

(No Model.)

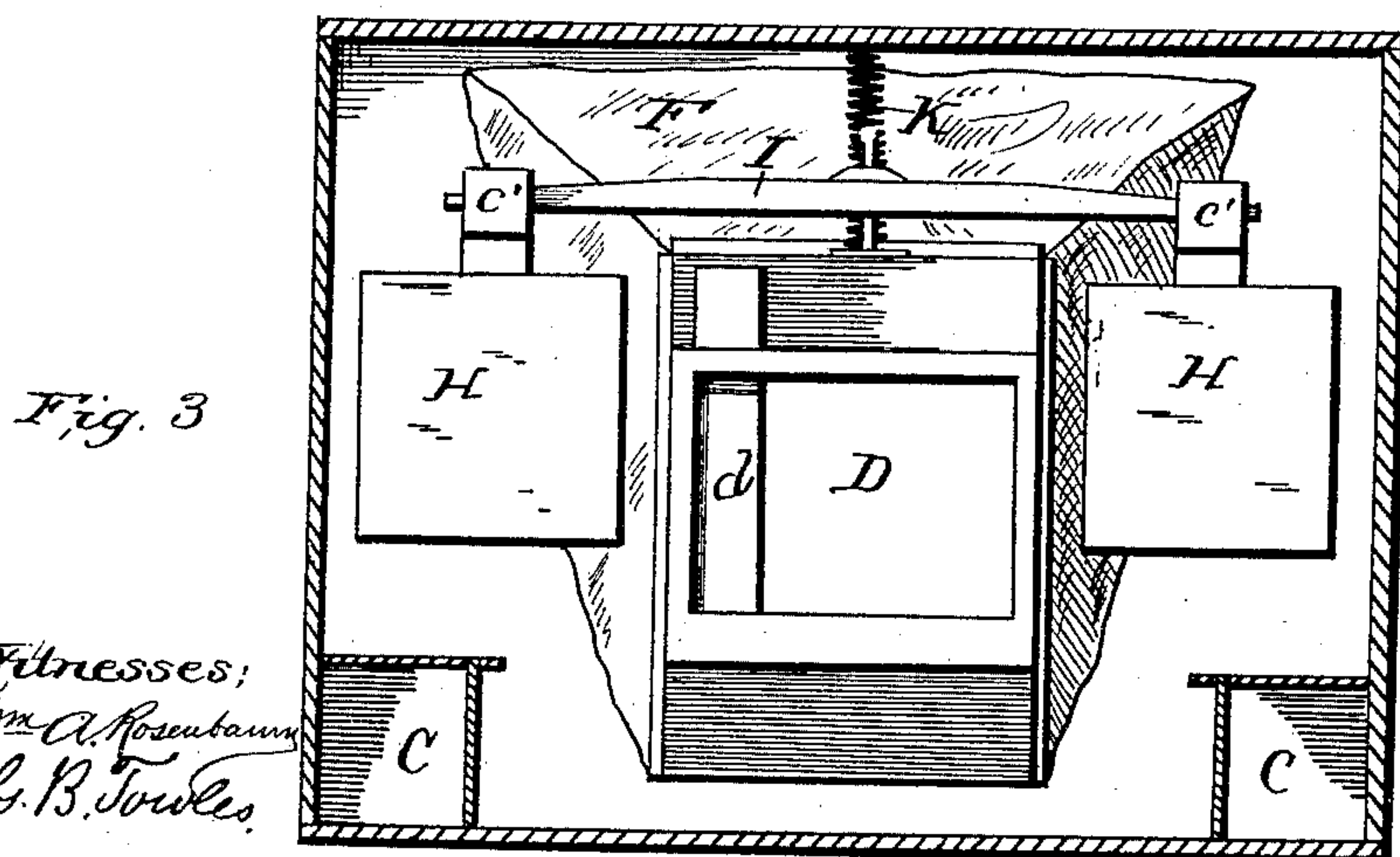
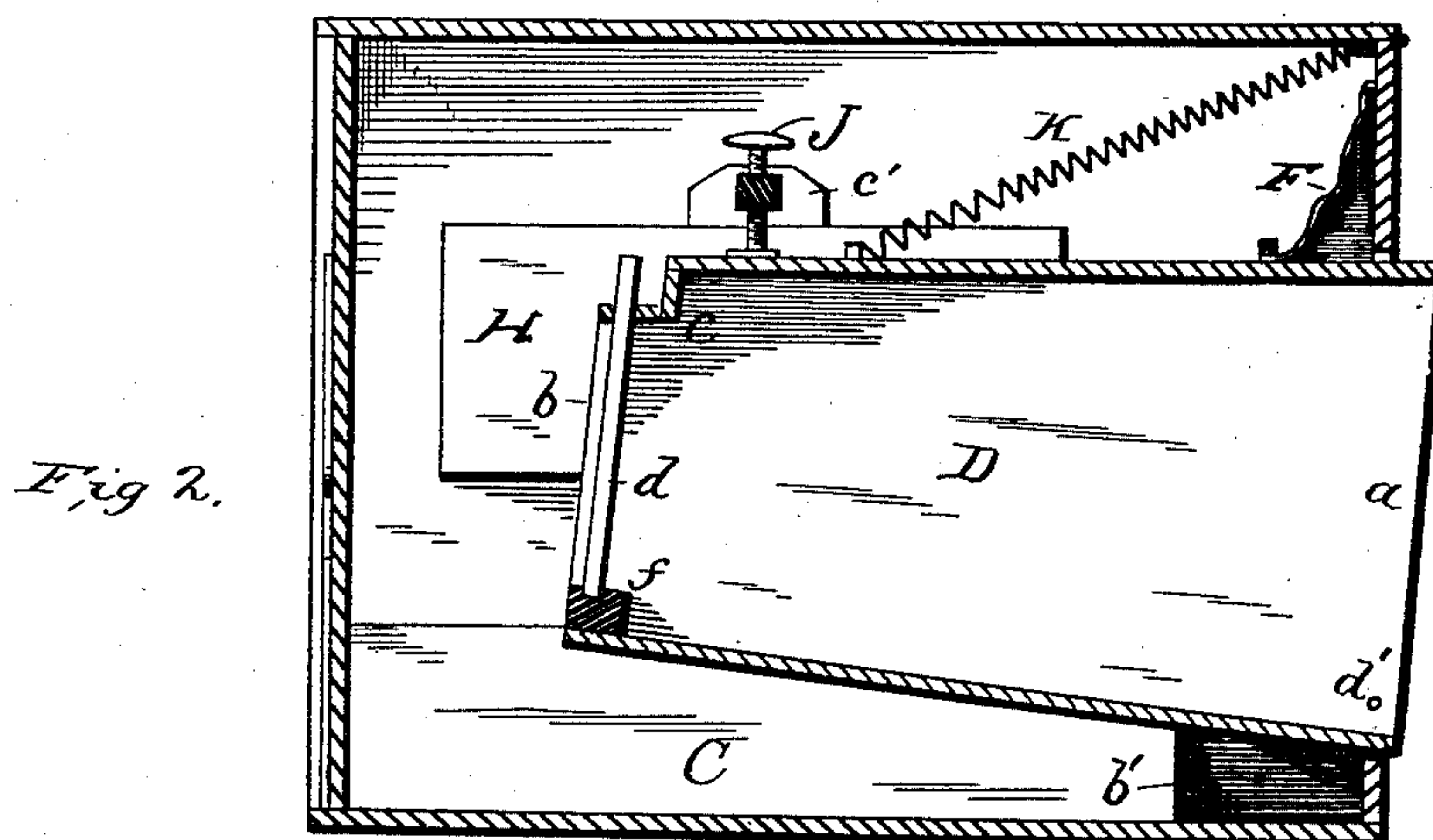
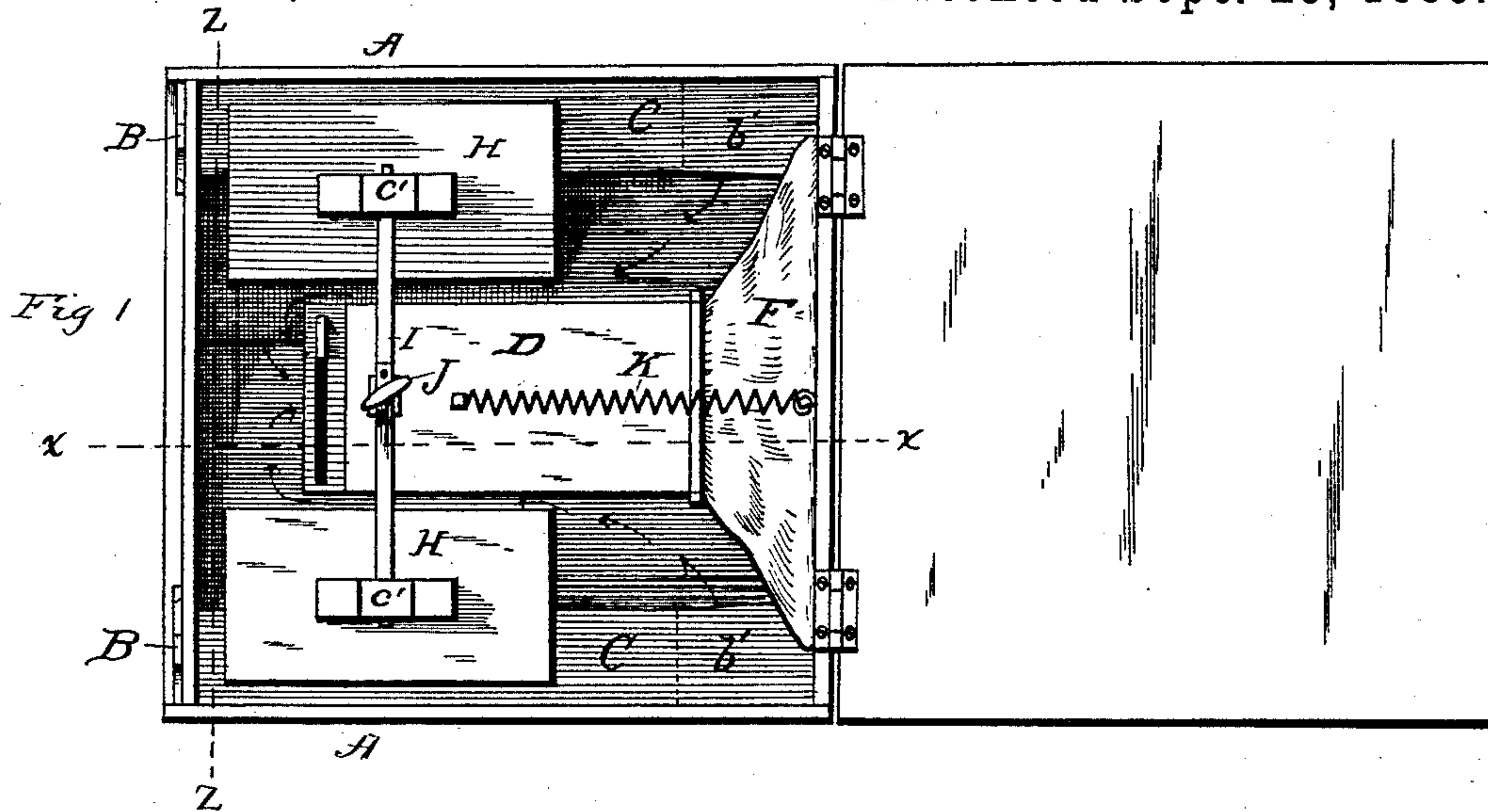
2 Sheets—Sheet 1.

J. CORNELL.

AUTOMATIC WATER DISTRIBUTER.

No. 327,141.

Patented Sept. 29, 1885.



Witnesses;
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Inventor
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

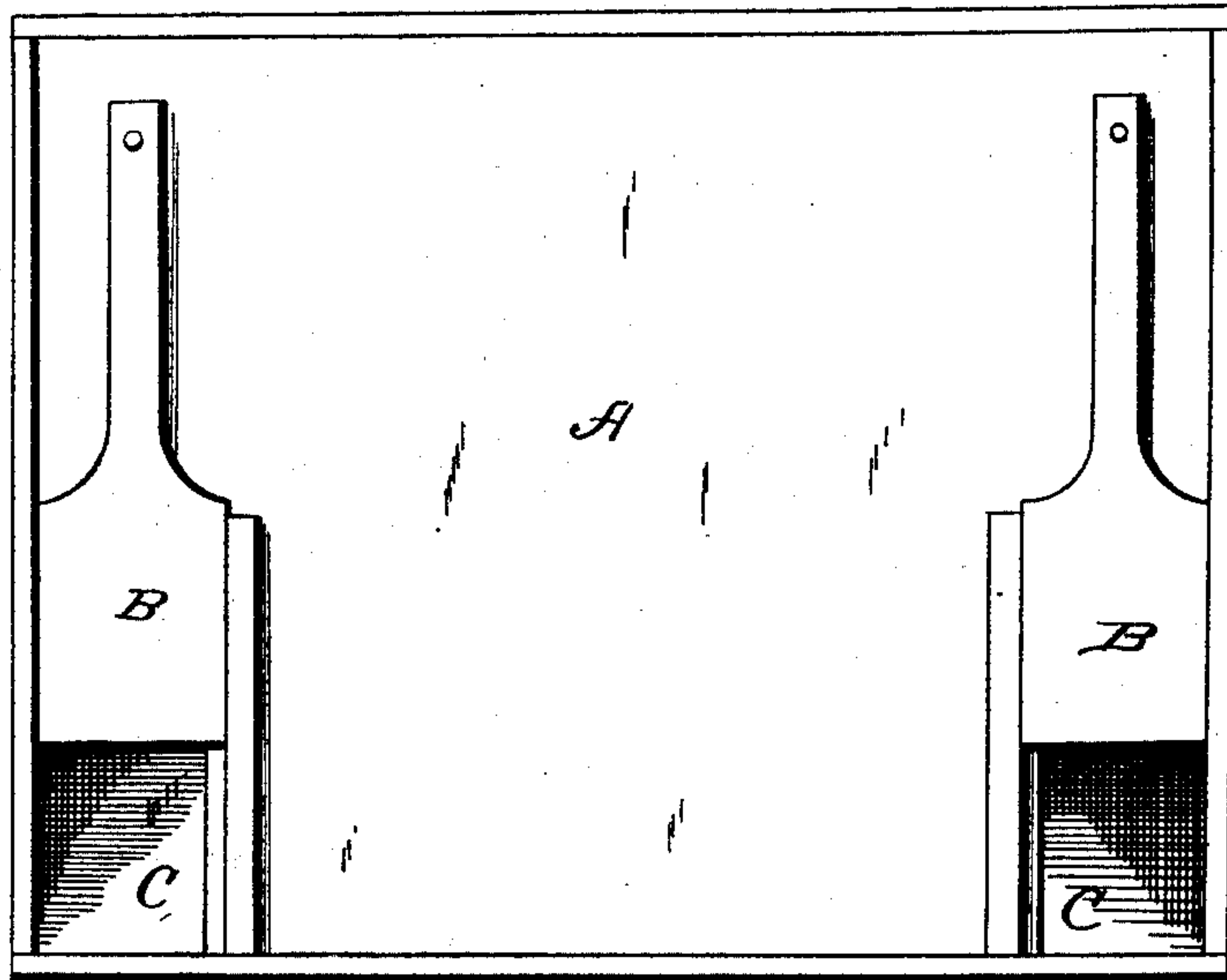


Fig. 5.

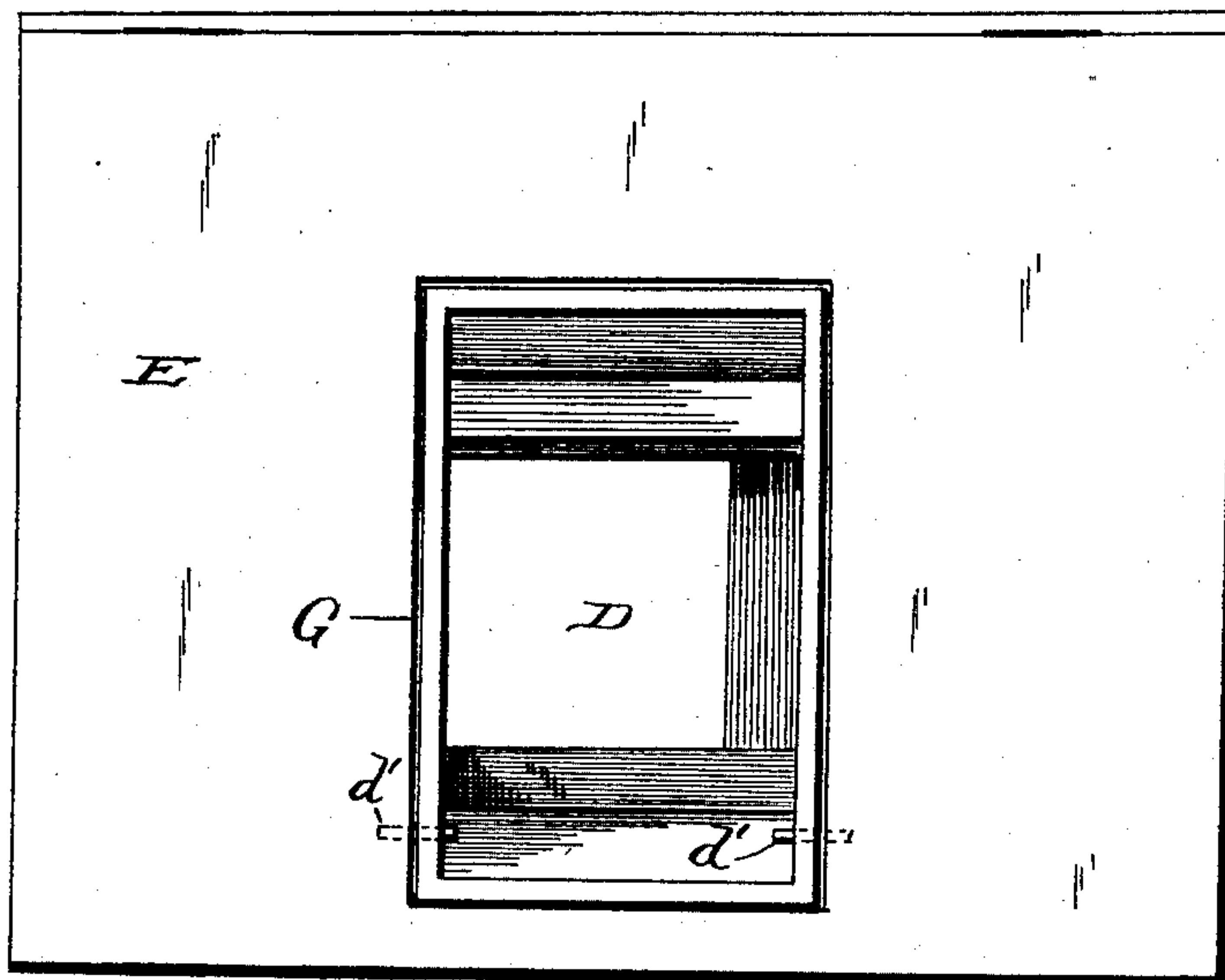
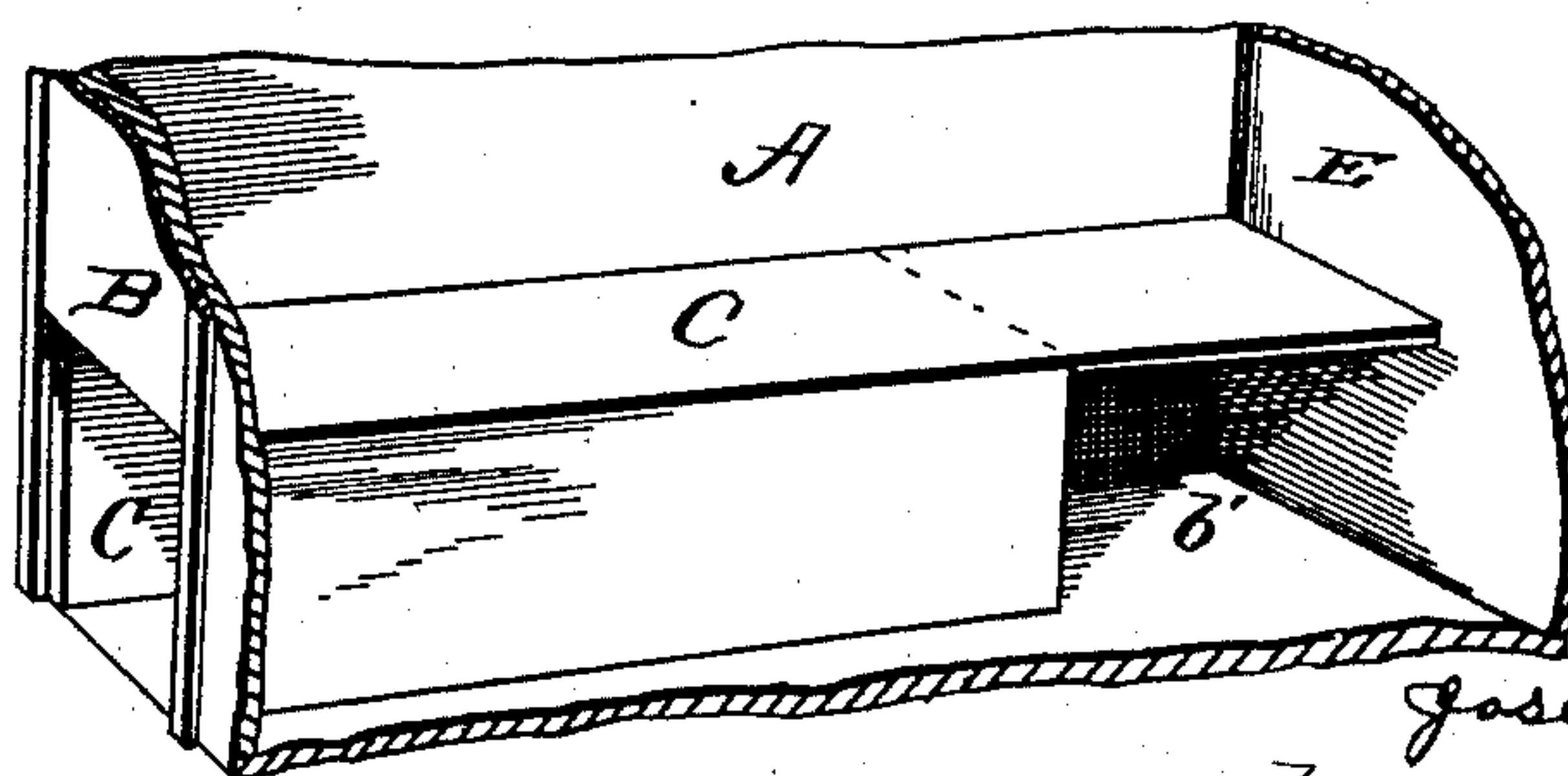


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSEPH CORNELL, OF PETERSBURG, COLORADO.

AUTOMATIC WATER-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 327,141, dated September 29, 1885.

Application filed March 25, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH CORNELL, a citizen of the United States of America, residing at Petersburg, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Automatic Water-Distributers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to apparatus for water-distribution for irrigation and other purposes; and it consists in an improved device for regulating the flow of water, as hereinafter described and claimed.

15 In the accompanying drawings, Figure 1 is a plan view of a penstock provided with my improvements. Fig. 2 is a longitudinal vertical section taken on line *x x* of Fig. 1. Fig. 3 is section taken on line *z z*, Fig. 1. Fig. 4 is a front elevation of the penstock. Fig. 5 is a rear end elevation. Fig. 6 is a perspective of one of the inlet-passages.

25 The object of my invention is to furnish a device which will regulate the flow of water through a penstock or other conduit, so that the same shall be uniform and unvarying, and shall be equally delivered to the several irrigating-channels whether the main stream supplying the water is either high or low. I attain these objects by means of the following-described devices.

30 A designates the casing of a penstock. CC are sand-boxes, the forward ends of which extend through and are fitted closely in openings in the front wall of the penstock, and are provided with the inlet-gates B B. These sand-boxes are extended backward, and are provided with the exit-openings *b'* near the rear in the penstock, for the purpose of conducting all the water entering the penstock through the boxes to the rear, whence it turns and runs forward to the inlet end *b* of the spout, as indicated by the arrows. By thus conducting the water through sand-boxes and having it enter the penstock near the rear of the penstock, the sand and other heavy substances are deposited in the boxes instead of accumulating under the spout. The spout D is placed centrally within its penstock, with its mouth in an opening, G, in the cross-wall E, to which the spout is pivoted upon the pins *d'*, and it is loosely se-

cured to the cross-wall by the flexible web F, which forms a water-tight connection with the wall and prevents the passage of any water out of the penstock except through the spout. The spout is larger at its discharge end *a* than at its inlet end *b*, and the inlet end is further reduced by an offset at *c*, for the purpose of forming an air-space above the water to prevent suction and allow space for the smooth flow of the water. The inlet end *b* is provided with a series of gates, *d*, made of different sizes, one of which is shown, to gage the quantity of water flowing through the spout, as required. The bottom of the inlet end *b* of the spout is provided with a downward step, *f*, which causes a fall and prevents a suction as the water enters the spout.

55 H H are floats formed of water-tight boxes of any suitable material, one being placed on either side and connected with the spout near its inlet end by means of a transverse bar, I, each end of which has an axial connection with a bearing, *c'*, on the top of a float, H, to allow it a rocking motion. A hand-screw, J, passes through a threaded aperture in the bar at its center, and at its lower end has a swivel connection with the spout, and by turning the screw the spout may be raised or lowered in relation to the position of the floats, and thus the depth and pressure of water in the spout is regulated, it being evident that the greater the depth of the water the greater will be the weight and pressure and the greater the quantity of the flow of the water through the spout, and vice versa.

60 K is a spring, of any suitable material and construction, attached at one end to the spout D and at the other end to the casing, for the purpose of retarding the depression of the spout in case of rapid lowering of the water in the penstock. For example, where several boxes are used in the same ditch, if the spouts were not provided with the retarding-springs, in case of a fall of water in the ditch the first spout would fall the full space of the fall of the water, and each of the other spouts would receive a less quantity of water, the second less than the first, and the third less than the second; but by providing each spout with a retarding-spring having the requisite force, the depression of the spouts may be regulated

so as to secure through each an equal flow of water.

Having described my invention I claim—

1. In a water-distributer, the combination,
5 with the penstock A and the automatically-
adjustable discharge-spout D, having its inlet
end near the front of the penstock, of the sand-
boxes C C, provided with the inlet-gates B B
at the front, and the exit-openings $b' b'$ within
10 and near the rear of the penstock, substan-
tially as and for the purposes described.

2. In a water-distributer, the combination
of the penstock A, the sand-boxes C C, pro-
vided with the inlet-gates B B at the front,
15 and the exit-openings $b' b'$ within and near the
rear of the penstock, the automatically-ad-
justable discharge-spout D, having its inlet end
near the front of the penstock, and provided
with a gage-gate, d , substantially as and for
20 the purposes described.

3. In a water-distributer, the combination
of the discharge-spout D, the flexible web F,
the floats H H, adjustably attached to the
spout, and the retarding-spring K, substan-
tially as and for the purposes described. 25

4. The combination, with the penstock A, of
the automatically-adjustable spout D, having
its outlet end enlarged and its inlet end pro-
vided with an upper air-space, e , and a lower
step, f , substantially as and for the purposes 30
described.

In testimony whereof I have affixed my sig-
nature in presence of two witnesses.

JOSEPH CORNELL.

Witnesses:

W. G. WHEELER,

LYMAN CORNELL.