

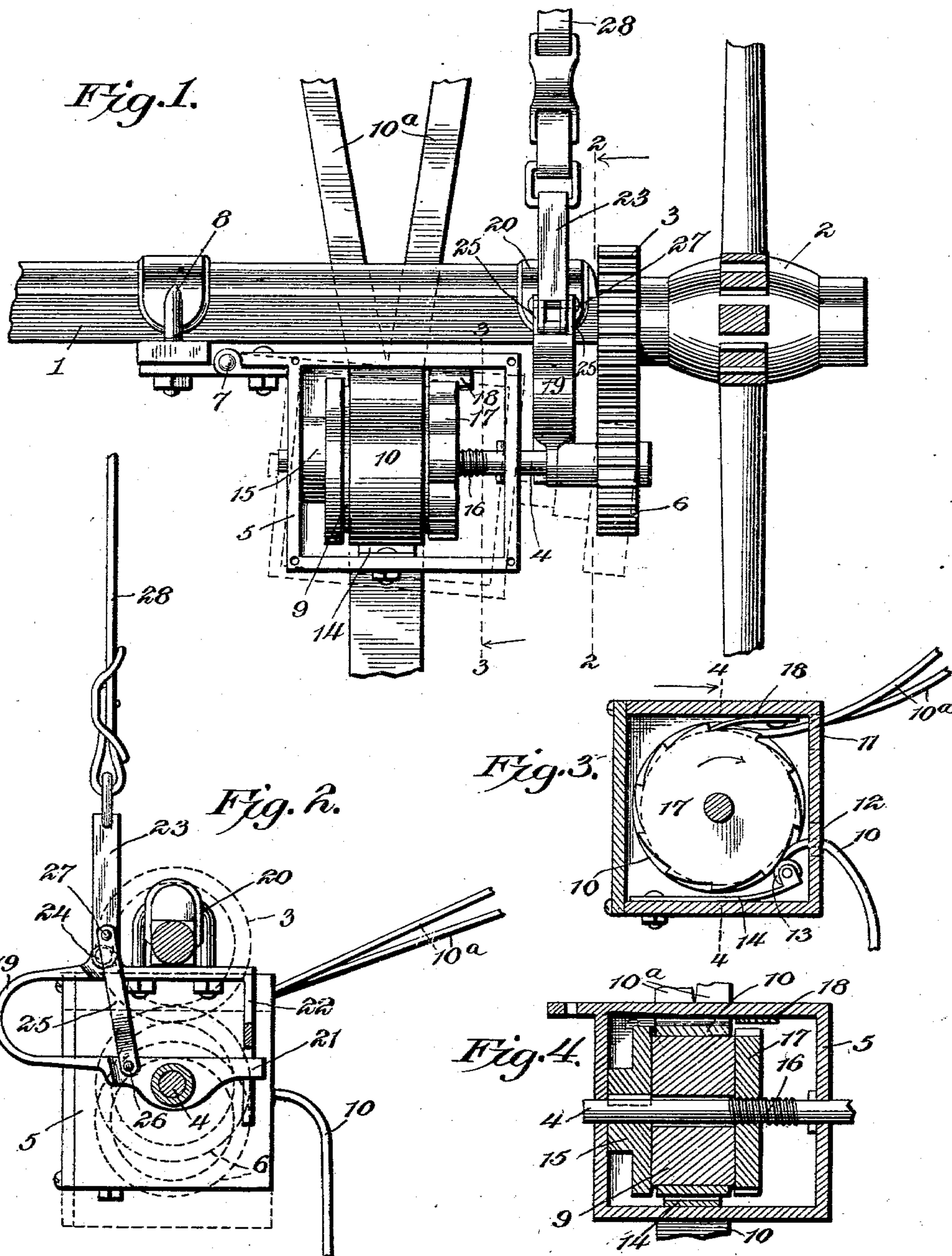
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C. B. CORL.  
HORSE CONTROLLING DEVICE.

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NO MODEL.



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# UNITED STATES PATENT OFFICE.

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## HORSE-CONTROLLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 721,022, dated February 17, 1903.

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*To all whom it may concern:*

Be it known that I, CHAUNCEY BERTRAM CORL, a citizen of the United States, residing at Riverside, in the county of Riverside and State of California, have invented a new and useful Horse-Controlling Device, of which the following is a specification.

This invention relates to means for controlling horses, and is designed to provide an improved device of this character which is operated from one of the wheels of the vehicle and is arranged to be thrown into and out of operation by the driver. It is furthermore designed to have the device exert a strain upon the animal's head should he attempt to move forwardly and to automatically relieve the strain when the vehicle is backed.

Another object is to lock the device in engagement with one of the vehicle-wheels when in operation, so as to prevent accidental disengagement of the device from the driving element.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a rear elevation of the present device applied to the axle of a vehicle, a portion of the casing being removed to show the parts housed therein. Fig. 2 is a sectional view taken on the line 2 2 of Fig. 1. Fig. 3 is a detail sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a cross-sectional view of Fig. 3 on the line 4 4.

Like characters of reference designate corresponding parts in all the figures of the drawings.

For adequately illustrating the application and operation of the present device there has been shown in the accompanying drawings a portion of an ordinary axle 1 and one of the wheels 2 thereof, the inner end of the hub of the wheel being provided with a gear 3 for operating the present device, as will hereinafter appear.

In carrying out the present invention there is provided a substantially horizontal shaft 4, located below the axle, with its opposite ends journaled in opposite sides of a suitable box or casing 5, with one end projected so as to overlap the inner end of the hub, with a pinion 6 carried thereby and in mesh with the gear 3. The box or casing 5 is hung from the axle by means of a hinge 7, one member of which is connected to the upper end of the casing, with the other member connected to a clip 8, embracing the axle, there being suitable means, as will be hereinafter described, for moving the casing vertically upon its hinged support to throw the pinion 6 into and out of mesh with the gear 3. Upon the middle portion of the shaft, which is within the box or casing, is a loosely-rotatable drum 9, which is frictionally embraced by the strap 10, that enters the upper front portion of the box or casing through an opening 11, thence passes across the upper rear and lower sides of the drum, and thence outwardly and downwardly through an opening 12 in the lower front portion of the casing. The upper forward portion of the strap is split or divided into longitudinal members 10<sup>a</sup>, which run forwardly and are connected to the opposite ends of the bridle-bit, and as this arrangement is perfectly obvious it has not been deemed necessary to illustrate the strap members connected to the bit. As best indicated in Fig. 3, it will be seen that the strap is held snugly in frictional engagement with the periphery of the drum by means of an antifriction-roller 13, which bears against the lower portion of the strap and is carried by the upwardly-inclined free end of a spring-arm 14, secured to the bottom of the casing, whereby the strap is prevented from slipping upon the drum. A collar 15 is keyed upon the shaft at the inner side of the drum and is designed to form an abutment to limit lateral movement of the drum and to aid in interlocking the latter with the shaft. At the outer side of the drum the shaft is provided with a worm or screw-thread 16, and upon this screw-threaded part of the shaft is a peripherally-toothed ratchet-disk 17, which is adapted to be fed toward and away from the drum by the rotation of the shaft when the pinion 6 is in mesh with the gear 3.



The ratchet-disk is held against rotation in the direction of the arrow shown in Fig. 3 by means of the spring-dog 18, which is secured to the underside of the top of the box or casing, with its free end in frictional engagement with the toothed peripheral edge of the ratchet-disk. In this connection it will be noted that when the shaft is turned in the direction of the arrow shown in Fig. 3 the disk will be held stationary by the dog and therefore the worm or screw-threaded part 16 of the shaft will feed the disk laterally away from the drum, and upon a reverse rotation of the shaft the disk will be fed in the opposite direction into frictional engagement with the drum, as the pressure of the dog 18 is sufficient to prevent rotation of the disk until the latter has engaged the drum and forced the same into engagement with the abutment 15, when all three of these elements will be interlocked and, through the medium of the abutment 15, will also be interlocked with the shaft for simultaneous rotation therewith in the direction opposite to that indicated by the arrow in Fig. 3, whereby the strap members 10<sup>a</sup> will be drawn rearwardly and a strong tension placed upon the head of the animal, so as to check any further forward movement. When the vehicle is backed, the ratchet-disk will be fed away from the drum, and as the latter is then loose upon the shaft the animal's head is released.

For throwing the device into and out of operation that portion of the shaft 4 which is between the box or casing and the pinion 6 is journaled in the lower side of a horizontally-disposed substantially U-shaped bracket 19, the upper side of which lies across the under side of the axle and is secured thereto by clip 20. The bracket is elastic, so that its lower side may be moved vertically to bring the pinion 6 into engagement with the gear 3, the forward end portion of the lower side of the bracket forming a projection 21 to work in the slotted or bifurcated part of the pendent guide-arm 22, which hangs from the forward end of the upper side of the bracket. To raise and lower the lower side of the bracket, there is an upstanding lever 23, the lower end of which is bifurcated, so as to straddle the upper side of the bracket in rear of the axle, and is fulcrumed thereon by means of a pivot-pin 24, passed through the side of the bracket and the bifurcation. A pair of links 25 embrace the lever and the bracket, with their lower ends pivotally connected to the lower side of the bracket, as at 26, and in front of the fulcrum of the lever, with the upper ends of the links pivoted to the lever at a point above the fulcrum thereof, as indicated at 27. A strap or other flexible connection 28 is secured to the upper end of the lever and extends into the vehicle for convenient operation by the driver, so that by pulling upwardly upon the strap the lower side of the bracket 19 will be drawn upwardly

and the pinion 6 meshed with the gear 3, whereby the device is thrown into operation to check the horse in the manner hereinbefore described.

A very important feature of the present invention is best illustrated in Fig. 2, wherein it will be seen that by having the pivotal connection 26, between the links 25 and the lower side of the bracket 19, disposed in front of the fulcrum 24, with a portion of the clip 20 disposed in the forward path of the links, the strain upon the links tends to draw the lever forwardly; but as the links lie against the portion of the clip and cannot move forwardly the lever is automatically locked and accidental disengagement of the pinion 6 from the gear 3 is precluded. The pinion 6 is disengaged from the gear by throwing the lever 23 rearwardly, and this disengagement is quick and positive under the influence of the elastic lower side or member of the bracket 19.

From the foregoing description it is apparent that the device of the present invention is complete in itself, and therefore no change or alteration whatsoever is required in the running-gear of the vehicle in order that the device may be applied thereto, as the gear 3 may be readily fitted to the hub in any suitable manner without requiring any alteration therein, and the clips 8 and 20 are the ordinary U-shaped axle-clips, which embrace the axle in the usual manner.

It is preferred to mount the drum upon a frame or casing and to have the latter pivotally supported rather than to have one of the journals of the drum loosely supported, so as to permit lateral movement thereof, as the latter arrangement gives too much looseness to the journals of the drum, while the former arrangement obviates such looseness and at the same time permits of the required swinging movement of the drum.

What is claimed is—

1. In a device of the character described, the combination of a pair of supporting-brackets, a casing hinged at the inner side to one of the said brackets, a drum journaled upon the casing, a checking element connected to the drum, and means carried wholly by the other bracket for moving the casing upon its hinged support to throw the drum into and out of gear with respect to a vehicle-wheel.

2. The combination with an axle, a wheel thereon, and a gear upon the wheel, of a casing located below the axle and hinged thereto, a shaft journaled in the casing with one end projected exteriorly thereof and provided with a pinion for engagement with the gear, a drum mounted upon the shaft, a checking element connected to the drum, and means mounted upon the axle for moving the casing upon its hinged support to throw the pinion into and out of mesh with the gear.

3. In a device of the character described, the combination of a casing having a pivotal support, a shaft journaled in the casing with one end projected externally thereof and opposite



the hinged support of the casing, a portion of the shaft within the casing being screw-threaded, an abutment rotatable with the inner end portion of the shaft, a drum loosely  
 5 mounted upon the shaft between the screw-threaded portion thereof and the abutment, a ratchet-disk mounted upon the screw-threaded portion of the shaft, a dog carried by the casing and engaging the ratchet-disk,  
 10 a checking element connected to the drum, a pinion carried by the projected end of the shaft, and means to move the casing upon its pivotal support to throw the pinion into and out of gear with respect to a vehicle-wheel.

15 4. In a device of the character described, the combination with a casing having a pair of openings, of a drum mounted within the casing, a checking element passed partially around the drum with one portion working  
 20 through one of the openings and the opposite portion working through the other opening, and means to throw the drum into and out of gear with respect to a vehicle-wheel.

5 5. In a device of the character described, the combination with a casing having upper and lower openings in the front thereof, a drum mounted within the casing, a checking element partially embracing the drum with one  
 25 portion projected through the upper opening and its opposite portion projected through the lower opening, a spring-pressed antifric-tion-roller bearing against the checking element to hold the same in frictional engage-  
 30 ment with the drum, and means for throwing the latter into and out of gear with respect to a vehicle-wheel.

6. The combination with an axle, a wheel thereon, and a gear upon the wheel, of a ver-  
 40 tically-movable drum carried by the axle and having a pinion for engagement with the gear, a checking element connected to the drum, and means for throwing the pinion into and out of mesh with the gear, comprising a lever fulcrumed upon the axle, and a link  
 45 pivotally connected to the shaft of the drum and to the lever at a point between the ends thereof, the parts being arranged to form a lock for holding the gears in mesh.

7. The combination with an axle, a wheel  
 50 thereon and a gear upon the wheel, of a drum located below the axle with its shaft projected at one side of the drum and provided with a pinion for engagement with the gear, a bracket carried by the axle and having a  
 55 movable member connected to the projected end of the shaft, and a lever fulcrumed upon the bracket and connected to the movable

member thereof for throwing the pinion into and out of mesh with the gear.

8. The combination with an axle, a wheel 60 thereon and a gear upon the wheel, of a ver-tically-movable drum disposed below the axle with its shaft projected at one side of the drum and provided with a pinion for engage-  
 65 ment with the gear, a substantially U-shaped bracket having its upper side connected to the axle and its lower elastic side connected to the projected end portion of the shaft, a lever fulcrumed upon the upper side  
 70 of the bracket, and a link pivoted to the lever and also to the lower side of the bracket, whereby the pinion may be thrown into and out of mesh with the gear.

9. The combination with an axle, a wheel 75 thereon and a gear upon the wheel, of a ver-tically-movable drum disposed below the axle with its shaft projected at one side of the drum and provided with a pinion for engage-  
 80 ment with the gear, a checking element connected to the drum, a substantially U-shaped bracket having its upper member connected to the axle with its lower elastic mem-  
 85 ber connected to the projected end portion of the shaft, an upstanding lever fulcrumed upon the upper member of the bracket, and a link having its upper end pivoted to the lever above the fulcrum thereof and its lower  
 90 end pivoted to the lower member of the bracket at a point in front of the fulcrum of the lever, a portion of the bracket lying in the path of the link to lock the lever.

10. The combination with an axle, a wheel thereon and a gear on the wheel, of a ver-tically-movable drum disposed below the axle  
 95 with its shaft projected at one side of the drum, a substantially U-shaped elastic bracket having its upper side secured to the axle and provided with a vertically-slotted arm pendent from the upper side of the  
 100 bracket, the free end of the lower side of the bracket working in the slot of the arm, the projected end of the shaft being journaled in the lower side of the bracket, and means carried by the upper side of the bracket for  
 105 raising and lowering the lower side of the bracket.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHAUNCEY BERTRAM CORL.

Witnesses:

ALBERTIS K. PATTY,  
 I. WALTER WINK.