

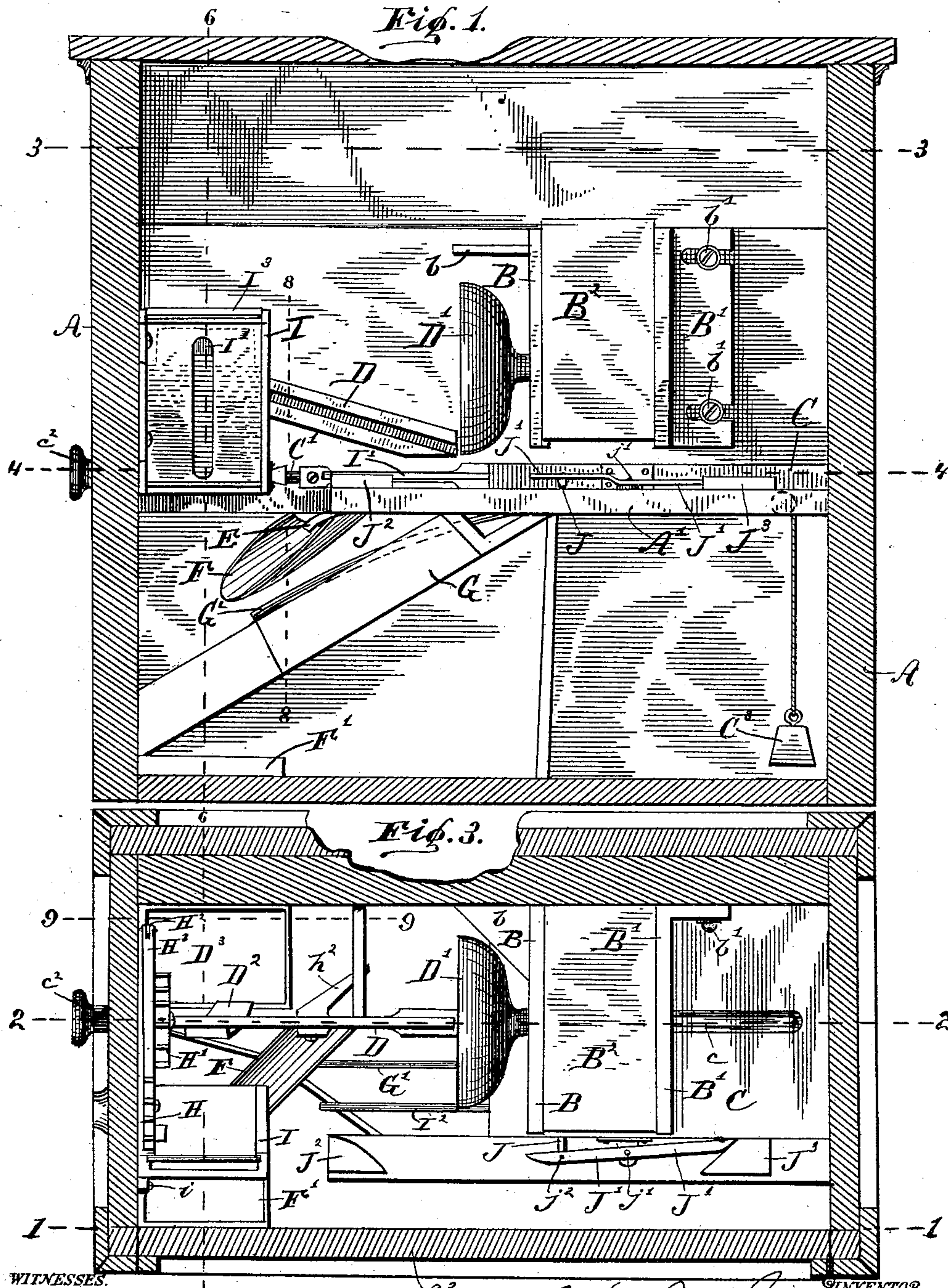
(No Model.)

3 Sheets—Sheet 1.

W. B. SEWARD.
AUTOMATIC VENDING APPARATUS.

No. 453,392.

Patented June 2, 1891.



WITNESSES.

G. H. H. Brown,
J. Walsh.

per W. B. Seward,
att. E. W. Bradford.

INVENTOR.

ATTORNEYS.

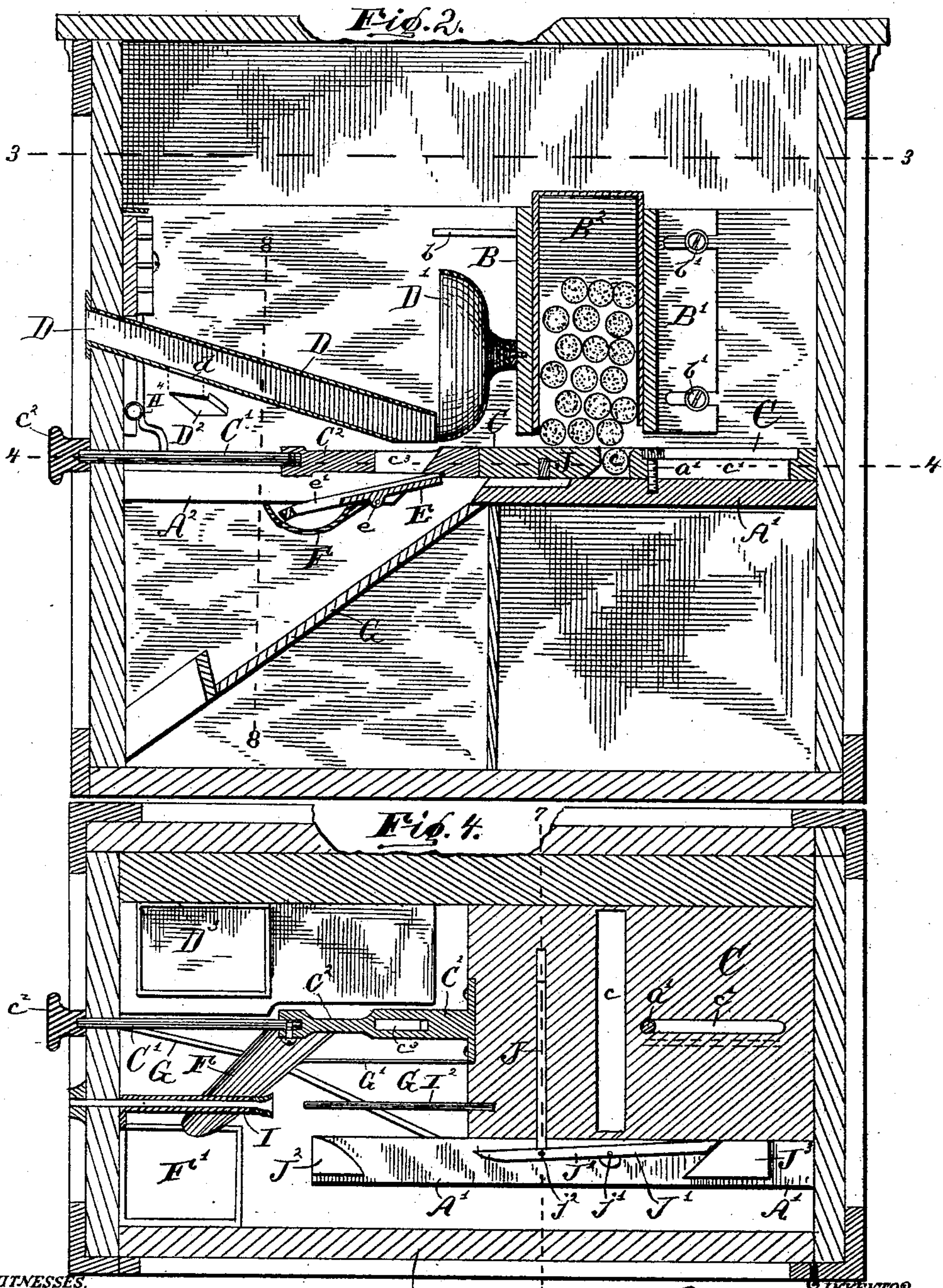
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Fig. 5.

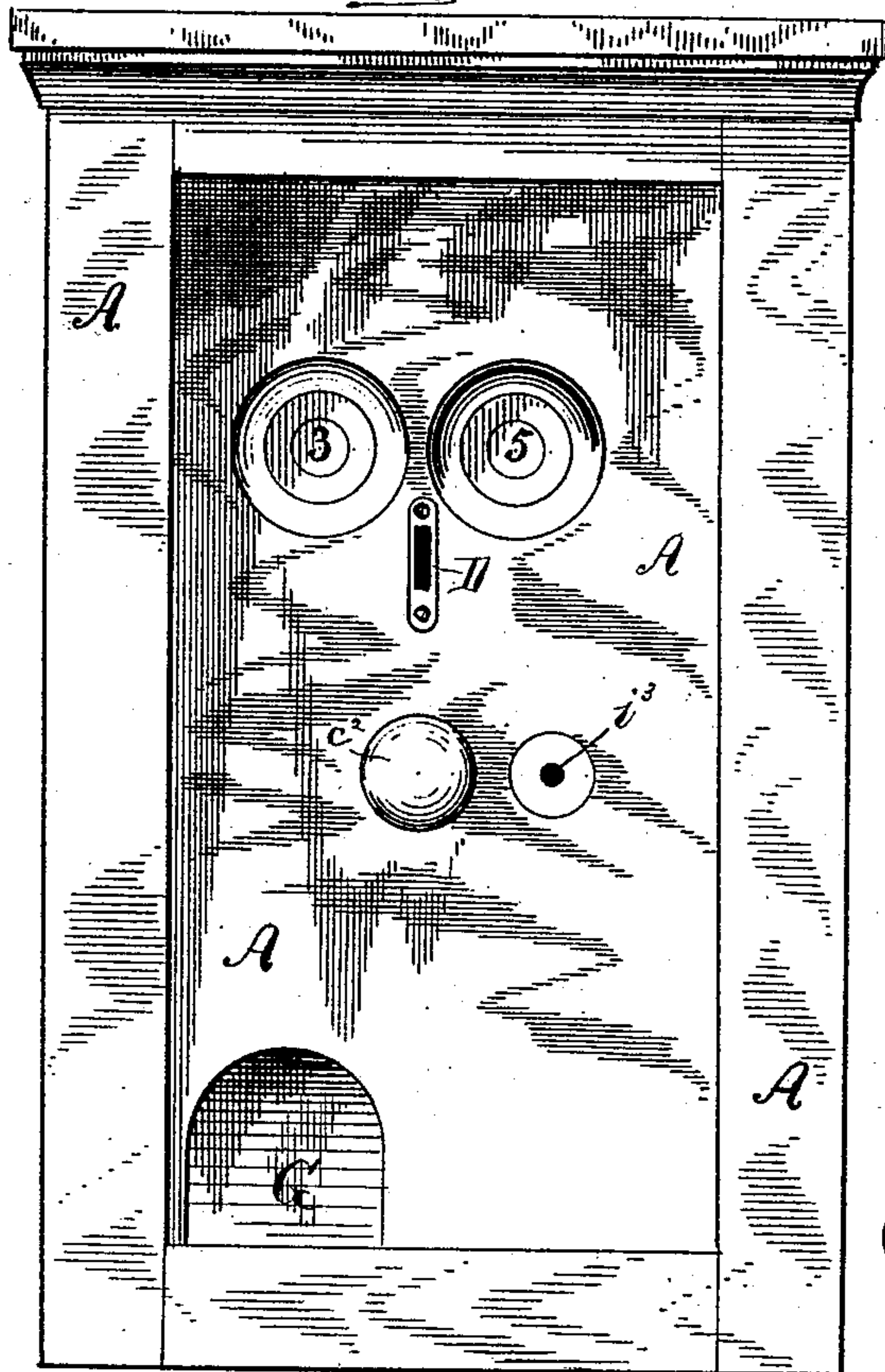


Fig. 6.

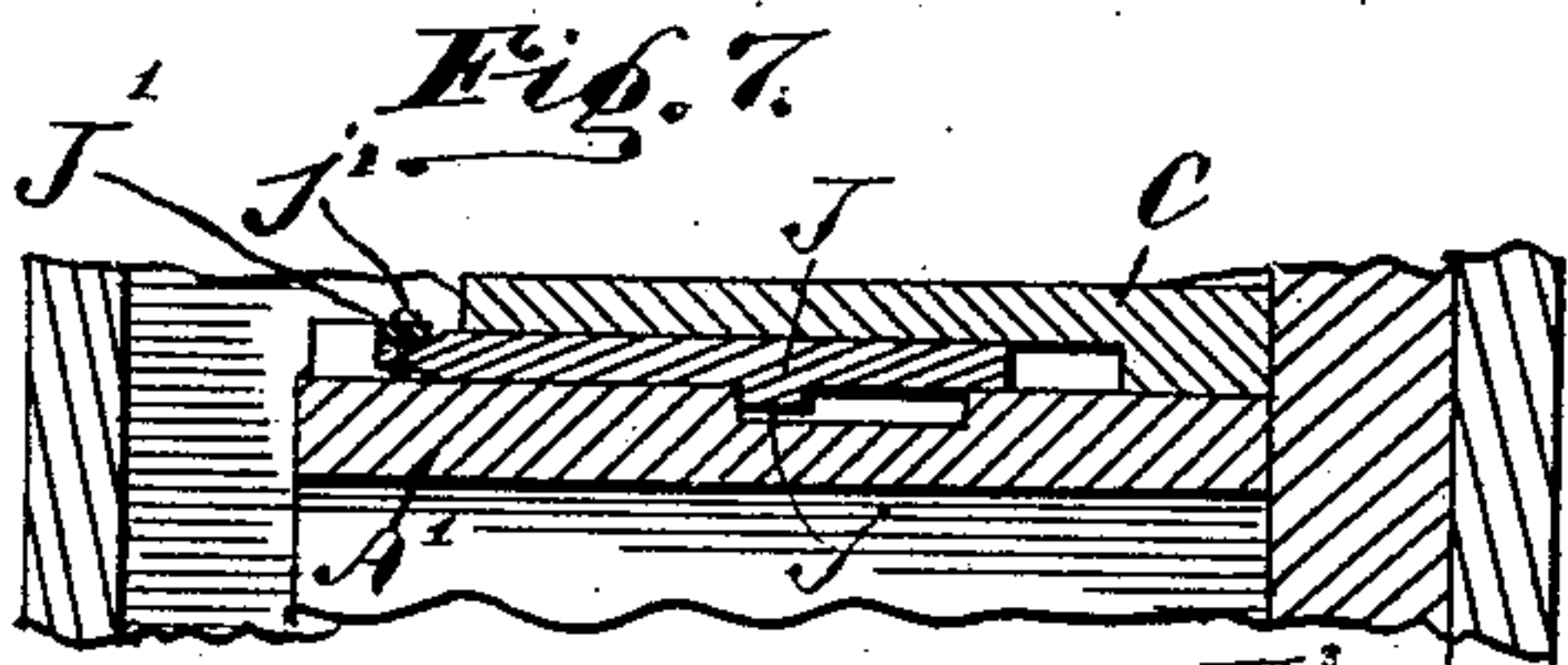
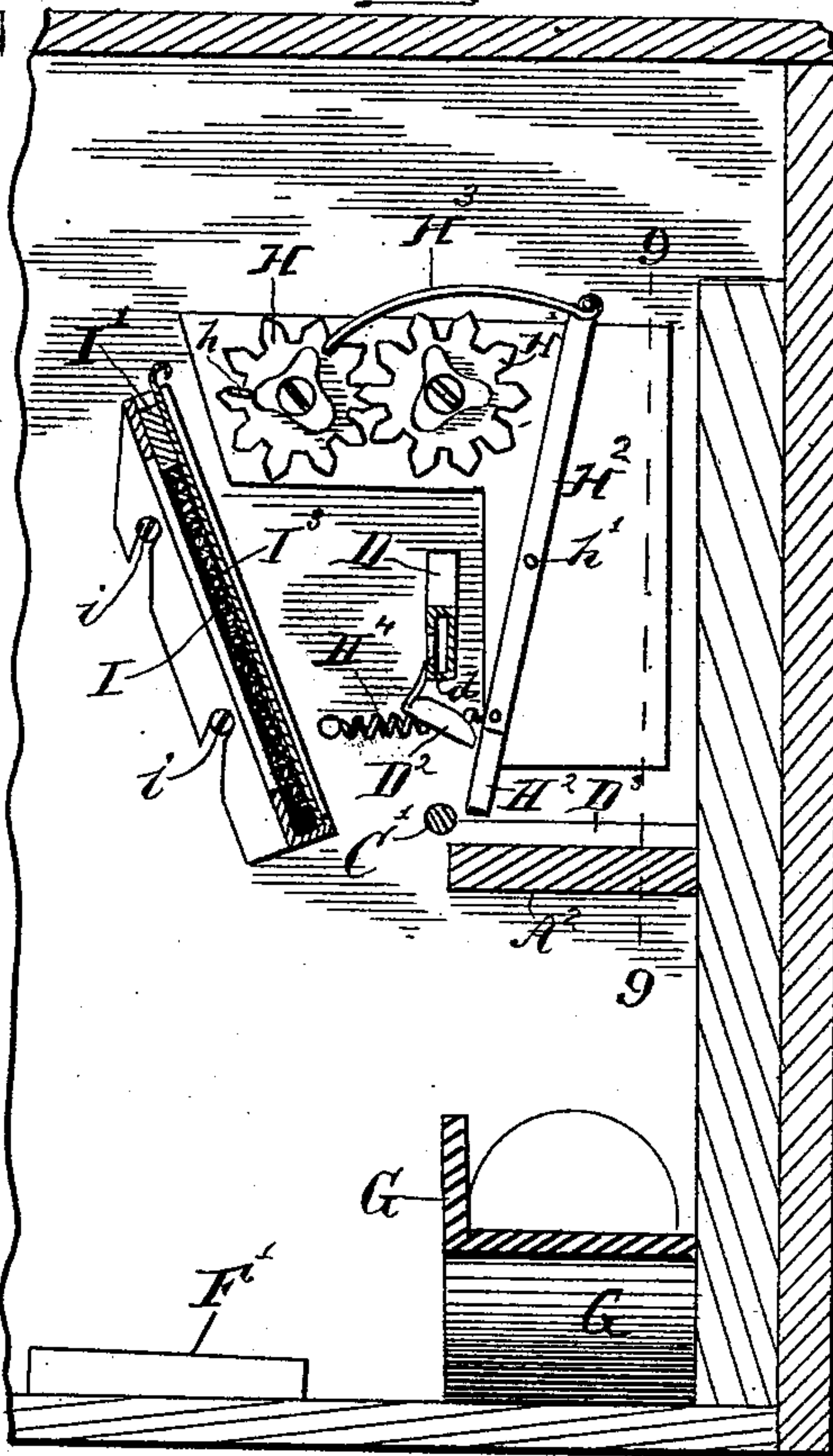


Fig. 8.

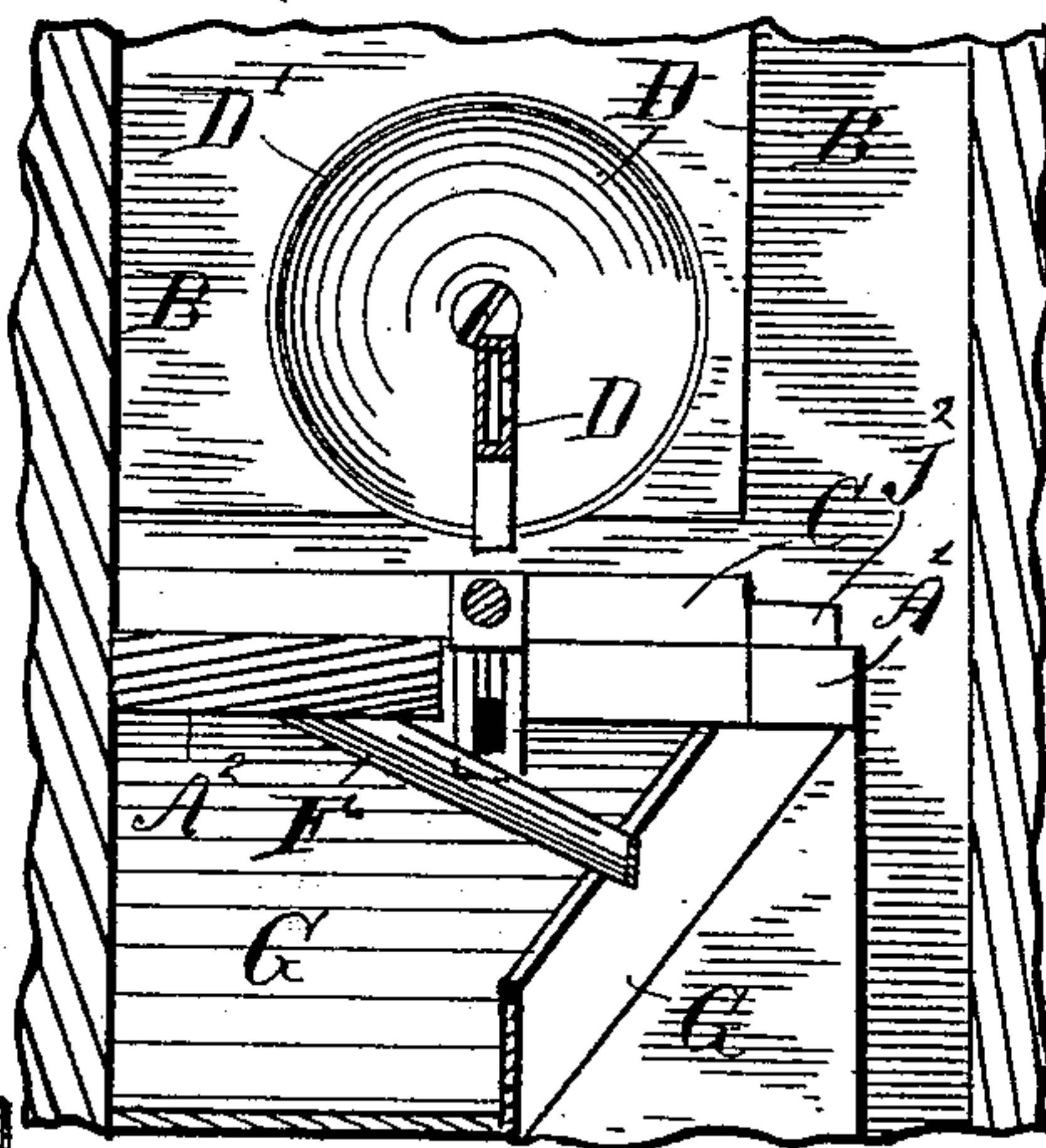
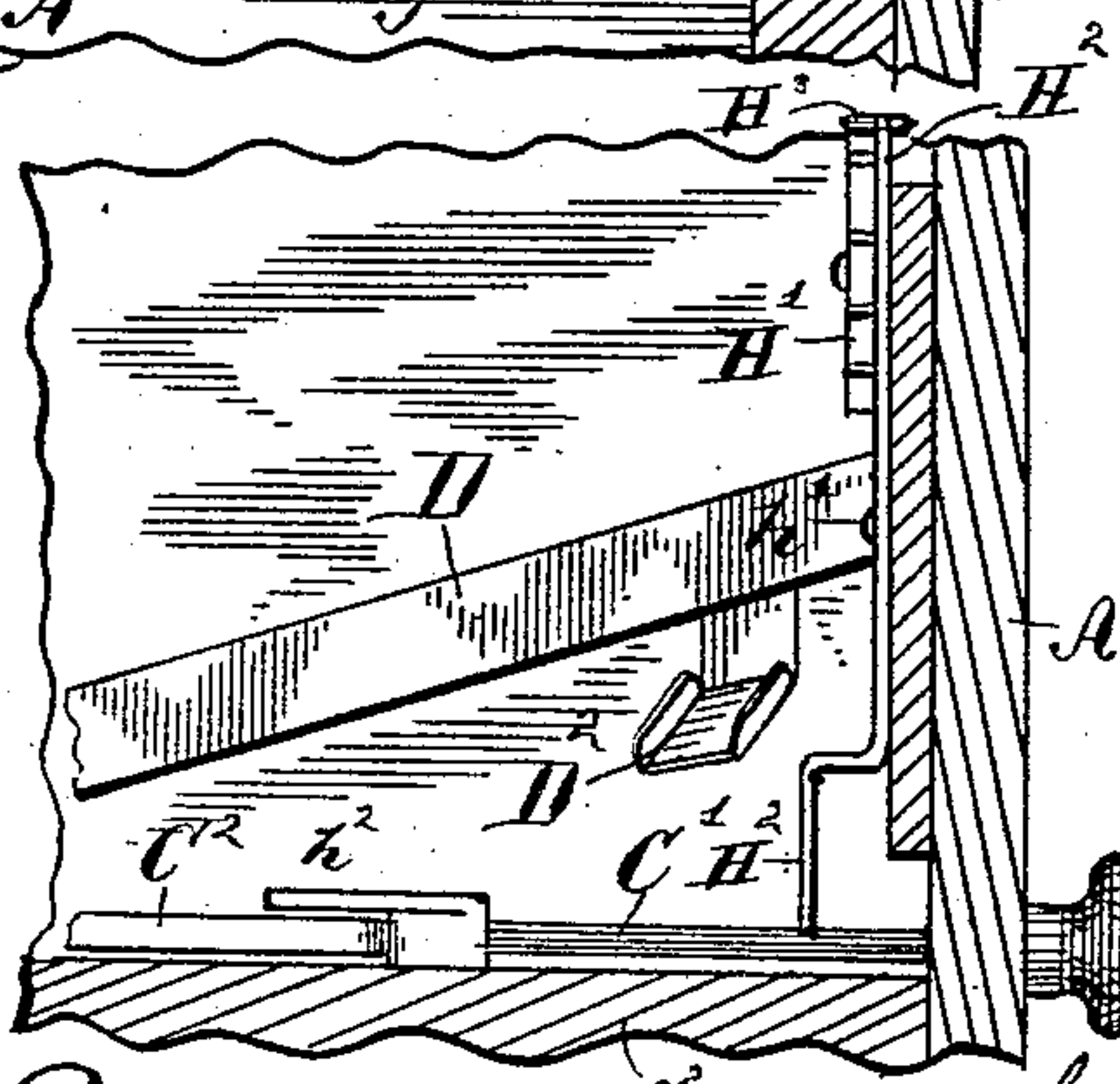


Fig. 9.



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UNITED STATES PATENT OFFICE.

WILLIAMSON B. SEWARD, OF BLOOMINGTON, INDIANA.

AUTOMATIC VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 453,392, dated June 2, 1891.

Application filed July 11, 1889. Serial No. 317,176. (No model.)

To all whom it may concern:

Be it known that I, WILLIAMSON B. SEWARD, a citizen of the United States, residing at Bloomington, in the county of Monroe and State of Indiana, have invented certain new and useful Improvements in Automatic Vending Apparatus, of which the following is a specification.

My invention relates to that class of devices by means of which an article of merchandise can be automatically delivered to a customer by the introduction of a coin of predetermined size. I have shown this apparatus as arranged for the vending of cigars; but it can obviously be arranged to vend other articles as well by obvious mechanical changes.

Said invention will first be fully described, and then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and in which similar letters of reference indicate similar parts, Figure 1 is a section at the dotted line 1 1 in Fig. 3 through the box or inclosing case, showing the mechanism in front elevation; Fig. 2, a central vertical sectional view of the same on the dotted line 2 2 in Fig. 3; Fig. 3, a horizontal sectional view through the box, looking downwardly from the dotted line 3 3 in Fig. 2, and showing the mechanism in plan; Fig. 4, a horizontal sectional view on the dotted line 4 4 in Fig. 1; Fig. 5, a front end elevation of the device; Fig. 6, a transverse sectional view looking toward the left from the dotted line 6 6 in Figs. 1 and 3; Fig. 7, a transverse sectional view looking toward the left from the dotted line 7 7 in Fig. 4; Fig. 8, a transverse vertical sectional view looking toward the right from the dotted line 8 8 in Fig. 1, and Fig. 9 a view of the rear side of the counting device as seen from the dotted line 9 9 in Fig. 6.

In said drawings the portions marked A represent the box or casing for the machine; B, a clamp-like frame for holding a box of cigars; C, a slide running beneath said box; D, the chute through which the coin is introduced; E, a pivoted combined chute and detent which receives the coin and is tilted thereby to unlock the mechanism; F, the chute which carries said coin away to a receptacle; G, the chute which conveys the

cigar or other article of merchandise to outside the machine or to a point near an opening in its casing; H H', wheels of the counting device; I, a receptacle containing matches, and J a supplemental locking device.

The frame A is in the main an ordinary casing or frame-work containing the mechanism. It contains floors A' A², upon which most of said mechanism is mounted. One side of said frame is in the form of a door A³, (see Figs. 3 and 4,) which door should be provided with a lock, (not shown,) so that the apparatus may be securely inclosed from being tampered with.

The clamp-like frame consists of one wing-like portion B, attached to the frame A and preferably held rigidly to position by one or more braces b, and one adjustable bracket-like wing or portion B', through slots in one wing of which screws b' pass, by which it is adjustably secured in position. Between these two wings B and B' is inserted the merchandise or a box B² containing it. This box is shown as a cigar-box partly filled with cigars and in position to be operated. A cigar-box for use in this apparatus is opened by removing one end and then placed in position between the wings B and B' of the clamp-frame, when the adjustable portion B' is moved up against said box, securing it in position, as shown.

The slide C consists of a floor-like piece mounted on the floor A' of the frame A and provided with a slot c of proper size to permit one of the cigars or other articles of merchandise to drop through when it is properly operated. It is secured to the floor portion A', preferably, by a screw a', passing through the slot c' in said slide, as shown most plainly in Fig. 2. This slide is connected to an operating-rod C', which extends to outside the box, where it is provided with a knob c². There is interposed between the slide C and rod C' a casting C², in which is a slit c³, which is arranged directly under the discharging end of the coin-chute D when the slide is pushed back, thus providing a way when the slide is in this position for the coin to fall through onto the tilting chute E, but which way is effectually closed when the slide is in any other position. As will be noticed, the casting C² is fastened rigidly to the slide C

and forms practically a part thereof. At a point immediately at the rear end of said tilting chute there is a notch in this casting C^2 , with which said rear end of said tilting chute will engage and thereby serve as a detent, preventing said slide from being pulled forward except when said chute is tilted, as will be presently more fully explained. A weight C^3 is provided (see Fig. 1) and suspended to a cord which runs up over a pulley in the floor, as shown by the dotted lines, and to a point on the under side of said slide, (see also dotted lines in Fig. 4,) which enables said weight to pull said slide back into position after it has been pulled out in operating the device.

The coin-chute D extends from outside the frame A to a point inside the apparatus directly above the slit c^3 in the casting C^2 . Directly in front of the inner end of this coin-chute is one edge of a bell D' , and the coin when it rolls down will strike this bell and serve as an annunciator to show that the apparatus has been operated. The coin then falls through the slit c^3 onto the tilting combined chute and detent E, which is thereby tilted, disengaging the engagement between it and the notch in the casting C^2 and permitting the slide to be pulled forward. As the slide is pulled forward it draws the coin along on top of the tilting chute E until it reaches the other side of its pivot, when it rolls down and passes through the slit therein onto the coin-chute F. In order to guard against a coin of different thickness operating the device, a thin slit d (see Fig. 2) is formed in the bottom of the coin-chute D and a supplemental chute D^2 attached in such a position that thin coins received thereby will fall through said slit d , be conducted off to one side, and dropped into a coin-pan D^3 . Thus, for instance, if the apparatus is designed to be operated by a five-cent piece or "nickel" an attempt to operate it with a cent or a dime will be fruitless. Such coins, being thinner, will drop through this slit d and be conveyed to one side by the supplemental chute D^2 . The coin-chute is itself made of such a width that a coin of greater diameter than the one which it is intended shall operate the apparatus cannot be introduced at all.

The tilting chute E is mounted on the inside floor A^2 by means of a pivot e , and is so proportioned that it will remain in the position shown most plainly in Fig. 2 at all times, except when operated by a coin of proper size, and will when in that position serve as a detent for the slide C. When, however, the coin falls thereon, said coin will tilt down the end that is shown as elevated, disengaging it from the slide C, and permit said slide to be pulled forward. When said slide starts forward, it pulls the coin with it, as before explained, until it passes the pivot e , when it rolls down and falls through the slit e' into the chute F. When the slide C is pushed back or returned automatically by means of

the weight C^3 , this tilting chute will re-engage therewith and again serve as a detent until again disengaged, as just explained. 70

The chute F is simply a plain inclined chute to carry the coin in the desired direction, so that it will fall into a receptacle F' provided therefor.

The slide or chute G extends from the front edge of the floor A' to either outside the apparatus or to in front of an opening in one end or one side thereof of sufficient size to permit the operator to withdraw the article which he has purchased through means of this apparatus. It is shown in the latter condition, and is tapered from the width of the floor A' to a narrower width, and a wire G' is shown, which serves to tilt up one end of the cigar as it is precipitated onto this chute and cause it to swing partly around and be delivered end foremost instead of sidewise, as would otherwise likely be the case. 85

The wheels H H' of the counting device are the ordinary "units" and "tens" wheels employed in such devices. Each cog has a figure on its face, and the units-wheel H has an operating-cog h , which moves the wheel H' one space at every complete revolution of the wheel H. A lever H^2 is secured alongside these wheels upon a pivot h' and carries upon its upper end a dog H^3 , which engages with the cogs of the wheel H. Upon the casting C^2 is a wing h^2 , which engages with the lower end of this lever H^2 as the slide is pulled forward and forces it back a sufficient distance to give the wheel H one-tenth of a revolution, thus displaying a different figure at the left hand of the counter, as shown in Fig. 5. A spring H^4 draws this lever in the other direction when the slide is pushed back, causing the dog H^3 to be retracted to position to again be operated, as will be readily understood. By this means it can be clearly ascertained how many articles of merchandise have been withdrawn from the case and the time when the supply is to be replenished thus determined. 110

The match-case I has an internal diameter just sufficient to enable a match laid therein to pass down easily and still not permit another match laid on top of it to pass down alongside of it. In operation it is filled with matches, one on top of the other, and a small weight I' placed on top of the matches. Attached to the slide C is a rod I^2 , which is arranged to exactly register with the extreme lower portion of the interior of the match-case, and on the other side of said match-case a small hole is formed in the casing A, extending through to the outside. The operation is, when this slide is pulled forward, that this rod I^2 will strike the end of the match at the extreme bottom of the case and force it out through this hole far enough so that it can be reached by the purchaser, who is thus supplied with a match each time he purchases a cigar by means of this apparatus. A slit is formed in the side of this match-case on the 130

side nearest to the door of the apparatus, so that its condition can be easily seen when said door is opened, thus permitting the operator to see when it needs replenishing. As shown in Fig. 6, this case is preferably hung on two nails or screws i by means of slots in a wing thereon, thus enabling it to be easily removed from the apparatus when desired. As shown most plainly in Fig. 6, one side of this case may be made in the form of a slide I^3 , which may be withdrawn, thus permitting the matches to be more easily placed therein.

The supplemental locking device J is in the form of a transverse bar let into a groove on the under side of the slide C . For the greater portion of its length it is of just sufficient width to fill said groove; but at one portion (see particularly Fig. 7) there is a downward projection j . When this is operated by the pulling forward of the slide C , as will be presently described, this projection gets directly in the path of the combined chute and detent E and prevents said slide from being pulled forward far enough to operate the apparatus so long as this projection is in this position. The object of this is to prevent the apparatus from being operated twice with the same coin, as will be presently explained. Secured to the outer end of this lock J is a bar J' , which is secured to a wing on the slide C by a pivot j' . The connection between said bar and said lock is also a pivot j^2 . Upon the floor A' are secured strikes J^2 and J^3 . When the slide is forward, the end of the bar J' strikes the inclined face of the strike J^2 , forcing it and the lock J inwardly and throwing the projection j across the path of the detent E , where it remains until the slide C is fully returned to the position where the detent E can again engage with the notch in the casting C^2 , when the other end of said bar J' strikes the inclined surface of the strike J^3 , which pulls the lock outwardly far enough so that the projection j is drawn out of the path of the detent E , thus permitting the apparatus to be again operated. If it were not for this arrangement, after the detent E had been operated by the coin the slide could be returned nearly back to its extreme position, but not quite far enough to permit of the engagement between said detent and the notch in the casting C^2 , in which position the slot c in the slide C would receive another cigar, which could then be pulled forward into the chute G without the use of another coin. By this supplemental lock such tampering is effectually prevented.

The operation of my apparatus is as follows: A coin is introduced from the outside into the coin-chute D , which rolls down said chute against the bell D' and announces that a purchase is being made to whomever may be within hearing. The coin then falls through the slit c^3 onto the detent E , tilting it. The purchaser then takes hold of the knob and by it pulls the slide C forward, the slot c wherein contains a cigar, which has

fallen into it from the box B^2 , which is located above it. The travel of this slide is just sufficient to pull said slot c over the edge of the floor A' , permitting the cigar therein to fall into the chute G , down which it slides to the opening shown in Fig. 5, whence the purchaser can easily extract it. At the same time the rod I^2 forces a match out through the opening i^3 , as previously explained. At the same time the forward end of the bar J' has become operated by the strike J^2 and the supplemental lock J thus operated, as has already been explained. When the slide C is returned to position either by the weight C^3 or by pushing on the knob c^2 , the detent E engages with the notch in the casting C^2 and locks the device until another coin of proper size is introduced. The supplemental lock is at the same time drawn out of the way. If the slide is not returned quite to position, the supplemental lock remains in the way of the detent, as has already been explained.

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

1. The combination, in an automatic vending apparatus, of the slide D for delivering the article to be vended, a casting C^2 , attached thereto and forming part of the pull to the slide, said casting having a slit c^3 , into which the coin enters and by which it is drawn from one side to the other of the pivot of the tilting chute, and said tilting chute E , pivoted centrally upon the frame-work below said casting C^2 , said casting also being provided with a notch, with which the rear end of said tilting chute engages before being tilted, all substantially as shown and described.

2. The combination, in an automatic vending apparatus, with the other mechanism thereof, of the initial coin-chute, a tilting chute E for receiving the coin from the initial chute upon one side of its pivot and afterward delivering said coin to the carrying-off chute upon the other side of its pivot, and said carrying-off chute, substantially as shown and described.

3. The combination, in an automatic vending apparatus, of the merchandise-delivering slide C , having a notch in its under side, and a combined coin-chute and detent E , which normally engages with said notch and locks said slide to position, but which is adapted to be tilted by the coin and thus unlock said slide C , said slide being provided with a slit through which the coin passes to said chute, and said chute being also provided with a slit for the delivery of the coin to a supplemental coin-slide or to a receptacle, substantially as shown and described.

4. The combination, in an automatic vending apparatus, of an introductory coin-chute D , extending from the outside to a point adjacent to an annunciator-bell, said annunciator-bell arranged in front of the lower end of said coin-chute, thus serving both as an annunciator and a deflector for the coin, and a

locking mechanism arranged below the lower end of the coin-chute upon which the coin is directed from the bell, said several parts being arranged and operating substantially as shown and described.

5 5. The combination, in an automatic vending apparatus, of an introductory coin-chute D, the slide C, having a slit c^3 , the tilting combined chute and detent E, and the carrying-off chute F, substantially as set forth.

10 6. The combination, in an automatic vending apparatus, with the merchandise-delivering chute G, of a wire or rod G' for tilting the merchandise and changing the direction of its discharge from the apparatus, substantially as shown and described.

15 7. The combination, in an automatic vending apparatus, with the reciprocating slide and the detent which holds it in position, of a supplemental lock J and strikes for operating said supplemental lock.

20 8. The combination, with the slide C and the detent E, of a transverse bar J, having a projection j , which serves as a supplemental

lock, a vibrating bar attached to said lock J, 25 and strikes with which said bar will come in contact as the slide reciprocates, substantially as set forth.

9. The combination, in an automatic vending apparatus, with the slide C, having a locking-notch, and the detent E, adapted to engage with said notch, of a transversely-operating bar J, mounted in a groove in said slide behind said detent and having a projection j , adapted to cross the path of said detent, and 35 an operating bar or lever J' , mounted upon said slide and pivoted to said lock J, and two strikes J^2 and J^3 upon the frame-work, with which the ends of said operating bar or lever are adapted to engage, substantially as set 40 forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 6th day of July, A. D. 1889.

WILLIAMSON B. SEWARD. [L. S.]

Witnesses:

C. BRADFORD,

E. W. BRADFORD.