

Jan. 16, 1940.

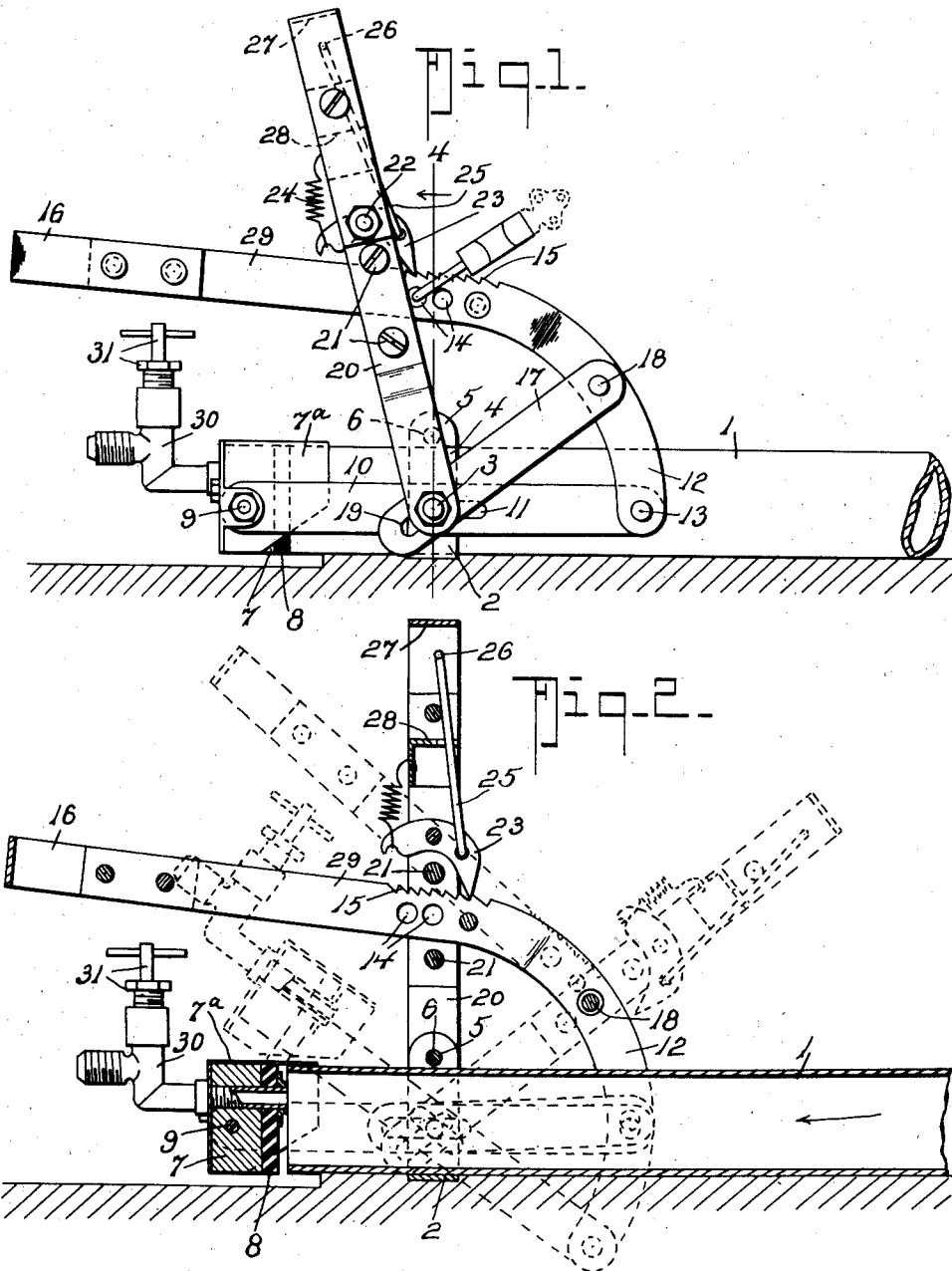
H. H. SCATES

2,187,665

HEAD GATE OR THE LIKE

Filed July 31, 1939

2 Sheets-Sheet 1



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Fig. 3.

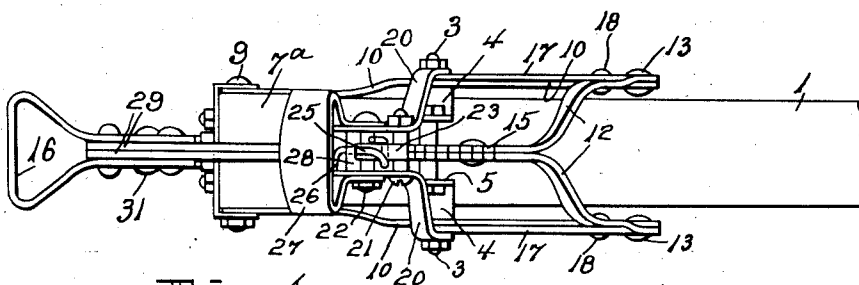


Fig. 4.

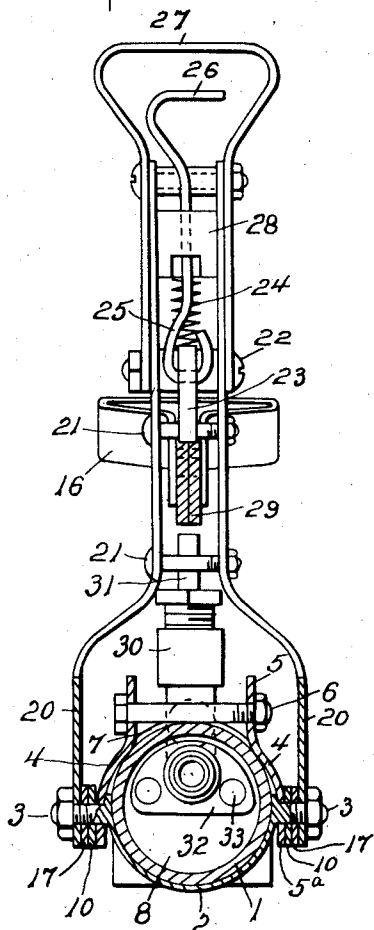
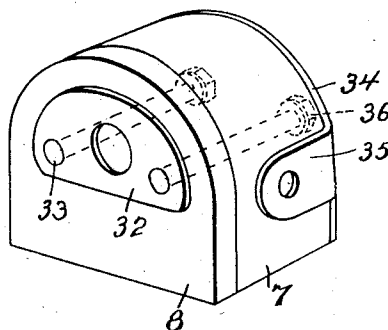


Fig. 5.



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UNITED STATES PATENT OFFICE

2,187,665

HEAD GATE OR THE LIKE

Homer Holmes Scates, Kirkland, Tex.

Application July 31, 1939, Serial No. 287,673

6 Claims. (Cl. 251—19)

My invention relates to a certain new and useful device for cutting off and for regulating the flow of liquids from pipes. It particularly has for an object the provision of a simple, effective, easily operated and inexpensive means for the purpose stated.

More specifically the invention comprises an end gate for water or oil lines so constructed and designed that by its use any desired quantity of liquid may be regulated to flow from the pipe, from a maximum to zero.

It also has for an object to provide a means whereby the device can be used as a head gate, or a means whereby a smaller pipe may be operatively coupled to the end of a larger pipe and the pressure of the fluid at the intake end of the smaller pipe can be regulated by opening, more or less, the head gate.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the above objects and ends the invention still further resides in the novel features of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description and will then be particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which:

Fig. 1 is a side elevation of my invention in use, the gate being in the closed position.

Fig. 2 is a central vertical longitudinal section of the same, the gate being partly open in full lines and all the way open in dotted lines.

Fig. 3 is a top plan view of Fig. 1.

Fig. 4 is an enlarged cross section on the line 4—4 of Fig. 1, the padlock being omitted.

Fig. 5 is a detail perspective view of the cap block with hood omitted.

In the drawings, in which like numbers of reference indicate like parts in all the figures, 1 is the pipe, duct or conduit whose outflow is to be governed by my device.

My device comprises a special quickly attachable and detachable clamp composed of a bottom member 2 having threaded studs 3 in axial alignment, and two quarter-section members 4 having apertured ears 5—5^a, the latter fitting the studs 3, while the former receive the bolt, with nut, 6 by which the members 2 and 4 are secured rigidly around the pipe 1.

7 designates the cap block which is designed to be held over the opening in the end of the pipe. It has a facing 8 of rubberized fabric, rubber, leather or other suitable material to make a water-tight contact with the pipe end when

the cap block 7 is forced toward the pipe end. The block 7 is provided with a hood 7^a that fits over the pipe (see Fig. 1) and acts also as a stop.

The block 7 has a metal face 34 held to the block by ears 35 and by bolts 33 with nuts 36 that also secure the plate 32 and facing 8 to the block (see Fig. 5).

At the sides of the block are secured at 9 the arms 10 which extend back along the sides of the pipe and have slots 11 to receive the studs 3. The connection between arms 10 and block 7 is preferably a rigid one, although it may be articulated if desired. There is an arm 10 at each side of the pipe 1.

To the rear ends of arms 10 are pivoted the forked ends 12 of a lever 29. This lever is provided with a handle 16, ratchet teeth 15, and holes 14, and extends through an arm 20 which comprises the holding arm. The lever holes 14 are designed to receive a padlock so that the lever arm can be locked against movement in a direction to open the outlet end of pipe 1.

The arm 20 is also bifurcated and pivoted at its forked ends to the studs 3. It is also provided with cross bolts, screws or rivets 21 to limit up and down movement of lever 29. The arm 20 carries a pawl 23 pivoted at 22 and held normally in engagement with rack teeth 15 by a coil spring 24. The pawl 23 may be lifted by a rod 25 that passes through a spacer 28 in the arm 20. The arm 20 also has a handle 27 and the rod 25 has a finger piece 26. Pivoted at 18 to each furcation 12, is a link 17 having a slot 19 to receive the stud 3.

If desired, a small pipe fitting 30 with needle valve 31 may be tapped into block 7 and communicate with pipe 1 when the same is capped.

Operation

Assume the parts to be positioned as in Fig. 1 with pipe 1 entirely closed. To open the pipe it is only necessary to raise latch pawl 23 via rod 25 and then to swing arm 20 clockwise in Fig. 1 to the dotted line position shown in Fig. 3, and then lift up on lever 29. Lifting lever 29 causes 18 to act as a fulcrum, and rods 10 are pushed out, thus separating block 7, 8 from the end of pipe 1, and also, on further movement, raising block 7 to clear the pipe entirely.

The degree to which the outlet end of pipe 1 is opened will depend on the combined action of lever 17 and arm 20.

The pawl 23 and ratchet 15 will set the levers and locate 7 as close to the pipe end as desired.

With block 7 pressed tightly against the pipe

end, all flow will cease. When valve 31 is opened, fluid will flow via fitting 30. If pressure is too great with valve 31 fully open, it may be reduced by moving block 7 more or less away from the end of pipe 1 to permit liquid to leak out between packing 8 and pipe 1.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the construction, operation and advantages of the invention will be clear to those skilled in the art, and I wish it understood that changes in the details of construction and form of the parts may be made without departing from the spirit of the invention and the scope of the appended claims.

What I claim is:

1. In a device of the character stated, a clamp having aligning studs secured to a pipe adjacent its outlet end, a cap for the end of the pipe, means pivotally mounted intermediate its ends on said stud and having provision whereby the means is slidable on said studs also along the pipe, said means being secured to and carrying said cap, and lever means connected with the end of said pivotally mounted means which is opposite that to which the cap is secured for moving said cap-carrying means on its pivot and along the pipe to close the outlet of the pipe or open the same accordingly as the lever means is in one position or another.

2. In a device of the character stated, a clamp having aligning studs secured to a pipe adjacent its outlet end, a cap for the end of the pipe, means pivotally mounted intermediate its ends on said stud and having provision whereby the means is slidable on said studs also along the pipe, said means being secured to and carrying said cap, lever means connected with the end of said pivotally mounted means which is opposite that to which the cap is secured for moving said cap-carrying means on its pivot and along the pipe to close the outlet of the pipe or open the same accordingly as the lever means is in one position or another, and means to hold said lever means against reverse movement.

3. In a device of the character described, a clamp for securing to a pipe adjacent its outlet end, said clamp having trunnions, slotted arms mounted on said trunnions, one at each side of the clamp for movement pivotally and longitudinally, a pipe end cap carried by said arms at one end, a bifurcated lever pivoted to said

arms at their other ends, links between said lever and said trunnions, and means to hold said lever in any of several adjusted positions.

4. In a device of the character described, a clamp for securing to a pipe adjacent its outlet end, said clamp having trunnions, slotted arms mounted on said trunnions, one at each side of the clamp for movement pivotally and longitudinally, a pipe end cap carried by said arms at one end, a bifurcated lever pivoted to said arms at their other ends, links between said lever and said trunnions, means to hold said lever in any of several adjusted positions, said means comprising a bifurcated arm pivoted to said trunnions and guiding said lever, a latching pawl carried by said arm, said lever having a rack portion to receive said pawl, and means carried by said arm to operate said pawl.

5. In a device of the character described, a clamp for securing to a pipe adjacent its outlet end, said clamp having trunnions, slotted arms mounted on said trunnions, one at each side of the clamp for movement pivotally and longitudinally, a pipe end cap carried by said arms at one end, a bifurcated lever pivoted to said arms at their other ends, links between said lever and said trunnions, means to hold said lever in any of several adjusted positions, said means comprising a bifurcated arm pivoted to said trunnions, a latching pawl carried by said arm, said lever having a rack portion to receive said pawl, and means carried by said arm to operate said pawl.

6. In a device of the character described, a clamp for securing to a pipe adjacent its outlet end, said clamp having trunnions, slotted arms mounted on said trunnions, one at each side of the clamp for movement pivotally and longitudinally, a pipe end cap carried by said arms at one end, a bifurcated lever pivoted to said arms at their other ends, links between said lever and said trunnions, means to hold said lever in any of several adjusted positions, said means comprising a bifurcated arm pivoted to said trunnions and guiding said lever, a latching pawl carried by said arm, said lever having a rack portion to receive said pawl, and means carried by said arm to operate said pawl, said lever having holes to receive a padlock and lock said arm and lever against movement in a direction to open the pipe's outlet.

HOMER HOLMES SCATES.