

No. 646,607.

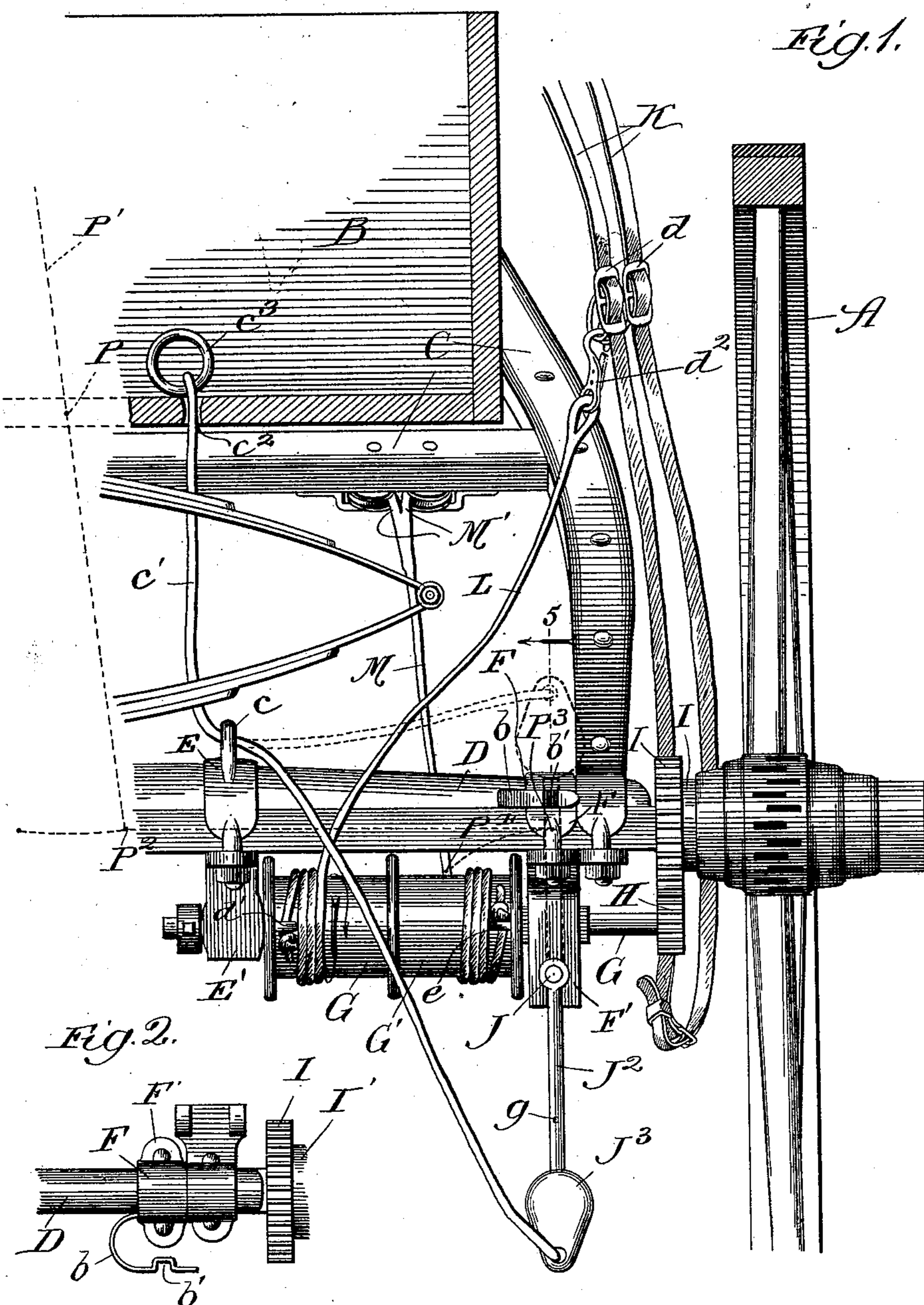
Patented Apr. 3, 1900.

C. W. PRINCE.
HORSE CONTROLLING DEVICE.

(Application filed Oct. 28, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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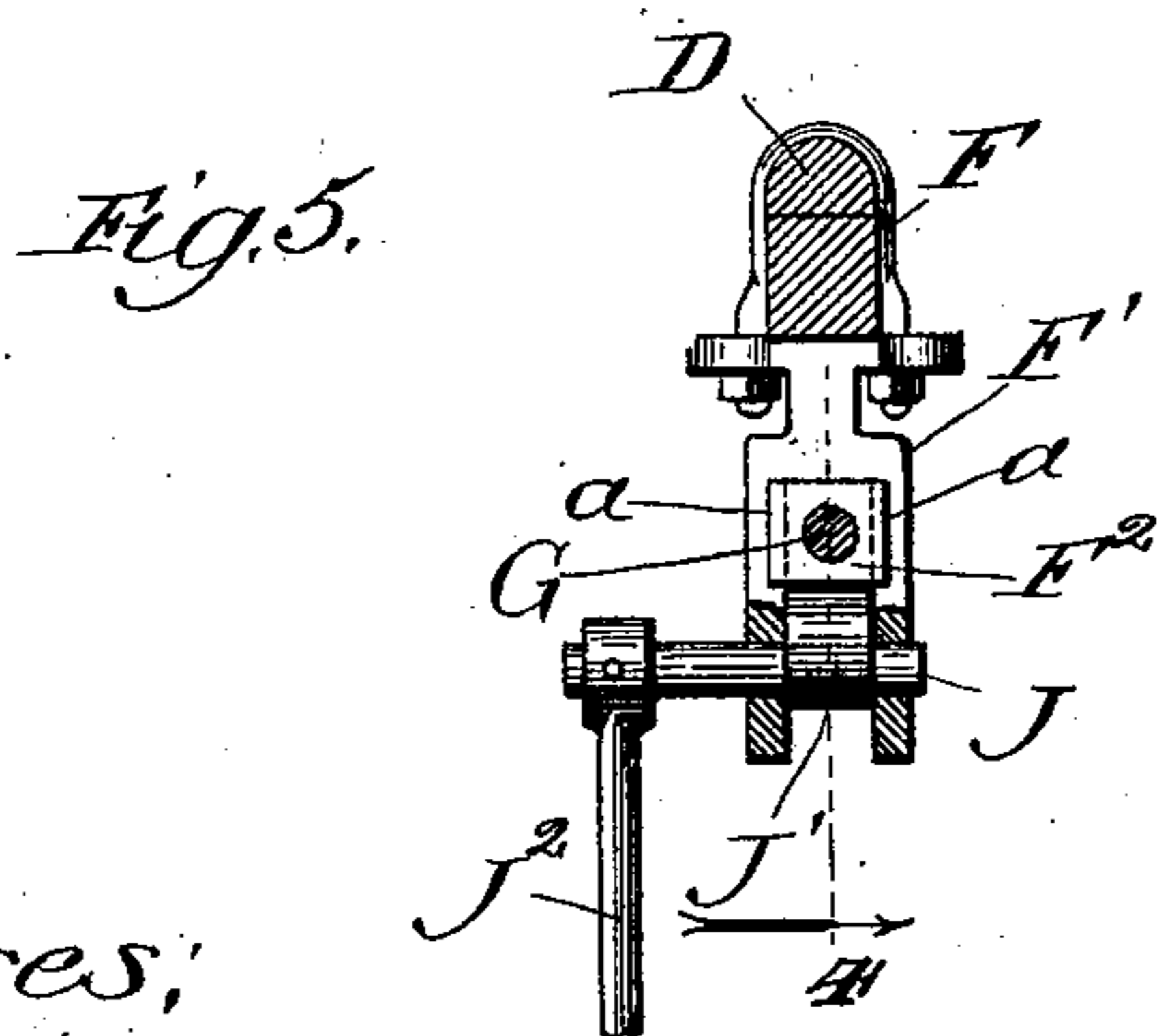
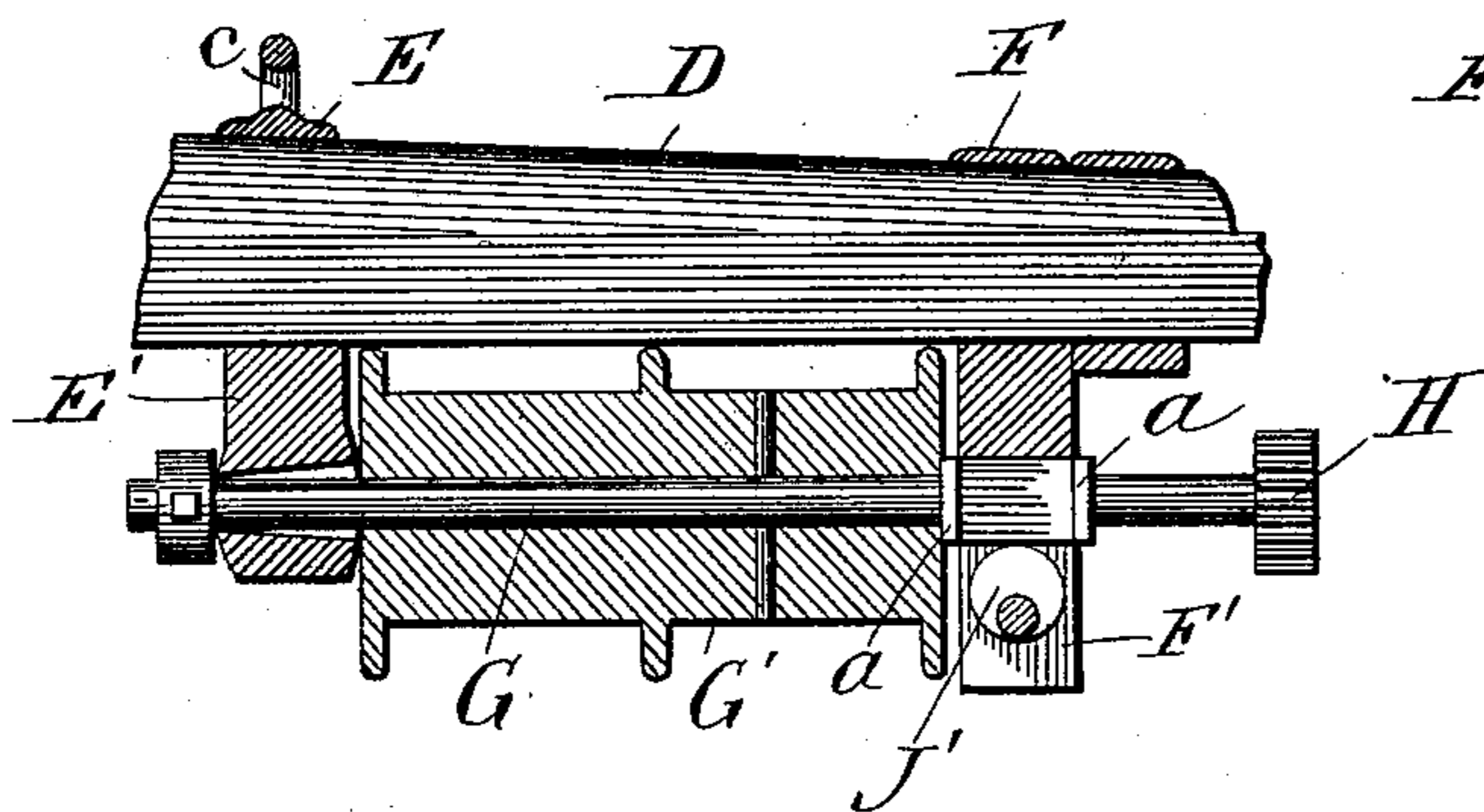
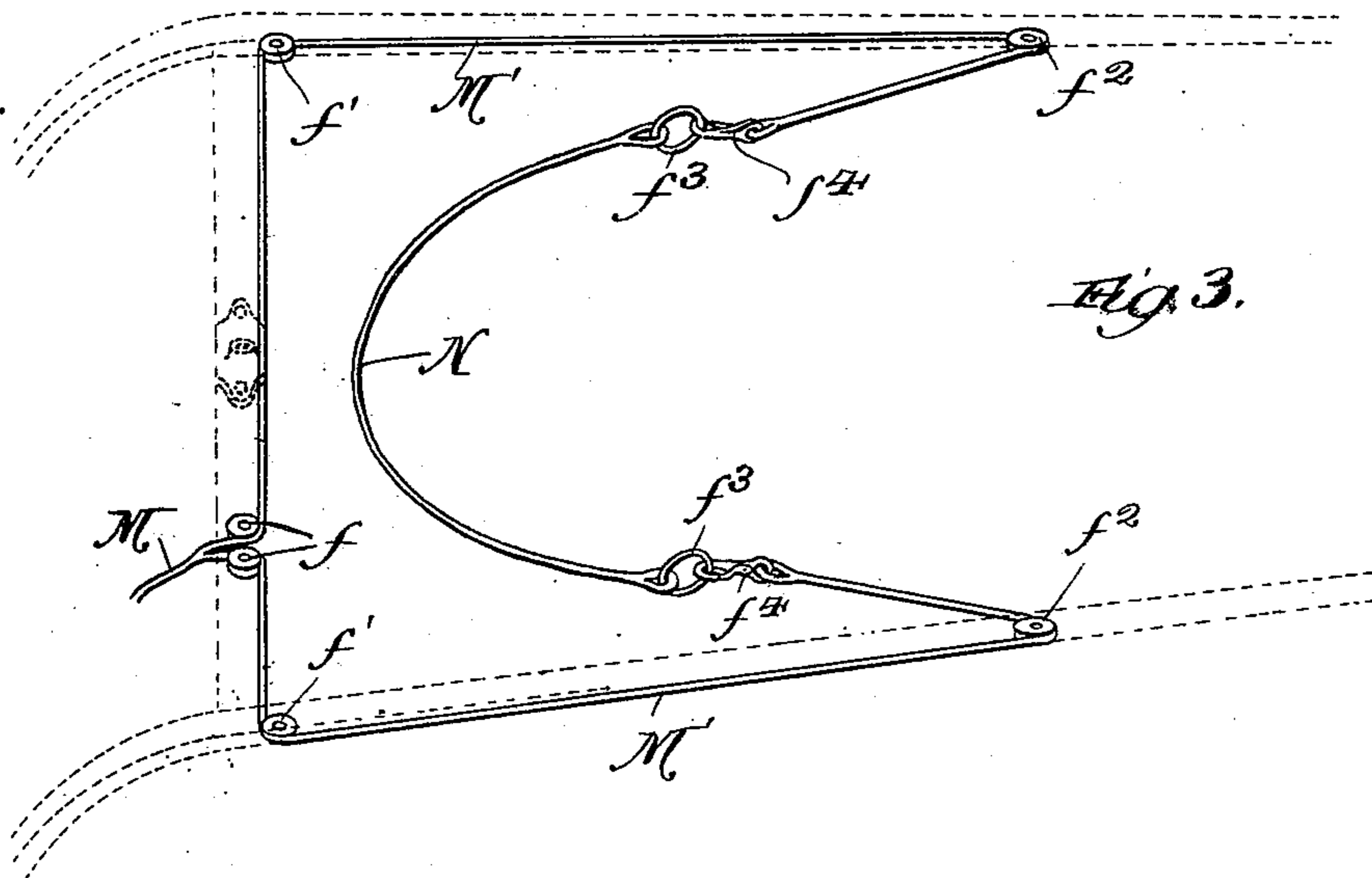
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UNITED STATES PATENT OFFICE.

CHARLES W. PRINCE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
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HORSE-CONTROLLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 646,607, dated April 3, 1900.

Application filed October 28, 1899. Serial No. 735,061. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. PRINCE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Horse-Controlling Devices, of which the following is a specification.

My invention relates particularly to an improvement in horse-controlling devices for attachment to vehicles.

My object is to provide improved means for connecting the reins with a wheel of the vehicle to prevent forward movement and also to provide altogether novel means for preventing backing by the horse.

In the accompanying drawings, Figure 1 is a broken vertical transverse section through a carriage in the rear of the front axle; Fig. 2, a broken plan view of the front axle and its equipments; Fig. 3, a perspective view showing the portion of the apparatus for preventing backing, the dotted outline of the thills appearing; Fig. 4, a broken vertical section longitudinally of the drum employed, and Fig. 5 a vertical section on line 5 of Fig. 1.

A represents the right front wheel of a vehicle; B, the vehicle box or body; C, the thills or shafts; D, the front axle; E, a clip securing a journal-box E' to the axle; F, a clip securing to the axle a guide F' for a movable journal-box F²; G, a drum-shaft bearing a drum G'; H, a pinion on the shaft G; I, a gear carried by the inner end of the hub of the wheel A, to which it is fixedly secured by a sleeve I', and J an eccentric-shaft journaled in the guide F' and bearing an eccentric-disk J' and an operating-arm J², having a weighted free end J³.

The guide F' is bifurcated, Fig. 5, to receive the journal-block F², and the latter is provided with laterally-projecting lugs a, which embrace the two bifurcations of the guide. The clip F, Fig. 2, is provided with a spring b, having on its rear surface a recess b' for receiving and retaining the arm J² when the latter is in its elevated position.

The clip E is provided with an eye c, through which passes a cord c', connected with the lever-arm J², and passing through a perforation c² in the bottom of the box B, where it is supplied with a ring c³. This cord serves to re-

lease the lever-arm J² from the spring-catch b to permit it to drop to the position of Fig. 1 and thereby cause the pinion H to mesh with the gear I. As shown in Fig. 5, the eccentric is at its elevated position when the lever-arm is down, and, as shown in Fig. 4, the journal-box E' is provided with a conical bearing to permit the shaft G to be swung in a vertical plane.

K K represent the driving-reins, provided with drum-cable-attaching clips d; L, a drum-cable attached at one end to an eye d' on the drum and at the opposite end with a snap d², detachably connected to the clips d, and M a drum-cable secured to an eye e on the drum and provided with branches M', Figs. 1 and 3, which pass about rollers f, journaled beneath the cross-brace of the thills, thence about rollers f' beneath the thills at the ends of the cross-brace, and thence about rollers f², journaled beneath the thills in front of the ends of a breech-strap N. The breech-strap is provided with rings f³, with which connect snaps f⁴, carried by the ends of the cable members M'. The breech-strap may be the ordinary breech-strap of a harness or a special strap for the purpose. The rollers f² or other cable-retainers are at a sufficient distance forward to permit an impelling force to be exerted at the free ends of the cable upon a horse attached to the vehicle.

It will be observed that the drum-cables L and M wind upon the drum in opposite directions and that the direction of rotation of the drum when the wheel A rotates forwardly is as indicated by the arrow in Fig. 1. When the wheel rotates forwardly, therefore, (assuming the pinion to be in mesh with the gear,) the cable L is drawn taut, while when the wheel A rotates backwardly the cable M is drawn taut, thereby drawing the breech-strap N forwardly and preventing the horse from backing.

The lever J² is ordinarily kept in its elevated position, thereby holding the pinion out of mesh with the gear of the wheel-hub. When the driver is about to alight from the carriage, the cord c' is pulled to throw the lever from its elevated position to its depressed position. After alighting the driver snaps the cable L to the clips d of the reins. The cable M is

secured to the breech-strap at the time the horse is hitched to the vehicle, and thus either cable is ready to operate if the horse moves. When the driver is about to reënter the vehicle, he (by hand) moves the lever J^2 to its elevated position to throw the drum out of gear and then disconnects the cable L from the reins.

It is not absolutely indispensable that the cable M be connected to both ends of the breech-strap N, provided that some means is present to hold the end of the breech-strap which is not connected with the cable. The thills or shafts of the running-gears of the vehicle may be replaced by a single draft pole or shaft.

Any suitable means may be employed for shifting the eccentric. In Fig. 1 is shown diagrammatically the manner in which a lever may be employed to shift the lever-arm J^2 positively in either direction. P represents a point in the bottom of the box B directly above the center of rotation or oscillation of the axle; P' , the upper end of a lever pivoted at P to swing in a vertical plane parallel to the front end of the box; P^2 , the lower end of the lever just mentioned; P^3 , the point of pivotal connection of a link leading from the point P^2 to the lever J^2 when the latter is in the position indicated by dotted lines.

When the lever $P' P^2$ has its upper end moved to the right to throw the drum into gear, the point P^3 moves to the point P^4 . The eccentric or cam in such case is of course of suitable shape to give the desired throw to the journal-box F^2 while the lever-arm J^2 moves through the arc $P^3 P^4$. The weight J^3 serves to hold the pinion in gear. In Fig. 1 the lever-arm is shown provided with a perforation g . This is for connection with the link $P^2 P^3$ when the latter is present, and the point g of the lever corresponds to the point P^3 in the dotted position. The reason for locating the pivotal point of the lever $P' P^2$ directly above the center of the axle is of course to avoid difficulty from the movement of the axle. Some slight movement there would of course be, but this is provided for by a slight looseness of joints.

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

1. In a horse-controlling device, the combination with the running-gears of a vehicle, of a gear-wheel carried by the hub of one of the vehicle-wheels, a drum, a pinion for the drum, means for throwing the drum into and out of gear, a drum-cable connected with the drum, and retaining means on a draft-shaft of the running-gears about which said cable passes and at a sufficient distance forward to permit an impelling force to be exerted at the free end of the cable upon a horse attached to the vehicle, as the cable is wound upon the drum, substantially as and for the purpose set forth.

2. In a horse-controlling device, the combination with a vehicle provided with a draft-shaft, of a gear-wheel carried by a wheel of the vehicle, a drum, means for connecting the drum at will with said gear-wheel, a drum-cable, a cable-retainer on said shaft about which said cable passes, and a breech-strap connected with the free end of said cable for exerting an impelling force upon a horse attached to the vehicle, when an effort is made to back the vehicle, substantially as and for the purpose set forth.

3. In a horse-controlling device, the combination with a vehicle provided with thills, of a gear-wheel carried by one of the vehicle-wheels, a drum, means for gearing the drum to said gear-wheel at will, a drum-cable provided with branch parts for connection with the two thills, and rollers on both of said thills about which said branch cables pass to connect with the breech-strap, substantially as and for the purpose set forth.

4. In a horse-controlling device, the combination with a vehicle, of a gear-wheel carried by a wheel of the vehicle, a drum provided with a pinion non-rotatably secured thereto and journaled adjacent to said gear-wheel in a journal-box movable toward and away from the axle, a cam for moving said journal-box, and a weighted lever-arm connected with said cam for moving it, substantially as and for the purpose set forth.

CHARLES W. PRINCE.

In presence of—

D. W. LEE,
F. J. MARTIN.