

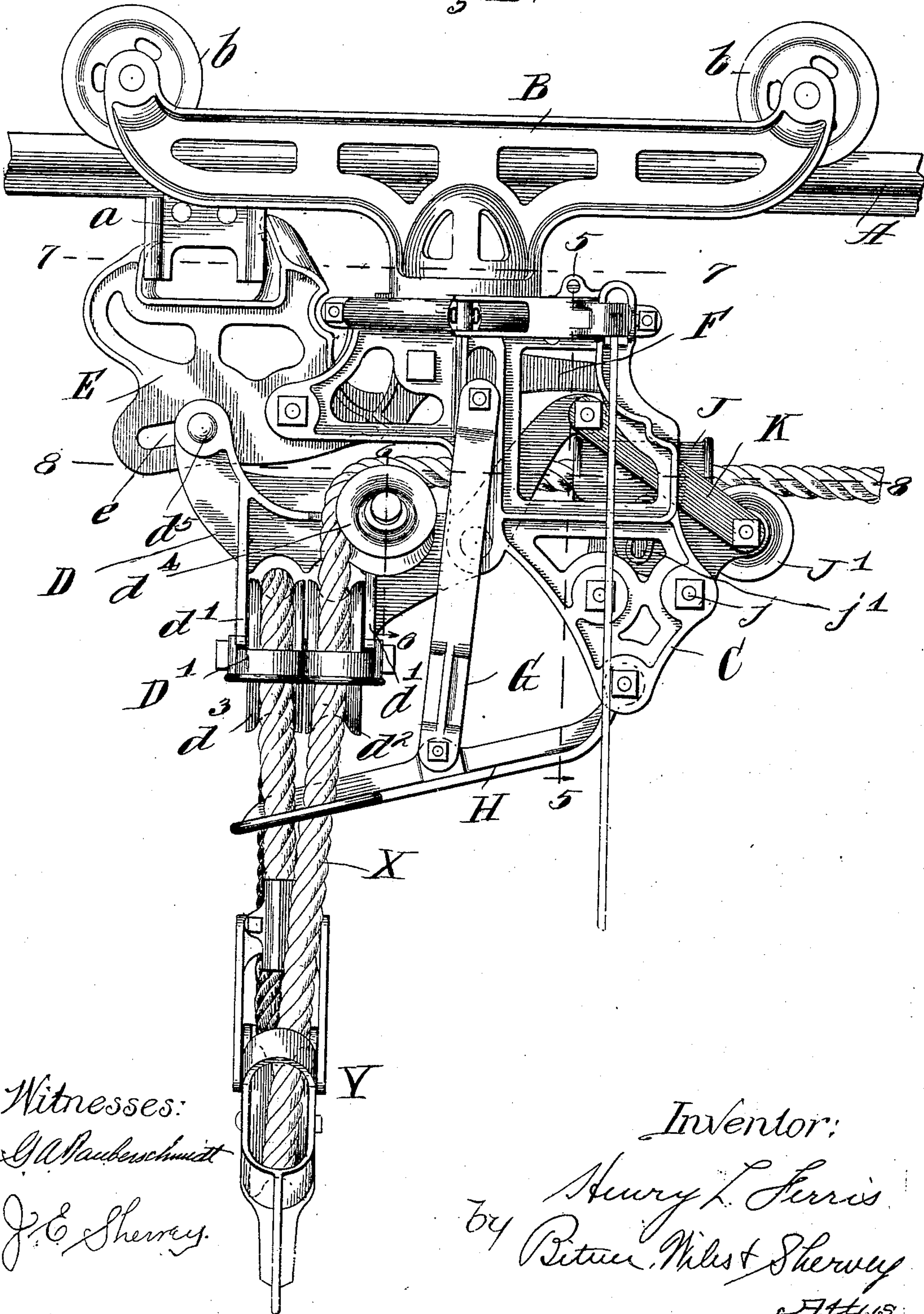
No. 835,186.

PATENTED NOV. 6, 1906.

H. L. FERRIS,  
HAY CARRIER.  
APPLICATION FILED SEPT. 13, 1905.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

G. A. Pauberschmitt

J. E. Sherry

Inventor:

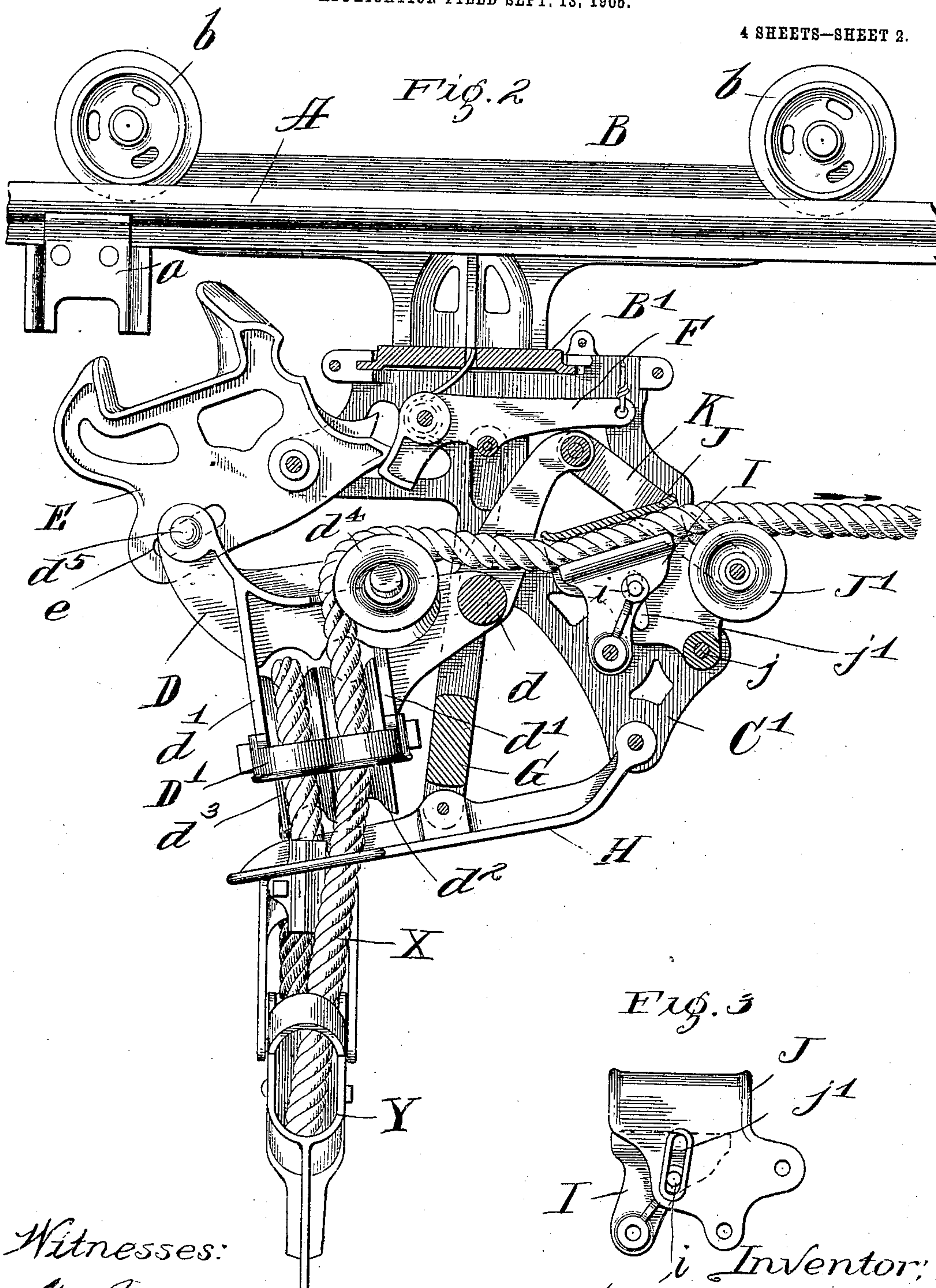
Henry L. Ferris  
by Pitman, Milst & Sherry  
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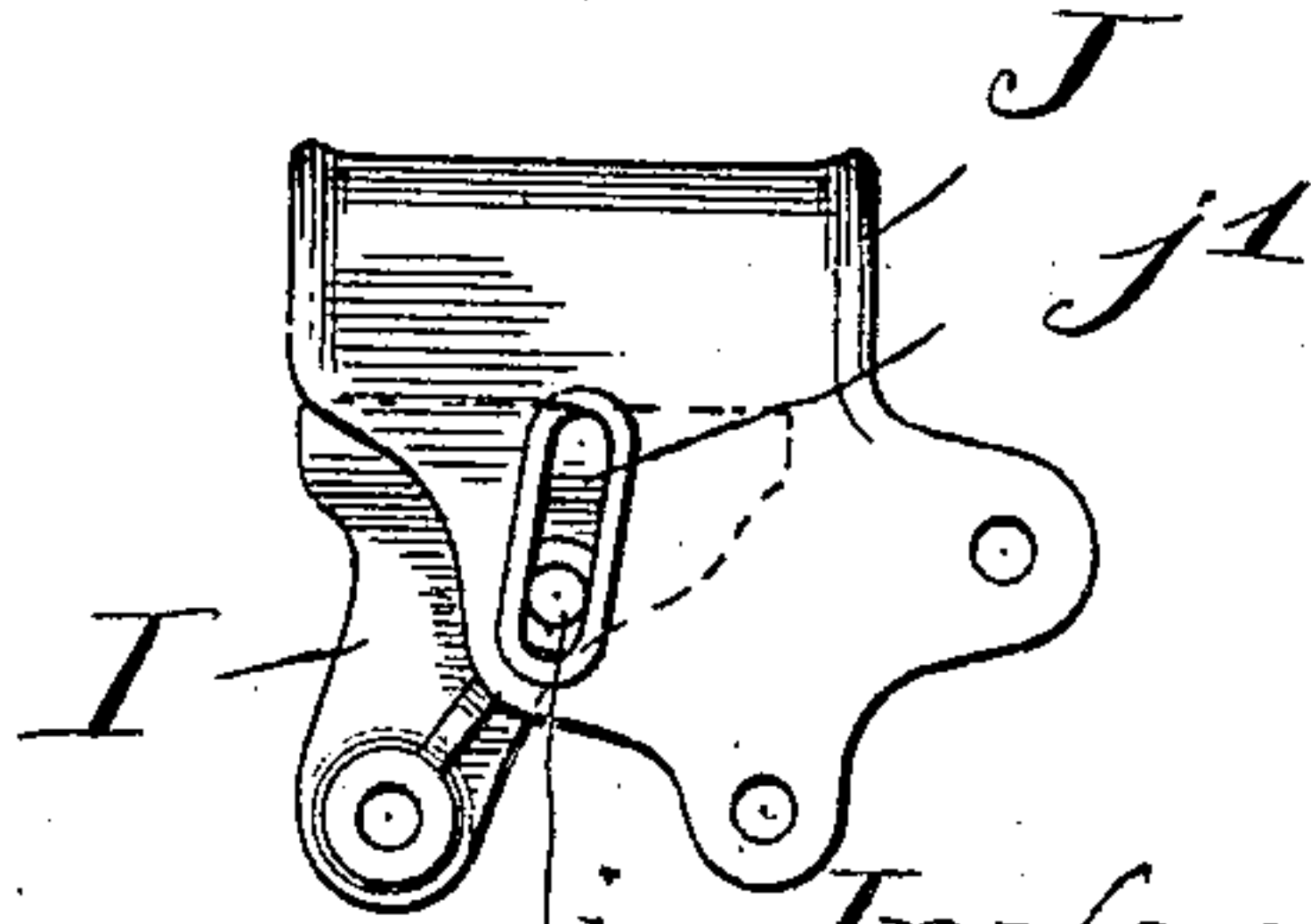


Witnesses:

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Fig. 3



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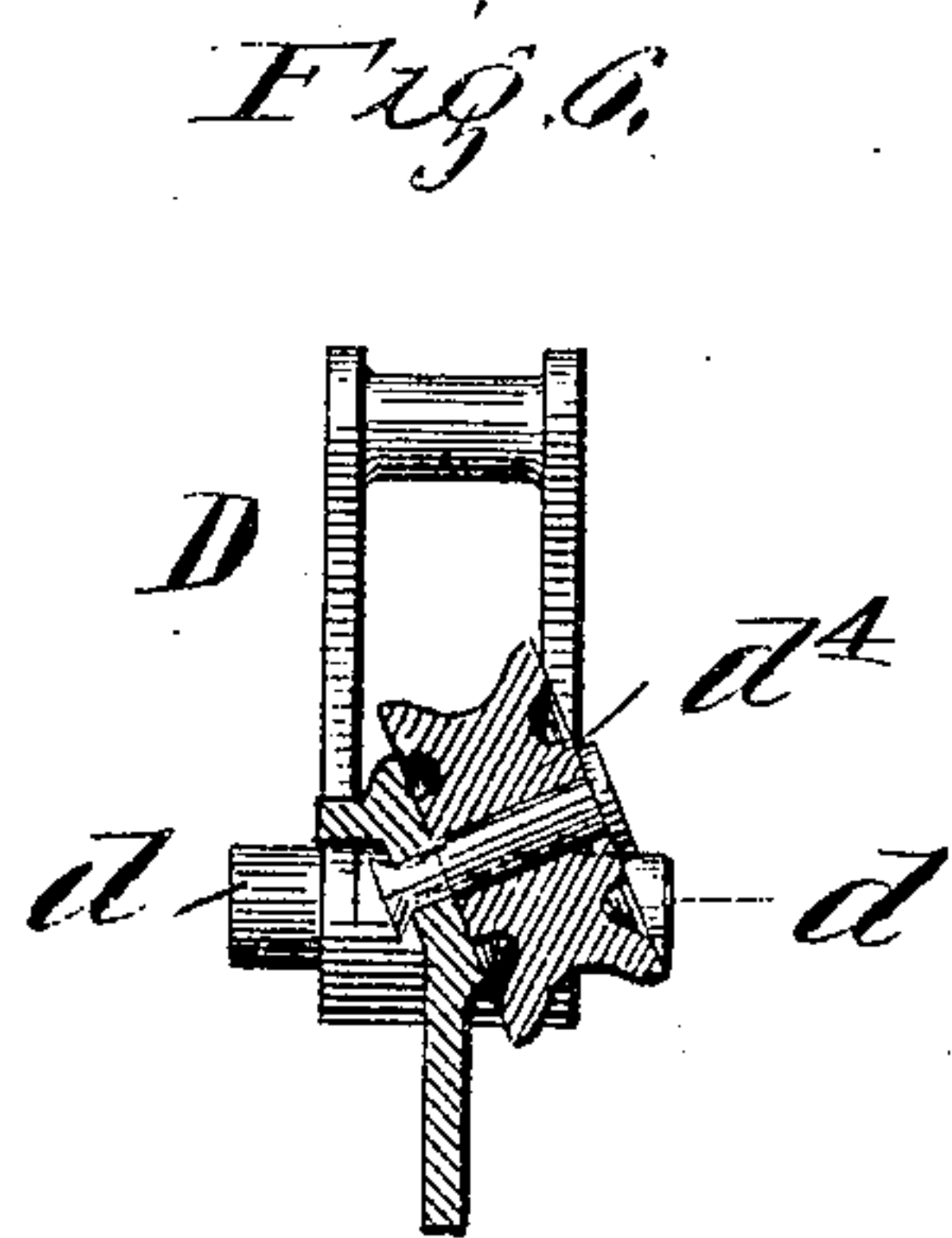
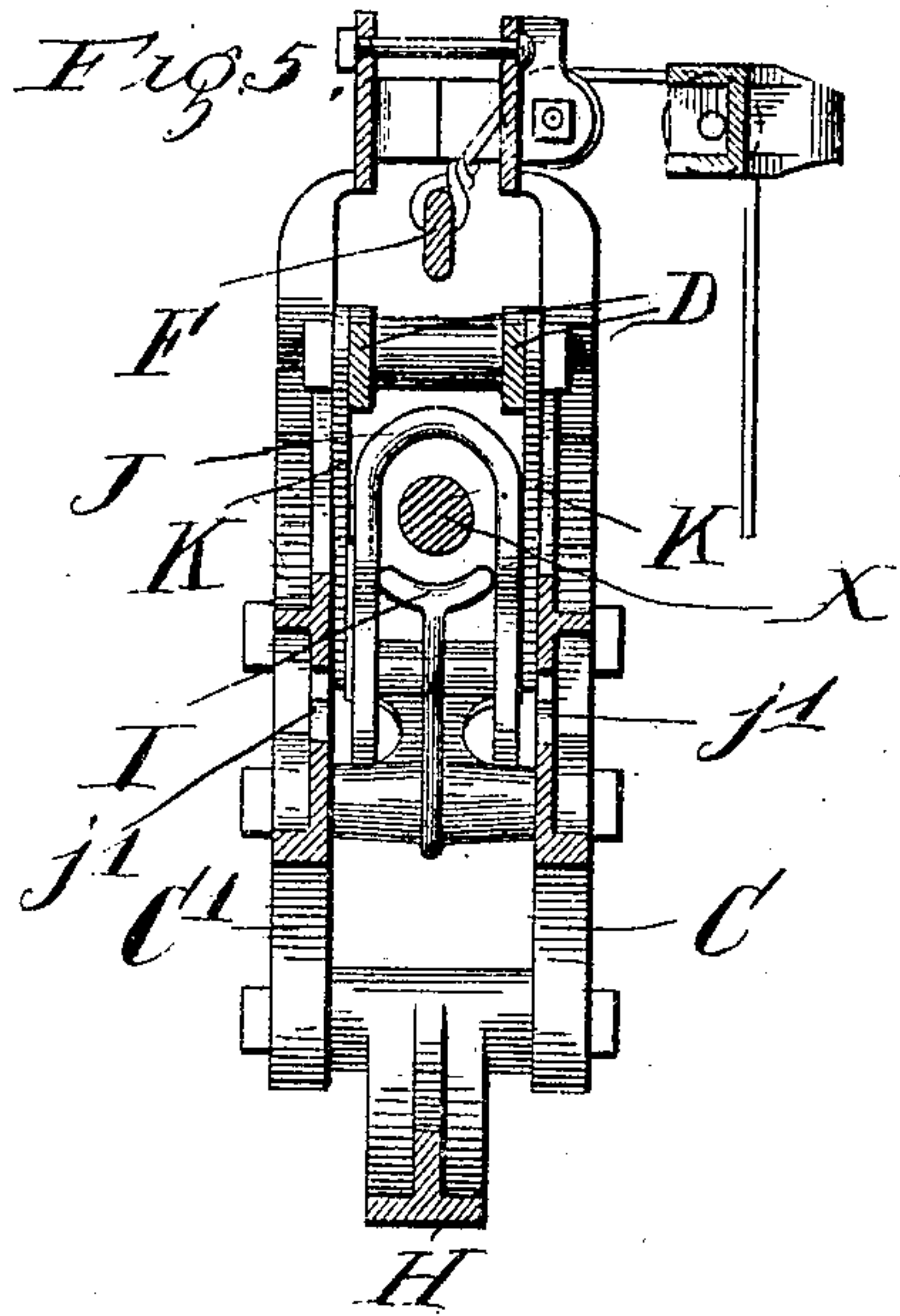
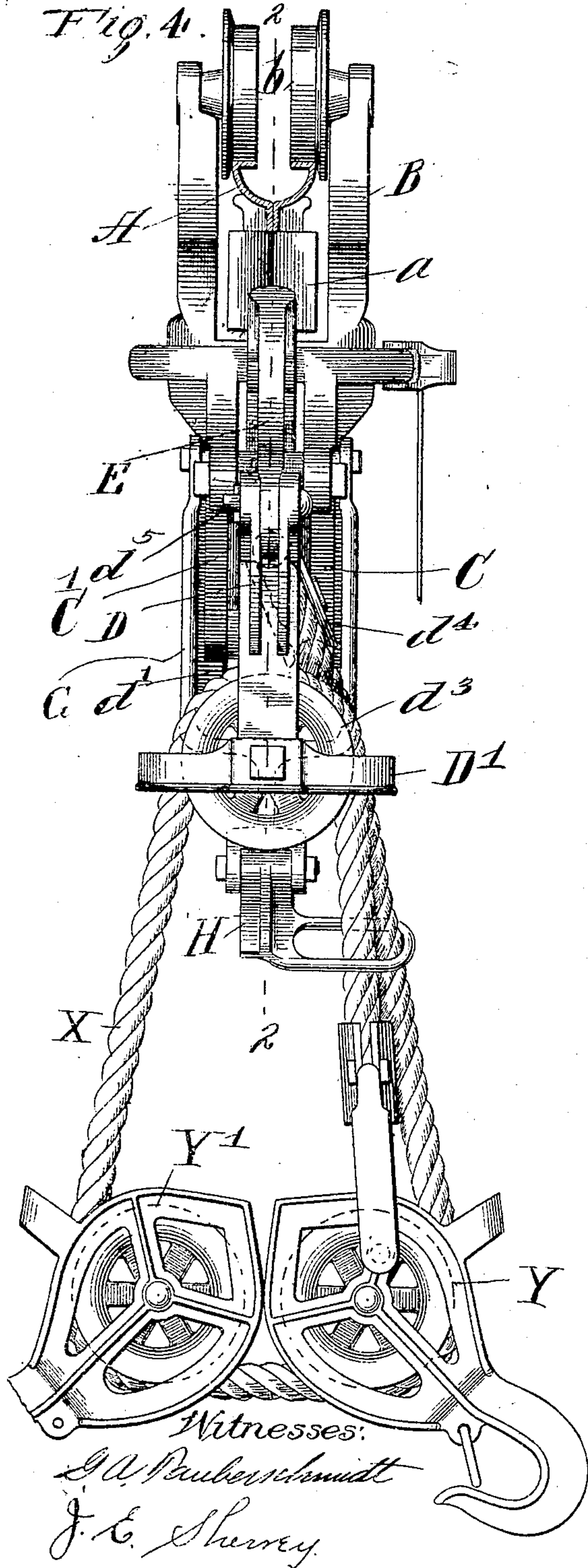
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

Fig. 7.

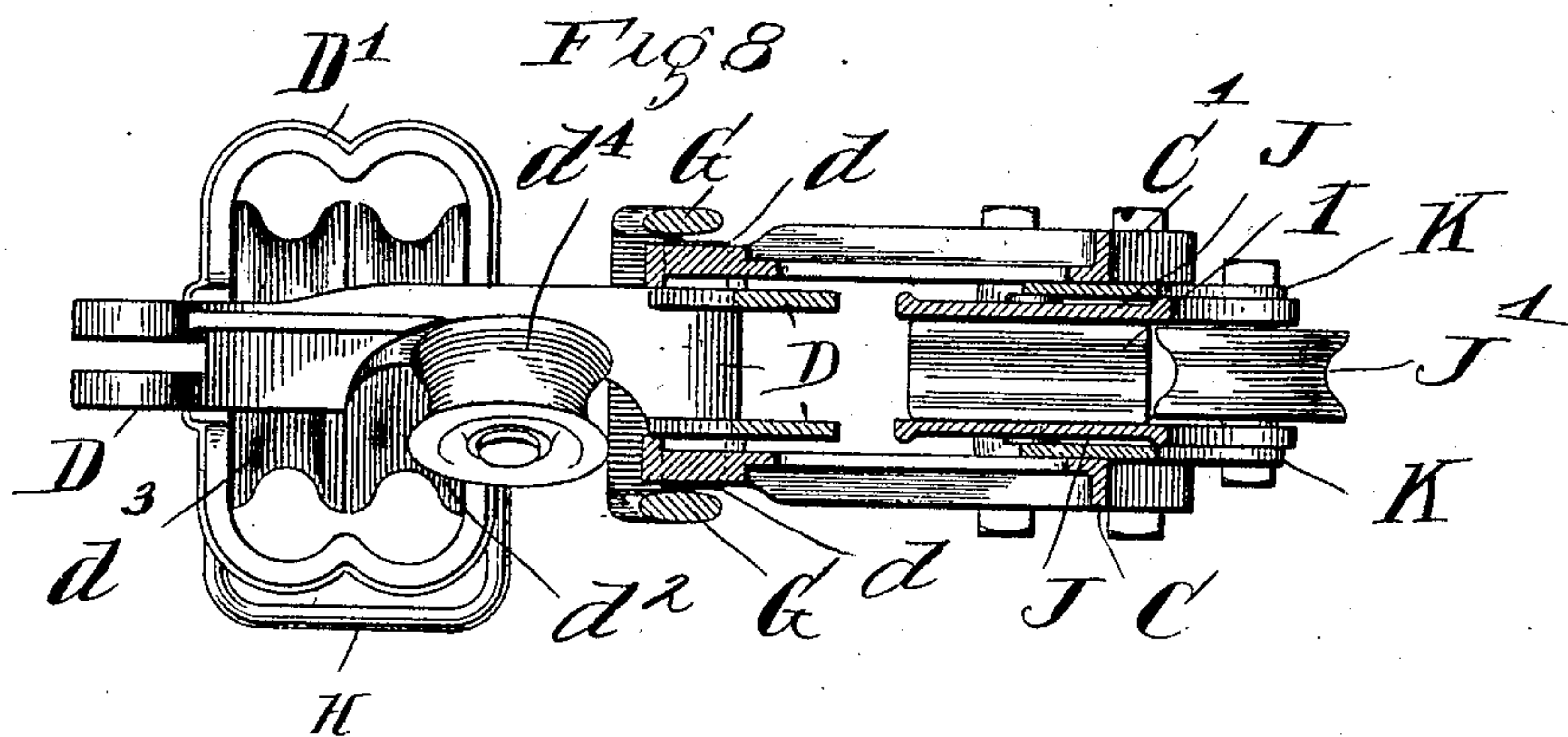
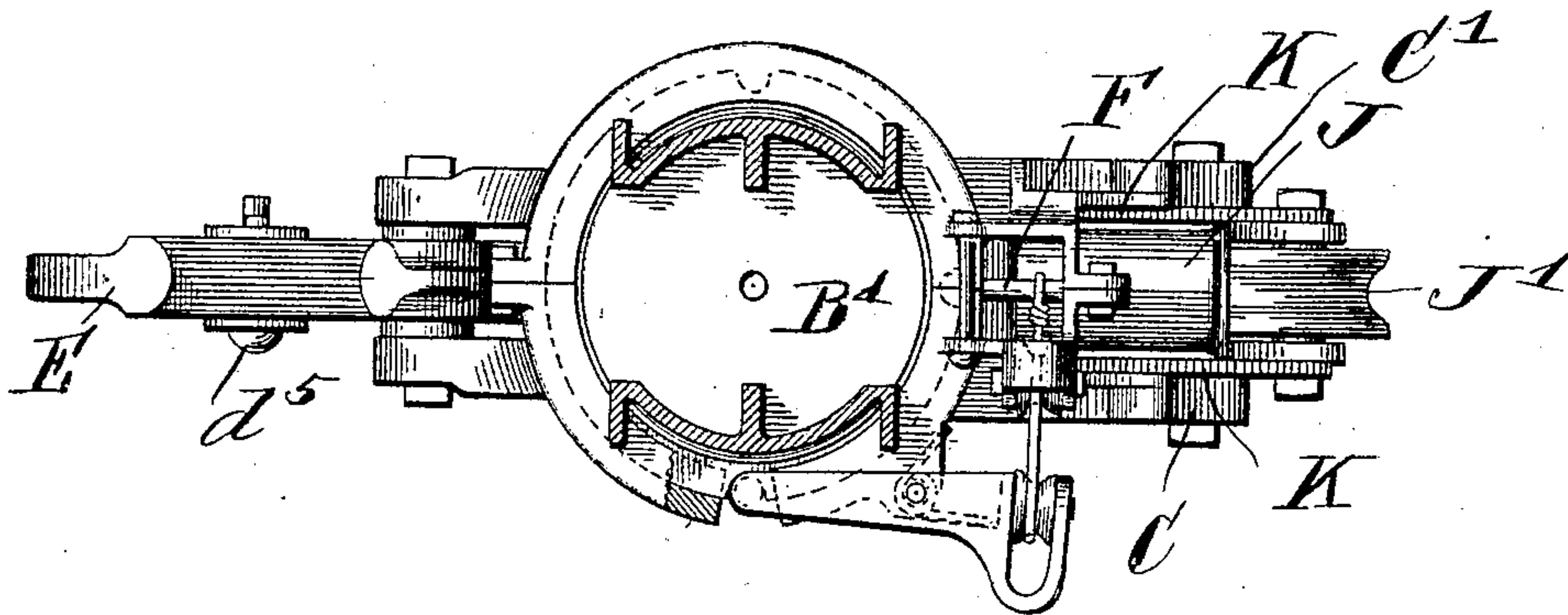
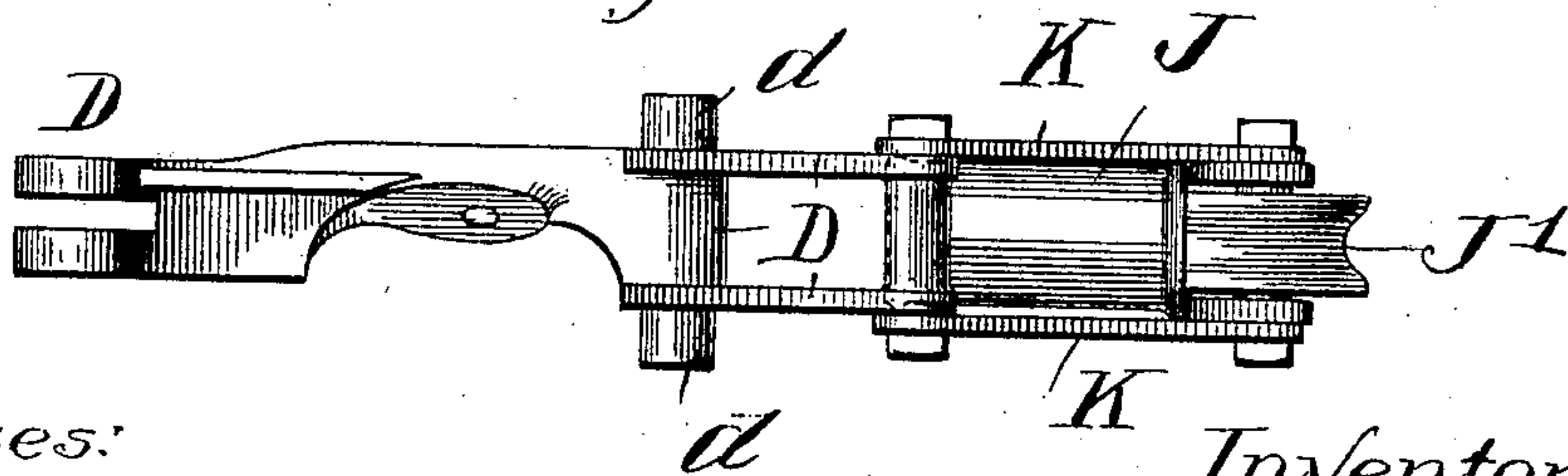


Fig. 9.



Witnesses:

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# UNITED STATES PATENT OFFICE.

HENRY L. FERRIS, OF HARVARD, ILLINOIS, ASSIGNOR TO HUNT, HELM,  
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## HAY-CARRIER.

No. 835,186.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed September 13, 1905. Serial No. 278,324.

*To all whom it may concern:*

Be it known that I, HENRY L. FERRIS, a citizen of the United States of America, residing at Harvard, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Hay-Carriers, of which the following is a specification.

My invention relates to improvements in hay-carriers, and is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved device. Fig. 2 is a section in the line 2 2 of Fig. 4, the interior parts of the device being shown in elevation. Fig. 3 is a side elevation of the rope-clamping jaws. Fig. 4 is a rear elevation of the device. Fig. 5 is a section in the line 5 5 of Fig. 1. Fig. 6 is a section in the line 6 6 of Fig. 1. Fig. 7 is a horizontal section in the line 7 7 of Fig. 1. Fig. 8 is a horizontal section in the line 8 8 of Fig. 1, and Fig. 9 is a top plan of the pulley-supporting member and clamping device.

Referring to the drawings, A is a track bearing a trip-block *a*. Upon the track A runs a carriage B, supported by pulleys *b* and having at its lower end a circular turn-table B', to which is swiveled a frame composed of two side plates C C', bolted or otherwise secured together to form a hollow structure. Between the parts of the frame is pivoted by gudgeons *d* a pulley-supporting member D, made in the form of a bell-crank lever, the rear of which is substantially horizontal when the device is in its normal position and the front arm of which extends diagonally upward from the gudgeons *d*. The rear arm of this pulley-supporting member is provided with downwardly-extending ears *d'*, between which runs a shaft bearing two main sheaves or pulleys *d*<sup>2</sup> *d*<sup>3</sup>. Above and in line with the pulley *d*<sup>2</sup> is a guide-pulley *d*<sup>4</sup> on the pulley-supporting member, said pulley running upon a diagonally-inclined axis, as illustrated.

The rear end of the pulley-supporting member D is bifurcated and straddles the lower portion of an engagement-piece E, having a slot *e*, through which passes a pin *d*<sup>5</sup> on the

pulley-supporting member. The engagement-piece E engages with the trip-block *a* in the ordinary manner, which is fully described and illustrated in my application for patent on hay-carriers filed on even date herewith and allotted Serial No. 278,323, and this engagement-piece is engaged by a dog F, operated by a fork G, connected with a trip-lever H, exactly as set forth in said application.

X indicates the rope of my device, and the same enters the carrier at its front end. It will be seen that the front arm of the pulley-supporting member is bifurcated, Figs. 8 and 9, and the rope passes between the two portions thereof. The rope is first led over the guide-pulley *d*<sup>4</sup>, then down over the main pulley *d*<sup>2</sup>, thence under two sling-pulleys Y Y', thence over the main pulley *d*<sup>3</sup>, and thence down to the sling-pulley Y. It is to be noted that the two main pulleys are pivoted in the exact center of the pulley-supporting member, so that a central pull is given thereto even if the ropes drag unequally on the two pulleys. In this way the pivots of the pulley-supporting member upon the frame are relieved of any strain which might otherwise arise. It will be seen by the arrangement herein described the rope is given a bight at right angles to the frame and track and that the main pulleys lie in the plane of this bight, so that the rope lengths may be drawn laterally to any extent without danger of running off the pulleys. Furthermore, the pulleys are brought close together, and space is economized, and in addition one pivot-pin is utilized for both, thereby saving machine-work and hand-labor in construction. A rope-guide D' is provided on the pulley-supporting member D to prevent the accidental running off of the rope from the main pulleys.

The operation of the tripping device here shown will be readily apparent, and no further description of it will be necessary. The clamping mechanism, however, which in this case is operated by the pulley-supporting member as it moves, is, I believe, novel and will be particularly set forth. In the front portion of the frame of the device is pivoted



a lower clamping-jaw I, the form and construction of which is well illustrated in Figs. 2 and 3. This jaw is straddled and inclosed by an upper clamping-jaw J, pivoted at *j* to the frame of the machine. This upper jaw J is trough-shaped and has a corrugated inner face for engagement with the rope. This upper clamping-jaw is also provided with slots *j'*, in which run pins *i* on the lower clamping-jaw, the arrangement being such that the clamping-jaw J is rotated about its pivot, and consequently swung downward and backward from the position shown in Fig. 1 to the position shown in Fig. 2, the jaw I will swing with it, moving upward and backward. The upper clamping-jaw J is provided with a guide-pulley J' and is connected with the forward ends of the pulley-supporting member D by means of links K. By means of this connection when the device is tripped and the pulley-supporting member moves down under the influence of the weight carried by the sling-pulleys the upper clamping-jaw is moved backward and downward and the lower clamping-jaw moves backward with it and upward toward it. The guide-pulley J' is simultaneously moved upward. In this way the rope is bent from a straight line or kinked by the clamping-jaws, which in this manner obtain a very firm hold thereon. Just as the jaws are closing on the rope they are both moving backward with the rope, and as a result they have a firm hold thereon before they stop and bring it to rest. By this means abrasion of the rope by the clamping mechanism is very greatly decreased.

This concludes the description of such portion of my device as will necessarily be described to give a thorough understanding to those skilled in the art. The hand tripping mechanism and swiveling mechanism here illustrated are fully described in the application above referred to and require no detailed description at this point.

I realize that considerable variation is possible in the details of this construction without departing from the spirit of the invention, and I therefore do not intend to limit myself to the specific form herein shown and described.

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

1. In a device of the class described, the combination with a track, frame, and pulley-supporting member movable in the frame, of two pulleys arranged side by side and pivoted thereto in such position that each one is symmetrically disposed with respect to a vertical plane passing through the longitudinal center of the pulley-supporting member.

2. In a device of the class described, the combination with a frame and a pulley-sup-

porting member movable therein, of a shaft extending in line with the longitudinal center of the pulley-supporting member, and two pulleys mounted on said shaft.

3. In a device of the class described, the combination with a frame, a pulley-supporting member movable therein, and mechanism for locking and tripping the pulley-supporting member, of a pair of jaws movable in the frame, and means of connection between the pulley-supporting member and the jaws, constructed and arranged to move the jaws toward each other and simultaneously backward with the rope.

4. In a device of the class described, the combination with a frame, a pulley-supporting member movable therein, and mechanism for locking and tripping the pulley-supporting member, of a pair of jaws, mechanism whereby one controls the other, and means of connection between one of said jaws and the pulley-supporting member, said jaws being constructed and arranged to move together and backward with the rope when the pulley-supporting member is tripped.

5. The combination with a frame, a pulley-supporting member, and mechanism for locking and tripping the pulley-supporting member, of two jaws separated and lying in the general direction of the rope when the pulley-supporting mechanism is locked, and means of connection between the pulley-supporting member and the jaws constructed and arranged to swing the jaws together and backward with the rope and out of line thereof when the pulley-supporting member is tripped, whereby the rope is clamped by jaws moving therewith and simultaneously kinked.

6. In a device of the class described, the combination with a frame, a pulley-supporting member, and mechanism for locking and tripping the pulley-supporting member, of two jaws pivoted to the frame upon independent pivots, a pin-and-slot connection between the jaws and a link connecting one of the jaws with the pulley-supporting member and operating to move both jaws together and backward when the pulley-supporting member is tripped.

7. In a device of the class described, the combination with a carriage, of two main pulleys and a clamping mechanism, of a rope running through the clamping mechanism and over the main pulleys and a guide-pulley between the main pulleys and clamping mechanism, constructed and arranged to guide the rope into the line of the center of the carriage.

8. In a device of the class described, the combination with a track, a frame, and a pulley-supporting member movable in the

frame, of two pulleys pivoted side by side on the pulley-supporting member and extending across the same.

5 9. In a device of the class described, the combination with a track, a frame, and a pulley-supporting member movable in the frame, of two pulleys pivoted side by side and extending across the frame.

In witness whereof I have signed the above application for Letters Patent, at Harvard, 10 in the county of McHenry and State of Illinois, this 6th day of September, A. D. 1905.

HENRY L. FERRIS.

Witnesses:

R. G. EHLE,  
H. D. CRUMB.