(No Model.) 2 Sheets—Sheet 1.

R. S. KINKEAD.

CONTROLLING GEAR FOR DRAFT HORSES.

No. 446,067. Patented Feb. 10, 1891.

FIG. 1.

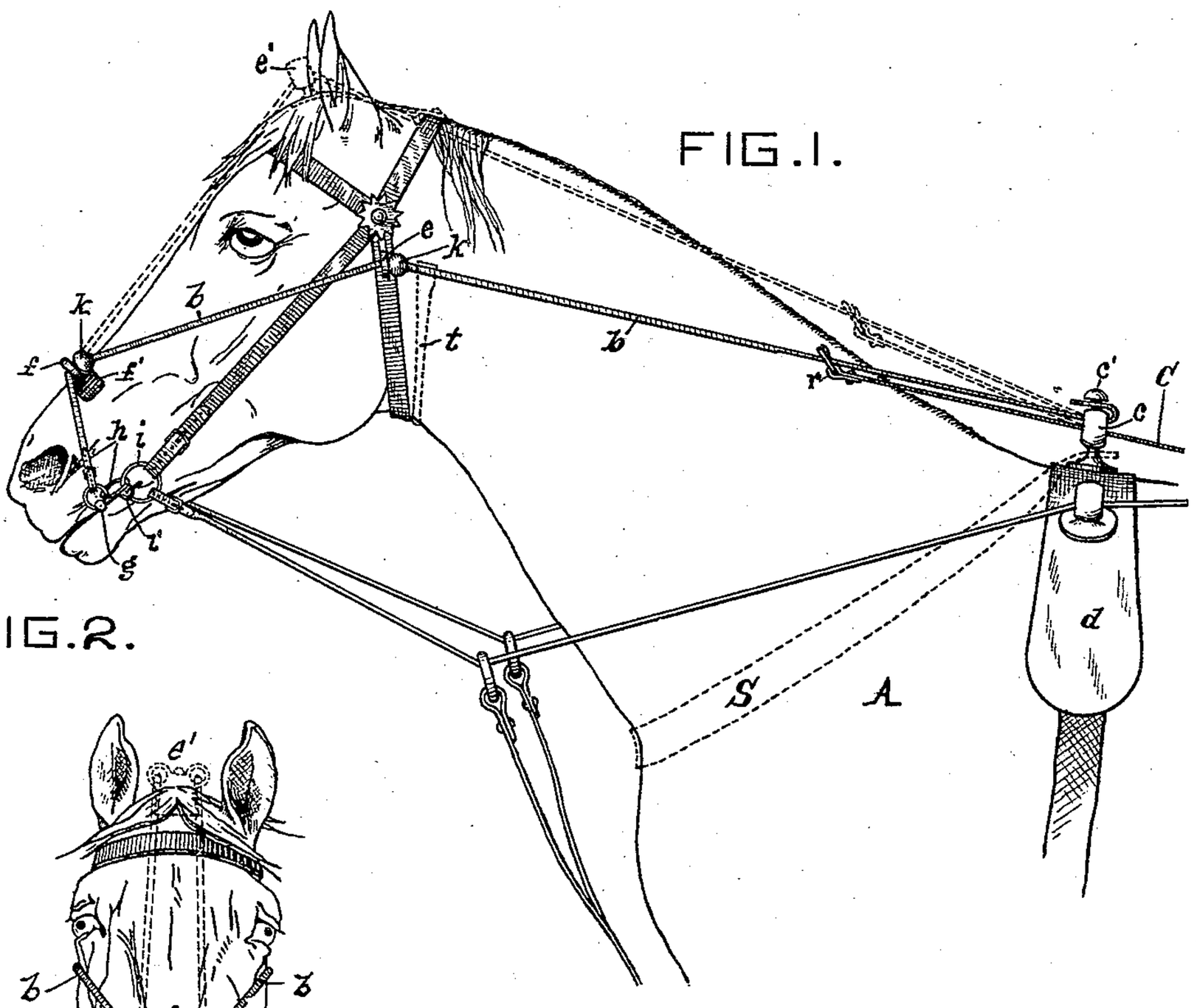


FIG. 2.

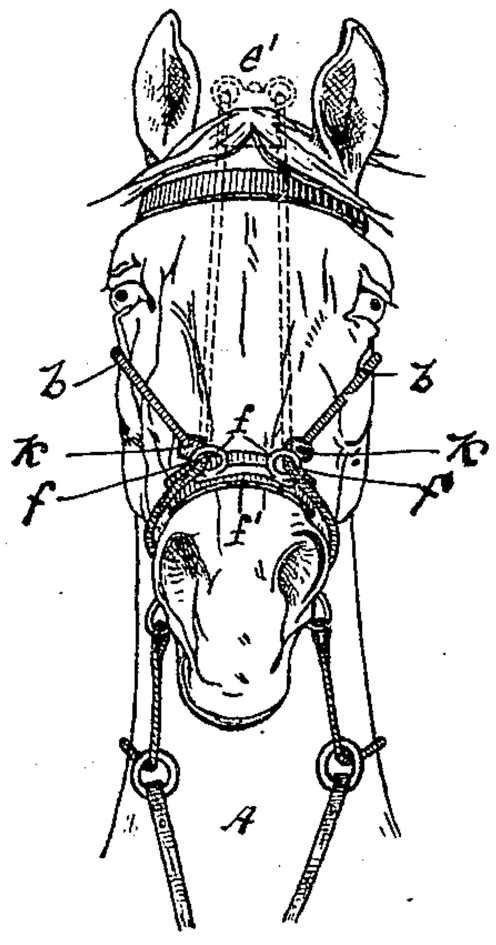
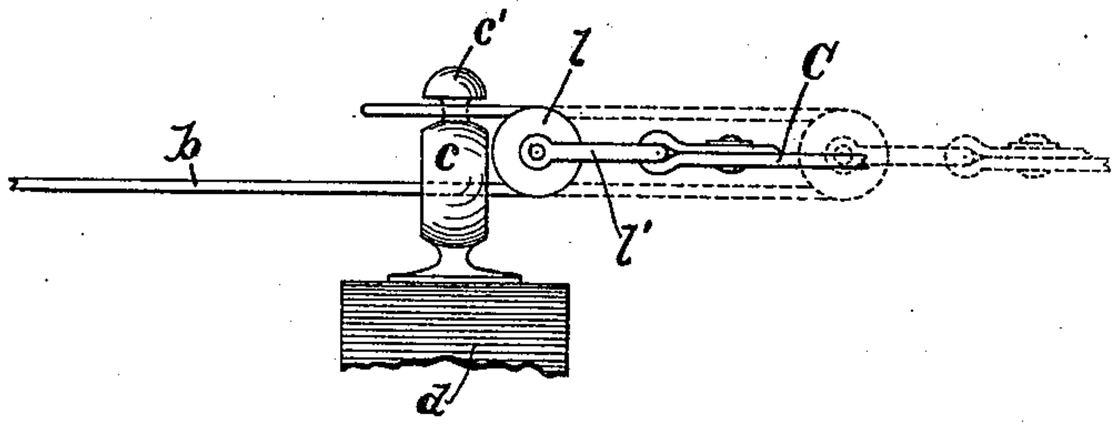


FIG. 3.



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(No Model.) 2 Sheets—Sheet 2.

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FIG. 4.

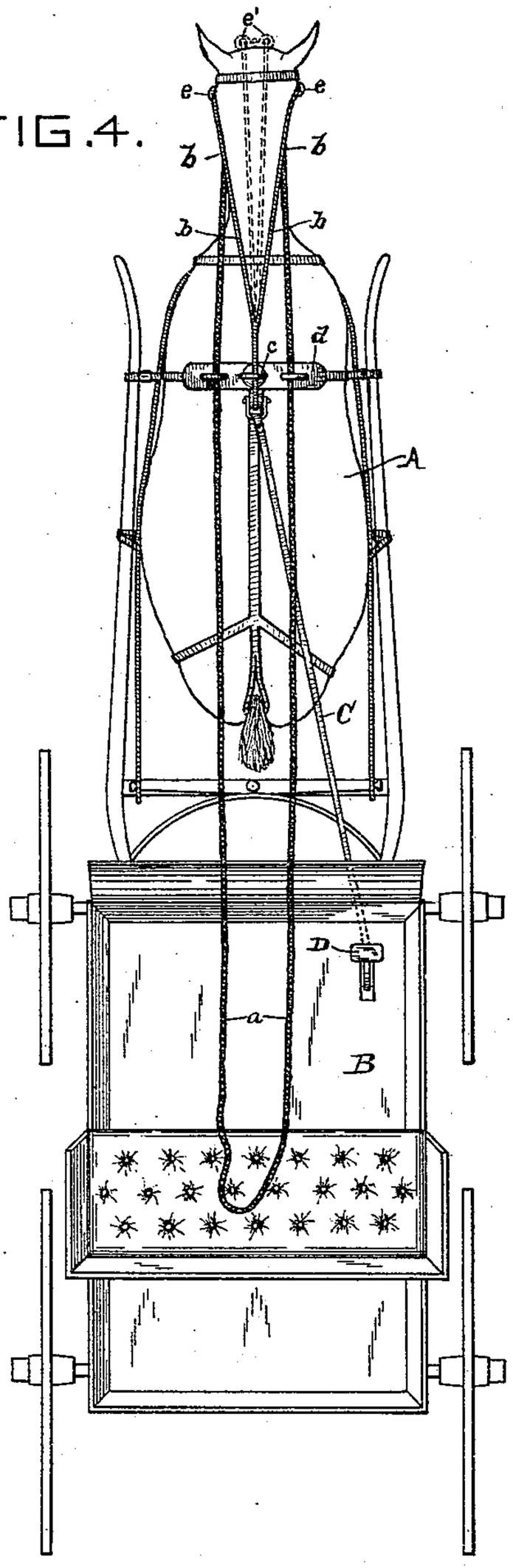


FIG. 5.

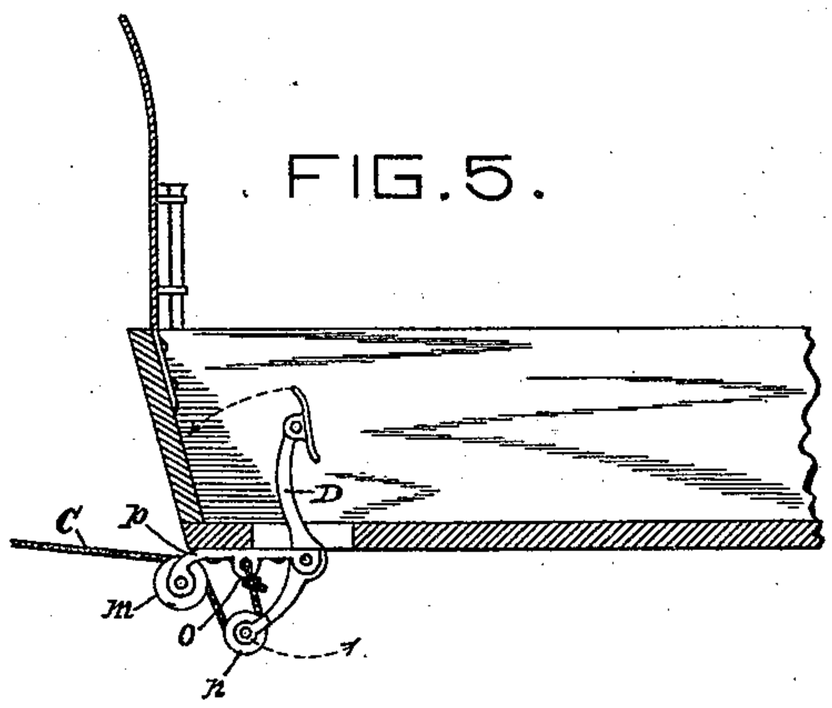
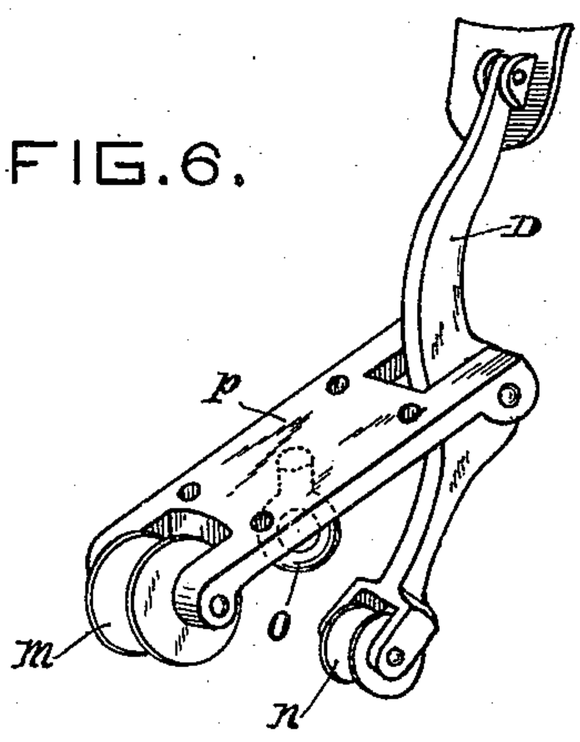


FIG. 6.



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UNITED STATES PATENT OFFICE.

ROBERT S. KINKEAD, OF LEXINGTON, KENTUCKY.

CONTROLLING-GEAR FOR DRAFT-HORSES.

SPECIFICATION forming part of Letters Patent No. 446,067, dated February 10, 1891.

Application filed November 16, 1889. Serial No. 330,566. (No model.)

To all whom it may concern:

Be it known that I, ROBERT S. KINKEAD, a citizen of the United States, residing at Lexington, Kentucky, have invented new and useful Improvements in Controlling Bridle-Gears for Draft-Horses, of which the following is a specification.

My invention relates to safety devices for controlling vicious, high-spirited, or hard-mouthed horses used for draft purposes, its object being to provide the driver with an efficient means of control auxiliary to but independent of the ordinary controlling-reins.

In Patent No. 412,272, and issued October 8, 1889, I describe an auxiliary head-rein attachment arranged to pass over the head of the horse and through a guide upon the nose at a point opposite the jaw, thence at both sides of and at right angles to the jaw to the terminals of an auxiliary or secret bit, whereby the pull upon the auxiliary rein or reins instead of drawing the bit backward into the soft muscles at the angles of the jaw forces the same outward against the upper jaw and tends to bend the head upward at its jointure with the neck with considerable force but without injury to the horse, the head of the horse by this means being thrown into such a position as disables him from rearing, plunging, or kicking. The controlling device described in said patent is operated by an auxiliary hand rein or reins carried back with the ordinary driving-reins and operated by hand in connection therewith. In some cases, however, with fractious animals it is desirable to leave the hands of the driver entirely free to manage the ordinary driving-reins, and my present invention is designed to meet this condition, and also to give the driver a more powerful means of actuating the auxiliary controlling device.

My present invention supplements that referred to in combining with the auxiliary controlling head-gear an independent connecting-rein and a mechanical operating device, such as a lever, arranged upon the vehicle and actuated, preferably, by the foot of the driver, whereby the additional control desired may be more efficiently obtained without undue tax upon the strength or attention of the driver.

While the use of an auxiliary controlling head-gear, such substantially as described in my said former patent, is preferred, yet it is not absolutely essential, inasmuch as the auxiliary operating device may be connected to the ordinary checkrein and thereby to the ordinary driving-bit and fair results obtained.

My invention, then, in its generic aspect consists in the provision and combination, with the ordinary driving-bridle and hand-reins, of an auxiliary controlling rein or reins and a mechanical operating device, such as a lever, located upon the vehicle and preferably arranged to be operated by the foot of the driver.

It also consists in certain detailed improvements in certain of the connecting parts, &c., all as hereinafter more fully described.

My invention is illustrated in its preferred form in the drawings herewith, in which—

Figure 1 is an elevation of a horse's head and neck, showing the construction and arrangement of the improved controlling head-gear; Fig. 2, a front view of the same; Fig. 3, a detail of the water-hook connection, showing a preferred form of attaching the connecting-rein to the checkrein. Fig. 4 is a plan view of a horse and vehicle, showing the invention complete; Fig. 5, a detail elevation of the forward part of the vehicle-bed, showing the position and indicating the operation of the foot-lever and connections; and Fig. 6, a perspective view of the foot-lever and plate attached.

Referring now more particularly to the drawings, the horse A is attached to the vehicle B by the usual harness and connections, including the managing-reins *a*. In addition I provide checkreins *b*, passing from the terret or water-hook *c* of the saddle *d* over the head of the horse through a guide *e'*, or at the side of the head, as an ordinary side check, through loops *e*, thence forward and downward to a guide *f* at the front of the nose, thence bifurcating at both sides of the jaw and attached to a secret bit *g*. Attached to this checkrein *b* is a connecting-rein C, passing directly backward to and beneath the vehicle to a foot-lever D, by which means the auxiliary head-reins and bit are actuated from the vehicle, all as more fully described hereinafter.

In my said former patent I assumed as es-

sential an ultimate point of support for the guide *f*, either at the guide *e*, which was mounted upon an extension of the headstall, from which point the guide *f* was supported upon and by a stiff nose-plate, or at the under side of the jaws, whence the guide *f* was supported by a jaw-strap passing under the jaws. In my present improvement, however, I dispense entirely with such extraneous support, and the nose-pad *f* at the guide rests upon the nose of the horse without other support than is afforded by the reins *b*—that is to say, the bifurcation of these reins below the guide, Fig. 2, prevents the pad from slipping forward, while a light wire or chain connection *h* from each terminal of the bit *g* to the usual rings *i* at the terminals of the main driving-bit *i'* prevents the auxiliary bit *g* from dropping forward. Knobs or buttons *k k* upon the reins *b*, just behind and engaging with the guide *e* or *e'*, being too large to pass through, prevent the pad from working back or upward on the nose. While in action, the friction of the pad against the nose retains it in place.

I prefer to construct the water-hook and connections as shown in Fig. 3—that is to say, the water-hook, mounted in the usual manner upon the harness-saddle *d*, is a terret-ring *c*, surmounted by a stud *c'*. The check or head rein *b* is passed backward through the ring *c*, thence turned upward and forward, and by means of a button-hole is slipped over the head of the stud *c'*, thus making a secure engagement which cannot become detached in case the horse throws his head back.

The auxiliary controlling devices may be conveniently attached as follows: By means of a metal ring or, preferably, a grooved friction-roller *l*, held between the jaws of a metal yoke *l'* and carried in the bight of the head-rein *b* behind the terret *c*, I attach the controlling-rein C, extending thence backward and downward at the side of the horse. It thence passes over a friction-roll *m*, beneath the vehicle-body at the forward end, and thence around a grooved friction-roll *n* or surface at the lower end of a foot-lever D, fulcrumed in the bottom of the vehicle to a fastening-loop *o*, attached to the vehicle-bottom. A preferable and convenient construction of the foot-lever and its connecting parts is shown in Figs. 5 and 6, in which the roller *m* and foot-lever D are journaled at the ends of a plate *p*, which is screwed fast beneath the bottom of the vehicle, through which the foot-lever projects and operates in a suitable slot. It will be seen that the terminal roller or surface *n* of the foot-lever D is carried in a bight of the line C, and the latter being attached to the fixed loop *o* the effect is to draw back the rein C double the distance traversed by the end of the foot-lever. The construction and arrangement of the described water-hook connection, Fig. 3, produce the same multiplied effect of the line C upon the checkrein *b*, so that by using the two devices together a movement of one inch at the lever D results in a pull of four inches at the mouth of the animal, (approximately,) whereby ample range of movement is secured for every demand of actual use.

The roller-connection *l l'*, as shown in Fig. 3, may in some cases be omitted and the rein C passed through the ring *c* and attached directly to the rein *b* at a point *r* forward of the ring, as shown in Fig. 1. This mode of connection is desirable in that it relieves the backward strain upon the terret incident to using the controlling device with the roller-connection, in which latter case a retaining-band *s*, connected with the saddle and passed around the breast of the horse, as shown by dotted lines in Fig. 1, is desirable in order to counteract the strain referred to. I may also in some cases attach a choke-strap *t*, (shown in dotted lines in Fig. 1,) connecting the reins *b* at both sides of the neck and passing under the throat. In drawing back the reins *b* the choke-strap *t* is drawn taut against the wind-pipe of the animal and loosened when the reins are released.

The action of the device has already been indicated, but may be recapitulated as follows: Upon pressing forward the lever D with the foot the connecting-rein C is drawn backward and the reins *b* retracted through the guides *e* and *f*, pulling the bit *g* upward against the upper jaw, thus tending to restrain and control the horse, while the hands of the driver are free to direct and further control him by the ordinary reins *a*.

In the purview of my present invention it is not material what precise mechanical device is employed as the initial actuating element at the vehicle, as many devices embodying a lever or other mechanical mover could be substituted; but I have described and shown what I deem to be the best and simplest. Neither is it essential that the precise form of head-rein and bit here shown should be employed, since the benefit of the invention could be attained in a degree by attaching the rein C to the ordinary checkrein connecting with the common "secret" bit or with the ordinary bit. I have here shown, however, the best form and application of my invention as a whole and in detail as tested by my own experience.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. A controlling-gear consisting of an auxiliary bit, an independent rein attached thereto, nose and head guides for said rein, and a pivoted lever on the vehicle having a friction-pulley around which the independent rein runs before it is attached to the wagon-body, substantially as described.

2. In a controlling-gear of the character described, the combination of a checkrein, a water-hook ring, a button thereon over which the checkrein is engaged, a friction-roller engaged in the bight of the checkrein behind

the water-hook ring, and a connecting-rein engaged with the roller and extending back to the vehicle, substantially as described.

3. In a controlling-gear of the character described, the combination of a slotted plate adapted to be attached to the bottom of the vehicle, a guide-roll mounted thereon, a lever fulcrumed upon said plate and operating through the slot, a pivoted roll carried at the end of the lever, and a connecting-rein secured at one end to said plate and passing thence around said roll at the end of the lever and forward ultimately to and connected with a bit in the mouth of the animal, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ROBERT S. KINKEAD.

Witnesses:
L. M. HOSEA,
F. L. HOSEA.