Nov. 29, 1960 W. HANSON ET AL 2,961,836

FLOOD GATE

Filed Oct. 14, 1955

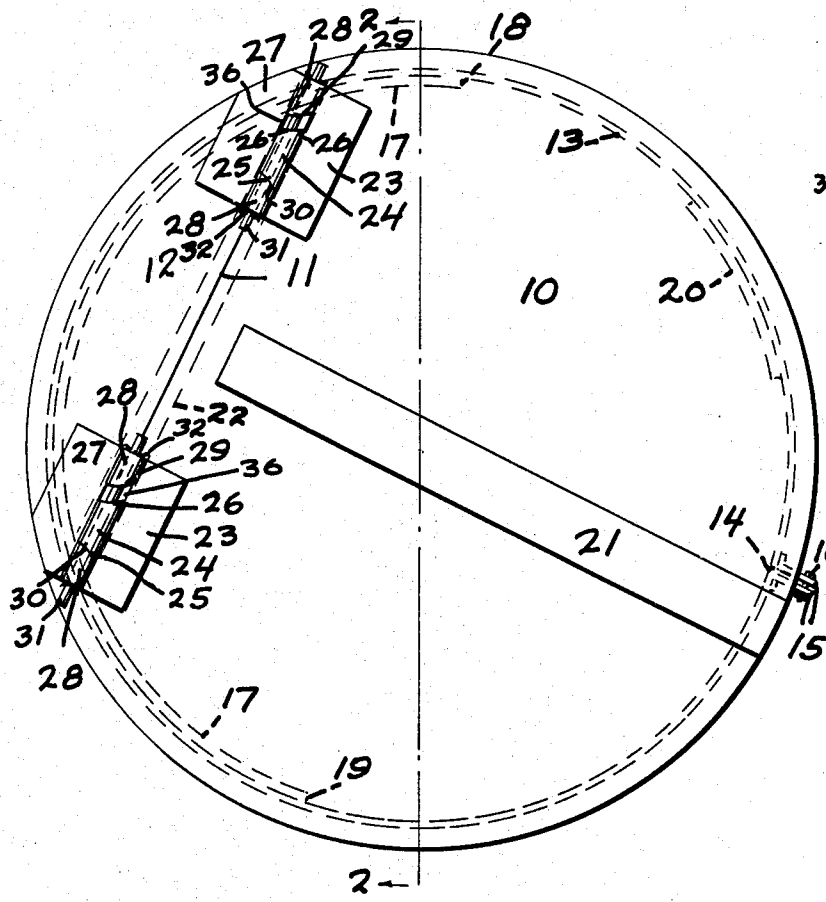


Fig. 1

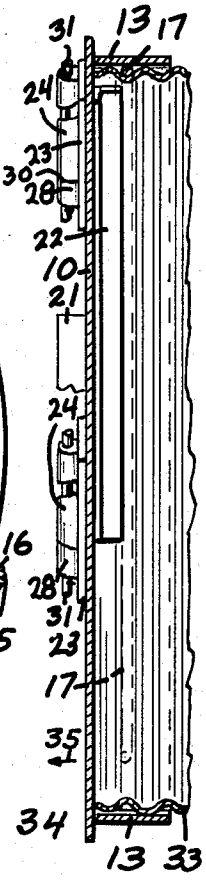


Fig. 2

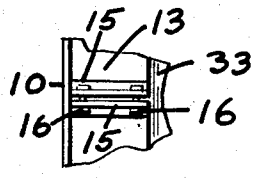


Fig. 3

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FLOOD GATE

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1 Claim. (Cl. 61—24)

Our invention relates to a flood gate.

An object of our invention is to provide a flood gate which is of relatively light construction, and so that by virtue of its light construction it can readily open.

A further object of our invention is to provide a special type of flood gate which is angularly positioned, and which includes special types of hinges so that the relatively light gate will firmly close and remain firmly closed unless opened in the usual manner.

A further object of our invention is to provide a flood gate which can be readily clamped onto the conduit and which will be securely locked thereto.

With these and other objects in view, our invention consists in the construction, arrangement, and combination of the various parts of our device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in our claim and illustrated in the accompanying drawings, in which:

Figure 1 is a forward elevation of the gate,

Figure 2 is a sectional view of Figure 1 taken along the lines 2—2 thereof, and

Figure 3 is a detail of an end view of the clamping arrangement.

Our invention contemplates the provision of a flood gate of economical cost and relatively light construction and which will function to properly close and open.

We have used the character **10** to designate a substantially circular plate made of suitable metal which need not be of too heavy gauge, which member **10** terminates at **11**, the character **12** indicating a further plate section also terminating at **11**, the combined members **10** and **12** providing a complete circular area.

Welded to the plate portion **12** and only to this portion is a circular band **13** which is split apart at **14** and which is attached to the extending angle members **15**, these angle members being bolted together by the bolts **16** when the unit is assembled.

Welded to the band **13** is a substantially semi-circular round in section bar **17** which terminates at **18** and at **19**, and also welded to the band **13** is a further small bar portion **20**.

A channel iron **21** assists in rigidifying the structure, this channel iron being attached to the plate portion **10**.

An angle iron **22** is welded to the section **12** to assist in closing the seam at **11**.

Attached to the plate section **10** are the flaps **23**, and extending from the flaps **23** are the integral central cylindrical portions **24** having the sloping surfaces **25** and **26**, and secured to the portion **12** is a further flap **27** having the cylindrical portions **28** having the sloping surfaces

29 and **30**, the surfaces **30** registering with the sloping surfaces **25**. The various cylindrical members **24** and **28** include suitable openings for the reception of the hinge pins **31** which are placed therethrough, the cotter keys **32** retaining these hinge pins.

The assembly is clamped to the end of the corrugated conduit **33** by inserting the band **13** over the end of the conduit and so that the bars **17** and **20** will lie within the recess of one of the corrugations as clearly shown in Figure 2. The gate is first hung so that the seam at **11** is substantially at the desired angle, an exact angle not being really essential as long as the angle is substantially accurate. Next, the bolts **16** are turned, which draws the flanges **15** together correspondingly drawing the band up tightly and so that the rods **17** and **20** will thus securely retain the assembly from being displaced from the end of the conduit.

The conduit **33** provides the laterals in the drainage system, and when the water in the ditch at **34** for instance subsides, the gate will open due to the pressure of water passing through the conduit in the direction of the arrow **35**. It will be particularly noted that as the gate opens, due to the sloping portions **30** on the stationary hinged portions **28**, the sloping surfaces **25** which are a part of the movable portions of the member **23** will gradually rise on these surfaces **30** due to the inclined formation thereof so that as the gate opens, it will gradually rise slightly, the rising action being permitted by means of the gaps at **36** between the portions **24** and **28**. Therefore, when the gate closes, it will thereby be in a weight-biased position so that as it closes, the angular positioning of the gate **10** together with this sloping formation will cause the gate to close firmly and securely, this angular formation and the other elements thereby providing this desirable result and in a lighter weight gate.

When the gate is hung from the right-hand side if such is desired instead of the left as shown, the sloping surfaces **26** and **29** will function in the same manner. The sloping surfaces are also formed in such a manner so as to causee the member **10** to tend to go past center to insure firm closing thereof.

It will be noted that the various members described also permit the gate to clear itself of debris due to the lighter weight and the automatic functions of easier opening.

It will now be seen that we have provided the various advantages mentioned in the objects of our invention with other advantages being readily apparent.

Some changes may be made in the construction and arrangement of the parts of our invention without departing from the real spirit and purpose of our invention, and it is our intention to cover by our claim any modified forms of structure or use of mechanical equivalents which may be reasonably included within its scope.

We claim as our invention:

In combination with a corrugated circular conduit, a segmental partially circular plate, a stationary segmental portion to which said partially circular plate is hinged, said stationary portion and said partially circular plate being substantially circular in shape in combination, the juncture between said stationary portion and said partially circular plate being positioned at an angle laterally whereby the weight of said partially circular plate will be biased downwardly laterally, said stationary portion

and partially circular plate being secured to the discharge end of said conduit, a substanially circular band secured to said stationary portion including end flanges for bolting said band about said conduit end, substantially arcuate bars secured to the inner surface of said band whereby said bars when received within one of the corrugations of said conduit will thereby secure said gate in fixed position.

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