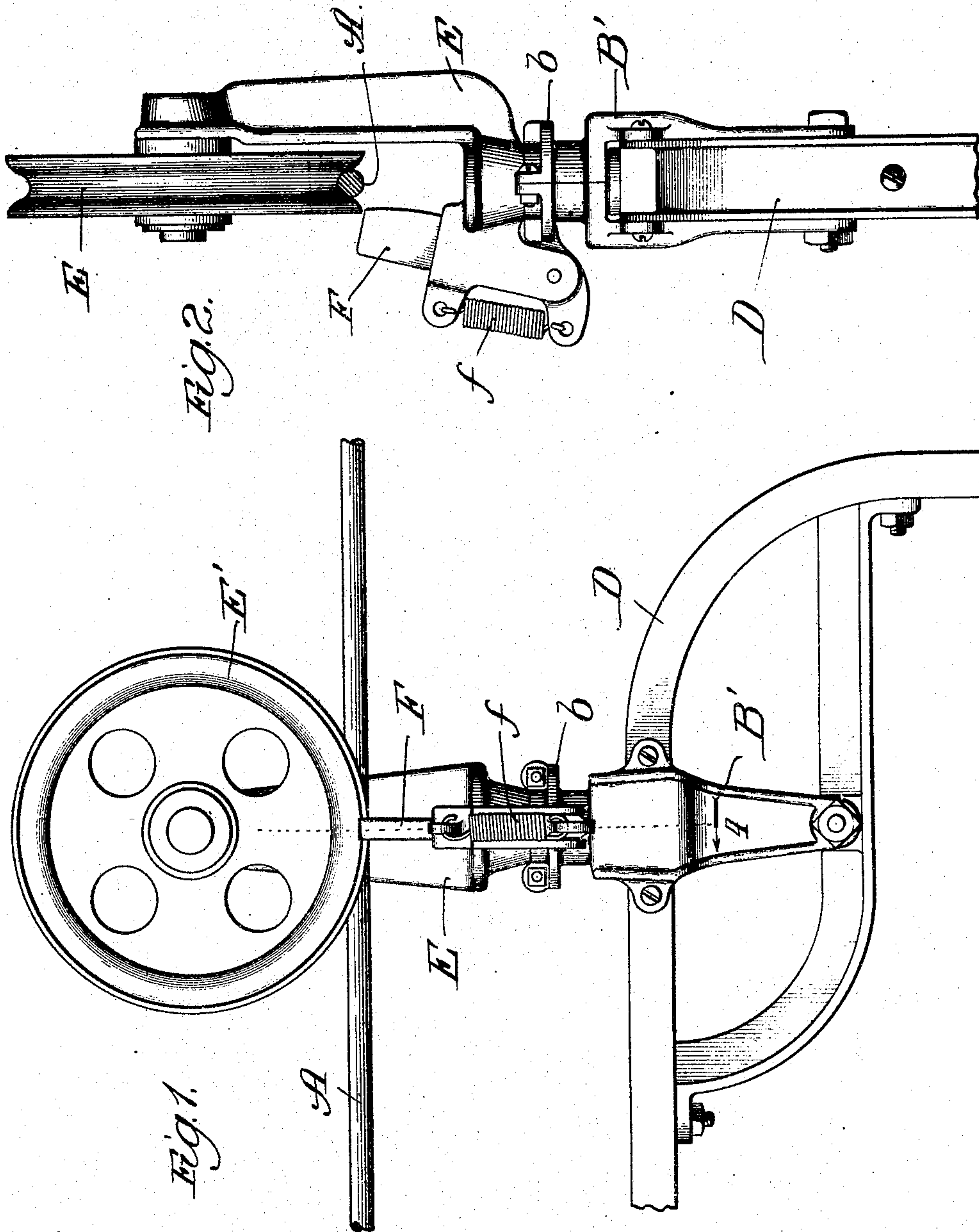


H. L. FERRIS.
 FEED AND LITTER CARRIER.
 APPLICATION FILED MAR. 18, 1909.

924,154.

Patented June 8, 1909.
 2 SHEETS—SHEET 1.



Witnesses:
 John Enders
 Chas. H. Buell.

Inventor:
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2 SHEETS—SHEET 2.

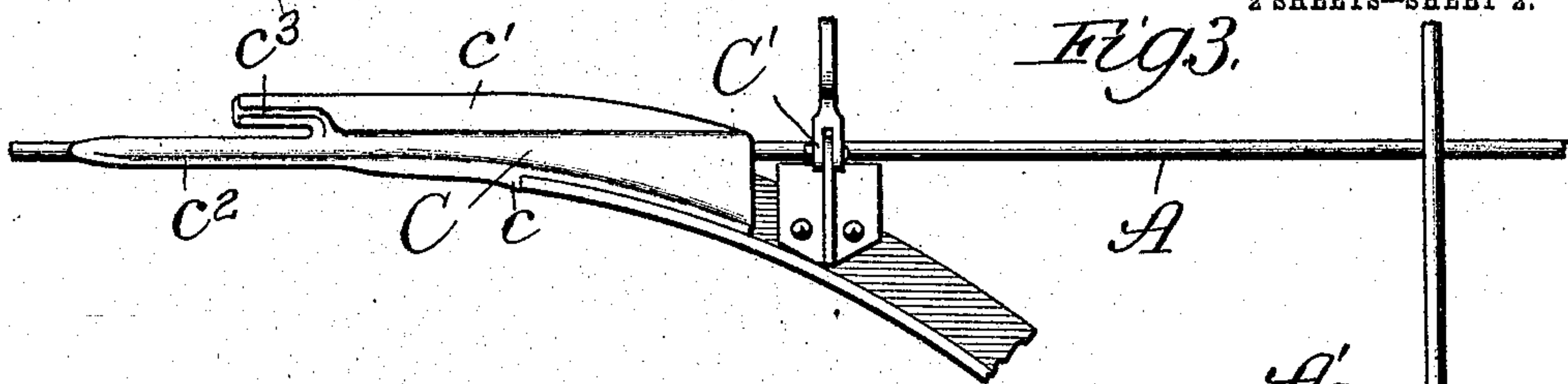


Fig. 5.

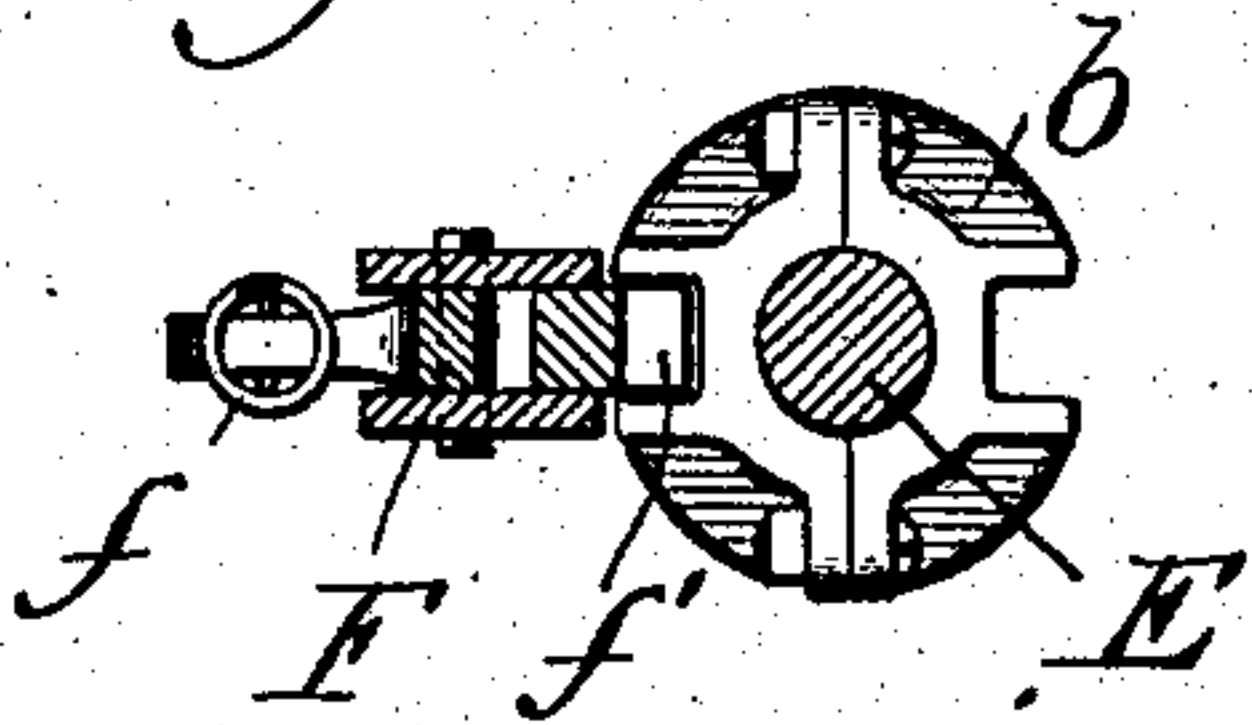


Fig. 4.

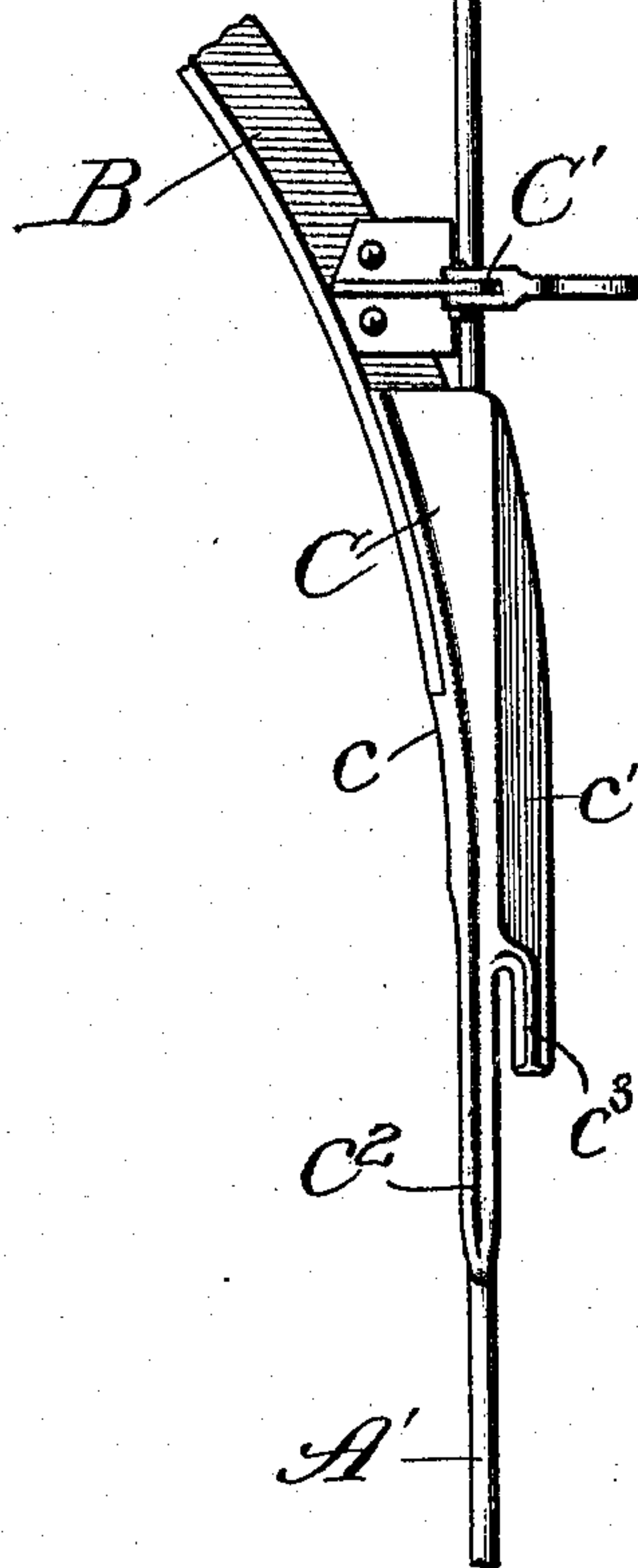
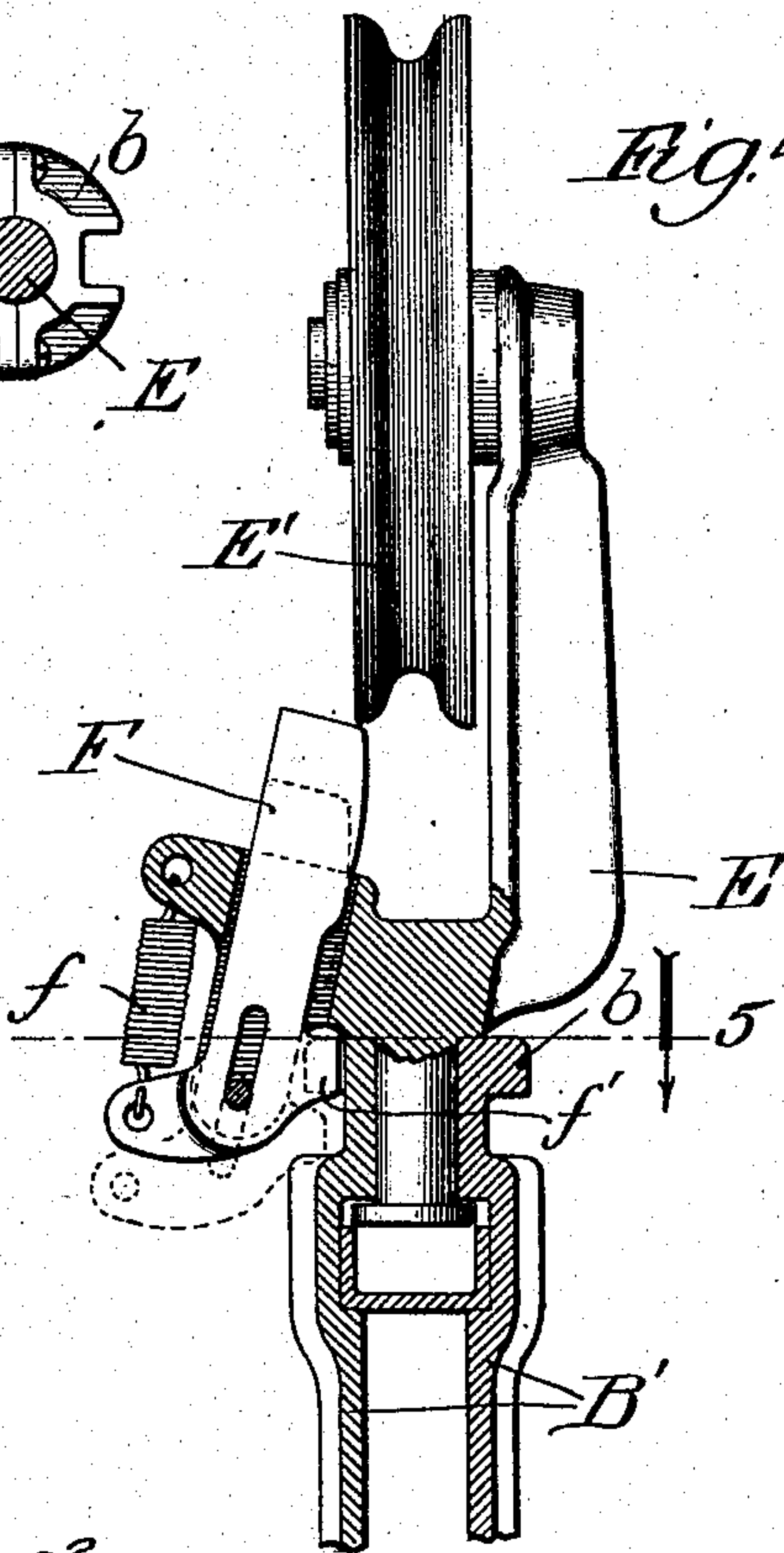
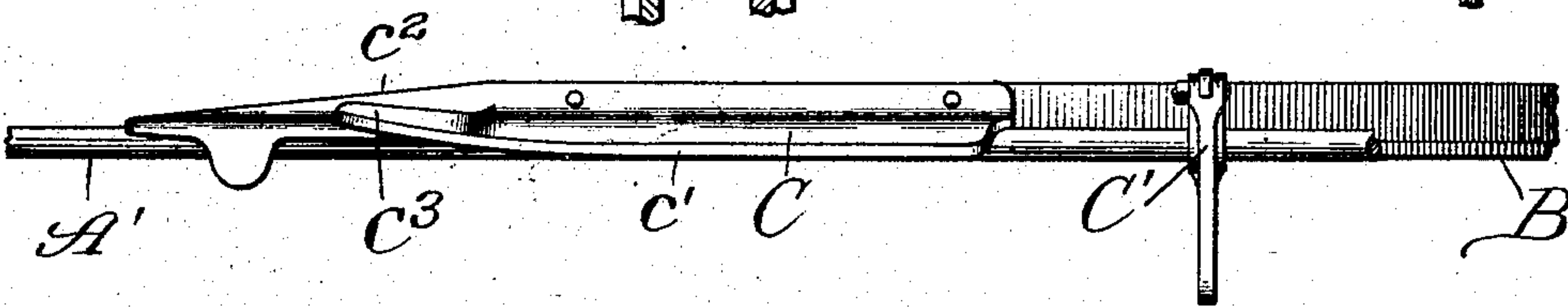


Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY L. FERRIS, OF HARVARD, ILLINOIS, ASSIGNOR TO HUNT, HELM, FERRIS & COMPANY,
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FEED AND LITTER CARRIER.

No. 924,154.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed March 18, 1909. Serial No. 484,319.

To all whom it may concern:

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

My invention relates to certain new and useful improvements in feed and litter carriers, and is fully described and explained in the specification and shown in the accompanying drawings, in which:—

Figure 1 is an elevation of a portion of the frame and one of the hangers of my improved device; Fig. 2 is an end view of the parts shown in Fig. 1; Fig. 3 is a top plan of the track, such as is used in connection with my improved device; Fig. 4 is a section in the line 4 of Fig. 1; Fig. 5 is a transverse section in the line 5 of Fig. 4, and Fig. 6 is a side elevation of one of the switch-castings used with my improved device.

The subject-matter of my present application is an improvement upon the device shown, described and claimed in my Patent No. 862,460, granted August 6th, 1907, the device being as a whole, substantially identical with that shown in said patent. For this reason I have not deemed it necessary to illustrate all the details of construction of the carrier, illustrating, on the contrary, merely those portions wherein my improvements lie and the parts which necessarily cooperate therewith in operation.

Referring to the drawings:—A, A¹, are two lengths of round flexible track running at an angle to each other and crossing as set forth in said patent. These tracks are connected by an arc-shaped track B of angle-iron with a vertical web and a horizontal web which lies on the outside of the curve, the vertical web being brought at its ends into such position that its upper edge is somewhat above the level of the tracks A, A¹, and so that it is just inside said tracks so that the two are practically tangent to its curve. Two symmetrical switch-castings C are provided at the ends of the quadrant-shaped track B, each casting comprising a vertical web c, riveted, or otherwise secured, to the outside of the vertical web of the quadrant-shaped angle-iron track, a horizontal web c¹ grooved on its lower face to receive the corresponding track A or A¹, as the case may be, an inclined bead c² running

downward from the vertical web and overhanging the adjacent section of track A or A¹, so as to guide the pulleys of the feed and litter carrier from the track to the quadrant, and an upwardly slanting ear c³ at the end of the horizontal web c¹, the purpose of which will presently be described. Clamps C¹ are provided upon the quadrant-shaped track for the purpose of engaging and holding the same to the tracks A, A¹. It is to be noted that the parts already set forth are identical with the corresponding parts shown in the patent referred to, and it will also be observed that as far as the present application is concerned, considerable variation is possible in the details of construction of these parts.

D is a frame adapted to support the tub of a feed and litter carrier, the frame, tub and accessory devices adapted for locking and releasing the tub being of any usual or desirable construction. Inasmuch as the tub and its manner of suspension form no part of the present invention, they have not been illustrated herein, as any mechanic skilled in this art will understand exactly how such parts are assembled. A thoroughly satisfactory manner of assembling such parts is illustrated in the patent above referred to. Brackets B¹ are secured to said frame at the upper corners thereof, in which brackets are swiveled hanger-frames E, the particular manner in which the swivel-joint is made being immaterial. The hanger-frames carry pulleys E¹ adapted to ride upon the track in the usual way.

Each of the hanger-frames E carries in the position illustrated an angularly disposed, flattened pin F movable through a hollow bracket provided to receive it, and normally spring-pressed upward or toward the pulley-rim by means of a spring f, the normal distance between the end of each flattened pin and the corresponding pulley-rim being less than the width of the track so that the pin serves to hold the pulleys upon the track, each one of the flattened pins F is provided with a projecting tongue f¹, which when in its upper position will engage with a corresponding notch in a shoulder b upon the bracket B¹.

It will be seen that my present construction is practically identical with that of my prior patent, excepting for the fact that the pin which holds the pulley upon the track is made flattened, and carries a lug or tooth

adapted to engage with the notch in the bracket, upon which the hanger-frame is swiveled. The notch is so positioned that this engagement will take place only when the pulleys are in direct alinement with the container-frame. The construction operates in the same way as does that of my prior patent in that sense that when the carrier reaches the curve, the pulley runs up on the flange of the switch-casting, and the pin is depressed by engagement with the inclined ear c^3 of the said switch-casting running therefrom onto the horizontal web c^1 , thence to the horizontal web of the quadrant-shaped track, and returning into close juxtaposition with the pulley only after the complete turn has been made. The operation of this device differs, however, from that of my patent in that the hanger-frames are rigid against rotation with respect to the main frame of the feed and litter-carrier when the pins are up, but are free to turn when the pins are down. In other words, when the device is running on a straight length of track, the hangers are locked against swiveling, but in passing around curves they are free to turn.

In the use of feed and litter-carriers in the past it has been necessary either to make a rigid connection between the hangers and the container frame, or a permanently swiveled connection. In the first case in order to permit the device to pass around a curve at all, it has been necessary to place the two pulleys close together, in which case the support of the carrier upon the track has been so short that a very undesirable tilting motion has been imparted to the carrier when in movement. In order to make the carriers readily pass around curves without this unfortunate oscillatory movement, the pulleys have been in many instances separated and made permanently swiveling as in the device of my prior patent, but in such cases the pulleys have had a tendency to get out of line and bind the comparatively small track between the flanges of their grooves, thereby making the movement of the carrier unnecessarily difficult. This construction has been generally deemed to be the lesser of the two evils and the construction with the two pulleys separated at a considerable distance and permanently swiveled to the frame has been generally preferred. With my present construction, however, I obtain the advantages of both forms of construction with the disadvantages of neither. During the great bulk of its movement, the carrier has its hanger-frames permanently locked against movement, and the pulleys are therefore held in proper alinement and do not bind on the track. When a curve is reached, however, the hanger-frames are promptly and automatically unlocked so that the curve can readily be passed in spite of the great separation between the hangers. As a result,

therefore, this construction is far superior to any construction heretofore generally used.

It is perfectly obvious that the present feature of invention is capable of considerable variation and that while it is shown in the form of an improvement upon the specific form illustrated in my patent already mentioned, still it is applicable to carriers other than the one therein shown, described and claimed. I therefore have no intention of limiting myself as to the scope of my invention except as is pointed out in the claims which follow.

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

1. The combination with a frame, hanger-frames having swiveled connection therewith, pulleys carried by the hanger-frames, and a locking-device constructed and arranged to secure the hanger-frames against rotation upon straight lengths of track and to permit rotation upon curved track.

2. The combination with a main frame, hanger-frames pivoted thereto and pulleys journaled upon the hanger-frames, of locking devices constructed and arranged to secure the hanger-frames against rotation under normal conditions and means upon the track for releasing said locking-means as the hangers run upon curves in the track.

3. The combination with a track having a curve, of a main-frame, hanger-frames swiveled thereto, pulleys journaled in the hanger-frames and adapted to run upon the track, locking-devices upon the hanger-frames adapted normally to prevent relative rotation between the hanger-frames and main-frame and stationary cam devices upon the track constructed and arranged to disengage the locking-devices when the pulleys run upon the curve.

4. The combination with a track, a pulley adapted to run upon the track and a frame supporting the pulley from one side thereof extending below the track, of a movable pin upon the opposite side of the frame and adapted to extend upward into close proximity with the pulley so as to prevent the passage of the track between the pulley and the pin when the pin is in its advanced position, said pin having a portion adapted to engage parts carried by said frame when said pin is in its advanced position.

5. The combination with a track, a main-frame, a pulley adapted to run upon the track and a hanger-frame supporting the pulley from one side thereof and extending below the track and having a swiveled connection with the main-frame, of a movable pin upon the opposite side of the hanger-frame and adapted to extend into close proximity with the pulley so as to prevent the passage of the track between said pulley and pin when the pin is in its advanced position, said pin having a portion adapted to engage

the main-frame to prevent relative rotation between the hanger-frame and main-frame when the pin is in its advanced position.

6. The combination with two main tracks, 5 pulleys adapted to run upon said tracks, a main frame, hanger-frames supporting the pulleys from one side thereof and having swiveled connections with the main frame, pins carried by the hanger-frames on the op- 10 posite side thereof and adjacent to the pulleys, the said pins being movable and so positioned that when in their advanced position, they will prevent the passage of the

track between the pulleys and the pins, a switch-track connecting said main-tracks 15 and means whereby said pin is retracted automatically as the corresponding pulley passes from the main track, the pin being provided with a projecting portion adapted to engage the main frame when in its ad- 20 vanced position to prevent relative rotation between the hanger-frame and main-frame.

HENRY L. FERRIS.

In presence of—

E. B. HUNT,
R. N. JACOBS.