



No. 631,896.

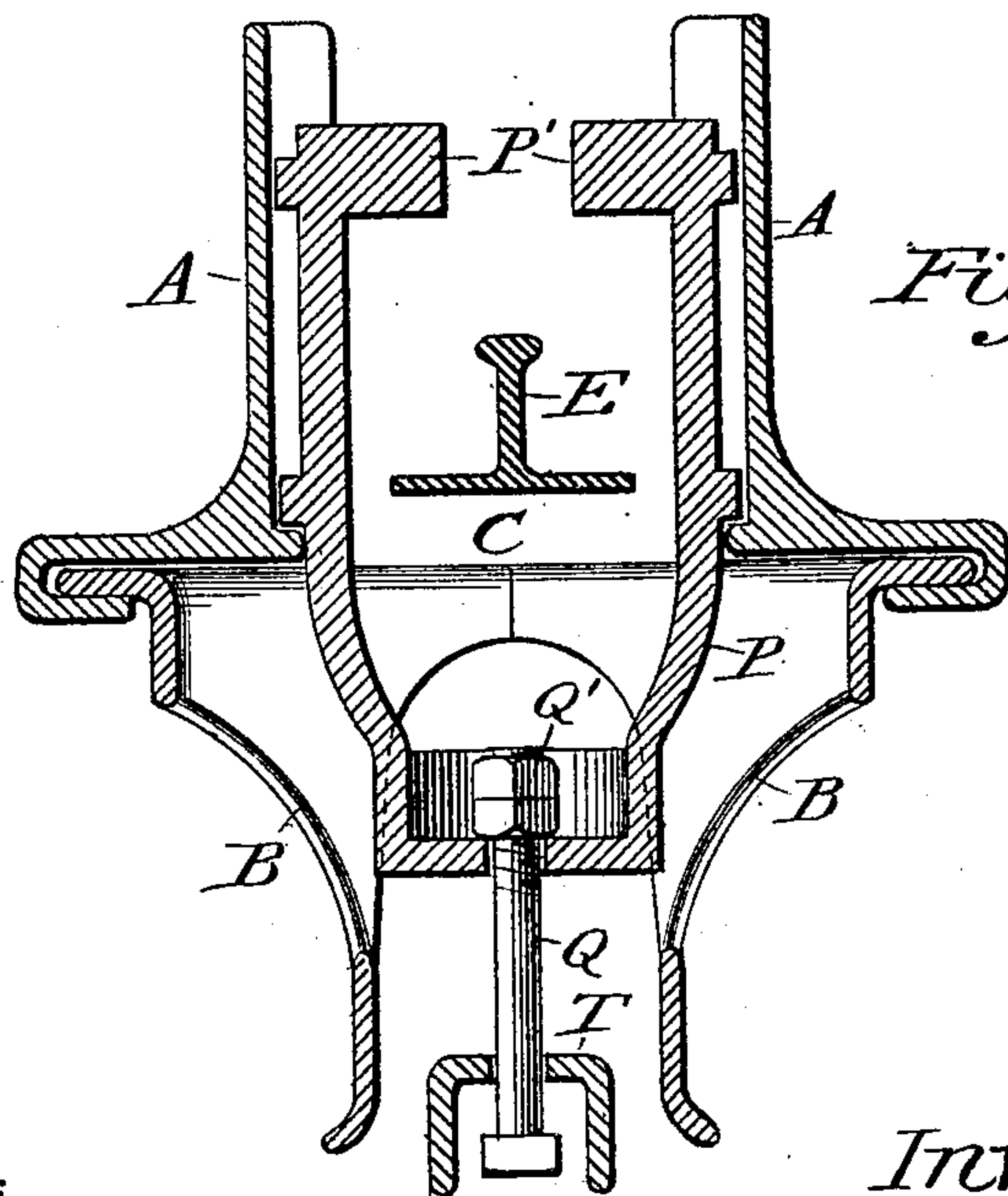
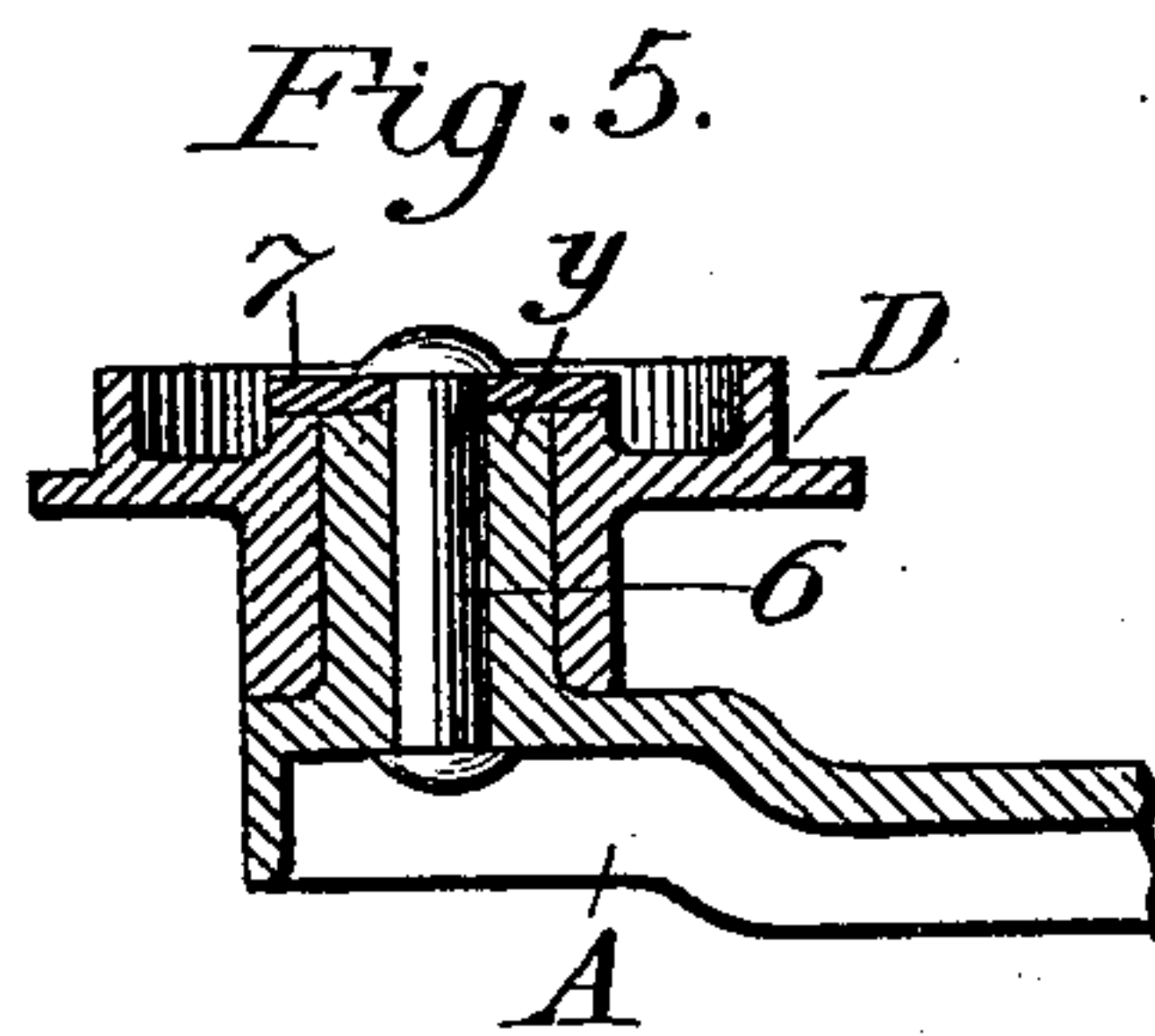
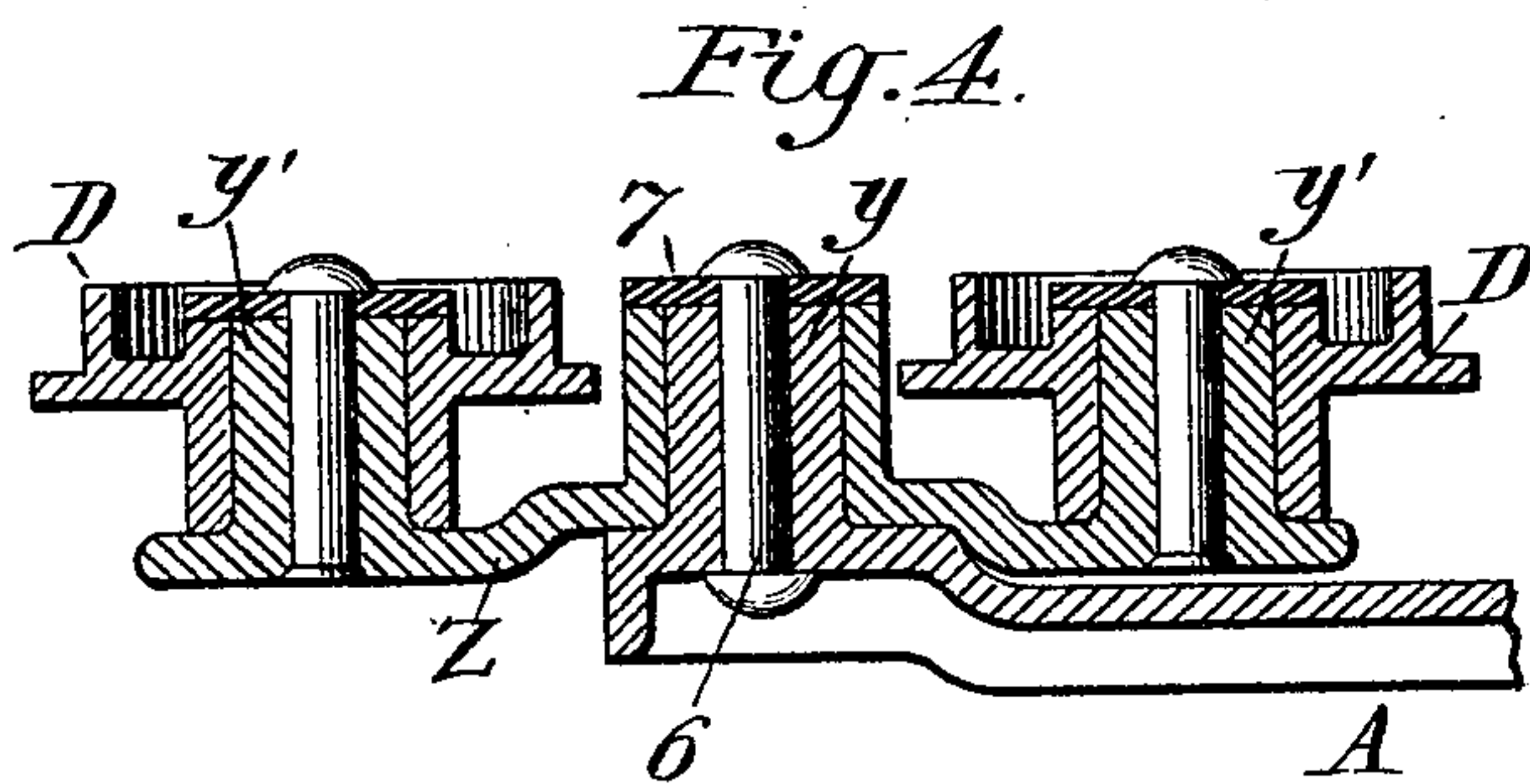
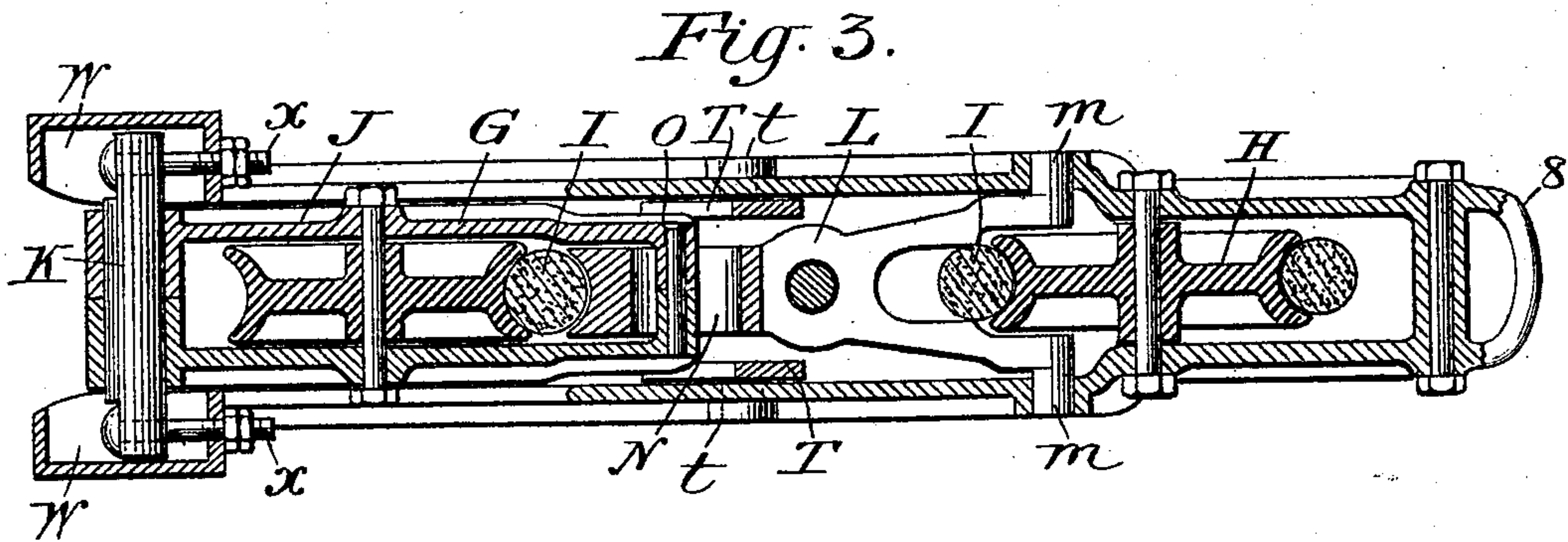
Patented Aug. 29, 1899.

W. LOUDEN.  
HAY CARRIER.

(Application filed Jan. 3, 1899.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM LOUDEN, OF FAIRFIELD, IOWA.

## HAY-CARRIER.

SPECIFICATION forming part of Letters Patent No. 631,896, dated August 29, 1899.

Application filed January 3, 1899. Serial No. 700,940. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LOUDEN, 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.

This invention relates to hay-carriers in which an automatic brake or grip is used to catch and hold the hoisting-rope; and it consists of means whereby part of the mechanism for operating the brake may be mounted in the upper frame of a swivel-carrier and the remainder in the lower frame and swivel, together with the frames upon which they are mounted.

It also consists of other features, set forth in the specification and particularly pointed out in the claims.

Figure 1 is a side view having the frame on the near side removed and the central parts, with the exception of the sheaves, cut in vertical section. Fig. 2 is a vertical section on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1. Fig. 4 is a horizontal section of one of the supporting-trucks and the adjoining portion of the carrier-frame on line 4 4 of Fig. 1. Fig. 5 is the same, showing an ordinary track-wheel in place of the truck.

The carrier is constructed with an upper frame A and a lower frame B, connected together by means of a swivel C. The upper frame is provided with wheels D to support the carrier on the track E and the lower frame with sheaves F, G, and H, around which the rope I passes. The sheaves F and G are mounted in a frame J, which is arranged to tilt or oscillate on an axle K.

L is a brake-bar pivoted in the frame of the carrier at *m* and is arranged to grip the rope I on the sheave G. It has a slot N in its body, in which plays a bolt or a boss O, connecting it to the inner end of the tilting frame J.

In the upper frame of the carrier is mounted a vertically-sliding dog P, having its lower end made circular and its upper end forked and fitted with horizontal lugs P'. In the center of the lower end of the dog P is a hole, and there is also a hole in the central part of the brake-bar L, through both of which holes a bolt Q is loosely fitted, thus connect-

ing the dog P and the bar L together so as to swivel around with their respective frames. When the carrier is run along the track to the stop S, the lugs P' will slide up the lower inclines R of the stop S, which will lift the dog P and will also raise the free end of the brake-bar L off the rope I by means of the bolt Q connecting them together. To hold them in this position, I pivot a loop-shaped trip-lever T to the lower frame of the carrier at *t* and arrange its upper end so that it will catch under the lower end of the dog P and keep it in elevated position. The lugs P' will then be held from passing out under the upper inclines R' of the stop S, and the carrier will be held stationary on the track in the usual manner, while the brake-bar L will be held free from the rope I. The loop-shaped trip-lever T is preferably made in two parts and riveted together at each end by the rivets *z*; and it is also preferable to join their central parts together by means of a central bolt or rivet *z'*. In Fig. 1 the rear side only of the trip-loop is shown. The rope I is first passed over the sheave F, then over the sheave G, then down under the elevating-pulleys U, the lower ends of which are cut away in the drawings, then up through the trip-loop T and over the sheave H and down through the trip-loop, and thence to one of the pulleys U, where it is fastened in the usual manner. An adjustable stop V is usually secured to the rope between the loop T and the pulley U. The pulleys U are now free to descend and be connected to the load to be elevated. Power being applied to the free end of the rope I, the pulleys U, with their load, will be elevated until the stop V comes in contact with the lower end of the loop T and raises its outer end, which will throw its upper end from under the dog P, so the dog will drop and allow the lug P' to pass out under the upper inclines R' of the stop S and the carrier can run along the track to the point of deposit. At the same time the free end of the brake-bar L will descend and grip the rope against the sheave G, so as to prevent the pulleys U, with their load, from descending should the rope be slackened. When in this position, the upper end of the trip-lever T will be free to swivel around the lower circular end of the dog P, as shown in Fig. 1.



The free end or foot of the brake-bar L is made concave in cross-section to fit the rope I and is constructed with a heel L' and a toe L'', with a hollow or recessed portion L''' between them. The heel is set so as to take a "bite" on the rope as it passes down over the sheave G and to gradually tighten the bite until the rope will pass down no farther or until the toe L'' rests on the top of the rope. The hollow L''' permits the bite of the heel to extend well up toward the toe, while the toe will come fairly on the top of the rope, and thus prevent the rope from being wedged too tightly between the brake-bar L and the sheave G. The slant of the heel will be sufficient to accommodate any moderate variation in the size of the rope, but should an extra large or small size of rope be used a further adjustment is provided for in the axle K, upon which the tilting frame J is pivoted. The ends of this axle are fitted to slide in recesses W in the frame of the carrier, so as to adjust the frame J, with the sheave G, closer to or farther from the foot of the brake-bar L, and the axle K is held in any desired adjustment by means of the double-nutted bolts x, which are passed through the ends of the axle K and also through the end walls of the recess W. In this way any size of rope may be used and may be adjusted to fit the brake-bar and also to compensate for wear of the parts. The brake-bar may also be adjusted to be raised higher or dropped lower by means of the bolt Q, connecting it to the dog P. This bolt is preferably fitted with double nuts Q', and by turning these nuts up or down and fastening them there the connection between the brake-bar L and dog P may be either shortened or lengthened, as desired.

The upper part of the carrier-frame A is fitted with bosses or studs-pins y, upon which the track-wheels D may be mounted in the usual manner, the boss being preferably made with a small hole through its center, into which a rivet 6 is inserted, with a washer 7 to hold the track-wheel D in place. When heavy work is required and there is great wear on the track-wheels, I use on opposite sides of the carrier truck-arms Z, which are fitted to go on the bosses Y in place of the wheels D and to be held in place by the rivet 6 and washer 7. On each end of the truck-arm Z is a boss y', the same as those on the carrier-frame and set in the same plane, and upon these the track-wheels D are mounted. In this way the number of track-wheels to support the carrier can be doubled and the wear on each greatly reduced.

Should there be more weight on one end of the carrier than on the other, the truck-arms Z can be placed on the heavy end and double the number of track-wheels be used on that end, while single track-wheels may be used on the light end in the usual manner, and the wheels on the truck-arms Z will be in the same plane as those mounted directly upon the carrier-frame. The truck-arms Z are also

made to oscillate slightly, so that the wheels mounted on its opposite ends will be free to accommodate itself to any unevenness of the track.

What I claim is—

1. A carrier having an upper and a lower frame swiveled together, the lower frame carrying a vertically-movable brake-bar adapted to grip the draft-rope, and the upper frame a dog vertically slidable therein, said brake-bar and dog being connected together so as to swivel around with their respective frames, substantially as described.

2. A carrier having an upper and a lower frame swiveled together, the lower frame carrying a vertically-movable brake-bar, and the upper frame a vertically-slidable dog, having its upper end forked and its lower end circular and a pivoted trip-lever adapted to swivel around the lower end of the dog and support it in elevated position, and said dog and brake-bar being connected together so as to swivel around with their respective frames, substantially as set forth.

3. A carrier having an upper and a lower frame swiveled together, the lower frame carrying a vertically-movable brake-bar, and the upper frame a vertically-slidable dog having its upper end forked and its lower end circular, a bolt loosely set in the central part of the lower end of the dog and pivotally connecting it with the brake-bar, and a pivoted trip-lever adapted to swivel around the lower end of the dog and to support it in elevated position, substantially as described.

4. A hay-carrier having in the lower part of its frame a vertically-movable brake-bar, and in the upper part of its frame a vertically-slidable dog, means to hold the dog in elevated position and trip it therefrom, and a bolt with adjustable nuts connecting said bar and dog together, substantially as and for the purpose set forth.

5. The combination of a vertically-slidable dog, a brake-bar pivoted at one end and the other end adapted to grip the hoisting-rope of the carrier, a bolt adjustably connecting the central parts of the dog and brake-bar together, and means to hold the dog in elevated position and to trip it therefrom, substantially as described.

6. The combination of a tilting frame pivoted in the main part of the carrier-frame, rope-carrying sheaves mounted in said tilting frame, a brake-bar pivoted at one end to the carrier-frame and jointedly connected at the other end to said tilting frame, a vertically-slidable dog, means to hold the dog in elevated position and to trip it therefrom, and a bolt connecting brake-bar and dog together, substantially as set forth.

7. The combination of a tilting frame, rope-carrying sheaves mounted therein, a brake-bar jointedly connected to said tilting frame and adapted to grip a rope passing over said sheaves, means to release the brake from contact with the rope, and an adjustable axle for



the tilting frame, so as to set the rope closer to or farther from the brake, substantially as and for the purpose set forth.

5 8. The combination of a tilting frame, rope-carrying sheaves mounted therein, a brake-bar jointly connected to said tilting frame and adapted to grip a rope passing over said sheaves, means to release the brake from contact with the rope, an axle for the tilting  
10 frame slidable in the carrier-frame and bolts to set it closer to or farther from the brake, substantially as described.

9. In a hay-carrier a rope-carrying sheave, a brake-bar pivoted at one end and the other  
15 adapted to grip a rope passing over said sheave and means to release it therefrom, the foot of the brake-bar having a heel to grip the rope, a toe to limit the movement of the grip, and a hollow or recess portion between the  
20 heel and toe, substantially as and for the purpose set forth.

10. In a hay-carrier bosses on the upper corners of the frame adapted for track-wheels to run upon, truck-frames mounted upon said  
25 bosses, a boss on each end of said truck-frame in alinement with the bosses on the carrier-

frame and a track-wheel mounted on each of said truck-frame bosses, substantially as described.

11. In a hay-carrier, bosses on the upper 30 corners of the frame adapted to support the mounting of the track-wheels, truck-frames mounted upon said bosses and adapted to oscillate thereon, a boss on each end of said truck-frames in alinement with the bosses on 35 the carrier-frame, and a track-wheel mounted on each of said truck-frame bosses, substantially as described.

12. In a hay-carrier bosses on the upper corners of the carrier-frame, horizontally-dis- 40 posed truck-frames mounted thereon, bosses on the opposite ends of said truck-frames and track-wheels mounted on said bosses substantially as described.

In testimony whereof I have signed this 45 specification in the presence of two subscribing witnesses.

WILLIAM LOUDEN.

Witnesses:

A. D. LONG,  
F. H. HIGBY.