P. H. GENTER.

HEAD GATE.

APPLICATION FILED JULY 2, 1913.

1,084,855.

Patented Jan. 20, 1914.

2 SHEETS—SHEET 1.

Fig. 1

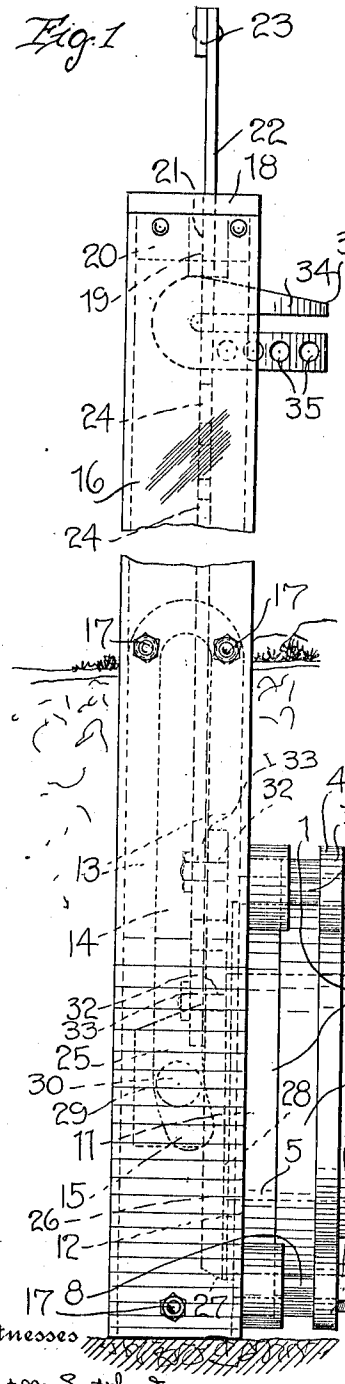
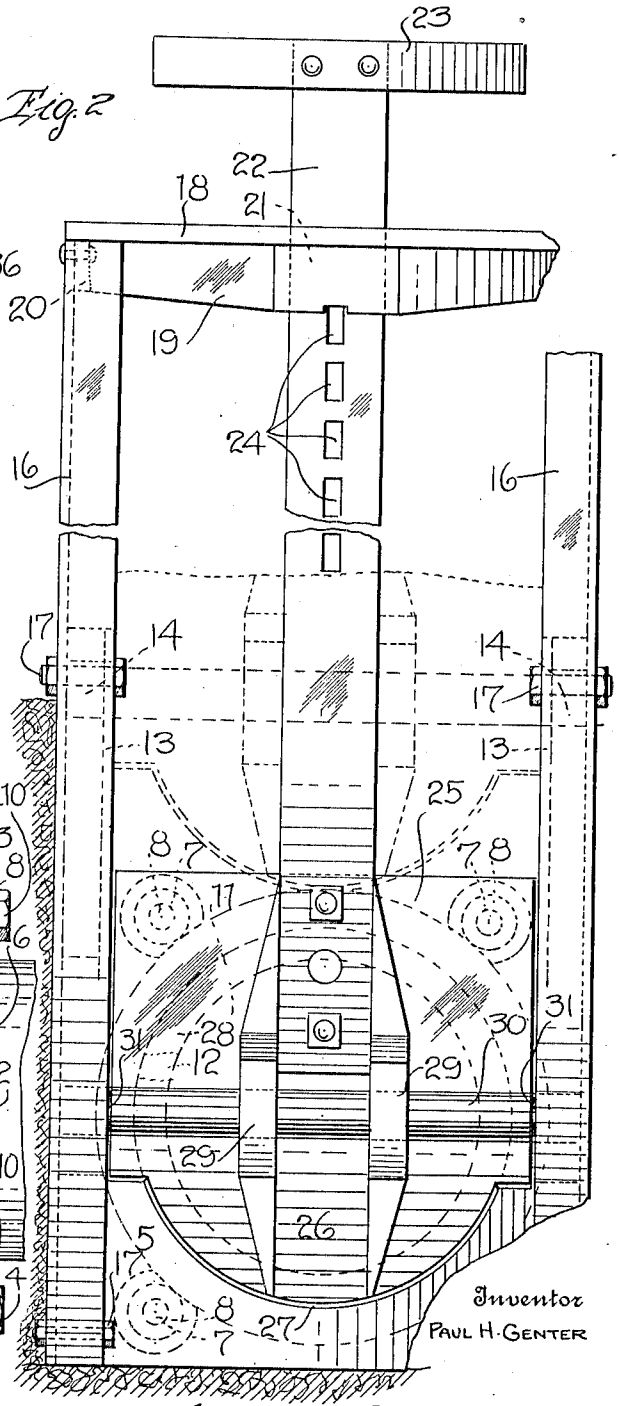


Fig. 2



Witnesses

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Fig. 4

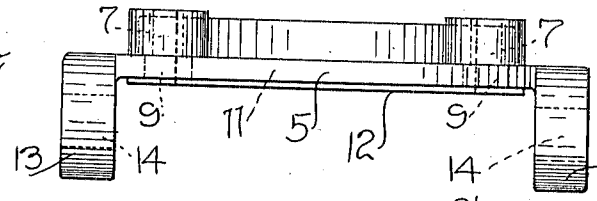


Fig. 5

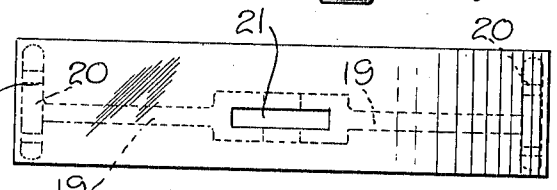
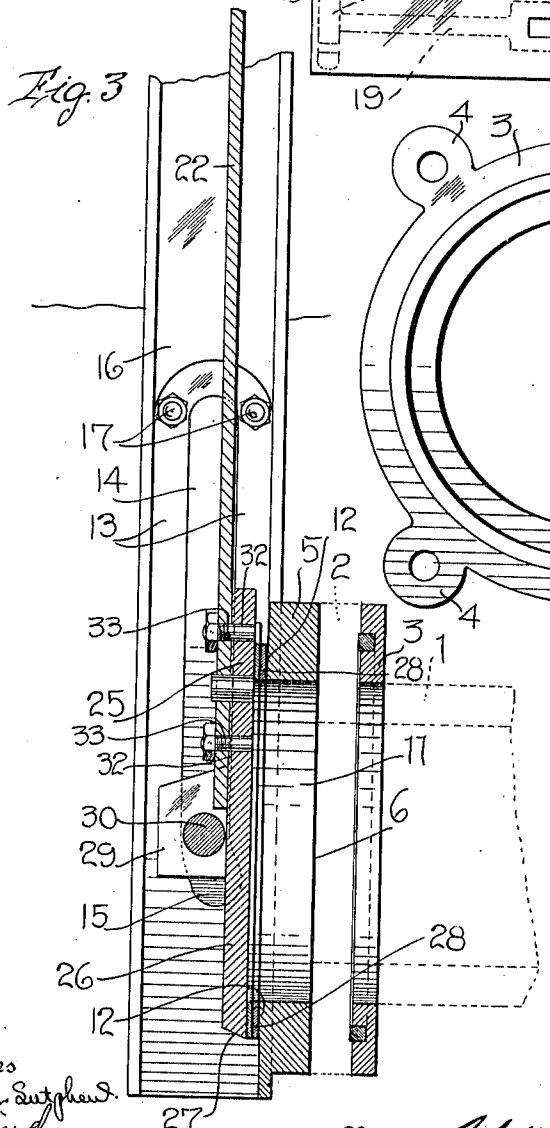


Fig. 3



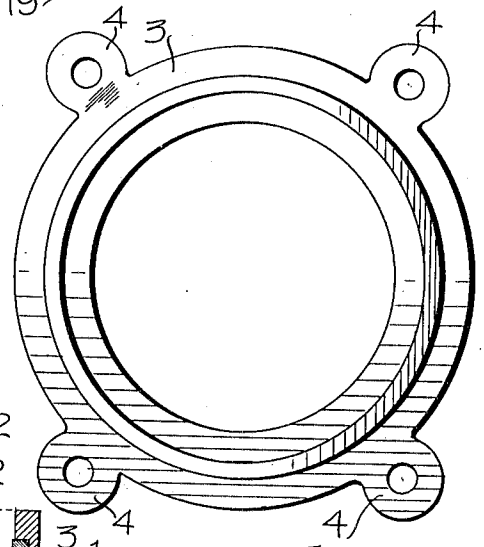


Fig. 6

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UNITED STATES PATENT OFFICE.

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HEAD-GATE.

1,084,855. Specification of Letters Patent. Patented Jan. 20, 1914.

Application filed July 2, 1913. Serial No. 777,130.

To all whom it may concern:

Be it known that I, PAUL H. GENTER, a citizen of the United States, residing at Englewood, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Head-Gates, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to new and useful improvements in head gates and more particularly to a head gate which is especially adapted for use upon irrigating ditches, flues, sewers and the like, the object of the invention being to provide a head gate which is preferably constructed of metal so arranged that it can be readily adjusted to various degrees and when in its closed position provides a water tight closure.

Another object of the invention is the provision of a head gate of the above character which will possess advantages in points of efficiency and durability, is inexpensive of manufacture and at the same time is simple in construction and operation.

With the above and other objects in view, this invention consists in the novel features of construction and the combination and arrangement of parts to be hereinafter more fully described, pointed out in the claims and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved head gate; Fig. 2 is a front elevation; Fig. 3 is a vertical sectional view; Fig. 4 is a top plan view of the guide plate; Fig. 5 is a plan view of the head cap; and Fig. 6 is a side elevation of the clamping ring.

Referring more particularly to the drawings, 1 indicates a pipe provided at one end with an annular flange 2 upon which my improved head gate is mounted. A clamping ring 3 is provided having a plurality of radially projecting perforated lugs 4, said ring fitting against the rear face of the flange 2, as clearly shown in Fig. 1. Secured to the front face of the flange 2 is a guiding plate 5, which is provided with an enlarged annular portion 6 which is adapted to abut against the front face of the flange 2 and which is provided at intervals with the bolt openings 7 adapted to receive the clamping bolts 8. The heads formed upon the inner ends of the bolts 8 are seated within recesses 9 formed in the front face of the guiding plate and nuts 10 are threaded upon the opposite end of said bolts to securely retain the guiding plate 5 and the clamping ring 3 in position upon the end of the pipe 1.

The guide plate 5 is provided with a central opening 11 which is adapted to be arranged in alinement with the openings in the end of the pipe 1 and surrounding said opening is a gasket 12, the purpose of which will be fully set forth hereinafter. The side walls 13 of the guiding plate 5 are provided with the vertically disposed slots 14 having offset ends 15, said ends being offset toward the end of the pipe 1. The side walls 13 of the plate 5 are arranged within the lower ends of the upright U-shaped channel bars 16 and are securely bolted in position by means of the bolts 17 which extend through the ends of the walls 13 and through the channel bars 16, thus securely holding the guiding plate 5 in its operative position.

The upper ends of the channel bars 16 are securely held in an upright position and in spaced relation by means of a head cap 18 having a central rib 19 formed integral therewith and downwardly projecting end ribs 20 which are securely riveted or otherwise secured to the upper ends of the channel members 16. The medial portion of the rib 19 is provided with an enlarged portion having a central opening 21 in which is slidably mounted the operating rod 22, the upper end of which is provided with a handle member 23 whereby the same may be quickly and readily manipulated when desired. The operating rod is preferably in the form of a flat metal strip which is provided adjacent its upper end with a plurality of elongated openings 24 adapted for the reception of a locking key to retain the rod in various adjusted positions.

The head gate or closure plate 25 is constructed of any suitable form of metal and is preferably rectangular in form having an arcuate portion 26 which is provided with a cutting edge 27 whereby the small sticks and other debris which might accumulate within the opening may be quickly and readily cut to permit the gate to drop to its closed position. The head gate 25 is provided upon its rear face with a gasket 28 which is adapted to coöperate with the gasket 12 on the guide plate 2 to provide a water tight closure when the head gate is in its closed position. The head gate 25 is further provided upon its front face thereof with the spaced bearings 29 in which is arranged the roller 30, said

roller being provided with the reduced end portions, as shown at 31, which are adapted to be arranged within the slots 14 of the side walls of the plate 5 to securely hold the head gate upon its reciprocating movement, in position. The head gate 25 is provided adjacent its upper edge with the vertical alined openings 32 and the lower end of the operating rod 22 is provided with a plurality of openings 33 which are adapted to be arranged in alinement with the openings 32 in the head gate 25 to securely bolt the operating rod thereto.

In the opening and closing of my improved head gate, I provide a gaging member 34 which is preferably U-shaped in form to provide two spaced arms, one of which is provided with a plurality of openings 35, adapted to receive a pad lock or other securing member and the other of said arms tapers to a point, as shown at 36, and the upper inclined edge of the same is adapted to engage the lower edge of the central portion of the rib 19. From this it will be seen that by the adjustment of the gage 34 within the openings of the operating rod 22, the gate 25 may be adjusted from $\frac{3}{8}$ to one inch. When it is desired to open the gate, the gage member 34 is withdrawn and the rod 22 pulled upwardly and when the gate 25 is opened to the desired position, the gage member 34 is inserted into the openings above the cap 18, the tapering arm 36 of the gage 34 being arranged so as to engage with the upper face of the cap. From this it will be seen that by adjusting the gage member 34 within the openings, the gate may be further adjusted to a finer degree and held in such adjusted position by inserting the pad lock or other securing member in the openings 35.

As will be readily apparent from the accompanying drawings, when the gate 25 is in its lowered or closed position, the ends of the roller 30 will be in the lower end of the offset 15, thus forcing the two packing rings 12 and 28 into tight engagement and providing a water tight closure. When the head gate 25 is in its closed position, as illustrated in Fig. 4, the gage member 34 will be inserted within the two uppermost openings in the rod 22 and disposed directly beneath the rib 19 of the cap 18. When it is desired to open the head gate to a very slight degree, the pad lock or other securing pin arranged within the openings 35 will be removed and the gage 34 adjusted so that the upper arm which bears against the rib 19 will permit slight upward movement of the rod 22. It will also be apparent that when it is desired to open the gate farther, the gage may be removed from the two uppermost openings and placed in the two below the uppermost opening, this operation being carried out until the openings are arranged above the top of the cap 18. The gage is then removed from below the rib 19 and placed above the cap, the operation being similar to that below the rib.

From the above description taken in connection with the accompanying drawings, it will be readily apparent that I have provided a simple and durable head gate which may be quickly and readily applied to pipes and flues of various forms and sizes, and is so constructed that the flow of water through the head gate may be adjusted to a very fine degree. It will also be apparent that my improved head gate is extremely simple in construction and can be manufactured at a comparatively low cost.

While I have shown and described the preferred form of my invention, it will be obvious that various changes in the details of construction and in the proportions may be resorted to for successfully carrying my invention into practice without sacrificing any of the novel features or departing from the scope of the appended claims.

What I claim is:—

1. A device of the class described including a guide plate having spaced walls provided with vertical slots, said slots having their lower ends offset toward the rear side of the plate, a head gate comprising a plate having spaced bearings formed upon one side thereof, a roller arranged within said bearings and having its ends mounted within said slots and an operating rod removably secured to the upper edge of the head gate whereby the same may be reciprocated within the guide plate.

2. A device of the class described including spaced U-shaped channel bars, a head cap connecting the upper ends of said bars and provided with a central opening, a guiding plate having spaced side walls provided with vertical slots, said slots being provided at their lower ends with an offset portion, a head gate having bearings arranged upon one side thereof, a roller mounted within said bearings, and having its ends arranged within said slots, and an operating rod movably mounted within the opening in the cap member and having its lower end removably secured to the head gate.

3. A device of the class described including spaced upright channel bars, a cap member connecting the upper ends of the same and provided with a central opening, a guide plate having side walls arranged within said channel bars and secured thereto, said side walls having vertical slots formed therein, which are provided with offsets at their lower ends, a head gate, spaced bearings formed upon one side thereof, a roller mounted within said bearings and having its ends arranged within said slots, an adjustable rod movably mounted

within the opening in the cap member, and having its lower end secured to the head gate, said rod being provided with a plurality of openings and a gage member removably arranged within said openings to retain said rod in various adjusted positions.

4. In combination with a pipe having an annular flange at one end, a clamping ring mounted upon the pipe and arranged at the rear side of the flange, a guide plate having spaced side walls provided with vertical slots, an annular flange formed upon the rear face of said plate and bearing against the flange on the pipe, bolts removably securing the clamping ring and the guide plate to the flange of the pipe, a head gate provided with spaced bearings, a roller mounted within said bearings and having its ends engaged within said slots, and means for operating said head gate.

5. A device of the class described including spaced upright channel members, a guide plate having side walls arranged within said channel members and secured thereto, said side walls being provided with vertical slots having offsets at their lower ends, a head gate having spaced bearings upon one side thereof, a cutting edge formed in the lower side of said gate, a roller mounted within said bearings and having its ends arranged within said slots, an operating rod having its lower end removably secured to the head gate and adapted to actuate the same, as and for the purpose set forth.

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

PAUL H. GENTER.

Witnesses:
BESSIE HYNES,
HENRY C. ALLEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."