

(No Model.)

2 Sheets—Sheet 1.

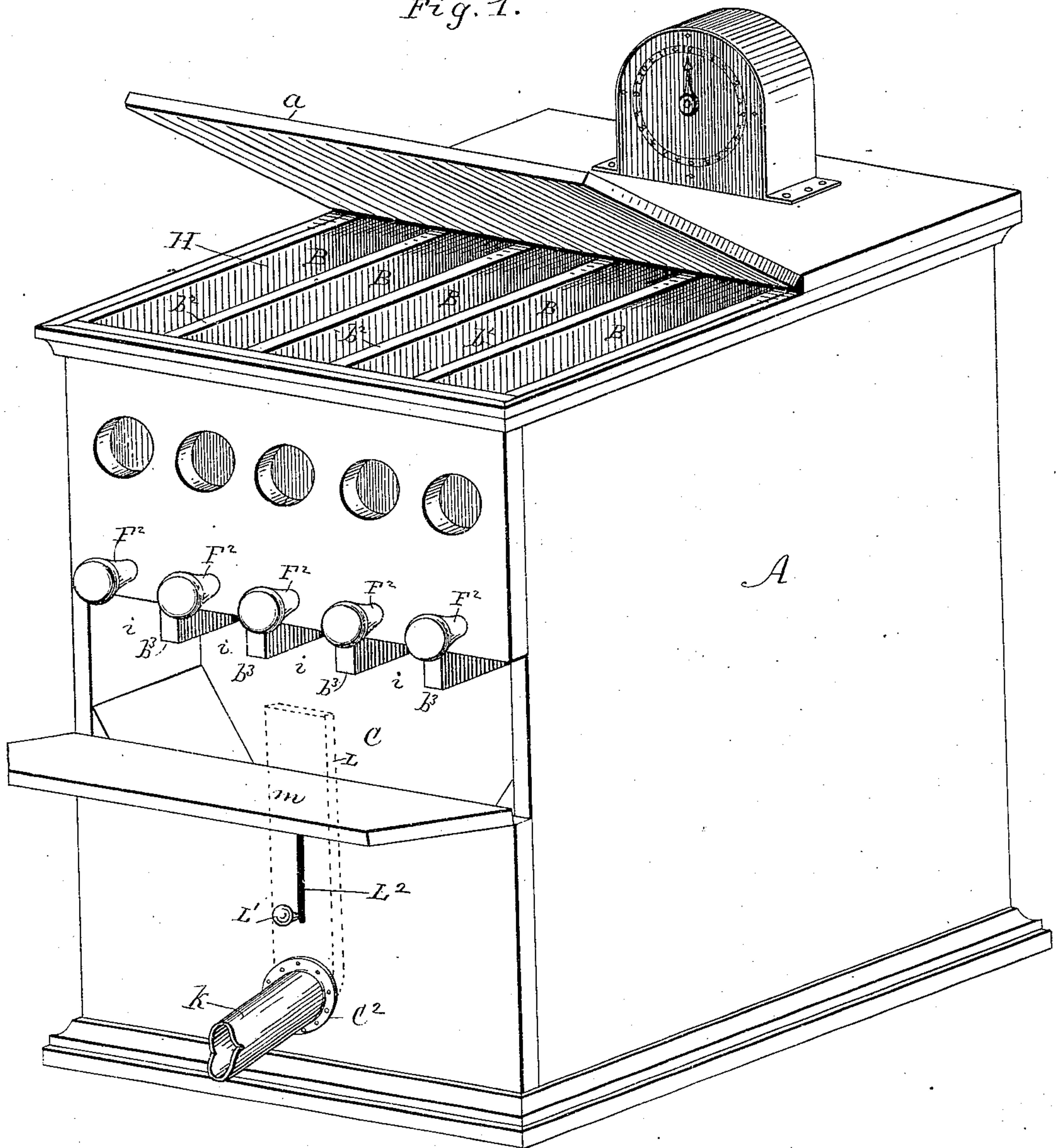
H. W. WHITE.

MEASURE FOR GRAIN, SHOT, AND OTHER LIKE ARTICLES.

No. 308,542.

Patented Nov. 25, 1884.

Fig. 1.



WITNESSES:

Thos. Houghton.

W. Read,

INVENTOR:

H. W. White

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2 Sheets—Sheet 2..

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Fig. 2.

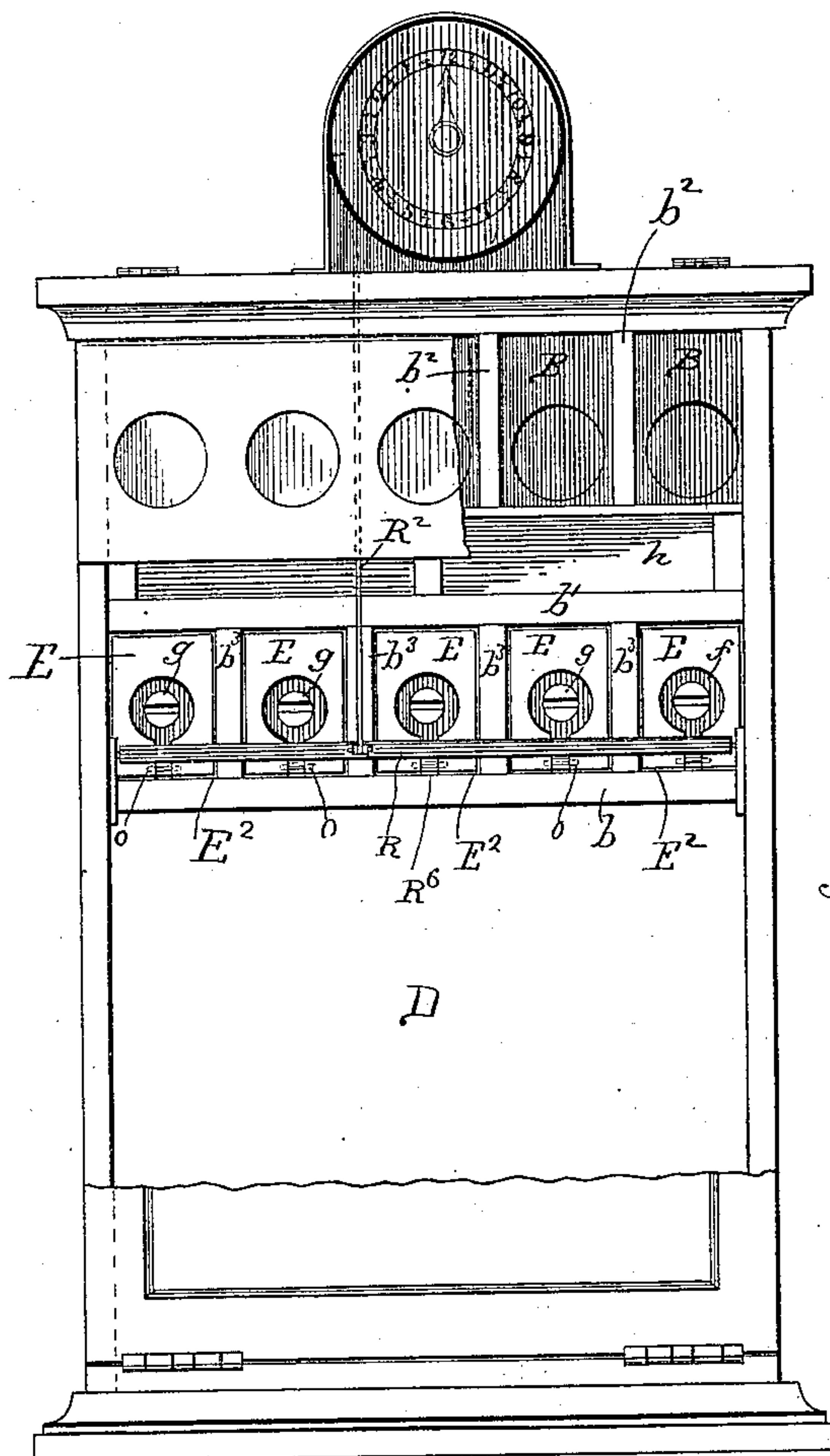


Fig. 3.

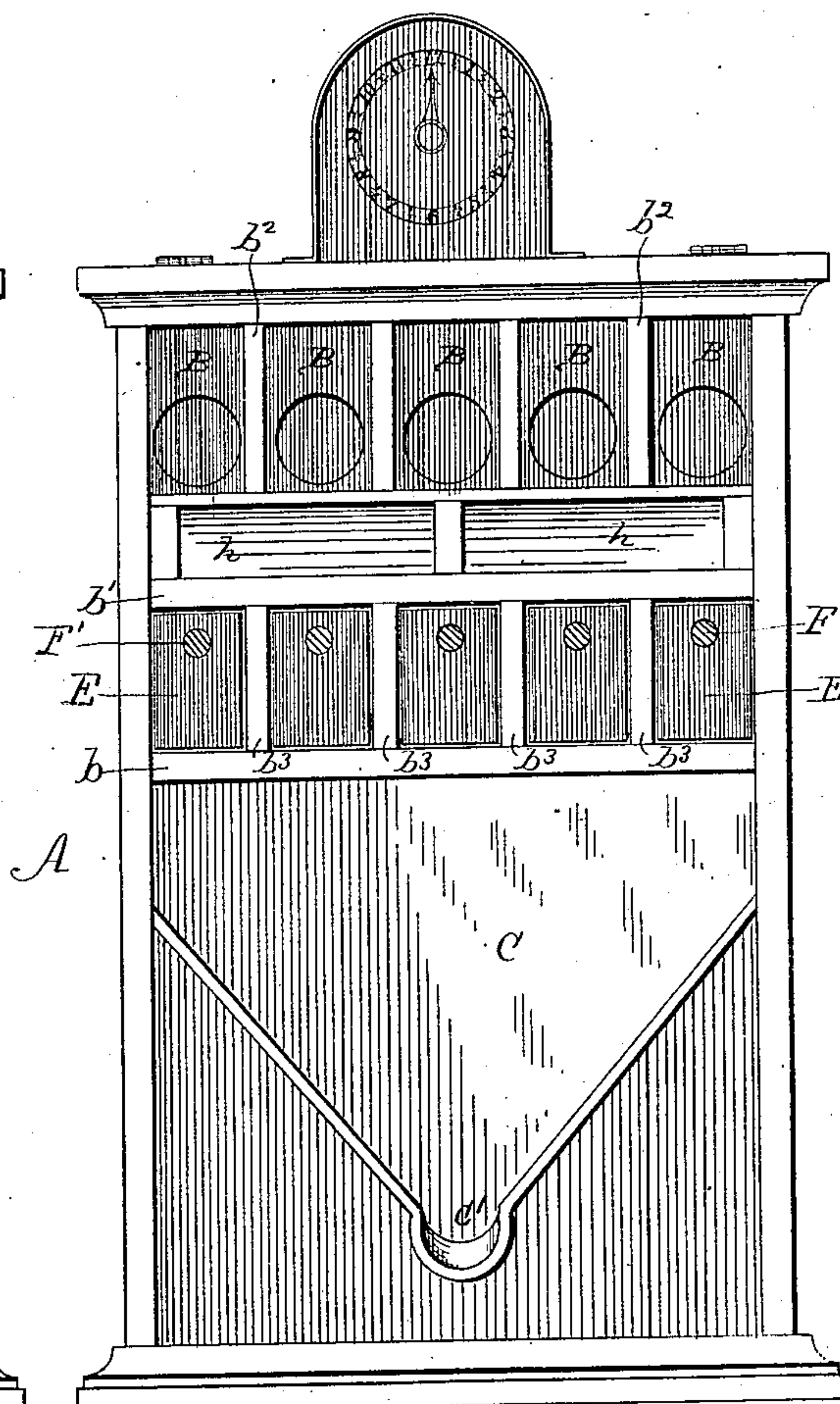


Fig 4.

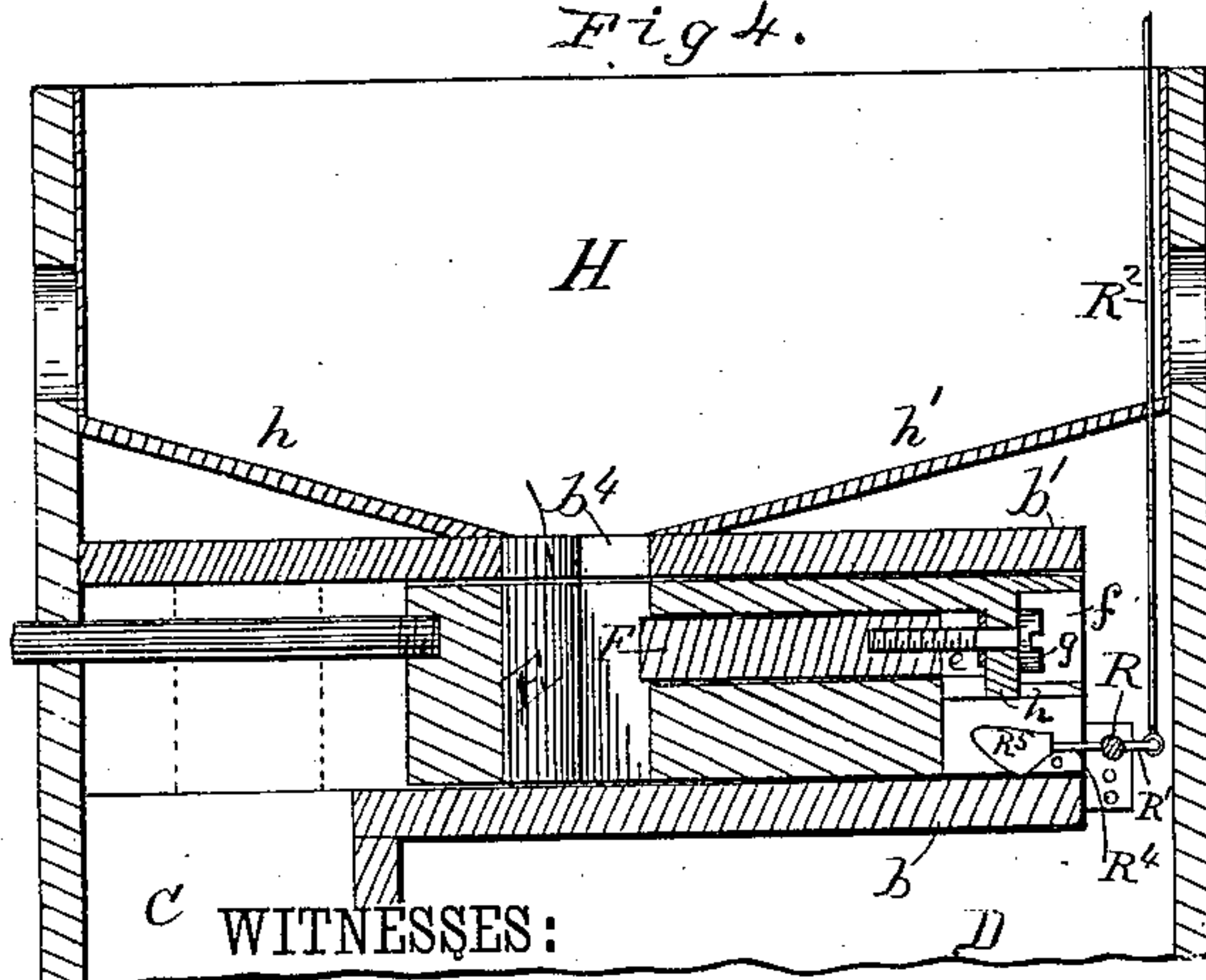


Fig. 5.

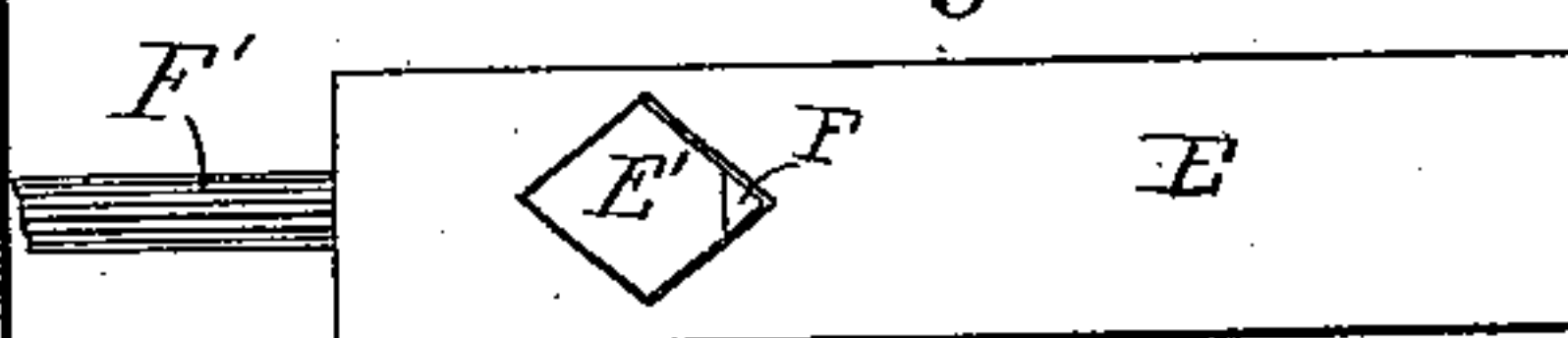
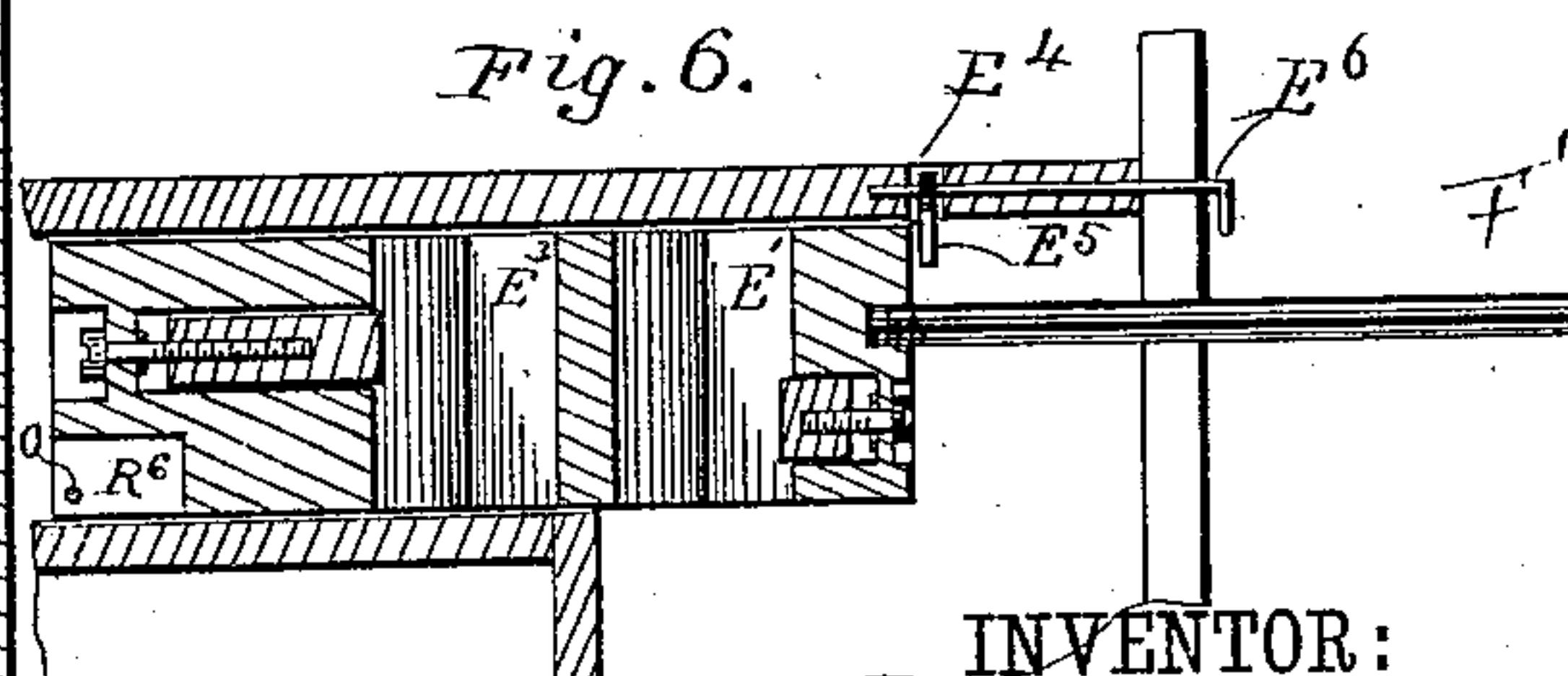


Fig. 6.



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UNITED STATES PATENT OFFICE.

HIRAM W. WHITE, OF YANKTON, DAKOTA TERRITORY.

MEASURE FOR GRAIN, SHOT, AND OTHER LIKE ARTICLES.

SPECIFICATION forming part of Letters Patent No. 308,542, dated November 25, 1884.

Application filed April 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, HIRAM W. WHITE, a citizen of the United States, residing at Yankton, in the county of Yankton, Dakota Territory, have invented certain new and useful Improvements in Measures, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and letters of reference marked thereon, in which—

Figure 1 is a perspective view of my improved measure. Fig. 2 is a view of the rear end of the measure partly broken away. Fig. 3 is a front elevation of the same with the front wall removed. Fig. 4 is a vertical longitudinal section, and Figs. 5 and 6 are detail views.

My invention relates to improvements in measures for grain, shot, and other like articles; and it consists in the peculiar construction and arrangement of the parts, as hereinafter more fully set forth, and pointed out in the claims.

Referring to the drawings, A represents a rectangular case having a hinged lid, *a*, in its top, and provided with an upper compartment, H, a discharge-chamber, C, a compartment, D, and slide-chambers E². The upper compartment, H, has for its top and sides the top and upper parts of the sides of the case A, and for its bottom the oppositely-inclined planes *h h'*, supported at their lower ends by the upper face, *b'*, of the slide-chambers E², with a short space between the lower ends of the inclined planes *h h'*, the latter being supported at their upper ends by the ends of the case A. The upper compartment, H, of the case A is subdivided into a series of parallel bins, B, by a series of parallel vertical planes, *b²*, extending from end to end and from top to bottom of the upper compartment, H. A series of circular holes are made in each end of the case A, opposite each other and opposite the upper part of each bin, each circular hole being provided with a pane of glass for the inspection of the interior of the bins, when desired.

b b' represent two parallel horizontal planes supported in the sides of the case A. The space between the parallel horizontal planes *b b'* is subdivided by a series of parallel vertical planes, *b³*, each of which is in the same

plane with one of the vertical planes *b²* which subdivide the upper compartment, H, into bins B, thus forming slide-chambers E² below each bin B. The lower horizontal plane, *b*, is provided with a discharge-opening, *i*, near its inner end, leading into the discharge-chamber C in the lower part of the case A. The space in each bin B between the lower ends of the oppositely-inclined planes *h h'* forming its bottom is provided with an aperture, *b⁴*, in the upper horizontal plane, *b'*, for the passage of the material to be measured and contained in the bins B. The aperture or opening *b⁴* in the bottom of each bin B is preferably of lozenge form in horizontal section, or with curved sides terminating in acute angles in the direction of the movement of the slides, hereinafter described.

E E represent blocks, one being employed in each chamber E², each block being adapted to be slid back and forth in its chamber E² between the boards *b b'* and beneath the bins B by means of horizontal rods F', connected at their inner ends with the slides or blocks E, the rods F' passing through holes in the front face of the case, and provided with knobs F² on their outer ends, whereby any slide may be reciprocated when desired. Each slide or block E is provided with a measure or chamber, E', open at top and bottom, which registers with the aperture *b⁴* in the bottom of the bin B above it when the slide E is pushed back as far as it will go. The horizontal section of the measure E' is the same as the horizontal section of the aperture *b⁴* in the bottom of the bin B, being preferably of a lozenge shape, having acute angles on the longitudinal central line of each block or slide, whereby the material placed in the bins B above the slides E will pass by gravity into the measures E' in the slides, and will be packed in a wedge form in the angles of the measures.

In operating the slides to convey the material from the bins to the discharge-chamber C the slides are liable to become clogged in their reciprocating movements by the shot or other material being drawn between the upper face of a slide and the lower face of the horizontal plane *b'*.

By forming the holes *b⁴* in the bins and the horizontal section of the measures of the con-

figuration described there will be less shot or other material in the acute angles of the lozenge or wedge form than if a cylindrical form of measure were employed, and therefore less liability of clogging the slides, because there is less material at the acute angles, and at the same time the material would be more readily cut off by the shear action imparted to the material in the movement of the slide by the configuration of the hole in the bottom of the bin and the horizontal section of the measure above described.

Within a longitudinal slot, e , in each slide E , communicating with an aperture, f , in the back of the case A , and with the chamber or measure E' , is arranged a follower, F , which is capable of adjustment in or out through an aperture in the side of the measure, to vary the capacity of the chamber E' , by means of a screw, g , connected with the outer end of the follower F and operated through the opening f in the case A and bearing in a nut-support, h , in the slot e .

It will be observed that the capacity of the measure can be diminished or increased by turning the screw g so as to project the follower F into the measure E' , or by withdrawing or partly withdrawing the follower from the measure E' by turning the screw g in the reverse direction. The series of parallel vertical planes b^3 , subdividing the space between the parallel horizontal planes b b' into slide-chambers E^2 , lying under the pins B , extend to the front inner face of the case A , which front face acts as a stop for the forward movements of the slides E . Each slide E may be provided with two or more measures, E' E^3 , open at top and bottom and arranged near each other, and the top face of the plane b' is provided with a cross-slot, E^4 , in which operates an arm, E^5 , on the inner end of a rock-shaft, E^6 , passing through a hole in the front face of the case A , and provided with a knob, E^7 , on its outer end, whereby the arm E^5 can be rocked in the slot E^4 , so that when the arm is moved upwardly the slide can be moved forward until its end abuts against the inner face of the front of the case A , so that the contents of both measures would be discharged from them; or, if the arm E^5 were turned down, the front end of the slide E in its forward movement would abut against the arm E^5 and the contents of the front measure, E' , only be discharged from it.

C represents the discharge-chamber, provided with inwardly-inclined back and sides leading into an outwardly-inclined chamber, C' , having an inclined tube, k , at its lower end passing through a hole, C^2 , in the front face of the case A .

m represents a hinged door in the front face of the case A , opening into the discharge-chamber C .

It will be observed that by pulling upon any one of the knobbed rods F , secured to a slide, E , and having its measure E' filled by gravity from one of the bins B above it, that

the slide will be drawn forward until its measure E' registers with the corresponding opening, i , when the contents of the measure will be discharged into the funnel-shaped discharge-chamber, from which it will be received through the projecting tube k in the lower extremity of the chamber C' .

L , Fig. 1, represents a gate adapted to slide vertically in ways of the front face of the chamber C of the box A against the rear end of the tube k , to vary the flow of the material escaping from said tube, or to open the gate to its fullest extent, or to close it entirely.

L' represents a knob secured to the gate L , and adapted to be reciprocated vertically in the slot L^2 made in the front face of the chamber C . After the gate L has been raised to allow the egress of the material through the tube k , if the hand of the operator is removed from the knob L' in the raised position of the gate L , the weight of the latter will close it.

R represents a horizontal rock-shaft journaled in the inner faces of the sides of the chamber D near its back face. The back side of the rock-shaft R has an arm, R' , secured to it, which projects rearwardly and horizontally from it in its normal position.

To the outer end of the arm R' is pivoted a vertical connecting-rod R^2 , which is connected with the hand-operating mechanism of a register of the usual construction secured to the top face of the case A , whereby the amount measured is indicated by the partial turning of the rock-shaft operated by the slides as they are reciprocated.

To the front side of the rock-shaft R are secured, one opposite the middle of each slide E , a series of arms, R^4 , having beveled or rounded heads R^5 . The rear end of each slide is provided with a vertical slot, R^6 , extending from the rear part of the slot e in the slide E to its bottom, the arms R^4 , attached to the rock-shaft R , being adapted to operate in the slots R^6 . o represents a bar extending across the vertical slot R^6 at its lower end. As slide E is moved forward the bar o , extending across the vertical slot R^6 , raises the rounded head of the arm R^4 and rocks the shaft R , thereby operating the register.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a series of bins, B , each having a hopper-shaped bottom provided with an aperture, b^4 , of lozenge form in horizontal section, of the slide-chamber, E^2 , each arranged below a bin, B , and provided with a measure, E' , angular in horizontal section, with two of its angles in the direction of the length of the slide, substantially as shown and described.

2. The combination, with the case A , provided with an upper compartment, H , subdivided into a series of bins, B , having hopper-shaped bottoms provided with apertures b^4 of lozenge form in horizontal section, and funnel-shaped discharge-chamber C , of the slide-

chambers E^2 , provided with the apertures i , slides E , each provided with an angular measure, E' , having two of its angles in the direction of the length of the slide, and knobbed rods F' , substantially as shown and described.

3. The combination, with a bin, B , provided with two angular apertures in its bottom, and a slide, E , having two measures, E' E^3 , and the plane b' , having a cross-slot, E^4 , of a knobbed rock-shaft, E^6 , carrying an arm, E^5 , on its inner end, and knobbed connecting-rod F' , substantially as shown and described.

4. The combination, with the rock-shaft R ,

provided with rearwardly-projecting arm R' , and vertical rod R^2 , pivoted to the arm R' , and 15 connected with the mechanism of a register, of the arms R^4 , secured to the front side of the rock-shaft, and provided with beveled heads R^5 , and slides E , each provided with a vertical slot, R^6 , in its rear end, and cross-pin o , sub- 20 stantially as shown and described.

HIRAM W. WHITE.

Witnesses:

ISAAC PILES,
NICHOLAS MORGAN.