J. H. BUTTORFF.

HEAD GATE.

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915,159.

Patented Mar. 16, 1909.

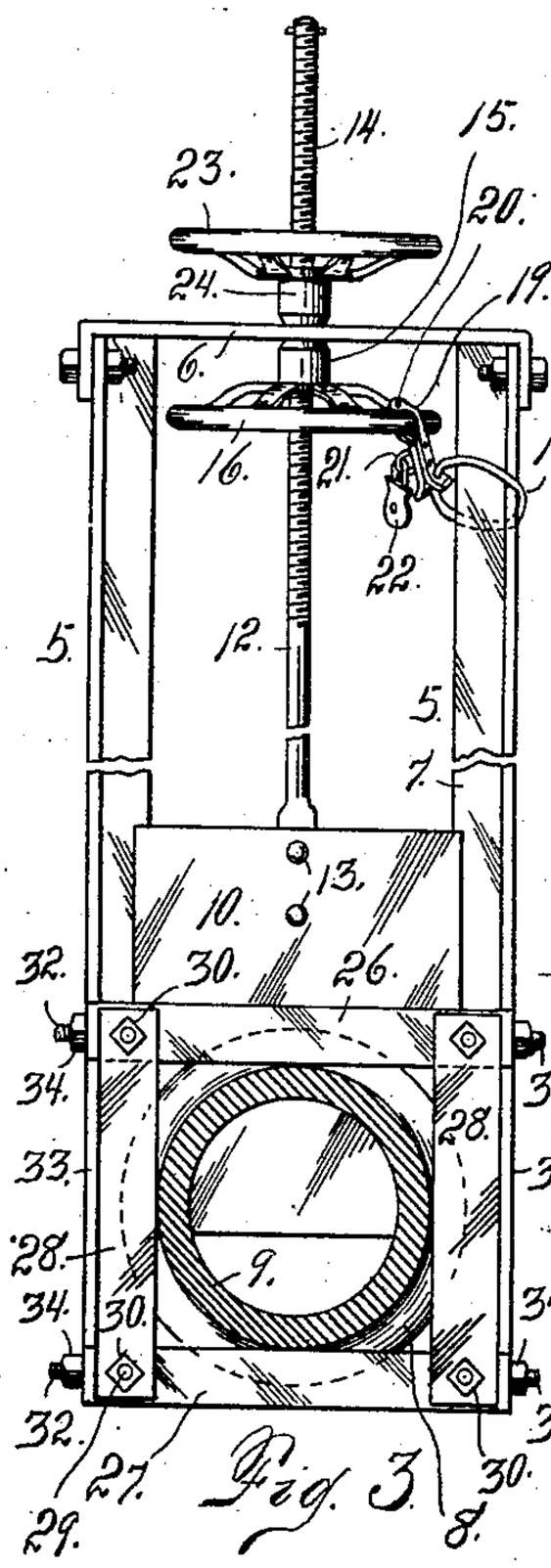

Fig. 3.

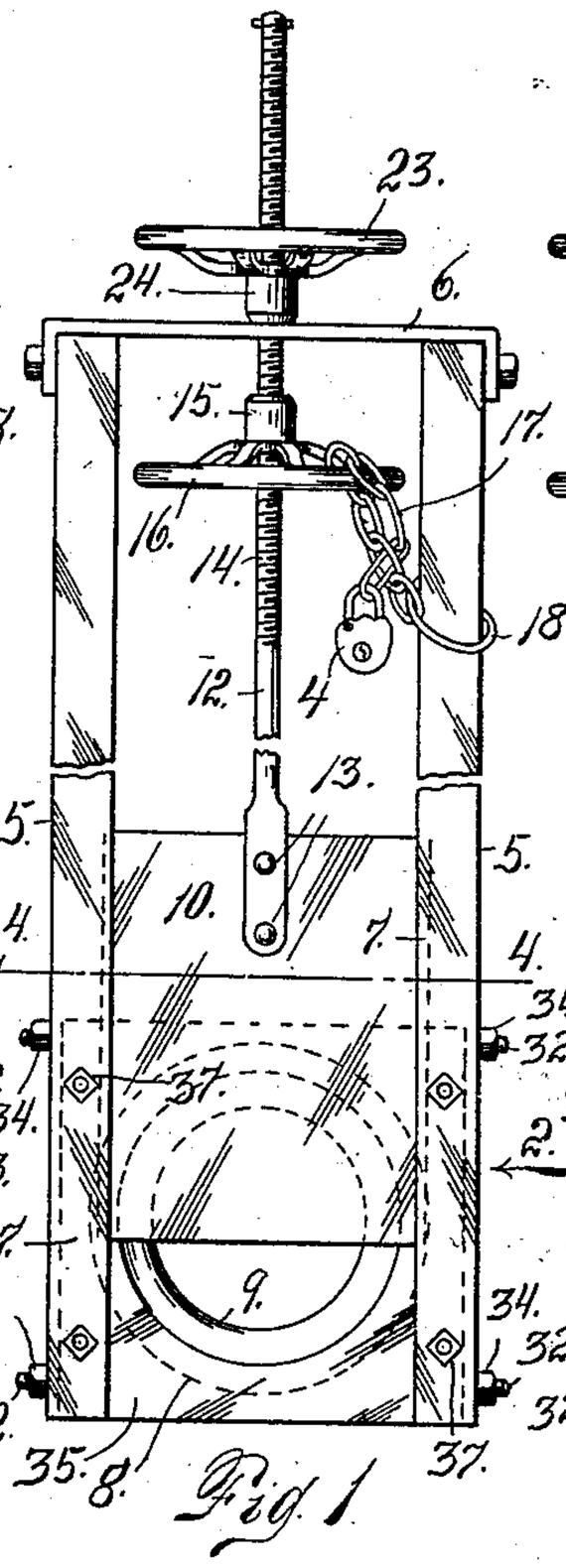

Fig. 1.

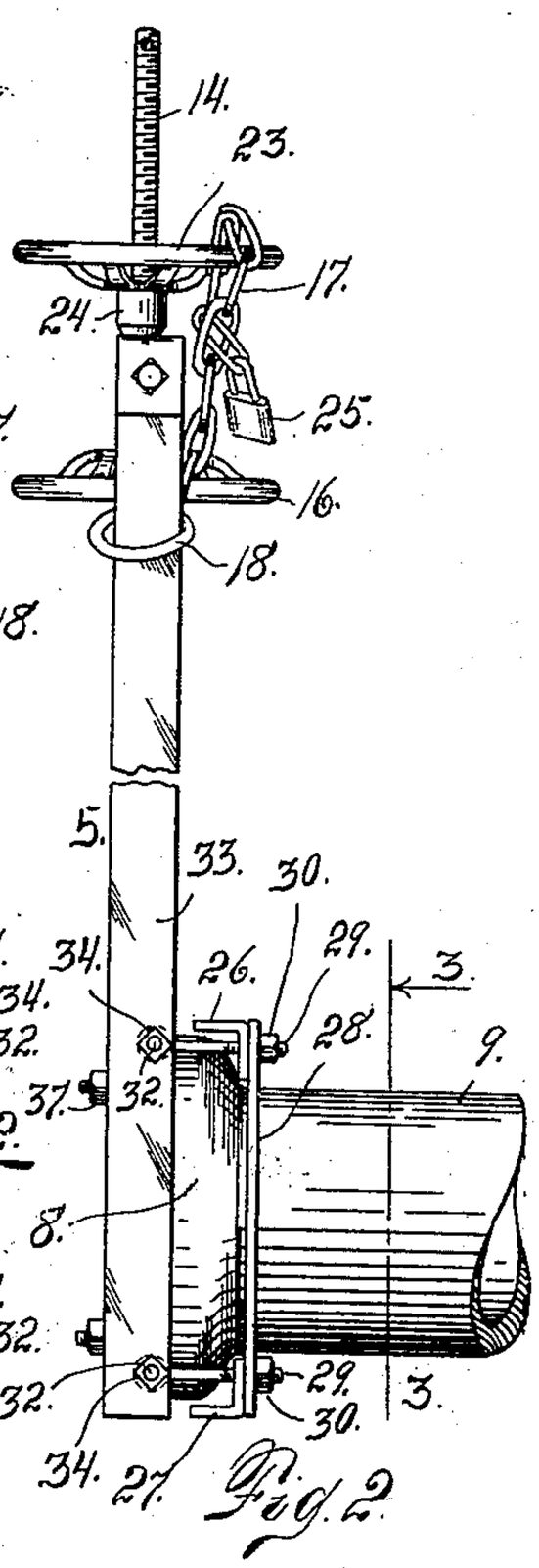

Fig. 2.

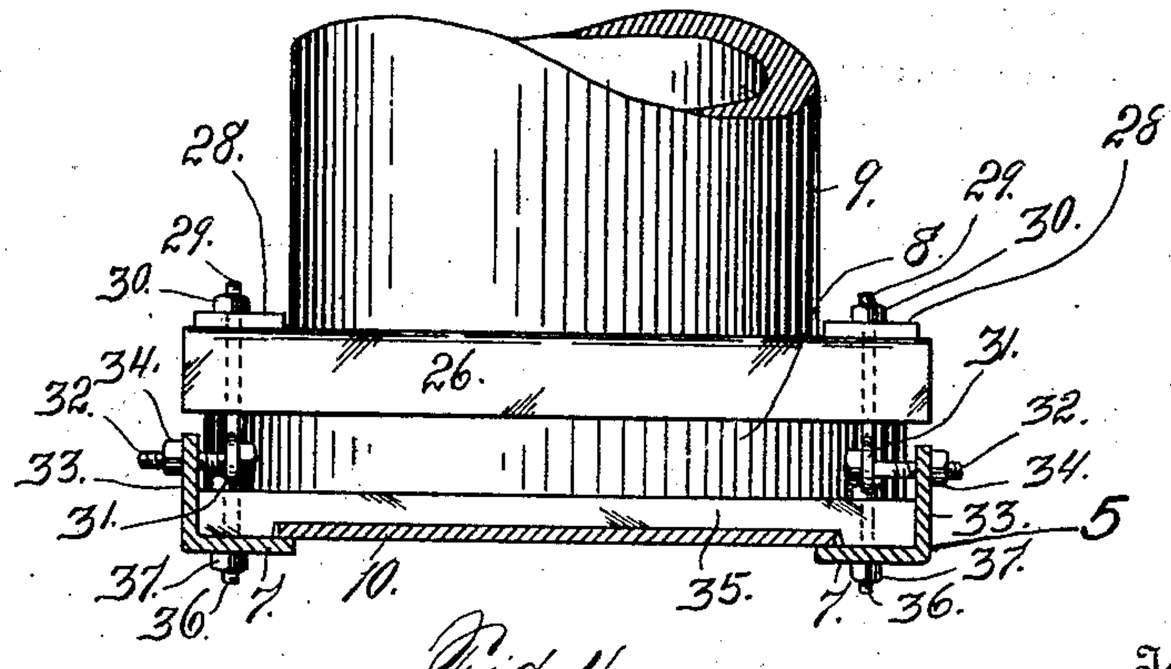

Fig. 4.

Witnesses

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HEAD-GATE.

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To all whom it may concern:

Be it known that I, JOHN HAMILTON BUTTORFF, a citizen of the United States, residing at Greeley, county of Weld, and State of Colorado, have invented certain new and useful Improvements in Head-Gates; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in head gates adapted to control the passage of water from irrigating ditches or canals into laterals or branches.

One feature of my improved construction relates to means for locking the head gate in the desired position of adjustment, whereby the consumer can only use a limited or predetermined quantity of water.

In sections requiring irrigation, the corporation owning a ditch or canal employs a superintendent whose business it is to regulate the head gates which control the amount of water delivered to the various consumers. Under these circumstances it is necessary that provision be made for adjusting the gate so that it is impossible for any consumer to use a greater quantity of water than that allotted to him.

My improved locking device also is capable of use to prevent the consumer from closing the gate, since it is sometimes necessary to compel the consumers to use water in order to prevent the overflow of the reservoir, which might result in serious damage.

Another feature of my improved construction consists in special improvements for attaching the head gate with the conduit connected with the canal, all of which will be fully understood by references to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a front view of a head gate equipped with my improvements. Fig. 2 is a side elevation of the same, or a view looking in the direction of the arrow 2 Fig. 1. Fig. 3 is a section taken on the line 3—3 Fig. 2, looking toward the left, or in the direction of the arrow. Fig. 4 is a section taken on the line 4—4 Fig. 1, looking downwardly, the parts being shown on a larger scale.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the upright angle bars forming the head gate frame, the said bars being connected by a cross plate 6 in the usual manner. The forward angle members 7 of these bars extend forwardly from the bell 8 of the conduit 9, and form ways in which the head gate 10 is adapted to slide. This gate is provided with a stem 12, which is centrally connected therewith by means of suitable fastening devices 13. This stem is threaded, as shown at 14, and its threaded portion passes through a plane of unthreaded opening formed in the cross plate 6. Below the plate 6 is located a nut 15, which is threaded on the stem and equipped with a hand wheel 16, for convenience of manipulation, and also to facilitate the locking of the nut against turning on the stem. The function of the nut 15 is to form a stop which engages the top plate 6, to prevent the opening of the gate beyond a predetermined limit. After this nut is properly adjusted on the stem, it may be locked in various ways.

In the form of construction shown, in Figs. 1 and 2, a short chain 17 is employed. This chain has a ring 18 at one extremity which surrounds one of the side bars 5 of the frame, and is freely slidable thereon. The chain is passed through the openings between the spokes of the hand wheel, after which the end link is passed through another link of the chain and secured by a padlock 18. As this ring 18 is freely slidable vertically upon one of the frame bars 5, the chain is always in position to lock the wheel, regardless of the vertical location of the latter.

In the form of construction shown in Fig. 3, a hasp 19 is employed. This hasp is connected with the ring 18, and is employed instead of a chain 17 in the other views. The hasp is hinged, as shown at 20, and its two parts may be opened and closed at will. One part is provided with a staple 21, through which the hasp of a padlock 22 is passed, for locking purposes. The hasp may be connected with the wheel 16 by applying its arms thereto, closing them upon the rim of the wheel. The staple 21, which is attached to one arm of the hasp, passes through an open-

ing formed in the other arm, after which the padlock is applied, as heretofore stated.

In both forms of construction the ring 18 slides freely on one of the upright angle bars of the head gate frame.

In the arrangement shown in Fig. 2, the chain is applied to a wheel 23 attached to a nut 24, the latter being applied to the stem above the cross plate 6. Of course, in order to close the gate, assuming that the nut 24 is in engagement with the plate 6, it will be necessary to turn the nut upon the stem to allow the gate to slide downwardly. If it is desired to prevent the water consumer from closing the gate, the latter, after being opened to the desired degree, may be locked against closing by turning the nut 24 upon the stem until it engages the plate 6, and then passing the chain 17 through the wheel 23, and locking it in place by a padlock 25 in the usual manner. It will then be impossible for the consumer to close the gate until the overseer or superintendent of the canal gives him permission.

In connecting the head gate to the conduit 9, I employ top and bottom angle bars 26 and 27, which are located adjacent to the bell 8 and above and below the body of the conduit. In the rear of the vertical members of these angle bars, are placed vertically disposed flat bars 28 located on opposite sides of the conduit. These bars 28 are connected with the vertically disposed members of the angle bars 26 and 27, by means of bolts 29, to which nuts 30 are applied. These bolts occupy positions outside of the bell of the conduit, and are provided with eyes 31, through which are passed bolts 32, the said bolts being also passed through openings formed in the angle members 33 of the side bars 5 of the frame. Nuts 34 are then applied to the outer extremities of the bolts 32, whereby the frame connected with the conduit is attached to the head gate frame. In this construction it will be understood that the bolts 32 extend at right angles to the bolts 29. In connecting the conduit with the head gate frame, the bell 8 is placed against a plate 35, having an opening registering with the opening of the conduit. This plate is connected with the front flanges 7 of the upright frame bars 5 by means of bolts 36 to which nuts 37 are applied.

From the foregoing description, the use of my head gate construction will be readily understood. Assuming that the head gate is attached to the conduit, if it is desired to allow a quantity of water to pass through the gate, the latter is opened the desired distance. The nut 15 is then adjusted on the stem 14, so that it shall engage the lower surface of the cross plate 6 of the head gate frame. The nut is then locked against rotation on the stem by the use of the chain 17, or the hasp, as the case may be, a padlock being employed in either case. It is evident that if this is done, the gate cannot be further opened until it is unlocked by the person holding the key, which, under the circumstances stated, is the superintendent or overseer of the ditch or canal. Again, if it is desired to prevent the consumer from closing the gate, for reasons heretofore explained, the chain should be employed to lock the nut 24 against turning on the stem when the gate is opened. In this event, it is assumed that the nut 24 is adjusted to engage the upper surface of the cross plate 6. The gate will then be locked against closing until the person having the key wishes to unlock the nut 24, by detaching the chain from the wheel 23.

Having thus described my invention, what I claim is:

1. The combination with an upright frame and a head gate having a threaded stem, of a nut applied to the stem, and means for locking the nut against rotation, including a ring vertically slidable on a member of the head gate frame, substantially as described.

2. The combination with a head gate frame having an upright member, a gate vertically movable in the frame and provided with a stem and a nut mounted on said stem, of a locking device adapted to be connected with the nut, and provided with a ring surrounding one of the upright members of the head gate frame, substantially as described.

3. The combination with a head gate frame including an upright member, and a head gate having a screw stem provided with a nut, of a locking device comprising means adapted to be connected with the nut and including a ring surrounding one of the upright members of the head gate frame, and vertically slidable thereon, for the purpose set forth.

4. The combination of a head gate frame and a conduit, and means for connecting the said frame and conduit, comprising top and bottom angle bars, vertically disposed plates located on opposite sides of the conduit, bolts connecting the said plates and bars, and other bolts extending at right angles to the first named bolts for connecting the latter with the head gate frame, substantially as described.

5. The combination with a head gate frame, including two upright angle bars; and a conduit, of means for connecting the conduit with the frame, comprising top and bottom angle bars, vertically disposed bars located on opposite sides of the conduit and whose extremities engage the angle bars, bolts connecting the two sets of bars, and other bolts connecting the first named bolts with one of the angle members of each angle bar of the frame, substantially as described.

6. The combination of a head gate frame including two upright bars; and a conduit

having a bell located adjacent to the head gate frame, of means for connecting the frame with the bell of the conduit, comprising bars arranged above and below the conduit, other bars arranged on opposite sides of the conduit, bolts connecting the two sets of bars and projecting outside of the bell of the conduit, and other bolts extending at right angles to the first named bolts for connecting the latter to the side angle members of the upright frame bars, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN HAMILTON BUTTORFF.

Witnesses:

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