

No. 620,467.

Patented Feb. 28, 1899.

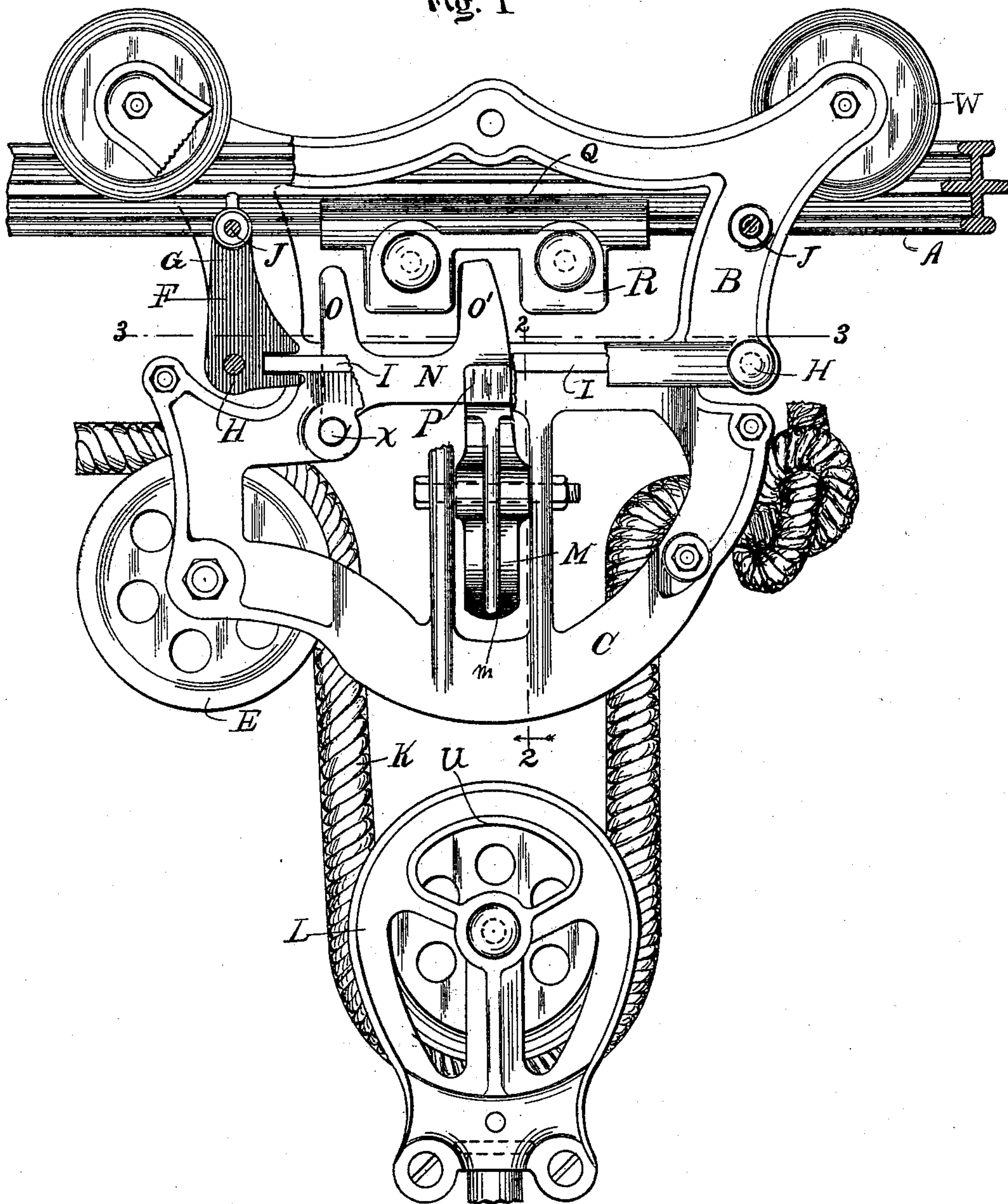
W. LOUDEN.
HAY CARRIER.

Application filed July 30, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1



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2 Sheets—Sheet 2.

Fig. 2

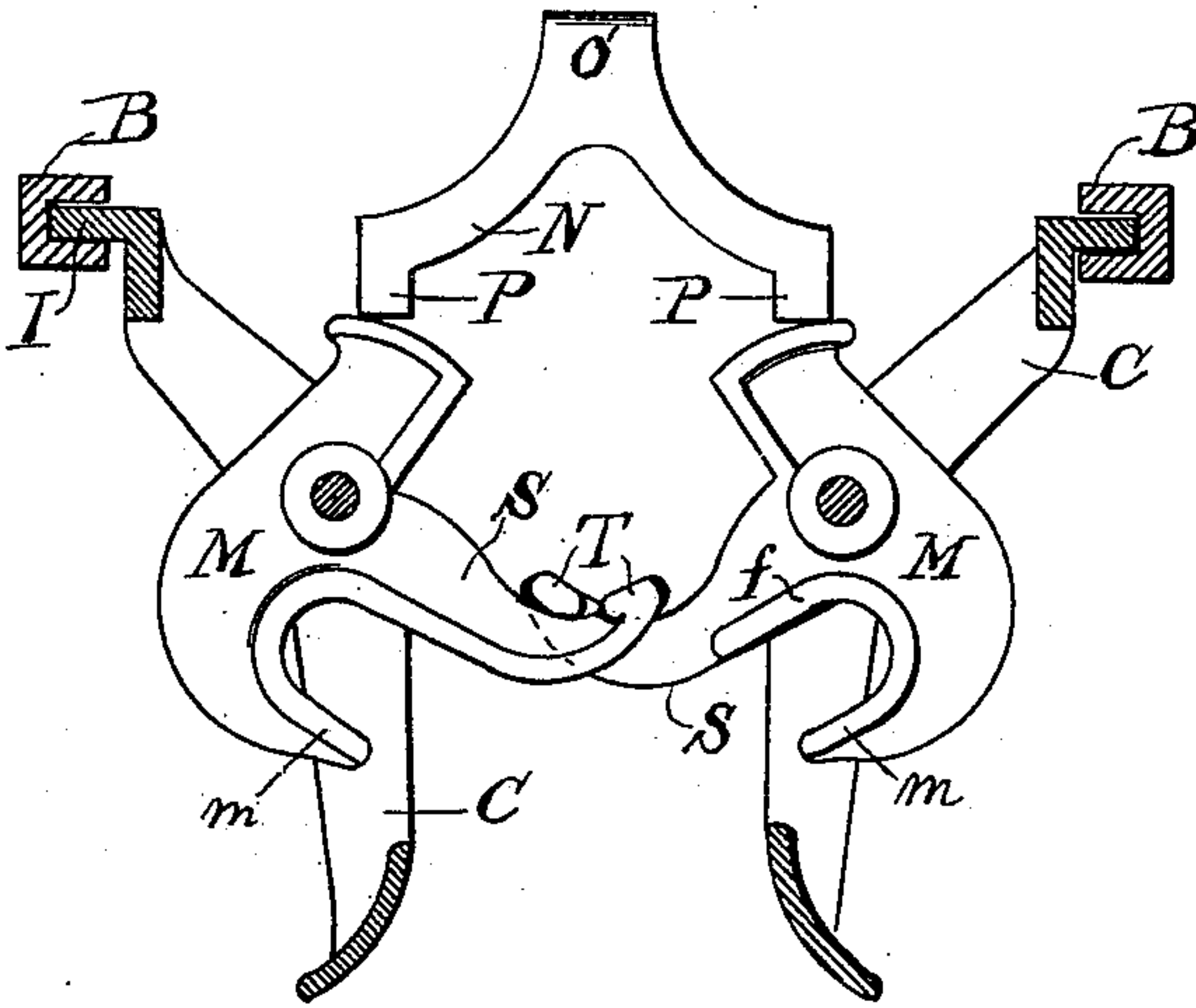


Fig. 4

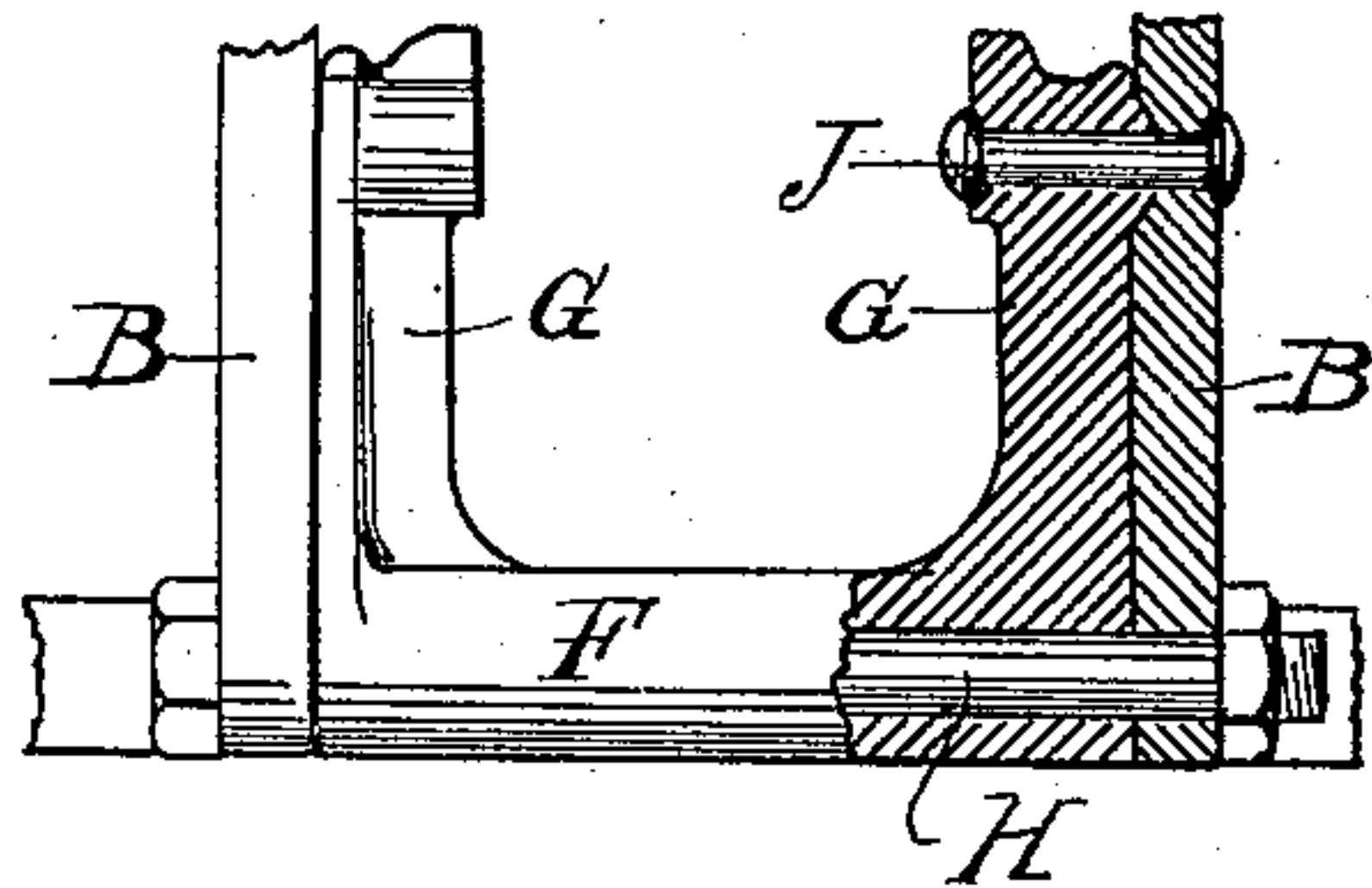


Fig. 5

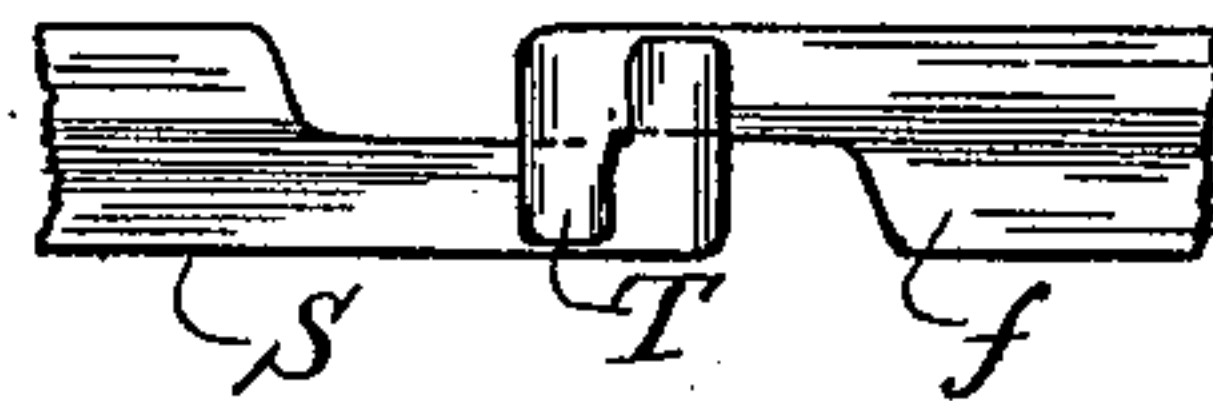


Fig. 3

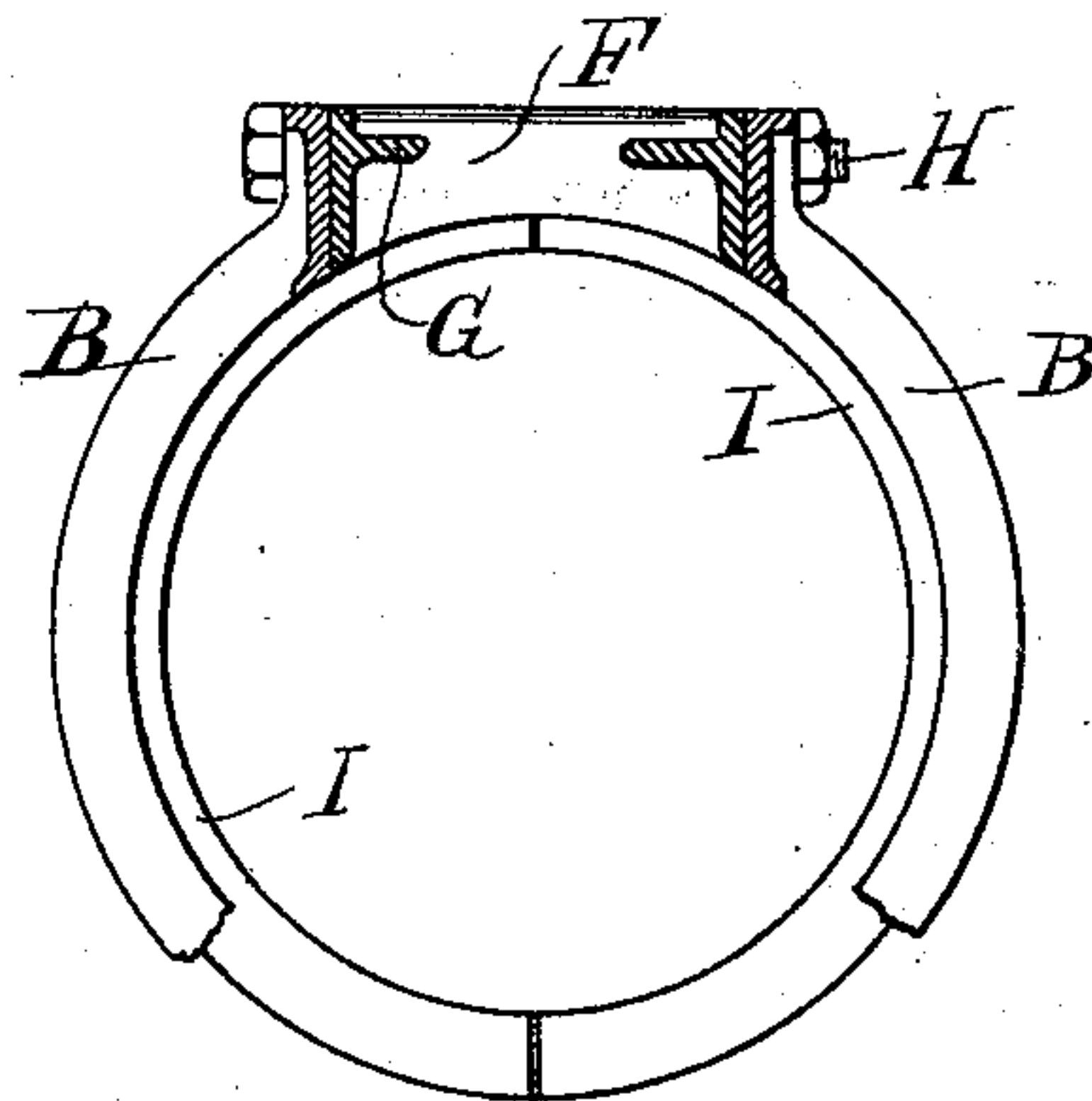
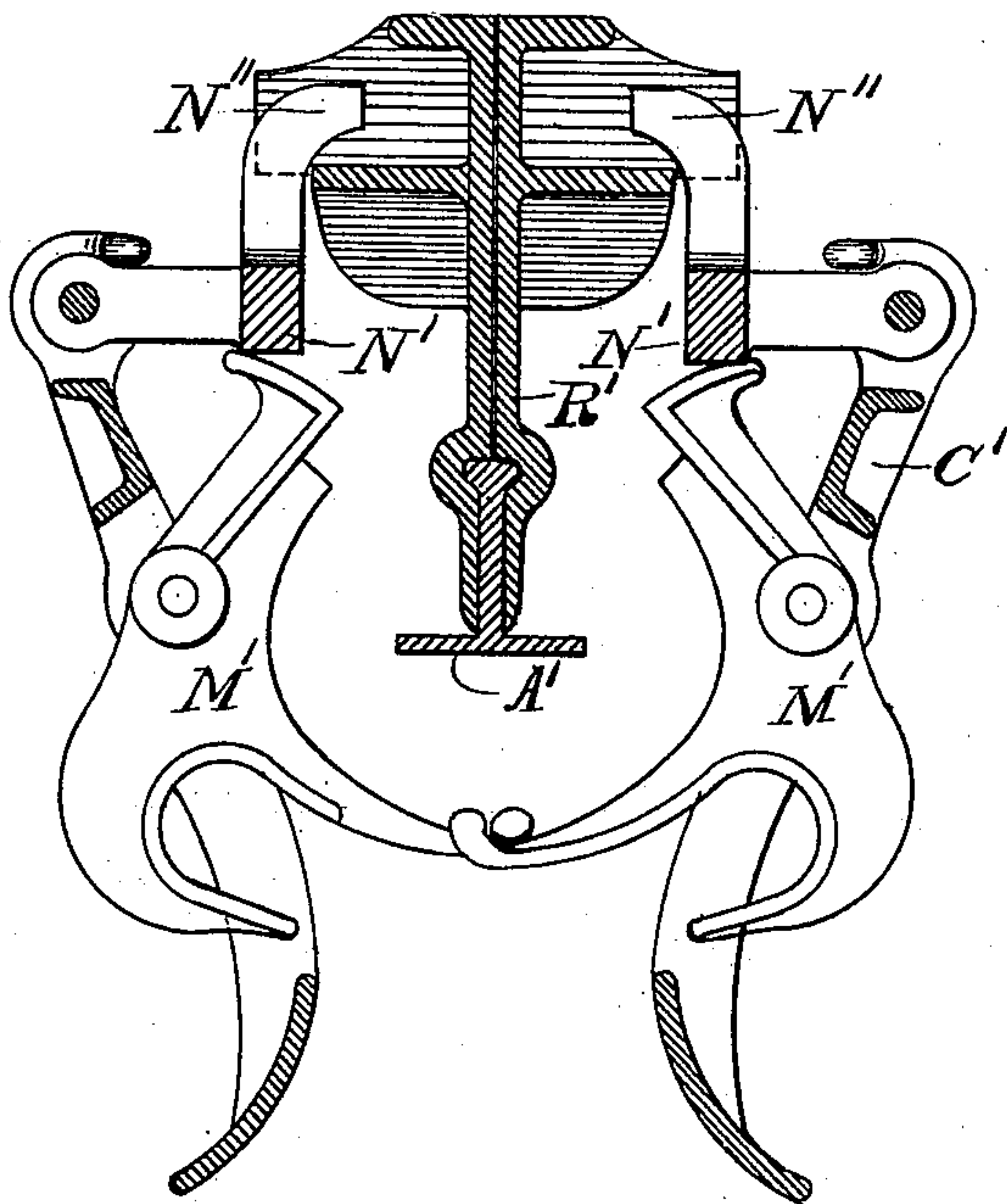


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM LOUDEN, OF FAIRFIELD, IOWA.

HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 620,467, dated February 28, 1899.

Application filed July 30, 1898. Serial No. 687,250. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LOUDEN, a citizen of the United States, residing at Fairfield, in the county of Jefferson and State of Iowa, have invented a new and useful Improvement in Hay-Carriers, of which the following is a specification.

My invention relates to hay-carriers having grappling-hooks adapted to support the elevating-pulley between them; and it consists of improved means for making the hooks act in unison, also of an improved construction of carriers having a swivel connection between their upper and lower frames, and in other details hereinafter explained, and set out in the claims.

In the accompanying drawings, Figure 1 is a side view of the carrier, a portion of the frame being broken away to show interior parts. Fig. 2 is a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a horizontal view of the swivel part of the carrier-frame, drawn on line 3 3 of Fig. 1, a part of it being broken away to show the lip on the swivel. Fig. 4 is an end view of a portion of the carrier-frame, a part of it being in vertical section. Fig. 5 is a top or plan view of the inner ends of the grappling-hooks. Fig. 6 is a cross-section view showing a modification of the lock mechanism of the carrier.

A represents the track or way upon which the carrier runs and which may be of any approved construction.

B represents the sides of the upper part of the carrier-frame, which carry the track-wheels W, and C is the lower part of said frame, which carries the rope-wheel E. Between the ends of the side pieces B are located end pieces F, and the whole is securely held together by bolts H. The lower ends of the pieces B and F are made to form (when bolted together) a circle which is grooved on its inner face, and the upper edge of the lower part C has a circular lip I, which is adapted to turn in said groove, so that the lower part C may be swiveled around in either direction.

The pieces F are perforated in their lower ends from side to side to permit the passage of the bolts H through them and are fitted with upwardly-projecting arms G, and these arms are secured to the side pieces B by rivets J (or otherwise) at some distance above

the bolts H. By this means the upper part of the carrier-frame is thoroughly braced and is made much stronger than if the sides B were directly united together in the ordinary way by the bolts H alone. Also all the space between the arms G is available for the passing of the track attachments therethrough, so that while the strength of the carrier-frame is greatly increased the vertical space taken up with the swivel is reduced to the minimum.

K represents the draft-rope, and L the elevating-pulley, the lower part of which is broken away, while M represents grappling-hooks adapted to support the pulley between them.

N is a dog hinged at x to the frame of the carrier and having two upwardly-projecting prongs O and O'. It is also fitted with two downwardly-projecting points P, which are adapted to rest on the upper ends of the hooks M or to drop between them, according to the position of the hooks.

Q is a stop-block secured to the track A and is provided with two lugs R, adapted to engage the prongs O and O'.

The hooks M are provided with inwardly-projecting arms S, the ends of which lap on each other and have laterally-projecting fingers T, each adapted to catch over and ride upon the opposite arm. To facilitate this operation, the ends of the arms are upwardly curved, so that the fingers T will be raised above and will be free to ride upon the opposite arm and to slide upon it as it turns upon its pivot. Also it is preferable to form flanges f on the arms S, adapted to come in contact with the lower edge of the opposite arm to hold them more accurately in unison.

When the prong O' is between the lugs R and the points P rest upon the upper ends of the hooks M, the carrier will be held stationary on the track. Power being applied to the free end of the draft-rope, the pulley L will be brought in contact with the arms S of the hooks M, which, turning on the pivots, will cause their upper ends to spread and allow the points P of the dog N to drop between them and free the carrier from the stop Q. At the same time the points m will be drawn under the lips U of the pulley L, and being held in this position by the dog N the hooks M will support the pulley and its load. The

carrier being returned to the stop Q, the prong O of the dog N will come in contact with the lug R nearest to it and the points P will be raised from between the upper ends of the hooks M, which will of their own gravity assume the position shown in Fig. 2, so as to free the pulley L, and the prong O' will be brought up between the lugs R and will hold the carrier again stationary on the track.

The advantages of this construction are in part as follows: The mechanism is simple and positive in action, the interior of the carrier is extremely open and easily reached, and the pulley can be run well up into the carrier without coming in contact with bell-shaped mouths or other obstructions. The hooks being slidably connected together by means of the fingers T are made to work in unison, while at the same time they are free to turn each on its own pivot to a sufficient extent to freely engage and release the pulley. The hooks also being on opposite sides of the dog and standing at right angles to it, the weight of the load will not have a tendency to spring the dog to one side nor cause it to bind upon its pivot. The arched form of the dog (shown in Fig. 2) permits the fingers T to go well up into it, thus economizing space, and the fingers being laterally set and the points of the arms upwardly curved permit a much greater movement of the hooks than if the fingers T projected directly toward and in line with the arm of the opposite hook. In swiveling the carrier around, the prong O' will remain between the lugs R, thus holding the carrier steadily in place, while the prong O is being swung around by the swiveling of the carrier to the opposite end of the stop.

In the modification shown in Fig. 6 the hooks M' are substantially the same as in Figs. 1 and 2, but the dogs N' are essentially different, being similar to those shown in my Patent No. 589,902, dated September 14, 1897. The dogs N' are hinged at their outer ends to the carrier-frame C' on opposite sides of the track A' and at right angles to it. Their central portions rest upon and drop in between the upper ends of the hooks M', as heretofore explained, while their inner ends N'' engage in the usual manner the wings of the stop R', secured to the track A'. The improvement of the grappling-hooks, consisting of the laterally-set overlapping fingers T, is especially valuable when used with dogs of this description, because these dogs are entirely dependent of each other, and by means of this improvement the separated lock mechanism on opposite sides of the carrier is made to act more positively in unison with each other.

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

1. In the combination of an upper and a lower frame swiveled together, two end pieces and two side pieces composing the upper frame, the end pieces running across from one side piece to the other and joining their ends

together, and the lower edges of said four pieces forming a swivel connection for the lower frame.

2. The combination of an upper frame and a lower frame swiveled together, said upper frame being composed of two side pieces and two end pieces secured together, and the end pieces having upwardly-extending arms secured to the side pieces, substantially as set forth.

3. The combination of an upper frame and a lower frame swiveled together, said upper frame being composed of two side pieces and two end pieces having upwardly-projecting arms secured to the side pieces and their lower ends being perforated for the passage of bolts therethrough, substantially as described.

4. The combination of a dog hinged at one end to the carrier-frame, and having upwardly-projecting prongs adapted to engage a stop on a hay-carrier track, an elevating-pulley frame with a lip on each side of its frame and a pair of pivoted grappling-hooks set at right angles to the dog and adapted to alternately support and be supported by the free end of the dog, and to engage and release the lips of the pulley-frame substantially as set forth.

5. The combination of a dog hinged at one end to the carrier-frame, having upwardly-projecting prongs adapted to engage a stop on a hay-carrier track, and downwardly-projecting points on opposite sides of its free end, an elevating-pulley frame with a lip on each side of its frame and a pair of pivoted grappling-hooks set at right angles to the dog and adapted to alternately engage and be engaged by said downwardly-projecting points, and to engage and release the lips of the pulley-frame substantially as described.

6. The combination of a dog hinged at one end to the carrier-frame, having upwardly-projecting prongs adapted to engage a stop on a hay-carrier track, and downwardly-projecting points on opposite sides of its free end, and a pair of pivoted grappling-hooks set at right angles to the dog and adapted to alternately engage and be engaged by said downwardly-projecting points, and said hooks having intermediate inwardly-pointing arms adapted to move up into the space between said downwardly-projecting points, substantially as described.

7. The combination of a pair of grappling-hooks pivoted in opposite sides of the carrier-frame and having intermediate inwardly-projecting arms, and a dog or dogs adapted to alternately engage and be engaged by the upper ends of said hooks, said arms being lapped on each other and each having laterally-set fingers adapted to ride on the upper side of the opposite arm, substantially as set forth.

8. The combination of a pair of grappling-hooks pivoted in opposite sides of the carrier-frame and having intermediate inwardly-projecting arms, and a dog or dogs adapted to

alternately engage and be engaged by said hooks, the inner ends of said arms being upwardly curved and lapped on each other, and each having laterally-set fingers adapted to ride on the upper side of the opposite arm, substantially as described.

9. The combination of a pair of grappling-hooks pivoted in opposite sides of the carrier-frame and having intermediate inwardly-projecting arms, and a dog or dogs adapted to alternately engage and be engaged by said hooks, the inner ends of said arms being upwardly-curved and lapped on each other, and each having laterally-set fingers adapted to ride on the upper side of the opposite arm, and flanges on their lower edges adapted to catch on the under sides of said arms, substantially as set forth.

10. The combination of a dog hinged at one end to the frame of the carrier, and a pair of grappling-hooks pivoted in opposite sides of said frame, and at right angles to said dog; said grappling-hooks having inwardly and upwardly projecting arms, and the free end of the dog being adapted to drop between the upper ends of said hooks, and its central portion being cut away to receive the upwardly-projecting points of said arms, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM LOUDEN.

Witnesses:

JAMES SHINBLANC,
FRANK H. HIGBY.