted end, which will automatically keep the clutch end against the rope when in its normal position, and this weight, when thrown upwardly beyond its pivot-point, will hold the clutch out of engagement with the rope and away from the face of the pulley *b*.

D refers to a friction device which is employed for gradually lowering the rope. This friction device consists of side plates, D', which are bolted to each other, the connecting-bolts passing through sleeves between the side frames or plates, D', for holding said frames at a suitable distance from each other, and two or more of said bolts may also be employed for attaching these frames to the legs A.

Between the side pieces, D', is journaled a pulley, E, which is provided with a grooved periphery and beveled edges, and within said frames is pivotally secured, by means of a bolt, *e*, links F F, which depending links carry small grooved pulleys *f f*, said pulleys having their edges extended outwardly, so as to lie over the beveled edges of the pulley E.

G refers to angular pieces, which are pivoted to the frames D' by a bolt, *g*, and between the outer ends of this portion G is secured a handle, G', the opposite end being inclined downwardly and pivoted to the strips F, between the pulleys *f f*. The rope A', after passing by the pulleys *a* and *b*, is passed through the frames D', between the pulleys E and *f*, and from thence continues down to the hoisting-lever. The pulleys *f f* are on each side of the center of the pulley E, so that when they are



pressed upon the rope by depressing the handle  $G'$  they will cause the rope to bend, and thus create a friction upon the rope, so as to hold it stationary or permit it passing between the pulleys  $E$  and  $f f$  at a low rate of speed. The pressure can be regulated by depressing the handle  $G'$ , so as to permit the rope to move as slow through said pulleys as may be desired. The weight of the lever is such that it will not by itself create sufficient friction to prevent the rope passing freely between the pulleys.

$H$  refers to the hoisting-lever, the portion  $H'$  of which is attached to the leg or support  $A$  by a suitable bolt, which may pass through either of the perforations  $h$ , so that this portion  $H'$  may have a pivotal movement thereon. At the upper outer portion the part  $H'$  is provided with a projecting portion,  $I$ , which is provided with an opening,  $i$ , through which the rope  $A'$  passes, and beyond this circular opening  $i$  is provided a slot,  $j$ , the end of said slot being connected by a transverse portion,  $j'$ . The sides of the portion  $I$  above and below the slot  $j$  are slightly enlarged and are provided with openings, through which a suitable bolt is passed for pivotally connecting the portion  $K$  of the lever  $H$  to the part  $H'$ . The portion  $K$  is bifurcated, and said bifurcated portion has perforations, through which pass bolts or other means for securing the lever  $H$  rigidly thereto.

The parts of the lever,  $H'$  and  $K$ , from their under sides a slight distance upwardly are provided with recesses  $l l$ , the upper portions of which are enlarged, so that the flanges of the friction-blocks  $L L$  may lie within these recesses, and the inner edges of these friction-blocks, which are made preferably of hard rubber, are serrated, as shown in Fig. 7. These blocks  $L$  can be secured to the metal portions  $H'$  and  $K$  either by bolts or by cement.

The operation of my invention is as follows: The rope  $A'$  is passed by the pulleys  $a$  and  $b$  under the pawl  $c$ , and from thence between the pulleys  $E$  and  $f f$  and down through the opening  $i$  in the lever, and when the parts are organized as shown in Fig. 1, by raising the end of the lever  $H$ , the jaws will be opened upon the rope and the part  $H'$  can be inclined upwardly. At the first downward movement of the lever  $H$  the jaws formed on the parts  $H'$  and  $K$  will be securely clamped upon the rope and will hold it firmly, and by further depressing the lever the rope will be drawn downwardly, so as to hoist or elevate the blocks to which the other end of the rope is attached,

and while the hoisting-lever  $H$  is being elevated the pawl  $c$  will hold the rope securely. When it is desired to lower the weight, the outer end of the lever  $H$  can be thrown upwardly, or the parts otherwise arranged so that the jaws will not come together so as to clamp the rope. The friction-lever  $G$  is then depressed, so as to force the pulleys  $f f$  against the pulley  $E$ , and the pulley  $c$  is thrown out of contact with the rope. By diminishing the pressure upon the end of the lever the rope may be permitted to slide upwardly between the pulleys, and the descent of the weight can be regulated by changing the pressure upon this lever.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a crane or derrick provided with means for drawing downwardly upon the hoisting-rope, a friction-lever pivotally attached to the frame of the crane or derrick above the hoisting device, said friction-lever carrying pulleys which are supported by swinging bails, so that said pulleys may be forced against a stationary pulley, the frame of which is rigidly attached to the crane or derrick, substantially as shown, and for the purpose set forth.

2. In combination with a suitable supporting-frame,  $D$ , a pulley,  $E$ , provided with a grooved periphery and beveled edges, links  $F$ , pivoted to said frame and carrying pulleys  $f f$ , parts  $G$ , pivotally attached to the stationary frame and provided with projecting portions attached to the links  $F F$ , and a lever,  $G$ , attached thereto, the pulleys  $f$  being constructed so as to overlap the edges of the pulley  $E$ , substantially as shown, and for the purpose set forth.

3. In combination with a crane or derrick, the hoisting-rope  $A'$  and clutch-pulley  $b$ , having a weighted pawl pivoted to the main frame opposite thereto, the portion of said pawl which is adapted to contact with the rope being centrally grooved and provided with beveled edges which embrace the sides of the pulley, and a lever for drawing downwardly upon the hoisting-rope, the parts being organized substantially as shown, and for the purpose set forth.

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

JAMES Q. DICKINSON.

Witnesses:

FORREST C. JONES,  
GEO. J. HOOPER, Jr.