No. 891,419. PATENTED JUNE 23, 1908.

J. W. HERBERT.

BRIDLE BIT.

APPLICATION FILED AUG. 9, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

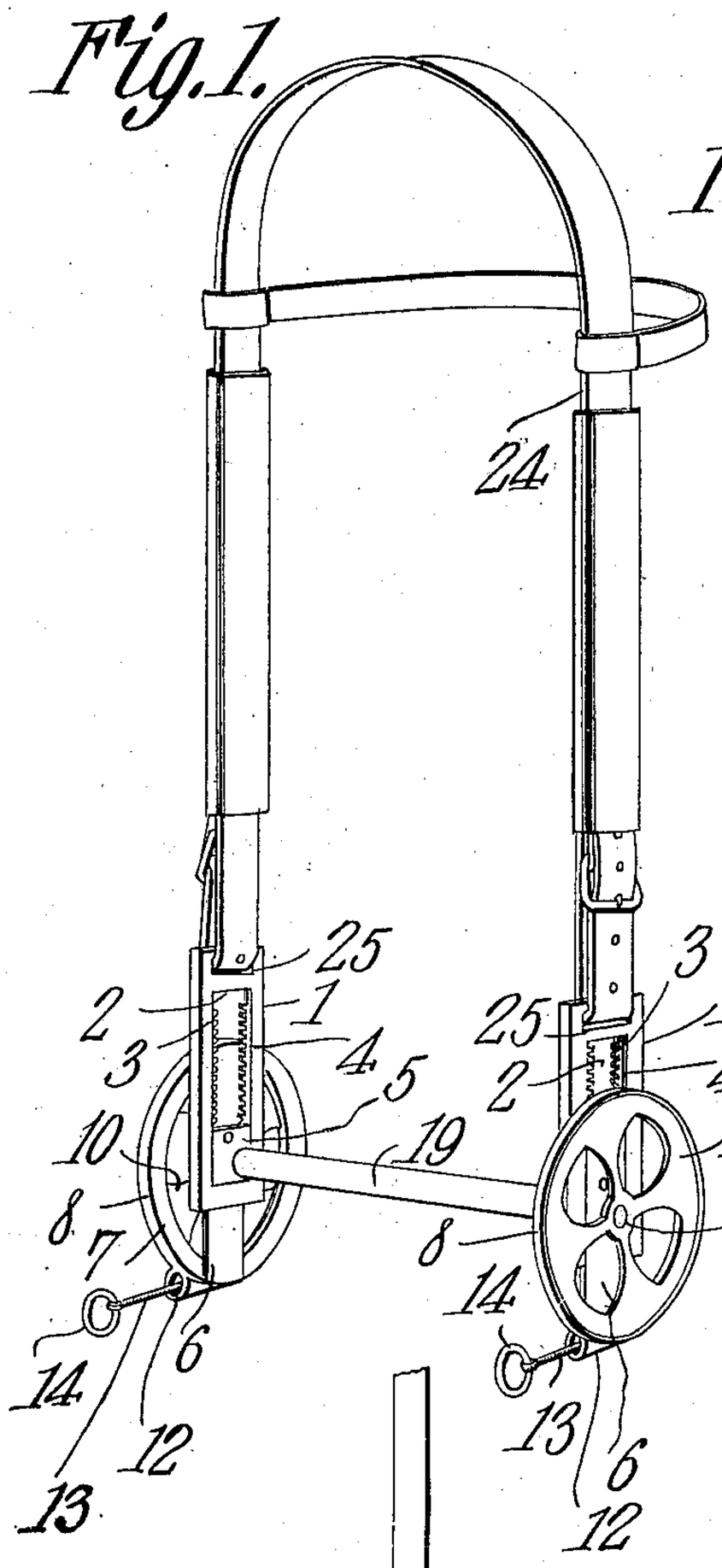


Fig. 2.

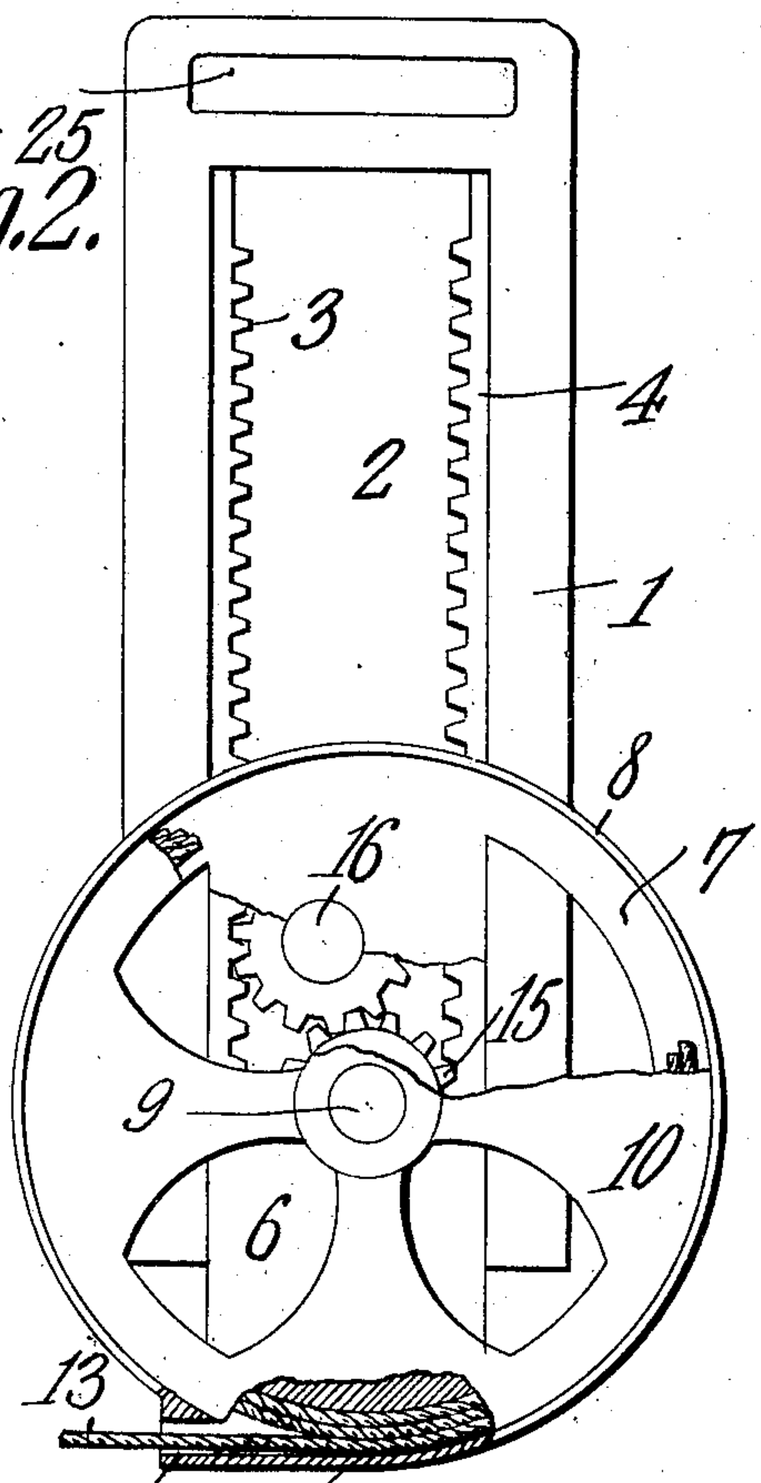
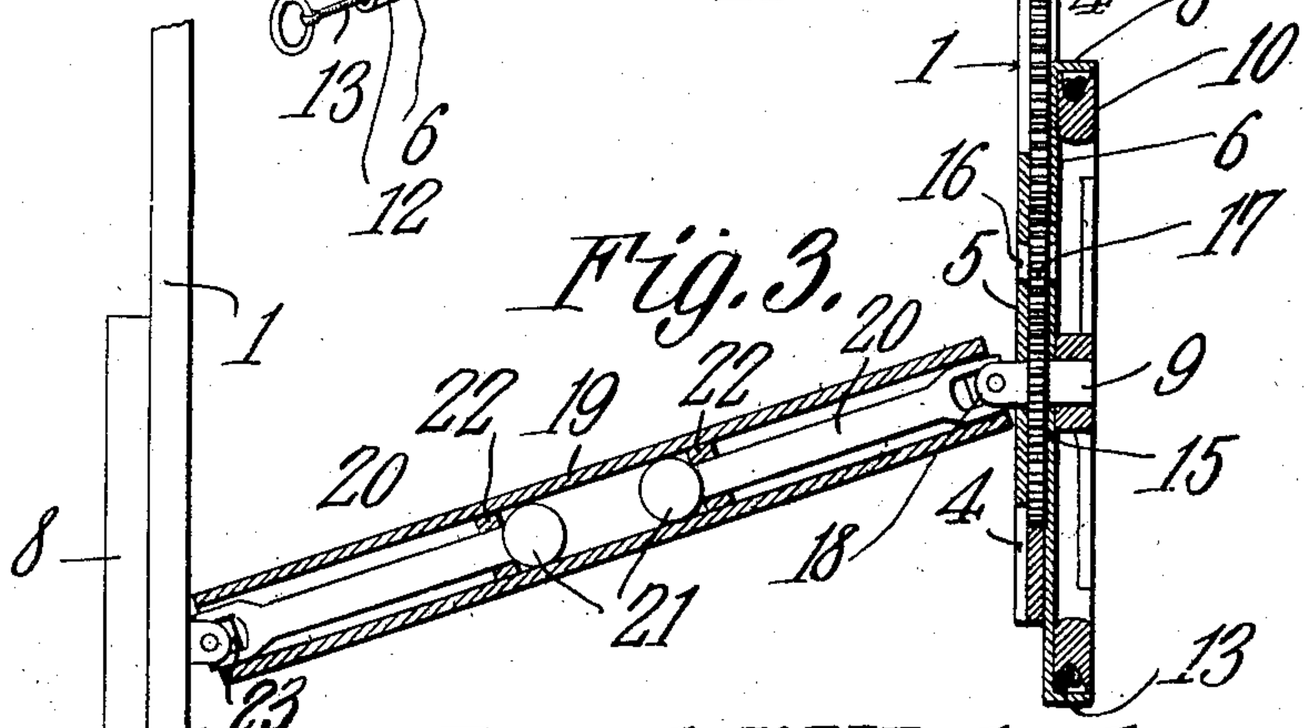


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

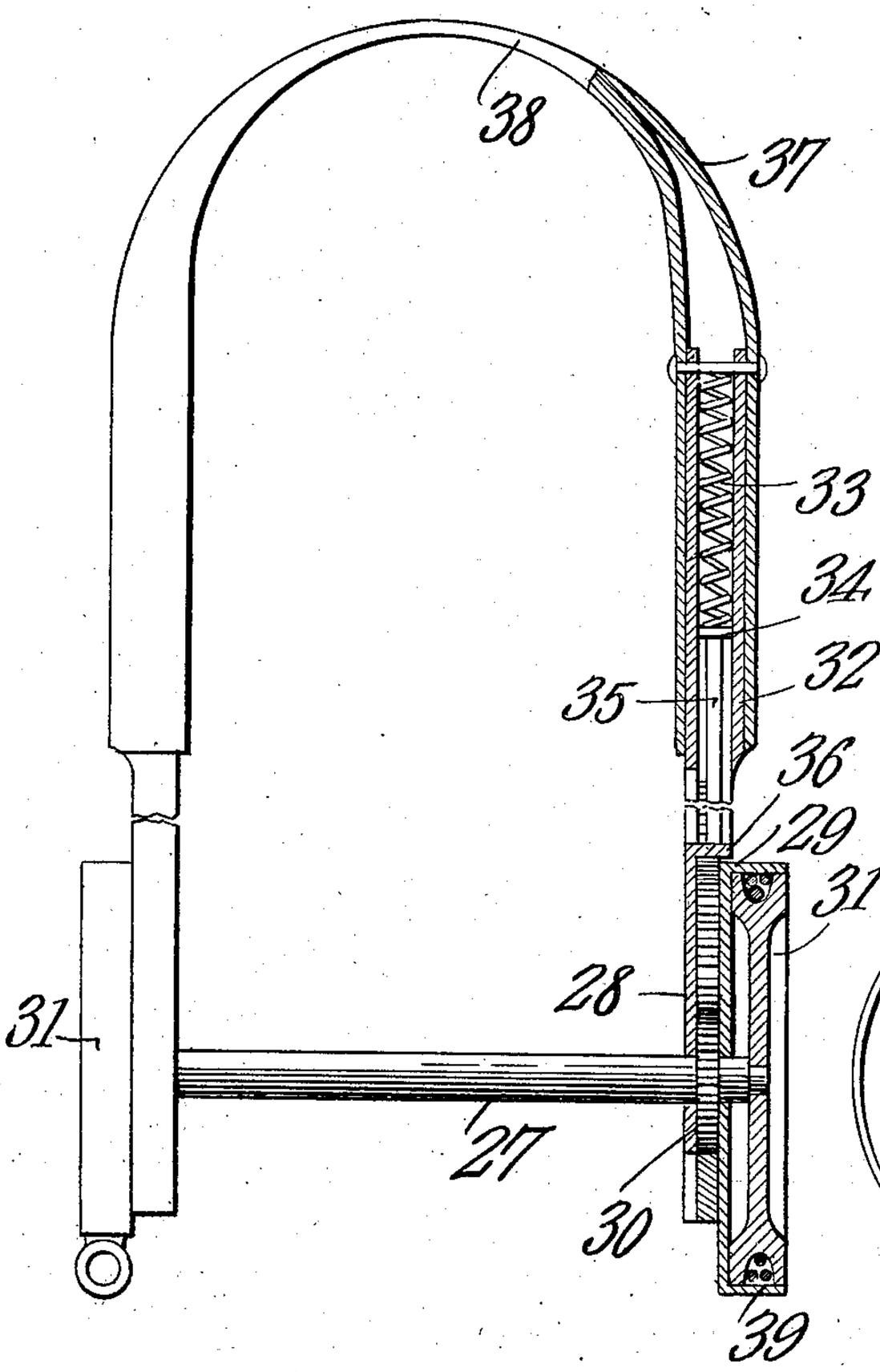
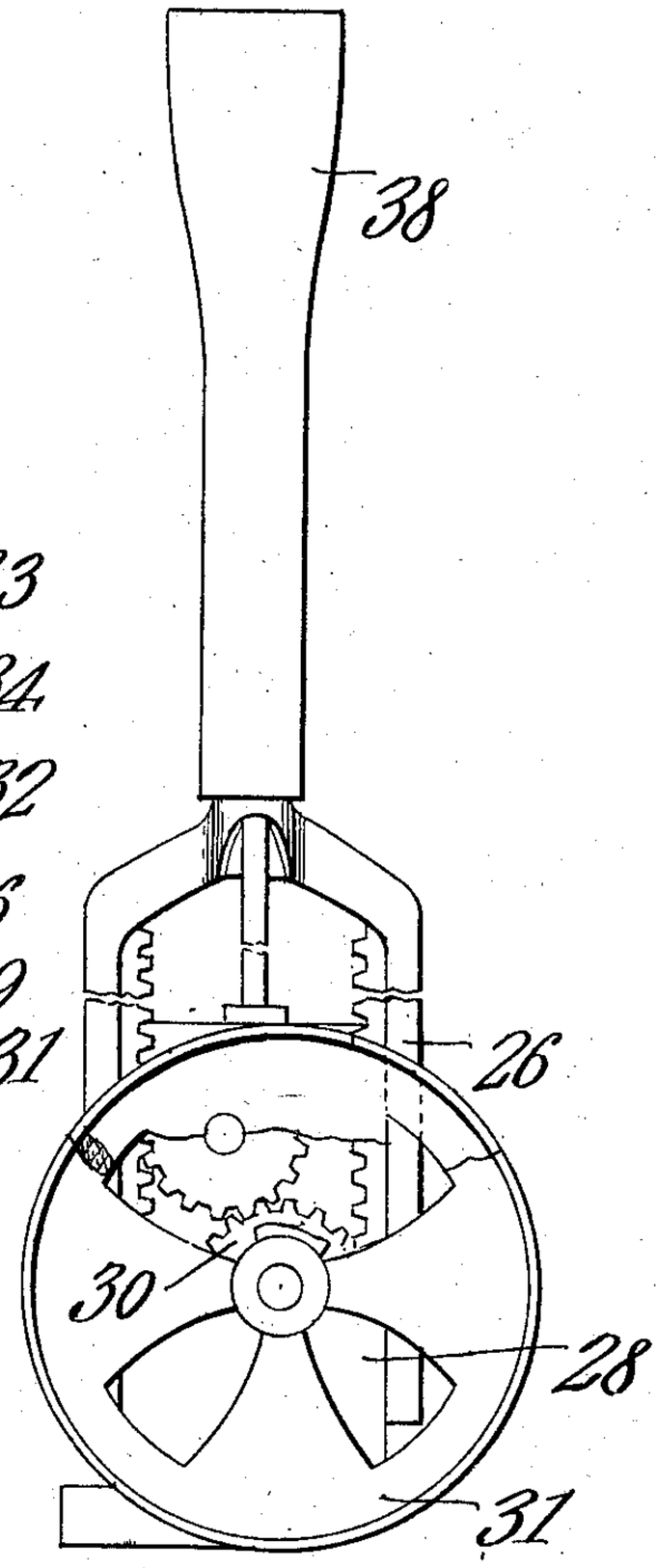


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH WALTER HERBERT, OF LOS GATOS, CALIFORNIA.

BRIDLE-BIT.

No. 891,419. Specification of Letters Patent. Patented June 23, 1908.

Application filed August 9, 1907. Serial No. 387,841.

To all whom it may concern:

Be it known that I, JOSEPH WALTER HERBERT, a citizen of the United States, residing at Los Gatos, in the county of Santa Clara and State of California, have invented a new and useful Bridle-Bit, of which the following is a specification.

This invention relates to bridle bits and is more particularly designed for use upon fractious animals.

The object of the invention is to provide a bit which is mounted in a novel manner so that the power exerted thereon by the driver can be greatly multiplied so as to force the bar of the bit back into the mouth of the animal and overcome any resistance offered by it.

A still further object is to provide cheek plates to which the bar of the bit is movably connected.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a perspective view of the bit; Fig. 2 is an enlarged side elevation of the bit, a portion of the actuating wheel and its casing being shown in section; Fig. 3 is a section through the bar and one of the cheek plates of the bit, the other cheek plate being shown in elevation and the bar being illustrated in a diagonal position. Fig. 4 is a view partly in elevation and partly in section of a modified form of bit, portions thereof being broken away. Fig. 5 is a side elevation of the parts shown in Fig. 4, the parts thereof being broken away.

Referring to the figures by characters of reference, 1 designates a cheek plate formed with an elongated rectangular opening 2 the longitudinal walls of which are provided with inwardly extending teeth constituting racks 3. Rabbets 4 are formed in opposite faces of the cheek plate and along the longitudinal walls of opening 2 and constitute guide-ways. Within the inner guide-way thus produced is mounted a slide 5 while another slide 6 is mounted in the outer guide-way and is formed with an integral ring-like casing 7 provided with an annular flange 8. A short shaft 9 is journaled within the two slides 6 and 5 and is concentric with the casing 7 and secured to this shaft and revolubly mounted within the casing is a grooved wheel 10. An outlet opening 11 is formed in the flange 8 and a guide tube 12 extends therefrom. Projecting loosely through this tube is a heavy cord or thong 13 one end of which is secured within the groove of wheel 10 and when the parts are in their normal positions there are preferably two or three wraps of the cord or thong within the groove of wheel 10. A ring or other suitable device is connected to the outer end of the flexible strip 13 as indicated at 14 so that the reins can be readily connected thereto. A gear 15 is secured to shaft 9 and between the slides 5 and 6 and meshes with one of the racks 3. A small shaft 16 is journaled in the slides 5 and 6 and carries a gear 17 which meshes with the other rack 3. One end of shaft 9 projects beyond the slide 5 as shown at 18.

It is of course to be understood that two cheek plates such as hereinbefore described are employed, each being provided with the same mechanism, one of them, however, being arranged oppositely to the other. Interposed between these cheek plates is a bar comprising a tubular member 19 in which are slidably mounted oppositely extending rods 20 the outward movement of which may be limited in any suitable manner as by means of heads 21 located at the inner ends of the rod and designed to bear against guides 22 located within the member 19. The outer ends of the rods are connected by universal joints 23 with the projecting portions 18 of shafts 9. When the bar 19 is in its normal position, to wit, perpendicular to the cheek plates 1, the inner ends 18 project entirely into the tubular member 19 and the ends of said member rest close to the slides 5. The bridle, which has been indicated at 24, is designed to be fastened to the upper ends of the cheek plates, said plates being preferably provided at both ends with slots 25 to receive the straps.

It is thought that the operation of this bit will be fully understood from the foregoing description when read in connection with the accompanying drawings. When the cords or thongs 13 are pulled outward the two wheels 10 are caused to rotate and, as the gear 15 moves therewith the same will be caused to travel along the rack 3. Said gear will also rotate gear 17 and cause it to travel along the other rack. The power exerted by the driver is thus greatly multiplied and the bar of the bit is drawn longitudinally of

the cheek plates with such force that it will be impossible for the animal to resist it. Should one of the flexible devices 13 be drawn harder than the other the telescopic and jointed connections between the operating mechanism and the bar are such as to permit a tilting movement as indicated in Fig. 3.

Instead of constructing the device with the bar pivotally connected to the cheek plates as shown in Figs. 1, 2 and 3, said bar may rotate with the cheek plates as shown in Figs. 4 and 5. By referring to said figures it will be noted that the cheek plates 2 are similar in construction to those heretofore described with the exception that the bar 27 extends through slides 28 and casings 29, the gears 30 being keyed or otherwise secured to the bar and the wheels 31 being also secured thereto. The cheek plates have tubular extensions 32 in which are secured coiled springs 33 and these springs press downward on head 34 formed at the upper ends of push rods 35. These rods bear downward on ears 36 extending from the slides 28 and serve to hold gears 30 at the lower ends of the cheek plates. Instead of connecting the cheek plates by means of straps as shown in Fig. 1 a tube 37 preferably of leather is secured upon the tubular extensions 32 and is flattened at its central portion as indicated at 38. With this construction the bar 27 will not move upward until after a sufficient pull has been exerted upon the wheels 31 to overcome the resistance of springs 33. Where the bit is to be used with an animal hard to control very light springs are preferably used so that the bit bar 27 will move upward as soon as the strips 39 are pulled. With gentle horses stronger springs 33 are preferably employed so that the bar 27 will not move upward unless the strips 39 are given a hard pull by the rider or driver.

It will be seen that a bit such as described is very simple, durable, and efficient and will be found of great utility in curbing tempered animals. While it is especially designed for saddle horses it can also be used effectively upon horses harnessed to vehicles.

What is claimed is:

1. In a bridle bit the combination with cheek plates and a bar interposed therebetween; of revoluble devices supported by each cheek plate and connected to the bar, means engaging said devices for rotating them, and means operated by said devices for shifting the bar and devices longitudinally of the cheek plates.

2. In a bridle bit the combination with cheek plates and a bar interposed therebetween; of a wheel supported by each cheek plate, a flexible actuating device normally wound thereon, a connection between the bar and each wheel, and means operated by the wheels for shifting the wheels and bar longitudinally of the cheek plates.

3. In a bridle bit the combination with cheek plates and a bar interposed therebetween; of a casing upon each plate, a wheel rotatably mounted in each casing, flexible means normally wound upon each wheel for actuating it, means operated by the wheels for shifting the wheels longitudinally of the cheek plates, and a connection between the bar and wheels.

4. In a bridle bit the combination with cheek plates, slides mounted thereon, and a bar interposed between and movable with the slides; of a revoluble element upon one of the slides, means for actuating the same, and means operated by said element for shifting the slides upon the cheek plates.

5. In a bridle bit the combination with cheek plates, a rack within each plate, and a bar interposed between the plates; of slides mounted upon the plates, gears carried thereby and meshing with the racks, a connection between the bar and the slides, and means for rotating the gear.

6. In a bridle bit the combination with cheek plates, and a rack upon each plate; of a slidable element upon each plate, a gear movable therewith and meshing with the rack, a bar movable with the slides, and means for rotating the gear.

7. In a bridle bit the combination with cheek plates, and racks thereon; of a slidable element upon each plate, meshing gears movable with each element, said gears meshing with separate racks, a bar movable with the slidable elements, and means for rotating the gears.

8. In a bridle bit the combination with cheek plates, and racks thereon; of slides upon each cheek plate, meshing gears interposed between the slides of each plate, said gears meshing with separate racks, a bar movable with the slides, a wheel revolubly mounted upon each cheek plate and movable with one of the gears, and flexible actuating means normally wrapped about the wheel.

9. In a bridle bit the combination with cheek plates and a bar interposed therebetween; of revoluble means for shifting the bar longitudinally of the cheek plates, and yieldable means for resisting said movement of the bar.

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

JOSEPH WALTER HERBERT.

Witnesses:

F. M. TIBBEY,

F. N. CRAFT.