

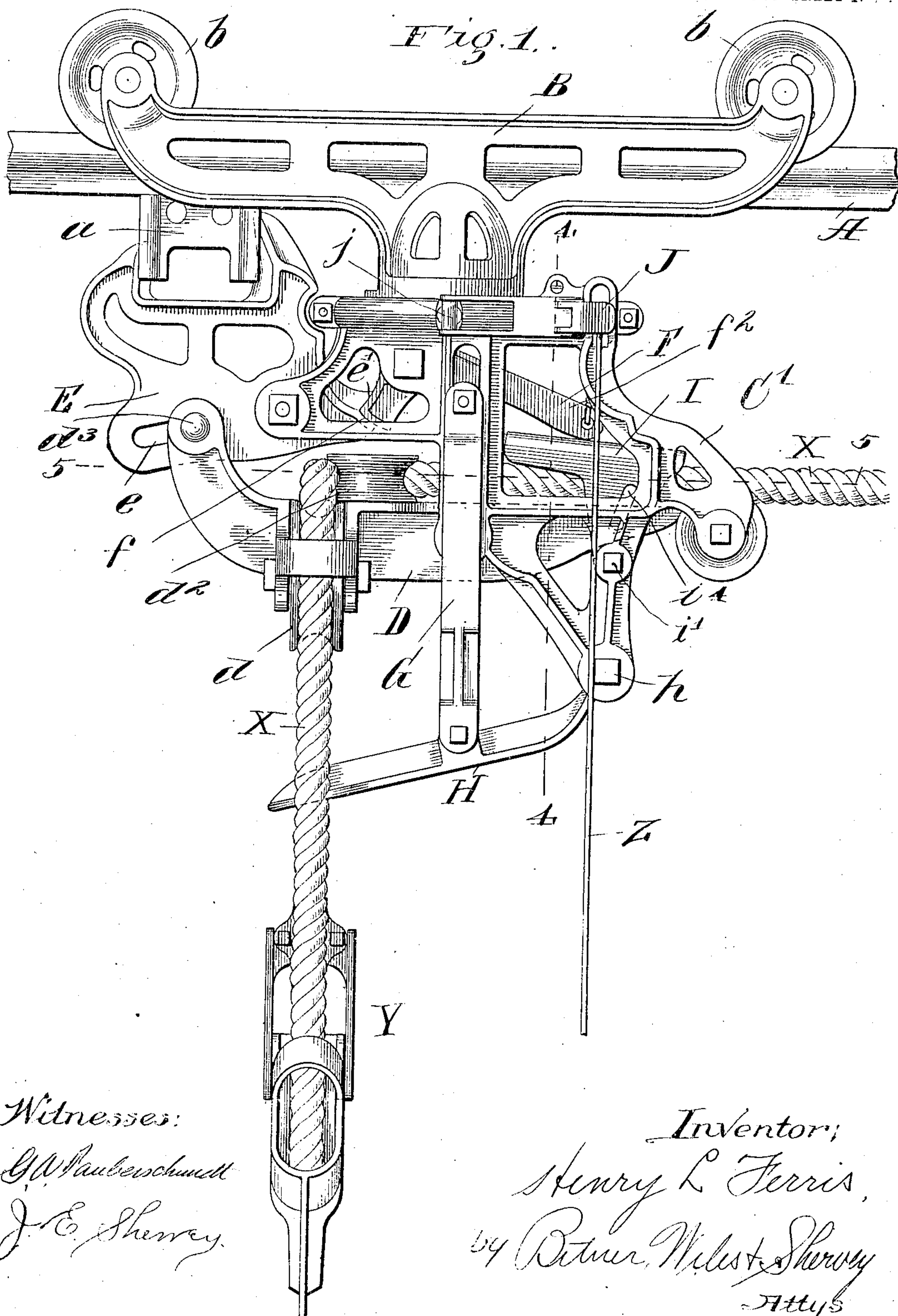
No. 844,719.

PATENTED FEB. 19, 1907.

H. L. FERRIS.
HAY CARRIER.

APPLICATION FILED SEPT. 13, 1905.

5 SHEETS—SHEET 1.



Witnesses:
G. A. Paulschmidt
J. E. Sherry.

Inventor;
Henry L Ferris,
by Arthur Wilcox, Sherry
Attys

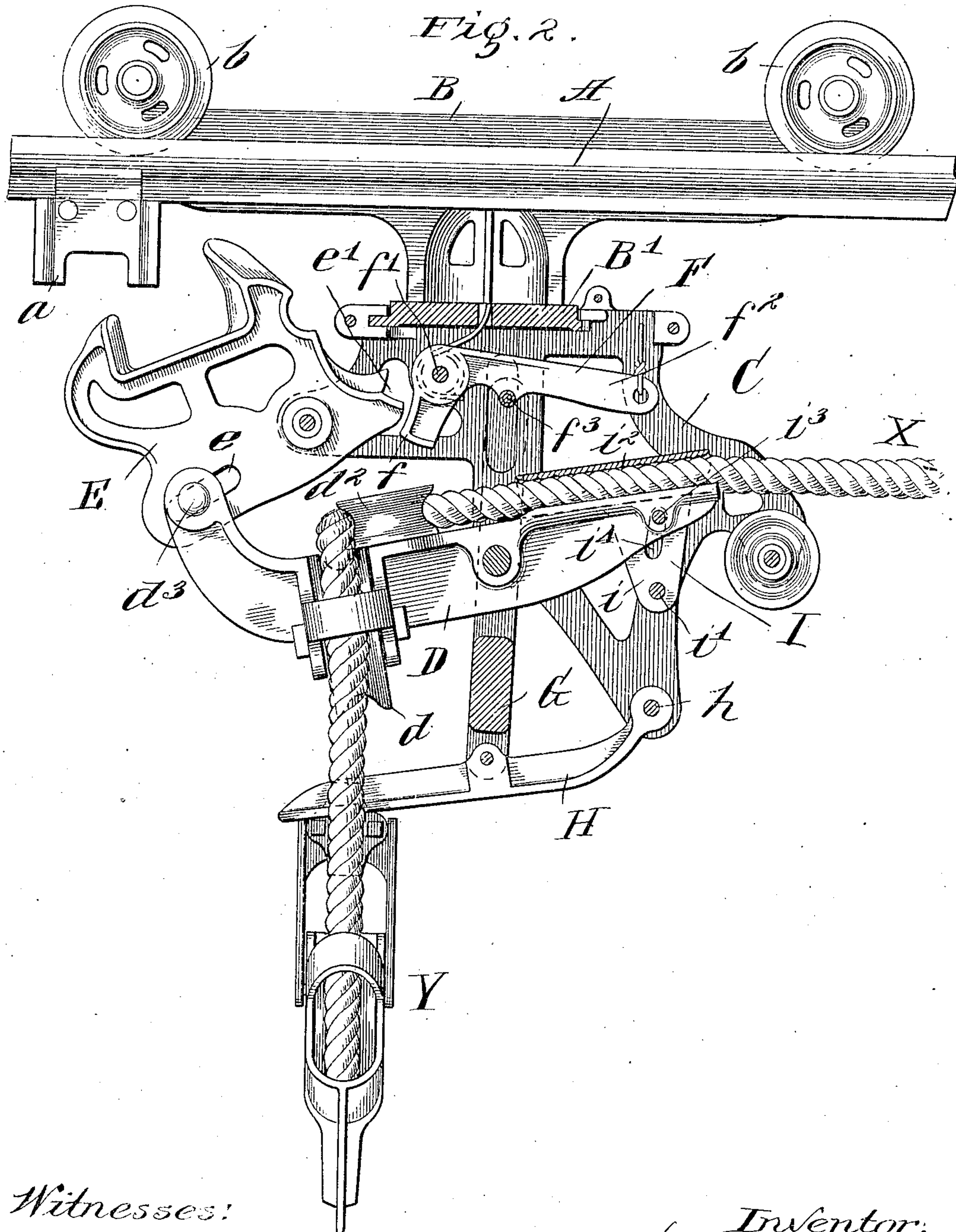
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5 SHEETS—SHEET 2.



Witnesses:

G. W. Mauberschnitt

J. C. Sherry.

Inventor:

Henry L. Ferris,
by R. A. Miles & Sherry
Attys.

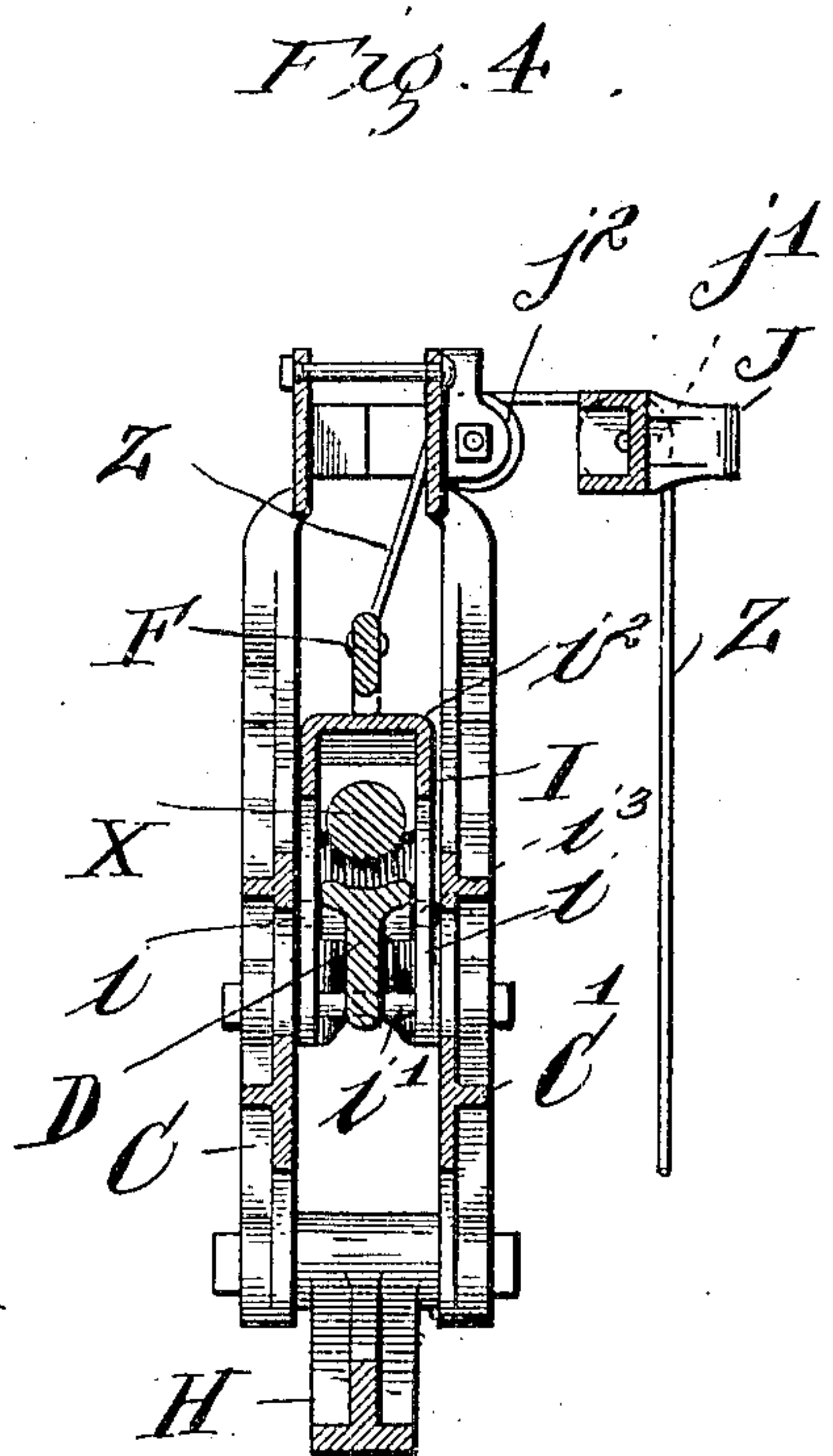
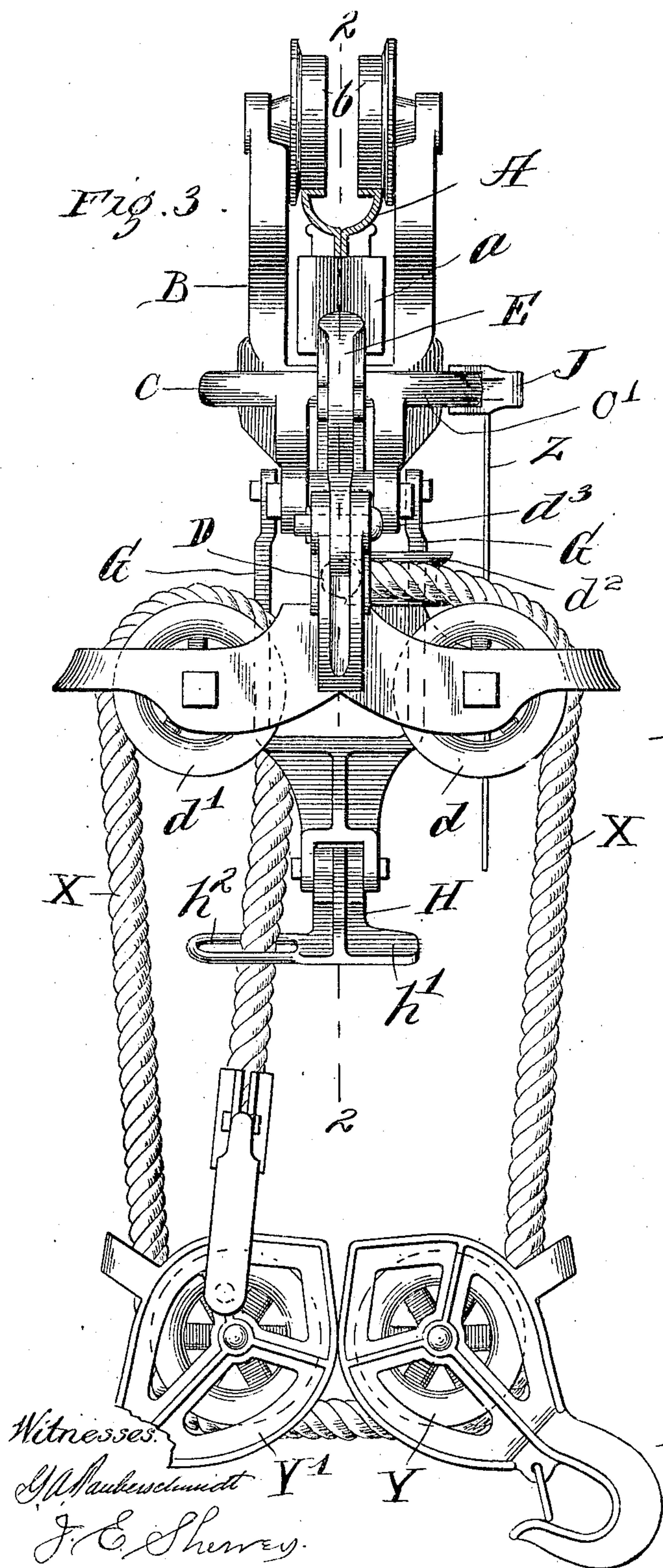
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5 SHEETS—SHEET 3.



Inventor:
Henry L. Ferris
 by *Arthur H. Sherry*
 Attys.

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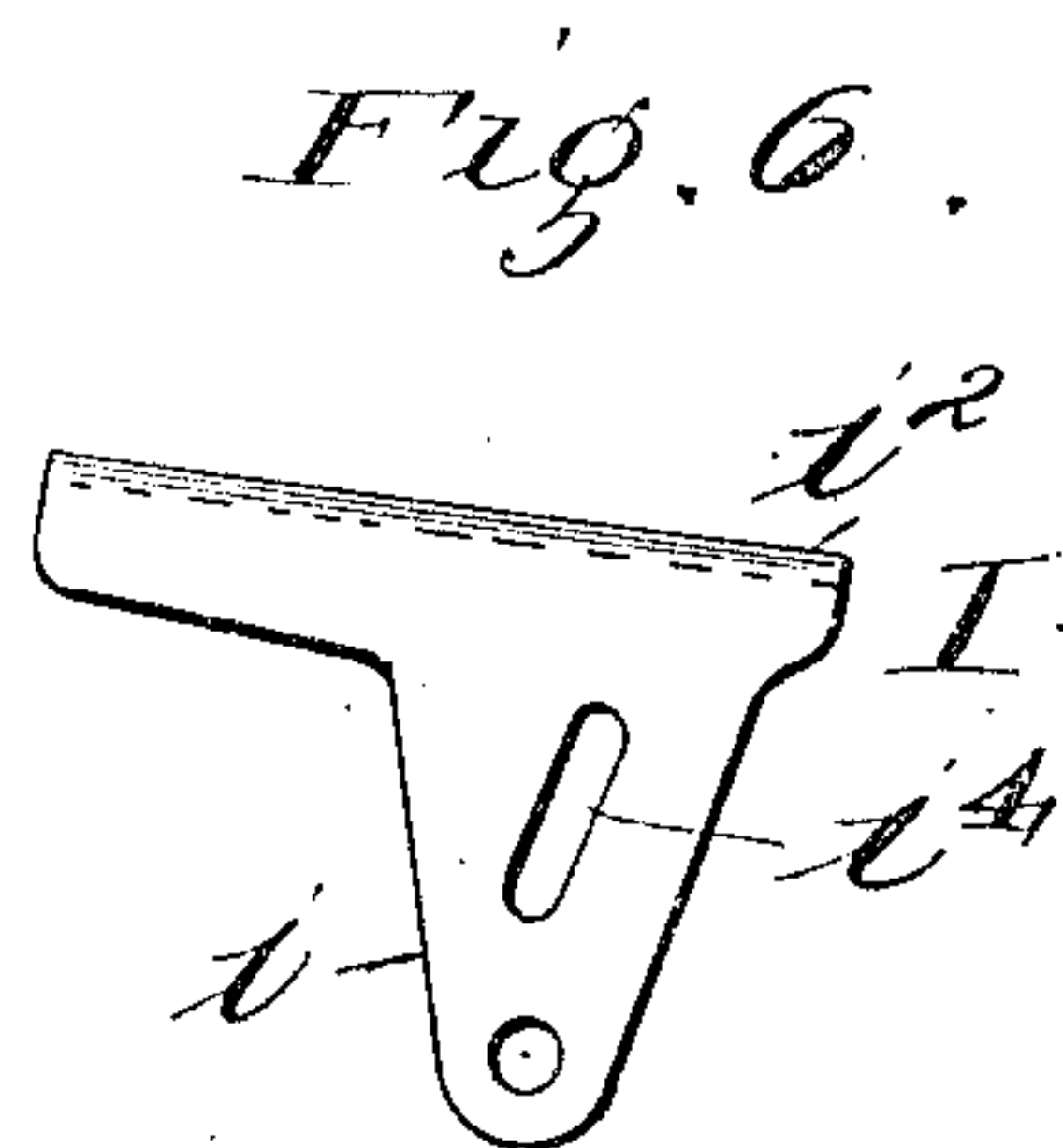
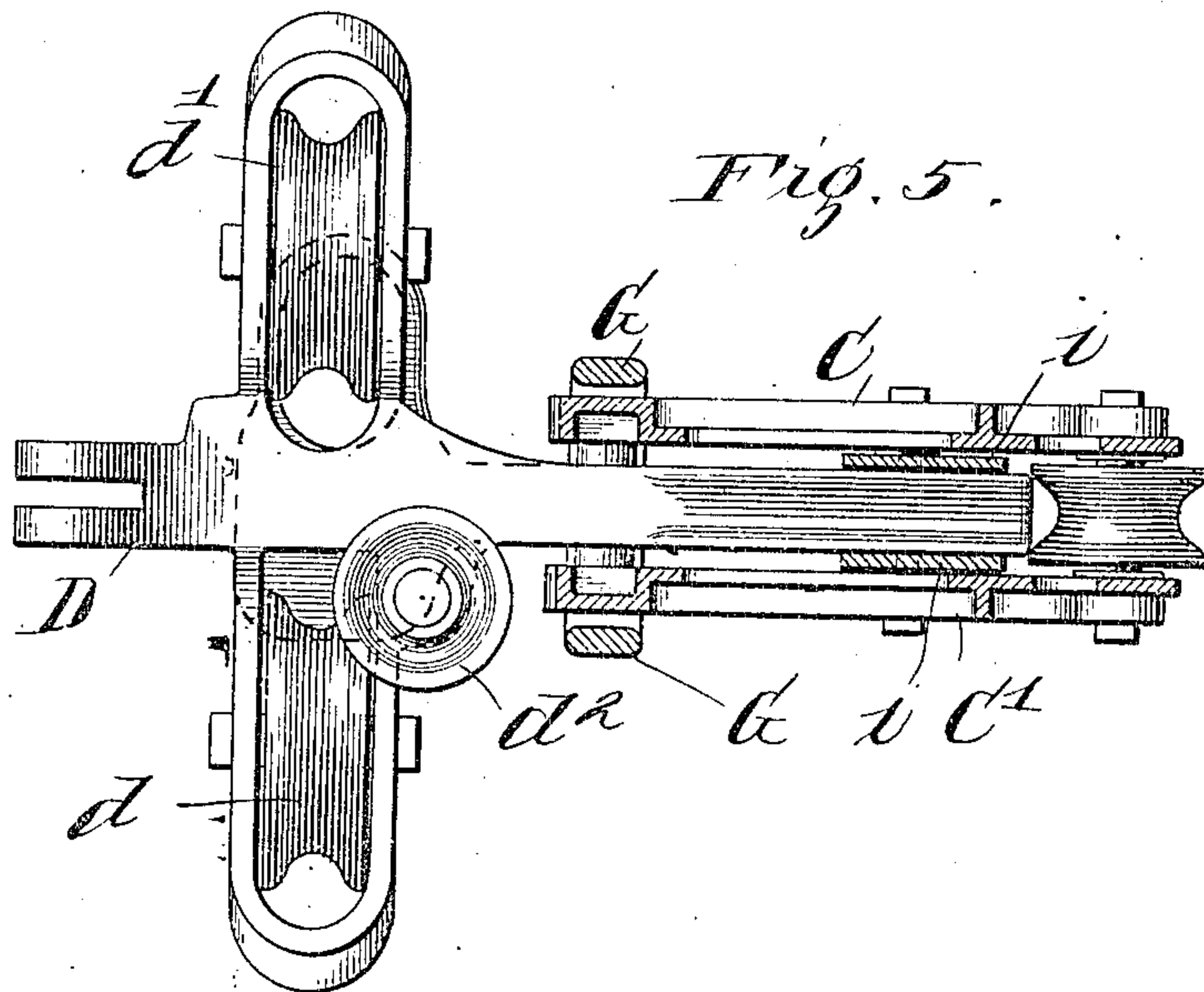
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5 SHEETS—SHEET 4.



Witnesses:

G. W. Paulschmidt

J. E. Sherry.

Inventor:

Henry L. Ferris.

By Pitman Miles & Sherry
Attys.

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5 SHEETS—SHEET 5.

Fig. 7.

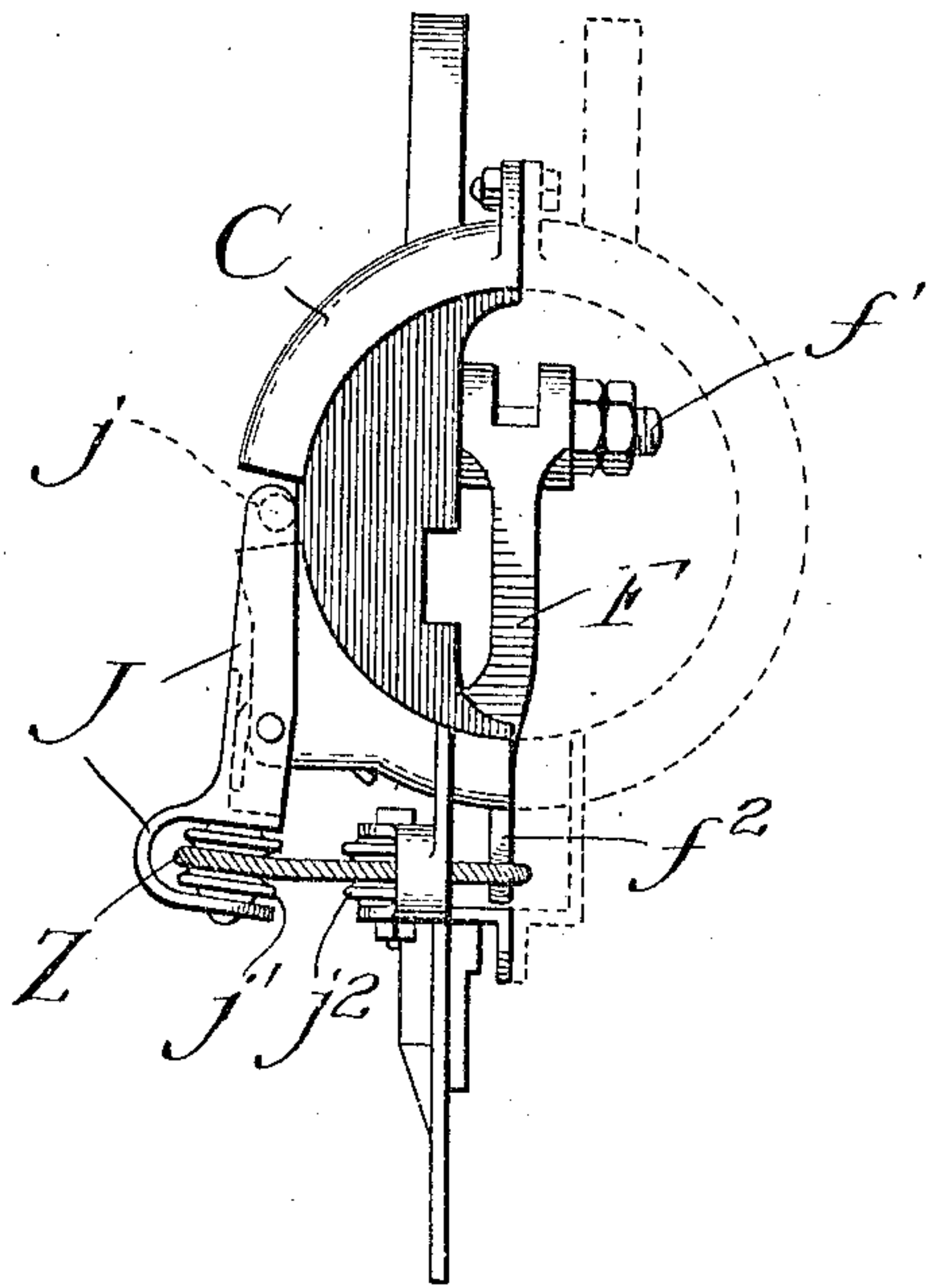


Fig. 8.

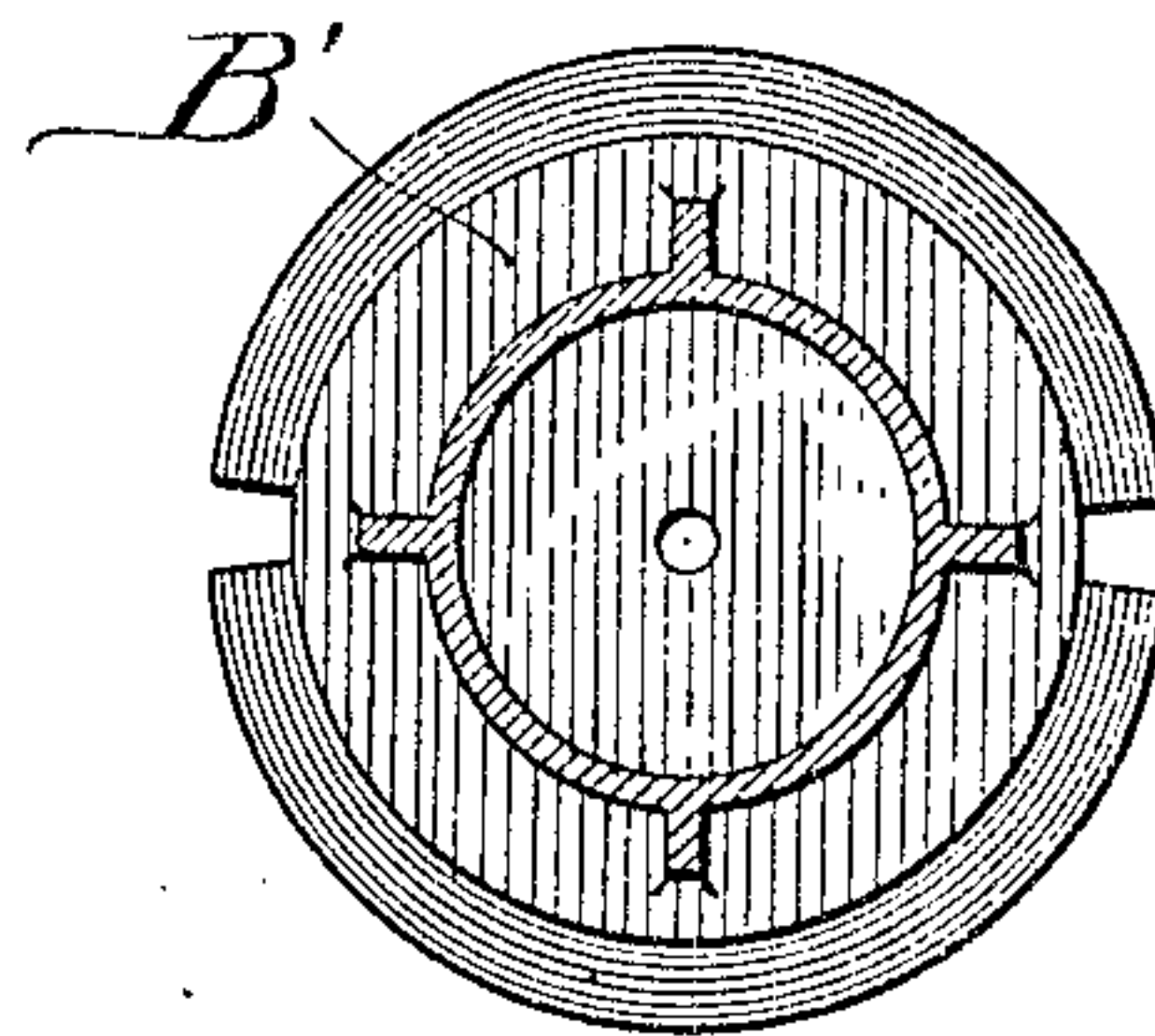
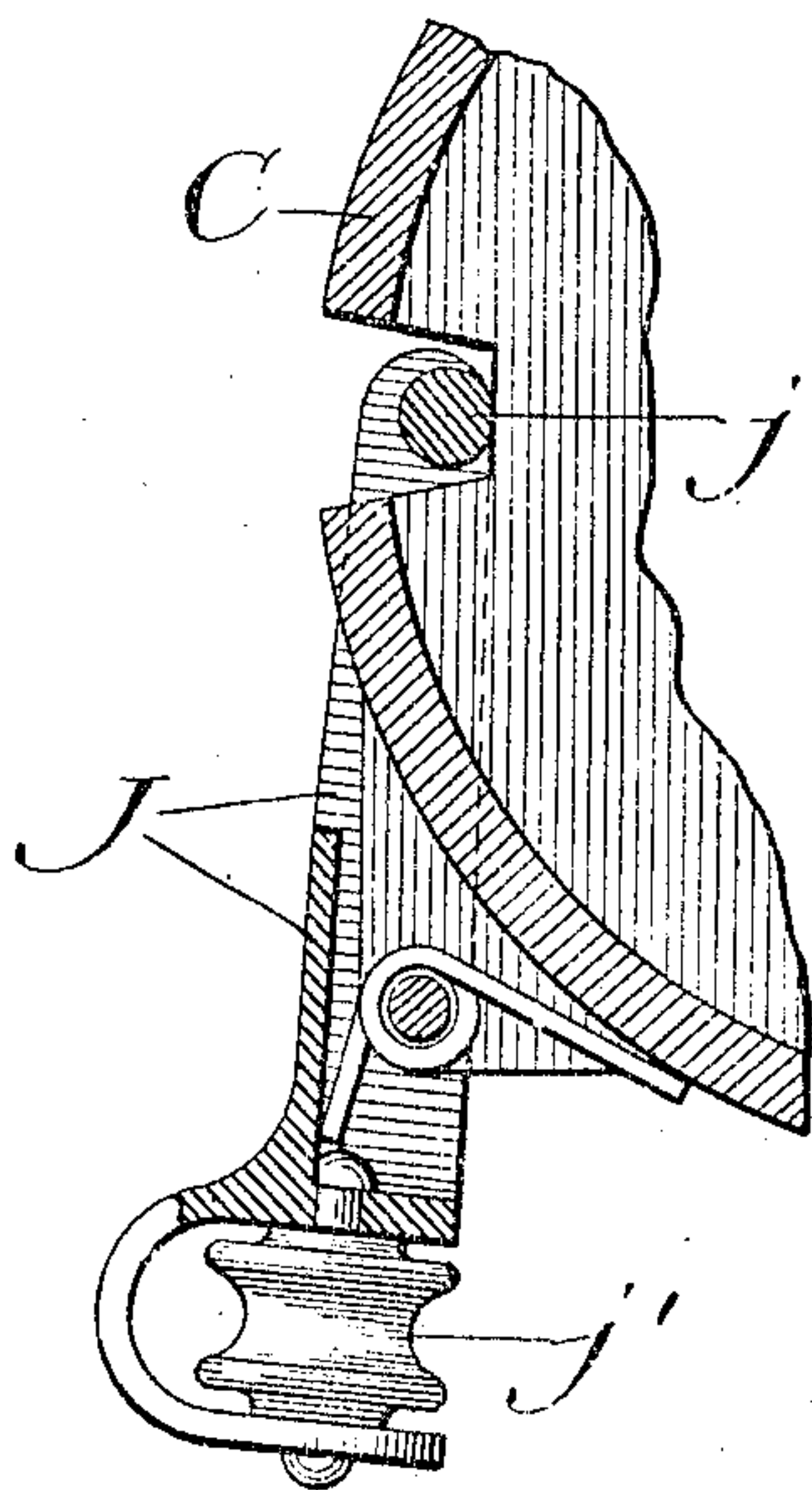


Fig. 9.



Witnesses,
E. C. Gaylord,
John Enders.

Inventor,
Henry L. Ferris,
By Dyrenforth, Dyrenforth, Lee & Wiles,
Attorneys.

UNITED STATES PATENT OFFICE.

HENRY L. FERRIS, OF HARVARD, ILLINOIS, ASSIGNOR TO HUNT, HELM, FERRIS & COMPANY, OF HARVARD, ILLINOIS, A CORPORATION OF ILLINOIS.

HAY-CARRIER.

No. 844,719.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed September 13, 1905. Serial No. 278,323.

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. 3, certain portions being shown in elevation and the parts being shown tripped. Fig. 3 is a rear elevation of the device with the parts in the position shown in Fig. 1. Fig. 4 is a vertical section in the line 4 4 of Fig. 1. Fig. 5 is a horizontal section in the line 5 5 of Fig. 1. Fig. 6 is an elevation of the upper rope-clamping jaw. Fig. 7 is a top plan of the frame of my improved carrier removed from the carriage. Fig. 8 is a horizontal section through the carriage just above the turn-table; and Fig. 9 is a horizontal section through the frame and parts carried thereby at the level of the turn-table.

Referring to the drawings, A is a suitable track bearing a trip-block *a*. Upon the track A runs a carriage B, supported by rollers *b* and having at its lower end a turn-table B', upon which is swiveled a frame composed of two halves C C', joined together by rivets or other means. Within the frame and between the side plates C C' thereof is pivoted upon a horizontal and transversely-extending pivot a pulley-supporting member D, which carries on opposite sides main pulleys or sheaves *d d'*, pivoted on horizontal longitudinal axes, and a guide pulley or sheave *d''*, which is pivoted upon a vertical axis adjacent to the main pulley *d*. The rope X, which is the main rope of the device, enters the structure at the right-hand end as viewed in Figs. 1 and 2, passes along the upper surface of the pulley-supporting member D, around a portion of the guide pulley or sheave *d''*, down over the first main pulley *d*, under two sling-pulleys Y Y' of ordinary construction, over the second main pulley *d'*, and down to the sling-pulley Y'. By this arrangement of pulleys the main rope X is enabled to enter the frame of the hay-carrier at its center, so as to

exert symmetrical pull on the device, and thence passes over two main pulleys the planes of which are transverse to the frame. (and consequently to the track when the device is in its normal position,) whereby the rope is given a bight at right angles to the track, so that the sling-pulleys are supported at right angles to the track instead of in line therewith. This is a particularly desirable construction in sling-pulleys, and my device attains it in a particularly simple and efficient manner.

The frame pivotally supports between its sections an engagement member E, the upper end of which is notched to engage with the trip-block *a* in the ordinary way. This engagement member is slotted at *e* to engage with the pin *d''* upon the pulley-supporting member D. The front end of this engagement member is notched at *e'* to receive a squared end *f* on a dog F, pivoted at *f'* between the sections of the frame of the machine and spring-pressed so as to tend to rotate in a right-hand direction, as viewed in Fig. 2. This dog F has a projecting arm *f''*, through which passes a pin *f'''*, extending across the ends of a fork G, the upper ends of which straddle the frame of the machine, the pin *f'''* passing through slots provided for the purpose on the frame of the machine. The lower end of the fork G is pivoted to a lever H, one end of which is pivoted between the frame-sections CC' at *h*, and the opposite ends of which is provided with a flat portion *h'*, adapted to be engaged directly by the hay-sling blocks and with an eye *h''*, through which the rope X passes.

Starting with the parts in the position shown in Fig. 1, it will be seen that if the rope X is pulled to the right the hay-sling blocks will be drawn up and will eventually contact with the lever H, thereby raising the fork G and rotating the dog F about its pivot, thus swinging its squared end *f* out of engagement with the notched end *e'* on the pivoted engagement-piece E. This will release the pivoted engagement-piece E, and the weight upon the hay-sling blocks or pulleys will cause the pulley-supporting member to swing down and draw with it the pivoted engagement-piece E, the parts thus assuming the position shown in Fig. 2. Continued pull upon the rope X will cause the device to move along the track where the load can be

dumped in any desired position, after which the carrier is returned to position in any desired way. In the course of its return journey the engagement-piece E will eventually
 5 strike the trip-block *a* and will be swung back to position by the force of its impact, thus raising the pulley-supporting member D to the position shown in Fig. 1 and permitting the dog F to swing into engagement to hold
 10 the parts in their raised position.

During the movement of drawing the load along the track it is desirable to have the load clamped or locked in its elevated position, and this is accomplished in my device in the
 15 following manner: I indicates an upper clamping-jaw trough-shape in cross-section and having downwardly-projecting side plates *i*, pivoted to a pin *i'*, extending between the side plates C C' of the frame. The upper
 20 plate *i*² of this jaw is corrugated on its inner or lower side, as seen in Fig. 2, for better engagement with the rope X, which passes beneath it. The pulley-supporting member D is provided with a transversely-extending
 25 pin *i*³, the opposite ends of which engage with slots *i*⁴ in the side plates *i* of the jaw I, said slots extending in such a position that as the pin *i*³ moves up the jaw will swing about its
 30 pivot in a left-handed direction from the position shown in Fig. 1 to that shown in Fig. 2. The result of this construction is that as the left-hand end of the pulley-supporting member swings down and its right hand swings
 35 up, carrying with it that portion of the rope X immediately above it, the jaw I swings to the left and coöperates with the right-hand end of the pulley-supporting member to clamp the rope. As the pulley-supporting
 40 member moves the rope also moves slightly to the left by reason of the dropping of the load a slight distance, and as this movement of the rope is taking place the upper clamping-jaw I is moving with it, so that when the
 45 rope is finally clamped it is clamped without the wear and tear which would be caused by gripping it between jaws having no movement with it. It is particularly desirable to have this upper clamping-jaw move along
 50 with the rope as it tightens upon it, for by this means much abrasion is saved.

J, Fig. 1, indicates a lever pivoted between its ends to the upper portion of the section C' of the frame. This lever carries at one end a
 55 pin *j*, which engages with notches in the turntable B to lock the frame against rotation and carries at its opposite end a pulley *j'*, (dotted lines, Fig. 4,) over which extends a cord Z, said cord passing subsequently over a
 60 guide-pulley *j*², pivoted in the frame-section C', and thence down to the free end of the arm *f*² of the dog F. The lever J is provided with a strong spring which holds it normally in engagement with the turntable on the
 65 carriage, so that an ordinary pull on the cord Z will operate only to rotate the dog F and

trip the mechanism exactly as would be done were it lifted by the rising of the load. This device is frequently useful when it is desired to trip the load before it has reached the
 70 limit of its upward movement. A stronger pull on the cord Z will operate not only to produce this result, but to pull in the lever J to permit the frame to swing about on the carriage.

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
 75 myself to the specific form herein shown and described.

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

1. The combination with a hay-carrier frame, of a pulley-supporting member movable therein, clamping means actuated by
 85 the pulley-supporting member and adapted to clamp the rope, means for locking and tripping the pulley-supporting member and two pulleys carried by the pulley-supporting member in a single plane at right angles to
 90 the pulley-supporting member and to the frame.

2. The combination with a hay-carrier frame, of a pulley-supporting member movable therein, clamping means operated by
 95 the pulley-supporting member and adapted to clamp a rope, means for locking and tripping the pulley-supporting member, two pulleys in a single plane at right angles to said pulley-supporting member and carried there-
 100 by and symmetrically disposed with respect to the central line of said frame, and means for directing a rope from said pulleys into the central line of said frame.

3. The combination with a frame and a
 105 pulley-supporting member pivoted therein, of two pulleys in a single plane at right angles to the length of the frame and secured to the pulley-supporting member symmetrically with respect to its pivot upon the frame.

4. The combination with a carriage and a frame swiveled thereto, of a locking-dog for the operating parts of the device, a lever operating to lock the frame to the carriage to prevent its rotation, a strong spring holding
 115 said lever in engaging position, a weaker spring holding the locking-dog in engaging position, and a cord running over the lever and connected to the locking-dog whereby a pull on said cord will first release the locking-
 120 dog and subsequently release the frame from the carriage to permit its rotation.

5. The combination with a frame, a pulley-supporting member and a pulley supported thereby over which the main rope of the de-
 125 vice runs, of a jaw fixed on said pulley-supporting device, mechanism for tripping the pulley-supporting member, a second jaw pivoted in the frame and opposed to the jaw on said pulley-supporting member, and a pin-and-
 130

slot connection between the pulley-supporting member and said pivoted jaw, the slot of said connection being constructed to cause said pivoted jaw to move toward the jaw on said pulley-supporting member and backward with the rope when the pulley-supporting member is tripped.

In witness whereof I have signed the above

application for Letters Patent, at Harvard, in the county of McHenry and State of Illinois, 10 this 6th day of September, A. D. 1905.

HENRY L. FERRIS.

Witnesses:

R. G. EHLE,

H. D. CRUMB.