

No. 687,858.

Patented Dec. 3, 1901.

J. H. SHEDD & O. P. SARLE, JR.

MOVABLE DAM.

(Application filed Mar. 27, 1901.)

(No Model.)

2 Sheets—Sheet 1.

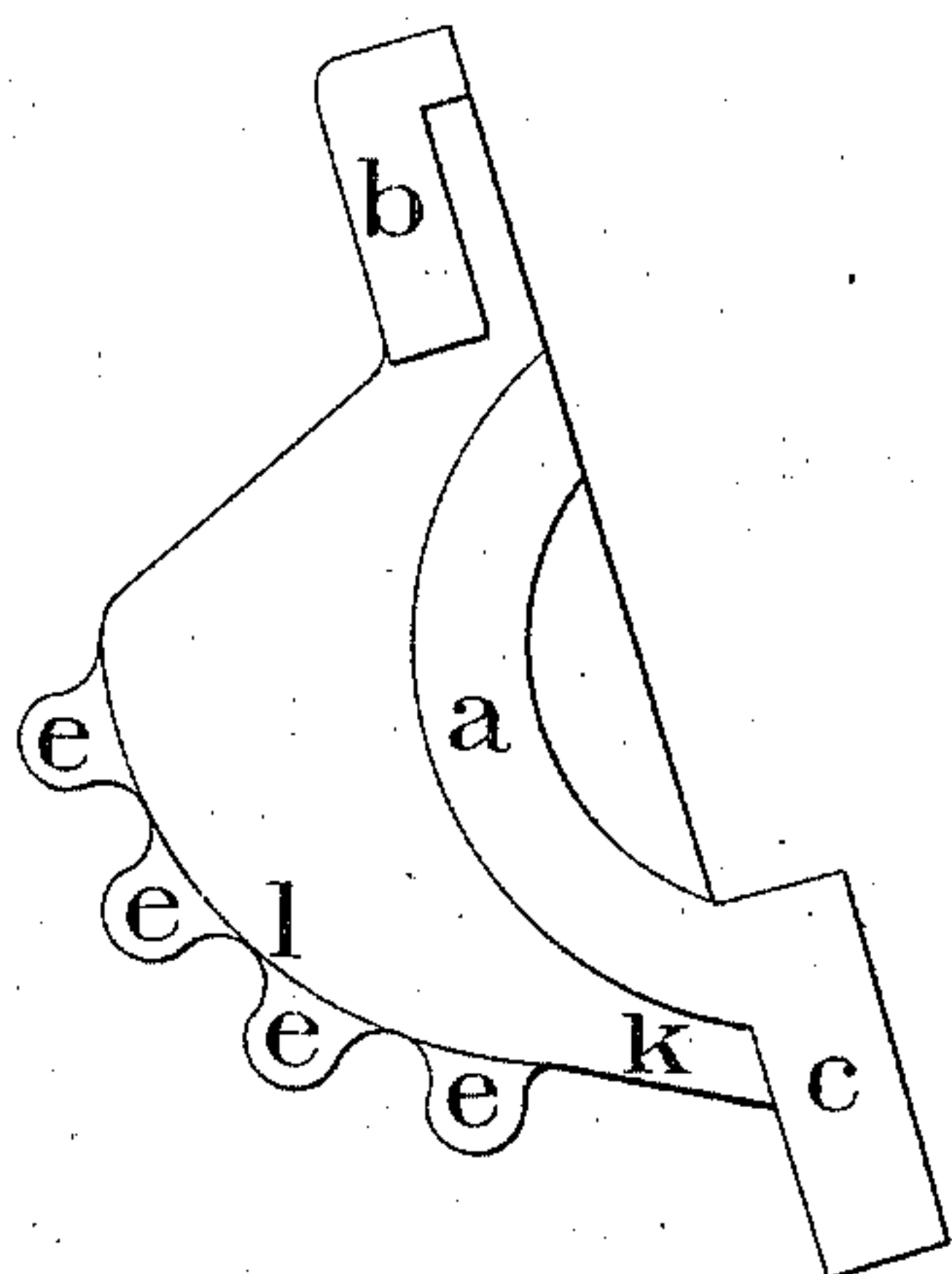


FIG. 1.

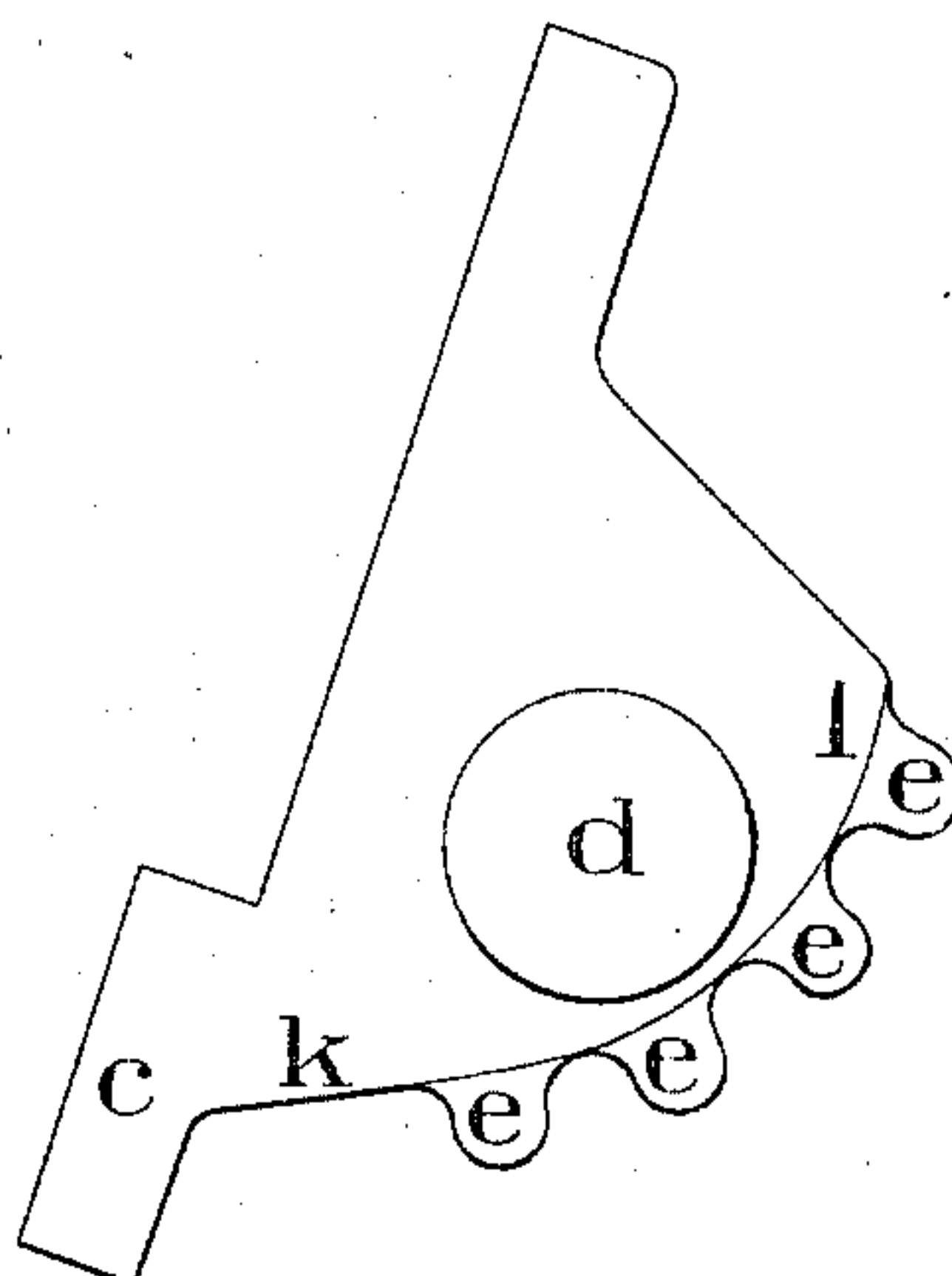


FIG. 2.

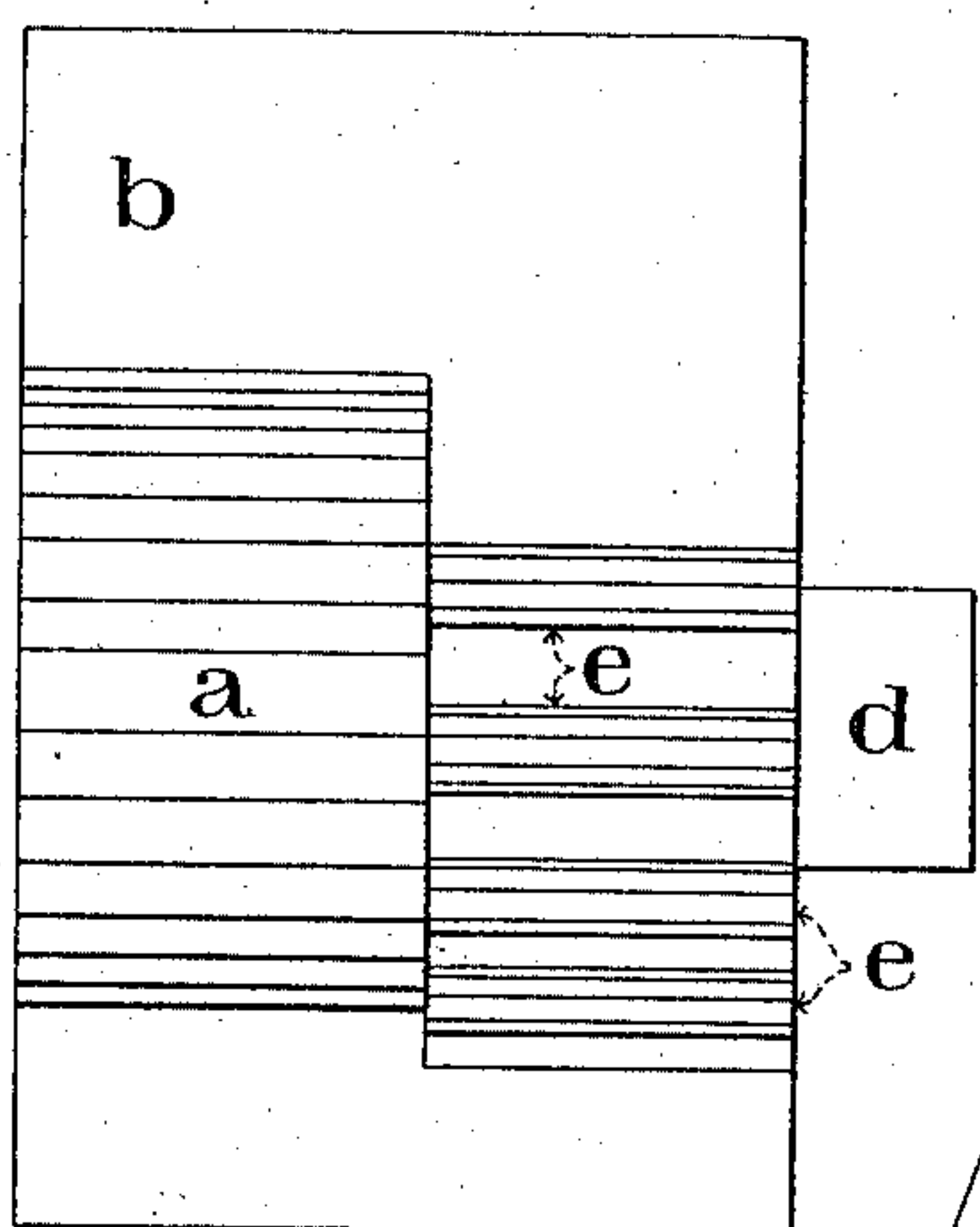


FIG. 3.

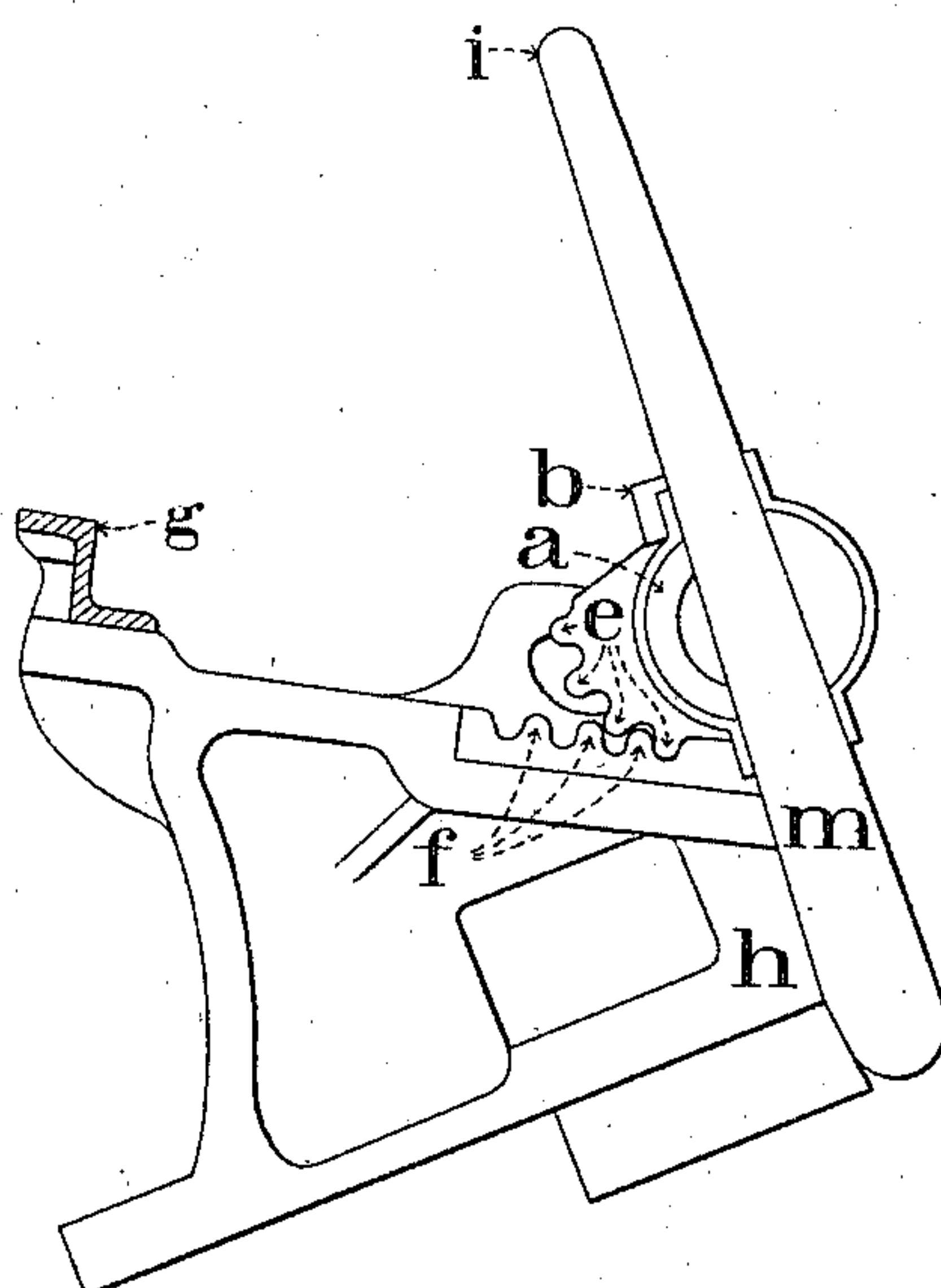


FIG. 4.

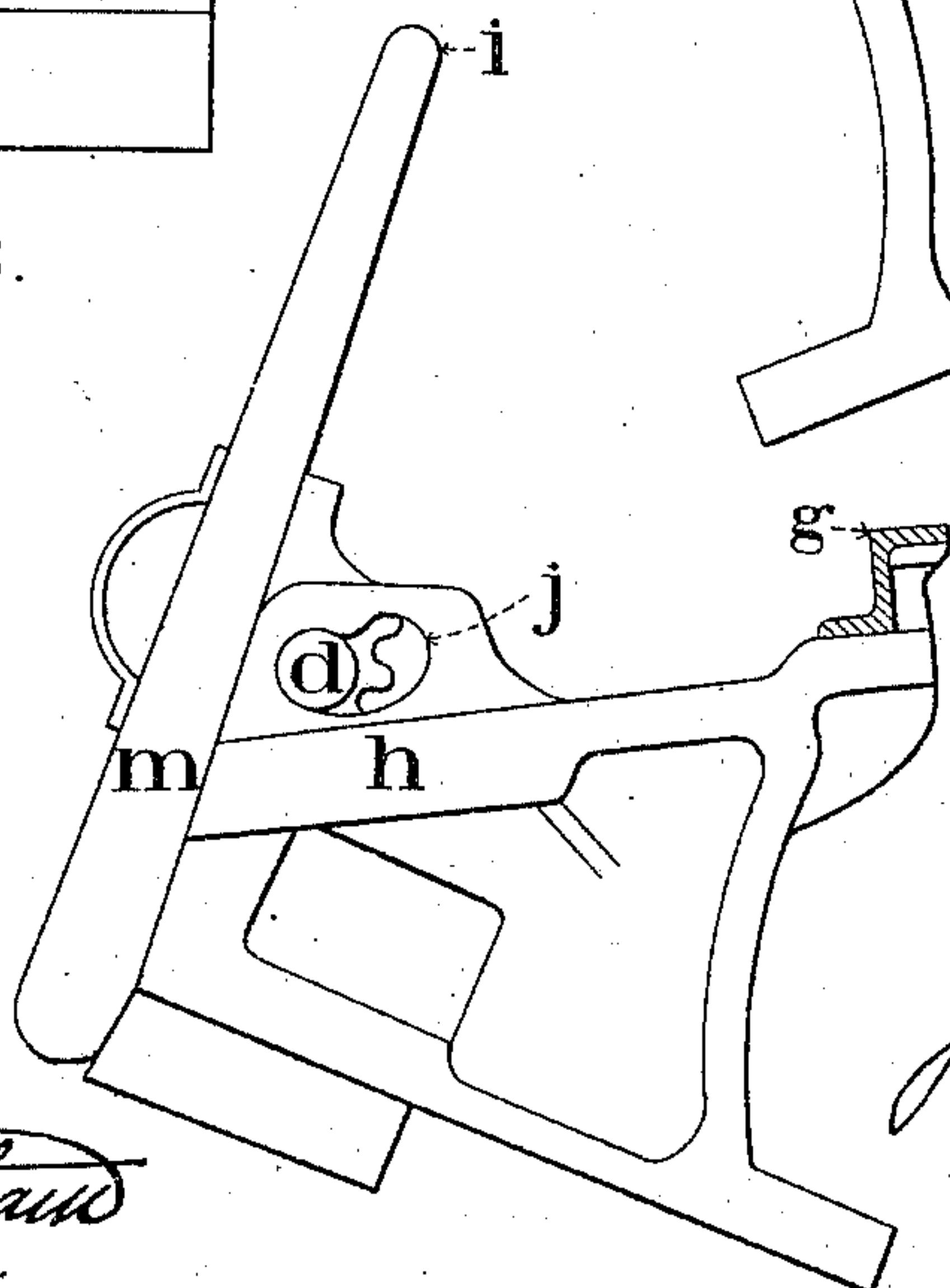


FIG. 5.

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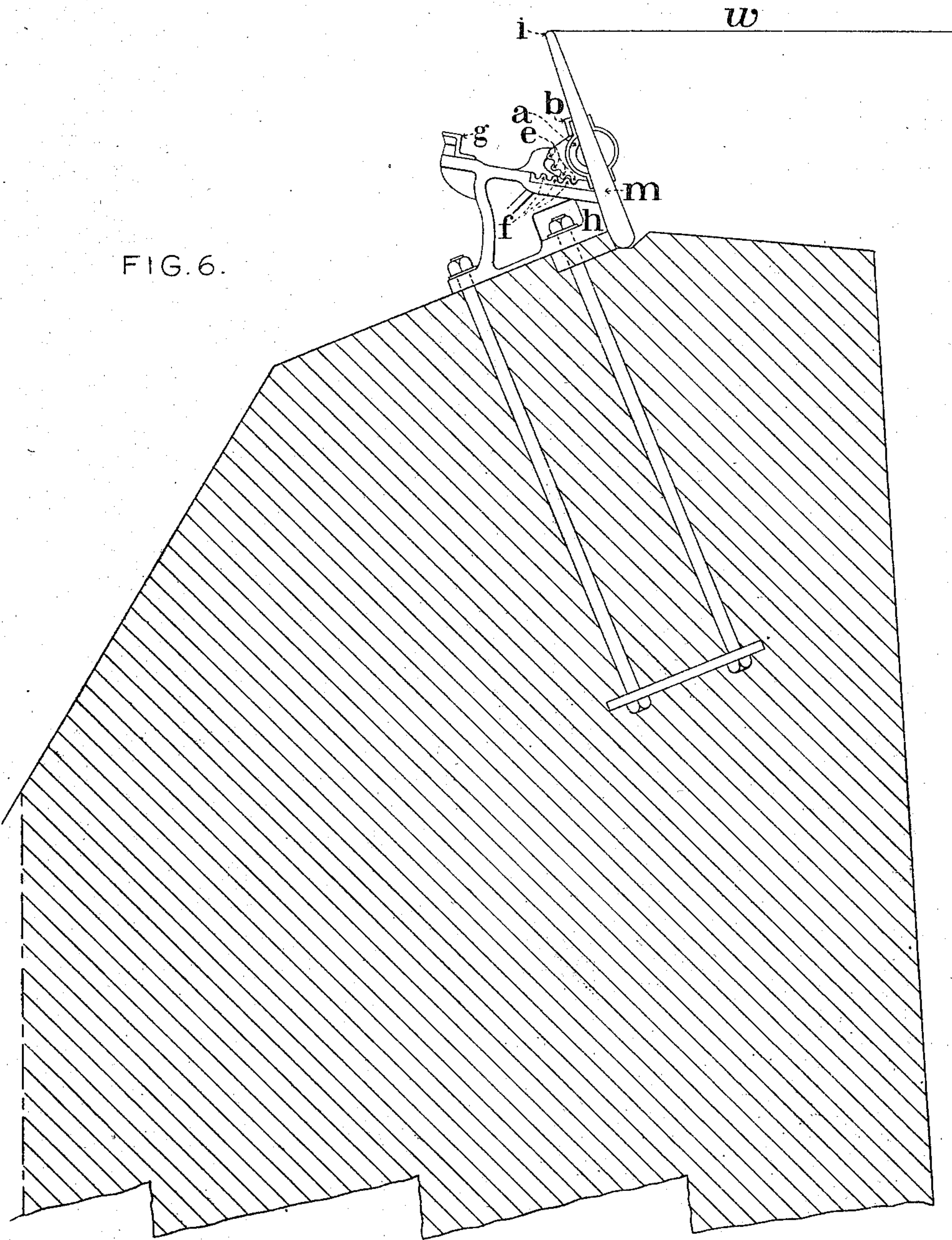
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2 Sheets—Sheet 2.

FIG. 6.



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JOEL HERBERT SHEDD AND OLIVER PERRY SARLE, JR., OF PROVIDENCE,
RHODE ISLAND.

MOVABLE DAM.

SPECIFICATION forming part of Letters Patent No. 687,858, dated December 3, 1901.

Application filed March 27, 1901. Serial No. 53,133. (No model.)

To all whom it may concern:

Be it known that we, JOEL HERBERT SHEDD and OLIVER PERRY SARLE, Jr., citizens of the United States, residing in Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Movable Dam, of which the following is a specification.

Our invention relates to improvements in movable dams.

The objects of this invention are, first, to so hang the dam that it shall automatically gradually open and close, and, second, to control the height of the surface of the water above the dam, so that it will not at any time while the dam is open fall below any given point. We accomplish these results by means of the device illustrated in the accompanying drawings, in which—

Figure 1 shows a side view of the hanger. This view also illustrates a method of attaching a beam to support the dam by a flange, (marked *a*,) and also an overhanging flange, (marked *b*,) and a lug which is let into the dam, (marked *c*,) The shape of this flange may be varied to suit the shape of beam to be used.

Fig. 2 is the reverse side of the hanger and shows the boss or knob, (marked *d*,) This is on the side and serves to lock the hanger to the frame.

Fig. 3 is an elevation of the hanger, showing the teeth *e*, boss *d*, and flanges *a* and *b*.

Fig. 4 shows the movable dam *m* with the hanger in place and also a frame *h* to carry it. The teeth *e* mesh with other teeth *f* on the frame. The stop *g* extends from frame to frame, so as to form a continuous support for the edge *i* when the dam is fully open.

Fig. 5 is the reverse of Fig. 4. The boss *d* is shown in a groove *j* in the position it takes when the dam is closed. It follows this groove and is at the other end when the dam is fully open.

In Fig. 6 the movable dam is shown mounted upon the main dam. The frame *h* is anchored to the main dam by means of bolts and anchor-plates. The normal surface of the water in the pond above the dam is indicated by the line *w*.

The dam *m* is made thicker at the bottom than at the top and weighted, so that the ex-

cess of weight is in the bottom portion. As the dam opens this excess increases. The dam is made in sections and is hung on frames or other supports.

The hanger is a metallic piece of irregular shape, which is attached to the movable dam. The grooves, projections, and stops keep it in place and under control. The operation of a movable dam when working on these hangers depends on the principle of the pressure of water. The center of pressure of a body of water of a given depth is at one-third the depth of water from the bottom. If the resisting-point of the dam is fixed at a height of one-third the depth of water above the bottom, the pressure of the water is such that the dam, leaving the friction of the mechanism and other retarding forces out of consideration, is just balanced and ready to turn on this point. If the volume of water increases, the dam will tip forward or open. When it begins to open, the position of the resisting-point rises in our device until it meets the center of pressure of the water at its new height and is held in its new position so long as the volume of water flowing remains constant. This process may be repeated at any number of stages until the dam is fully opened, and the reverse process may be repeated from the position of the dam fully opened to closed. When the dam begins to open, the water will pass both under and over it, thus relieving the pond and at the same time maintaining the level of the water at its normal height until the volume is too great to pass through the space vacated by the dam. When the volume of water flowing is diminished, the dam will begin to close as the center of pressure of the water falls and meets the point of resistance of the dam, thus cutting off gradually the amount of water passing under and over the dam. Further, under the above conditions the level of the water controlled by this device cannot fall below a height equal to the level of the top of the dam when it is closed, as the center of pressure of the water and the resistance of the board are balanced at all stages from the dam in position closed to full open, except in case the water is so high that it holds the dam fully open against the stop provided for checking its motion.

Further, the design of this hanger is such that when the dam is fully open it will hang at or near the middle, thus balancing the force exerted from the vacuum created by the water flowing under and over the dam.

We are aware that previous to our invention movable dams have been made.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The movable dam as heavy, or heavier, below the axis as in the upper portion, hung out of center on a frame by means of a hanger and confined in place by means of teeth, boss and slot.

2. The hanger herein described, fastened to the movable dam and rolling on a plate frame or rack in such manner that the dam hung out of center and as heavy or heavier below the axis as in the upper portion will be thrown more out of balance as it is caused to open by an increasing head of water and tend the easier to return to its normal position as the head of water decreases.

3. The hanger rolling on a plate, frame or rack, confined to its position by projections on its face and side or sides.

4. The hanger having the straight part k whereby a substantial seat is afforded to keep the dam from starting to rotate too easily, and the curved face l whereby the dam is allowed to rotate and shift its point of bearing from its resisting-point when closed to a distance about one-half the height of the dam when fully open.

5. The hanger provided with a lateral boss in combination with a plate or frame provided with a groove or other opening in which said boss works.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

J. HERBERT SHEDD.
O. PERRY SARLE, JR.

Witnesses:

FRED J. LATHAM,
FRED E. CHAPIN.