

J. A. G. HARRISSON.
ADJUSTMENT FOR REGULATING THE DISCHARGE OF LIQUIDS OVER CREST WEIRS AND THE LIKE.
APPLICATION FILED OCT. 7, 1912.

1,061,240.

Patented May 6, 1913.

2 SHEETS—SHEET 1.

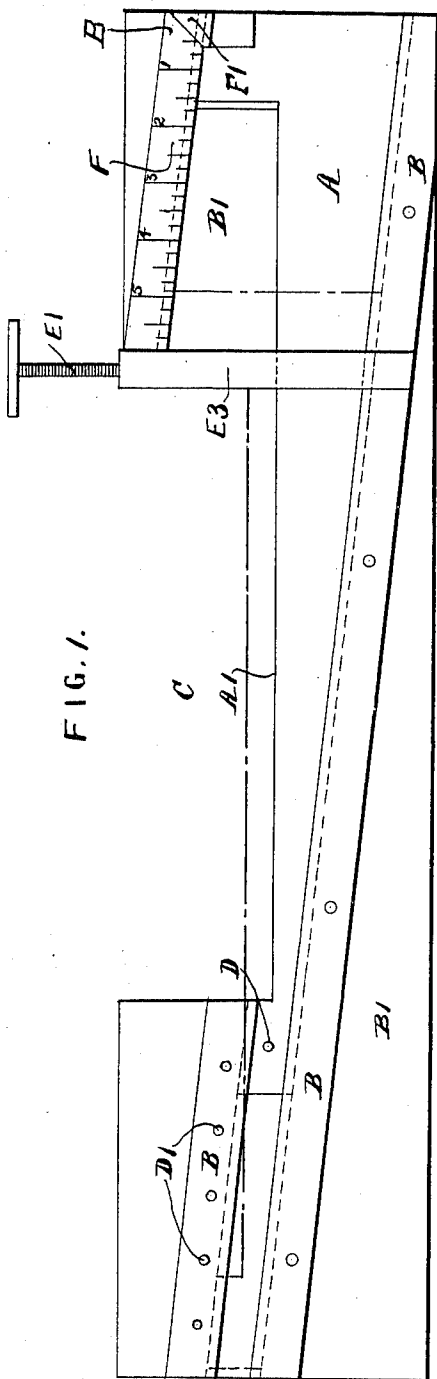


FIG. 1.

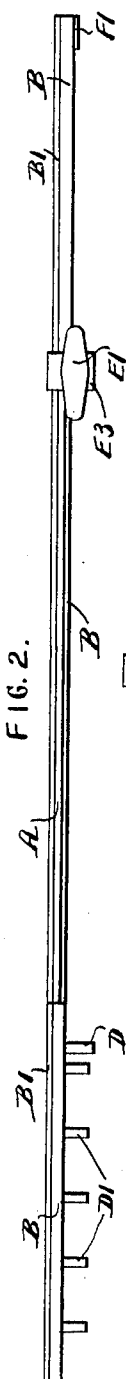


FIG. 2.

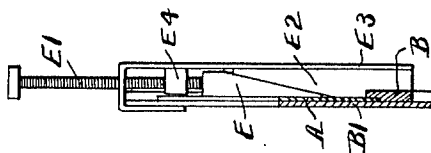


FIG. 3.

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2 SHEETS—SHEET 2.

FIG. 4.

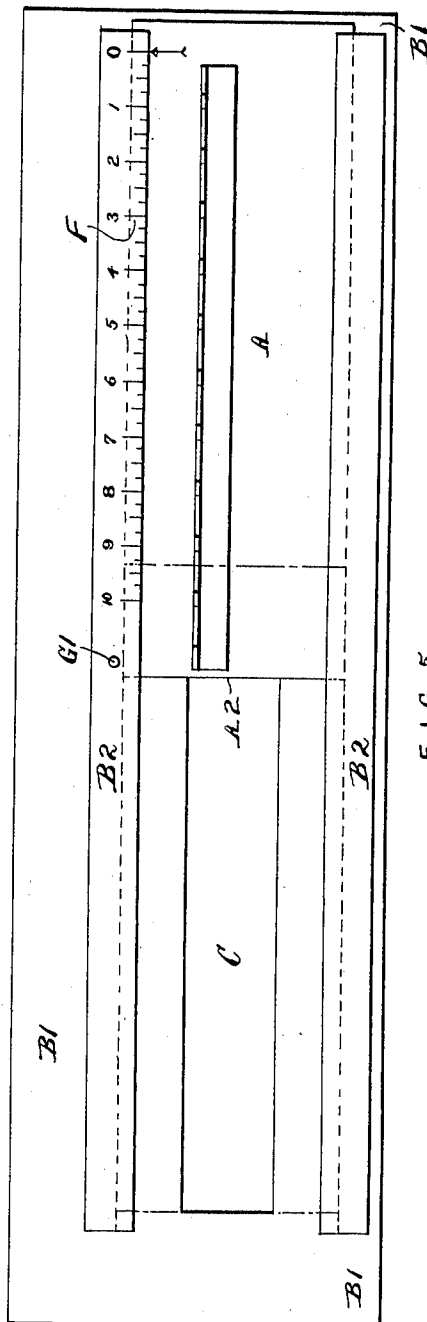


FIG. 5.

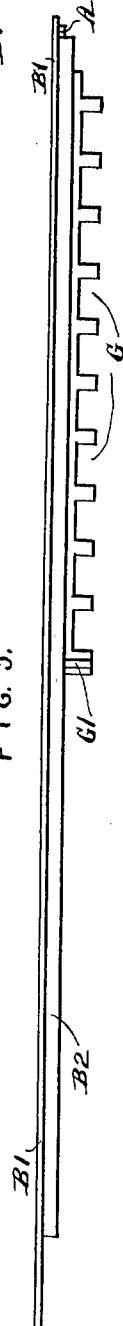
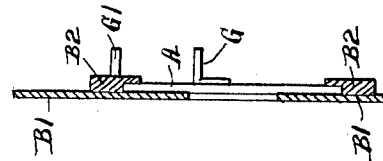


FIG. 6.



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ADJUSTMENT FOR REGULATING THE DISCHARGE OF LIQUIDS OVER CREST-WEIRS
AND THE LIKE.

1,061,240.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed October 7, 1912. Serial No. 724,328.

To all whom it may concern:

Be it known that I, JAMES ALBERT GRAYSON HARRISSON, a subject of the King of Great Britain and Ireland, and a resident of Potchefstroom, Transvaal, South Africa, have invented a certain new and useful Improved Adjustment for Regulating the Discharge of Liquids Over Crest-Weirs and the Like, and of which the following is the specification.

This invention has for its object to provide an improved and simple form of adjustable open-topped notch device for sluice gates and the like, the adjustable part forming in fact a weir crest the effective area of which is regulable.

The invention comprises a sliding panel running on an inclined plane in a guide attached to a fixed weir (in effect a rectangular notch) and artificially raising in its forward movement the crest of the weir in a parallel line, thereby regulating the discharge. The inclined guide on and through which the sliding panel is moved, may be set at any convenient angle to suit various conditions, but the sliding panel is so constructed that its top edge always remains parallel with the fixed crest weir when moved backward or forward. Assume for example that to a fixed crest weir, which is placed in a river, canal, stream or furrow and set at such a level as to discharge the lowest assumed quantity of fluid to pass over it, is attached a guide with an inclination of one in ten for a moving panel to move through when the panel is at zero (or its lowest point) its top edge will be co-incident with (or a little lower) but parallel to the top edge of the fixed weir, and anything above the normal discharge of fluid required can be regulated by pushing the sliding panel forward. Assume again that the required lowest and normal discharge passing over a crest weir to be three inches, and the water in the canal or furrow or the like rises to six inches, to reduce the discharge to its normal flow again, the sliding panel would have to be moved two and a half feet forward, thereby raising the edge three inches, and the normal discharge of three inches over the weir is again obtained, and so on backward and forward. The width of the weir may also be reduced at the same time by means of a plate attached to the moving panel, which plate when at zero has its ver-

tical end co-incident with the vertical side of the weir. As the panel is moved forward, say one foot, the width of the weir is reduced by a foot by the vertical edge of the plate and the crest of the weir raised one tenth of a foot by the panel—(assuming that the inclination through which the panel is moved through is one in ten). Again, the diagonally sliding panel may be dispensed with and a horizontally sliding vertical-edged panel—having the same effect as the plate above referred to—be used to restrict the weir area. The fixed weir may be built in masonry or concrete, or in other manner, and sufficiently long to allow the ends of the sliding panel to pass through freely. The panel is locked by screws on wedges pressing it against both ends of the fixed weir, which will also prevent side leakage. The sliding panel is moved by pinch bars, pulleys or engine power according to the size of the weir and length and weight of panel. Or other means may be provided to these same ends.

In order that the invention and the manner of performing the same may be properly understood there are hereunto appended two sheets of explanatory drawings illustrating in Sheet 1 an example of the diagonally sliding panel form of variable weir crest, Figure 1 being a front elevation, Fig. 2 a plan, and Fig. 3 a transverse vertical section, and in Sheet 2 in like views respectively, in Figs. 4, 5 and 6 an example of a horizontally-sliding vertical-edge form of the device.

In the example shown in Figs. 1, 2 and 3 there is a sliding panel A arranged in inclined guides B on the face of a plate B¹ which forms the weir. An edge A¹ on the panel is horizontal, and as the panel is slid from the position shown in Fig. 1 toward the left (as indicated by dotted lines) the edge A¹ reduces the effective area of the rectangular open-topped notch C in the weir plate B¹. The panel is moved to and fro by means of a tommy-bar or the like applied to a pin D on the panel and fulcrumed on the adjacent of a series of pins D¹ on one of the weir plate guides B¹. It is locked in position by a wedge E operated by a handled screw E¹ and engaging between the face of the panel A and a wedge E² carried on a bridge-piece E³ on the plate B¹ which also carries a nut E⁴ with which the screw engages. The position of the

panel is indicated on a scale F on the plate B¹ by means of a pointer F¹ on the panel. It is at once apparent that if a plate, having a vertical edge positioned to move across the notch C as the panel is moved to the left, is attached to the panel, that by that movement of the panel the weir will not only be restricted in depth but also in width. It is apparent again that if the panel consist only of a vertical-edged plate, a restriction in area by restriction in width alone—sufficient for many purposes—will be arrived at. Such a device is shown in Figs. 4, 5 and 6. The panel A in this case has a vertical edge A² and slides in horizontal guides B² on a plate B¹ in which is a rectangular notch C—virtually open-topped in that the upper part of the structure is above water level. Sliding of the panel to the left obviously reduces the effective area of the notch C. The panel is slid by means of a tommy-bar or the like applied between any convenient one of a series of notches G in the edge of an angle plate secured to the panel and taking its fulcrum on a pin G¹ fixed in the plate B¹.

I am aware that horizontally sliding water gates have been used in sluices and the like; but not, so far as I am aware, in open-topped measuring weirs.

It is to be understood that the examples described are only given by way of illustration—the devices may be constructed in any manner and of any materials to suit particular circumstances.

What I claim is:—

1. Means for varying the effective area of a rectangular open-topped notch weir comprising lateral guides on the weir, a panel sliding laterally in the guides and an

edge on the panel more or less covering and uncovering the notch opening as the panel moves.

2. Means for varying the effective area of a rectangular notch weir comprising inclined lateral guides on the weir, a panel sliding laterally in the guides and a horizontal edge on the panel more or less covering and uncovering the notch opening as the panel moves.

3. Means for varying the effective area of a rectangular notch weir comprising inclined lateral guides on the weir, a panel sliding laterally in the guides and a horizontal edge on the panel more or less covering and uncovering the notch opening as the panel moves and a vertical-edged part on the panel also controlling the opening.

4. In a weir of the character described, a stationary frame having a series of pins to form fulcrums for a tommy-bar or the like, a panel sliding laterally in guides and provided with an edge more or less covering and uncovering a notch opening as the panel moves, and a pin on said panel positioned with relation to said series of pins in the weir frame and affording means for engagement by said tommy-bar when fulcrumed upon one or the other of said pins on the weir frame to slide said panel laterally, for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of subscribing witnesses.

JAMES ALBERT GRAYSON HARRISSON.

Witnesses:

FRANK MAXFIELD KING,

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