

No. 713,324.

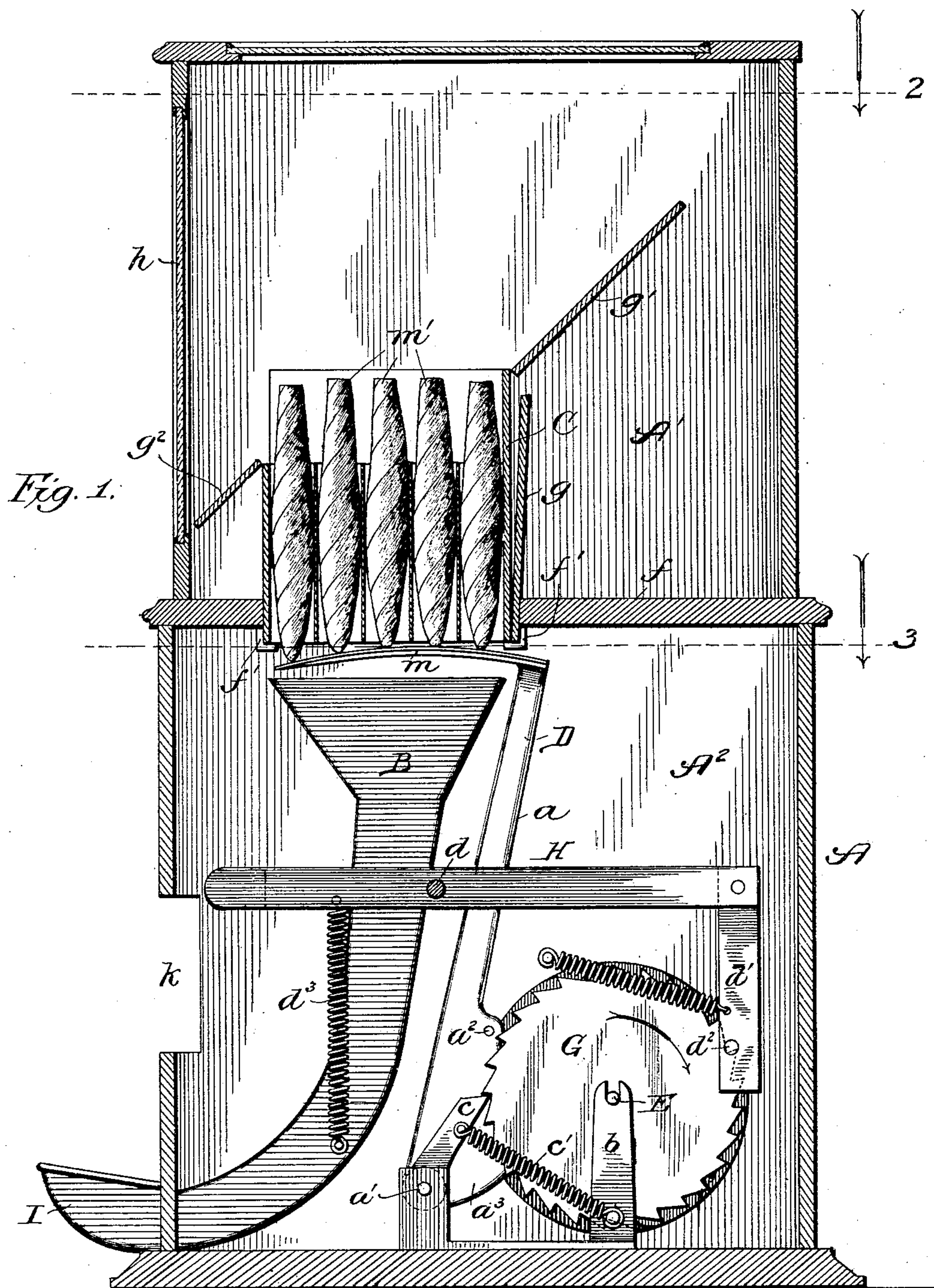
Patented Nov. 11, 1902.

M. B. MILLS.
VENDING MACHINE.

(Application filed Dec. 14, 1901.)

(No Model.)

4 Sheets—Sheet 1.



witnesses
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Inventor:
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Fig. 2.

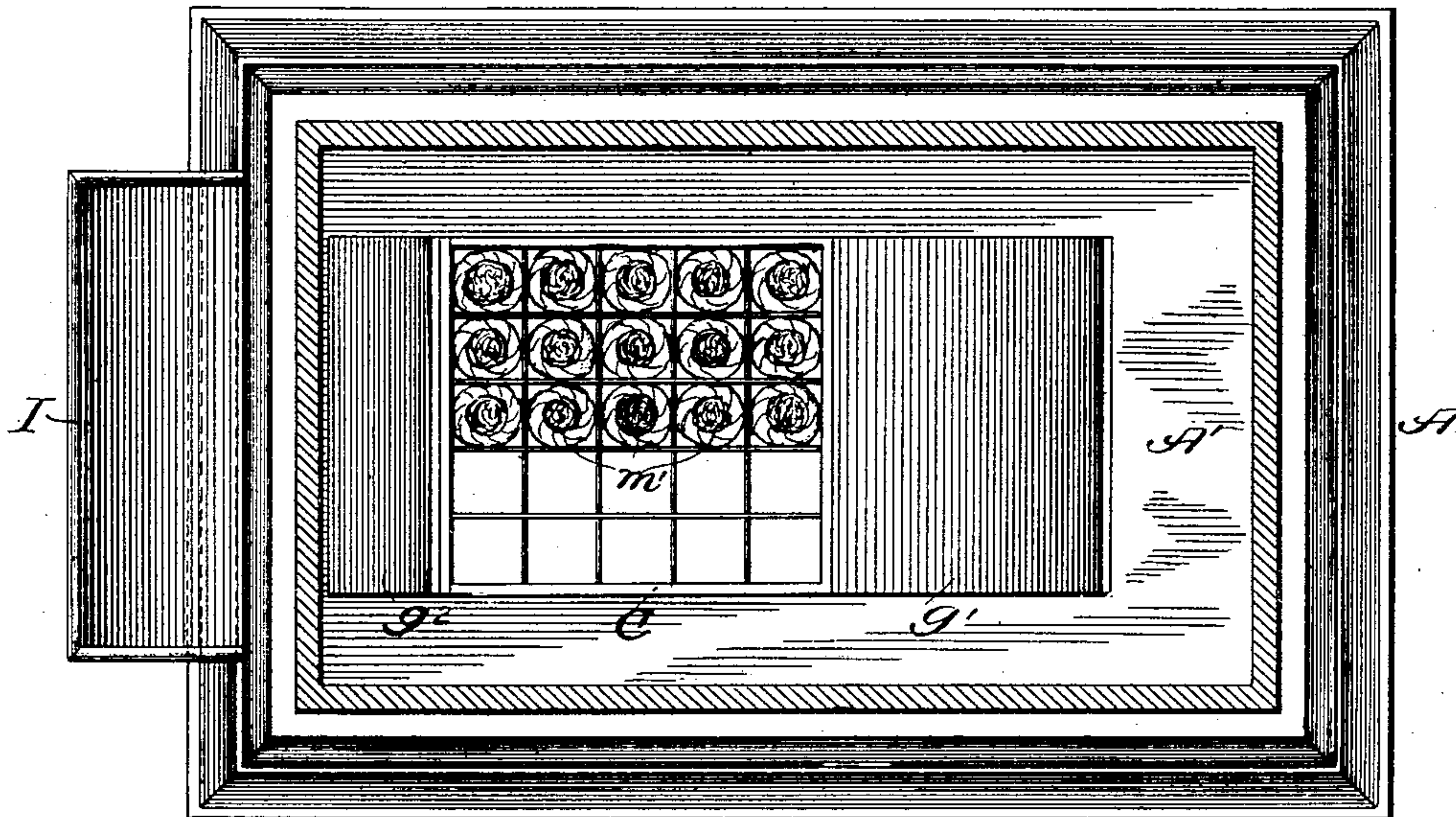
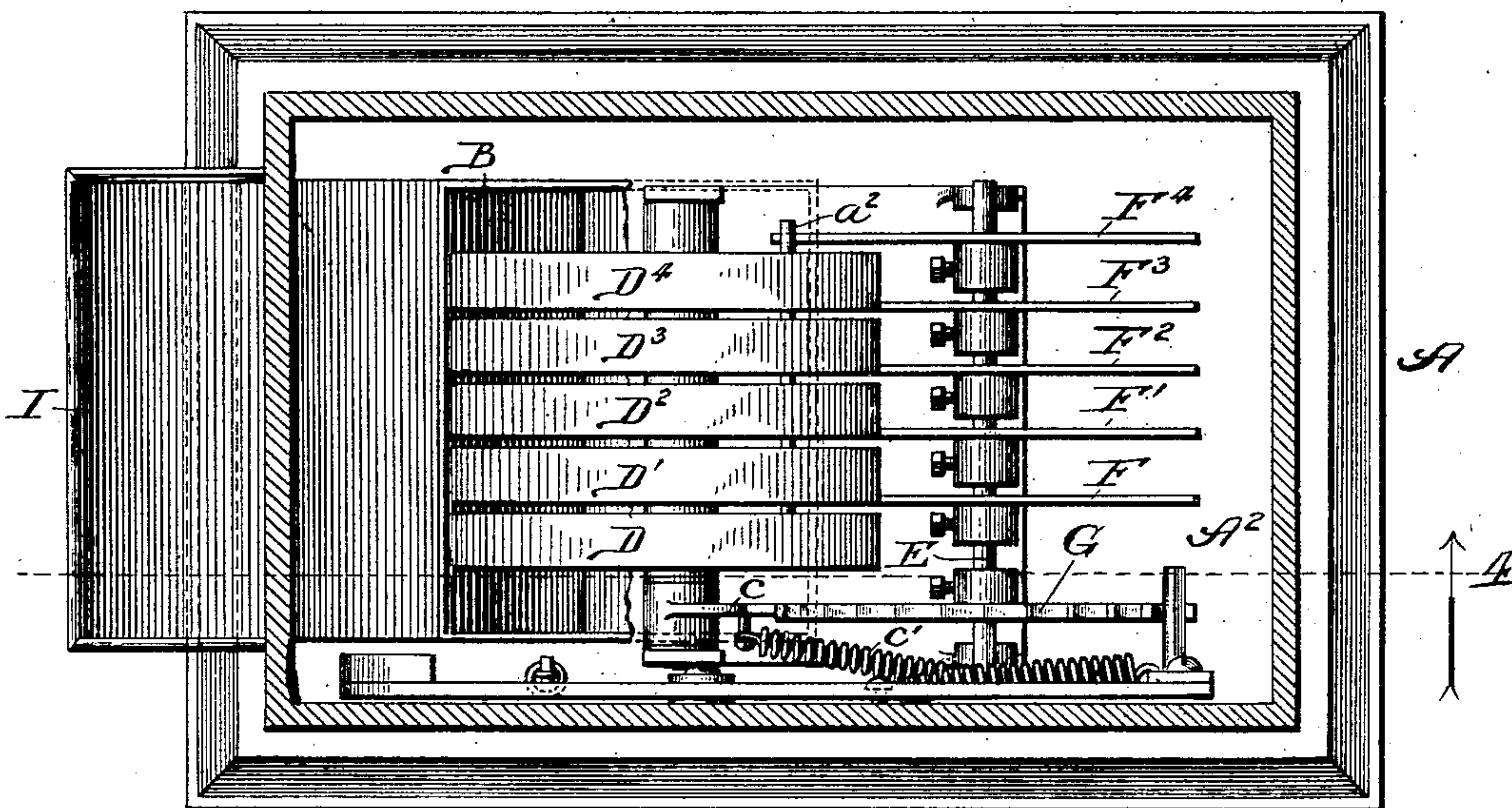


Fig. 3.



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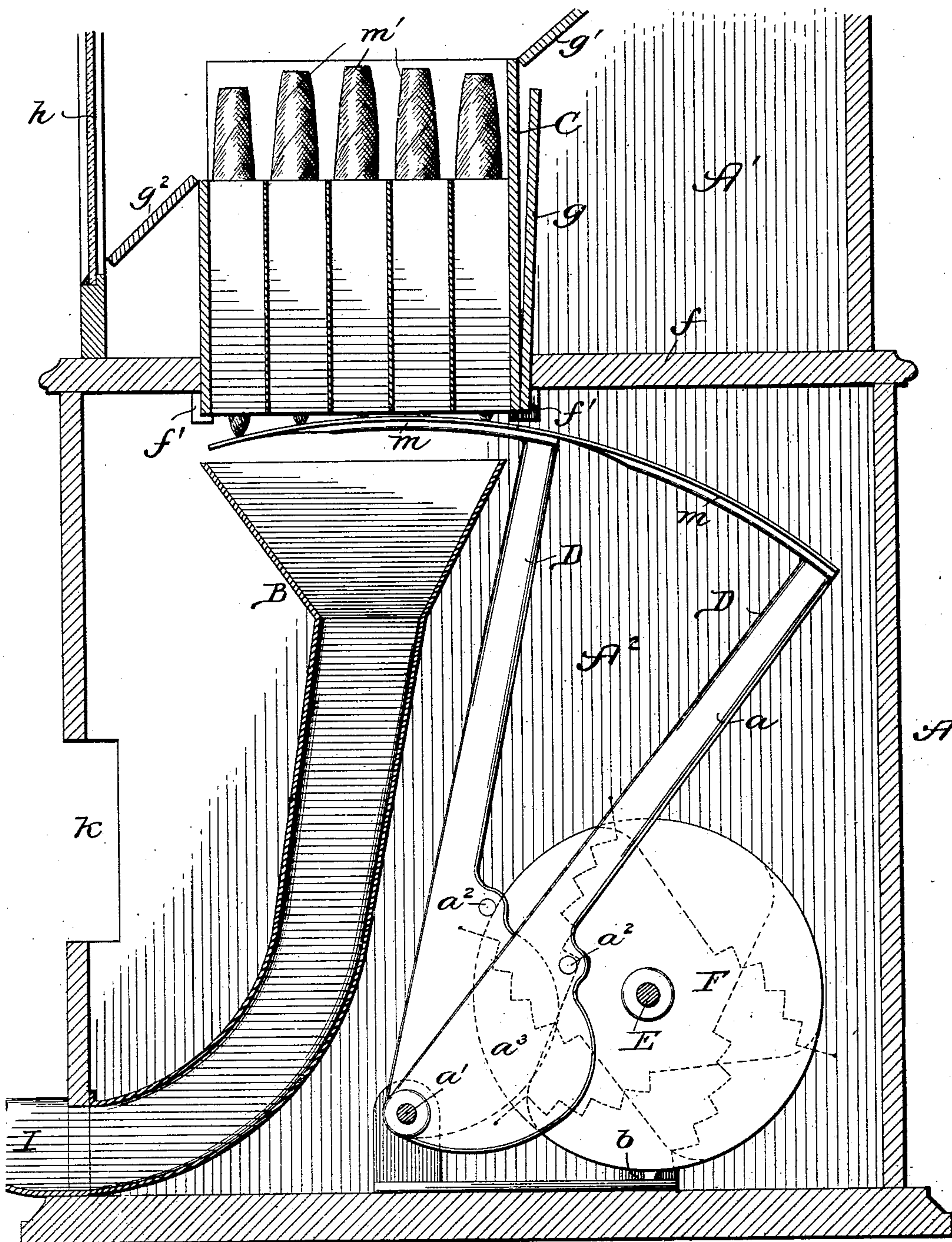
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4 Sheets—Sheet 3.



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Fig. 4.

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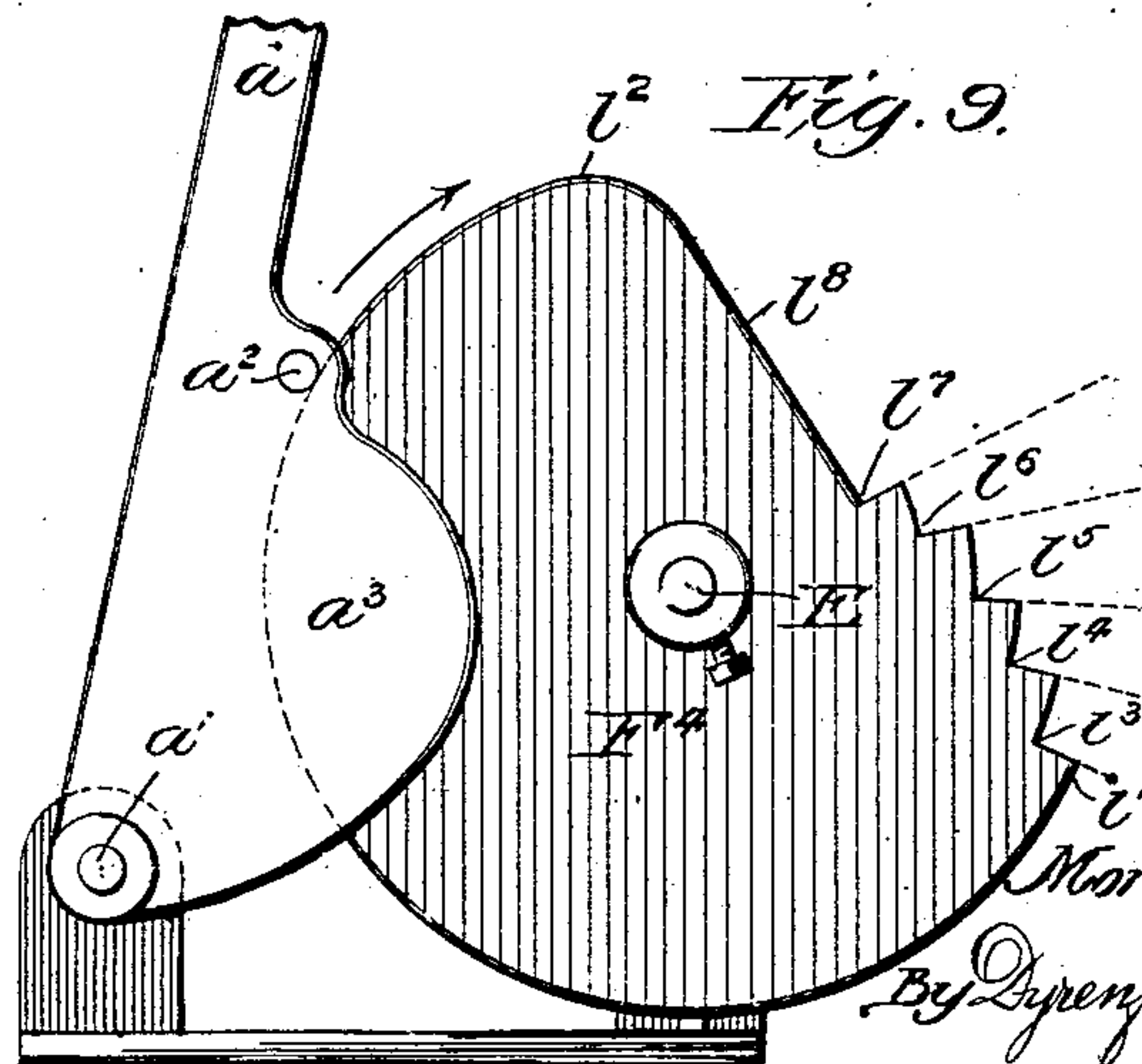
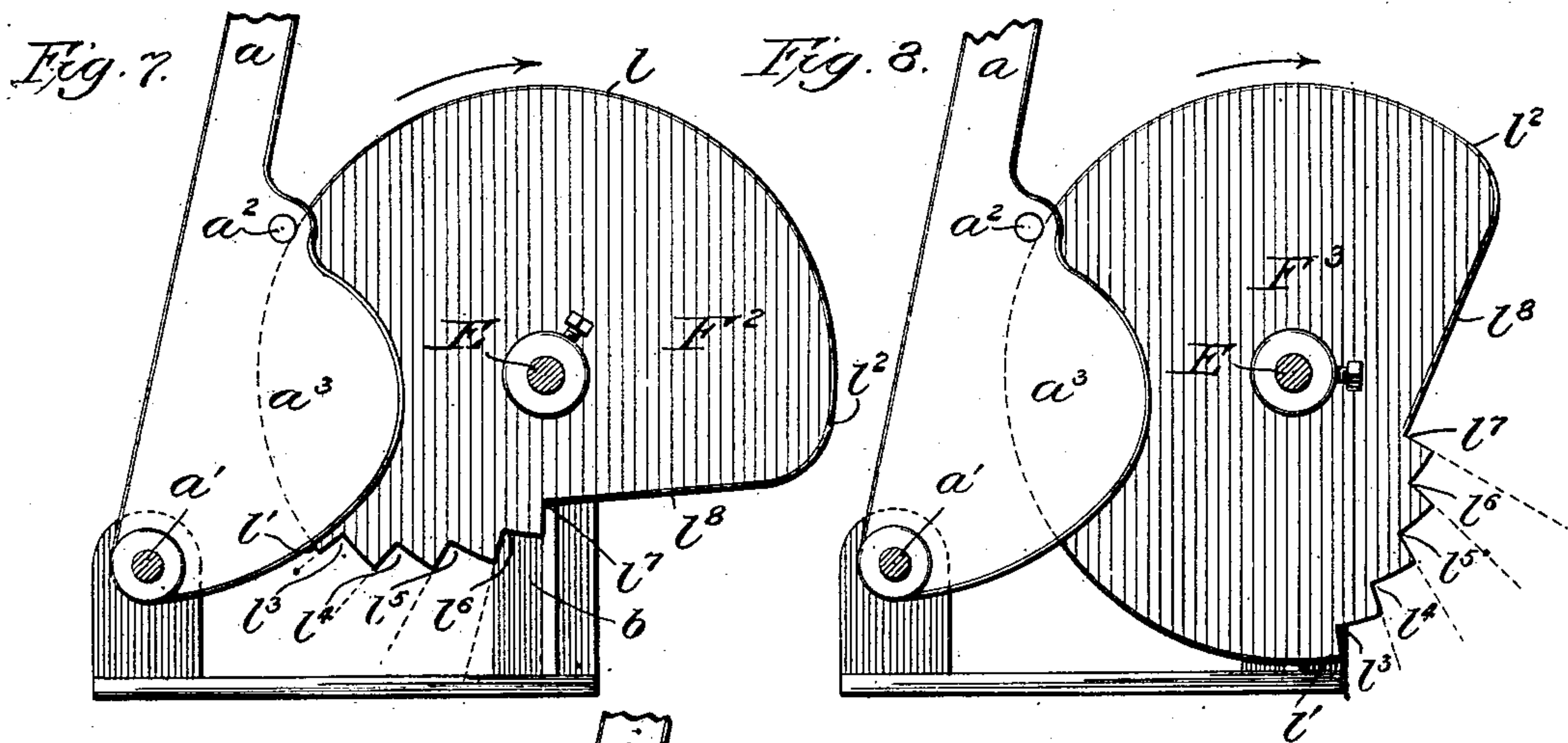
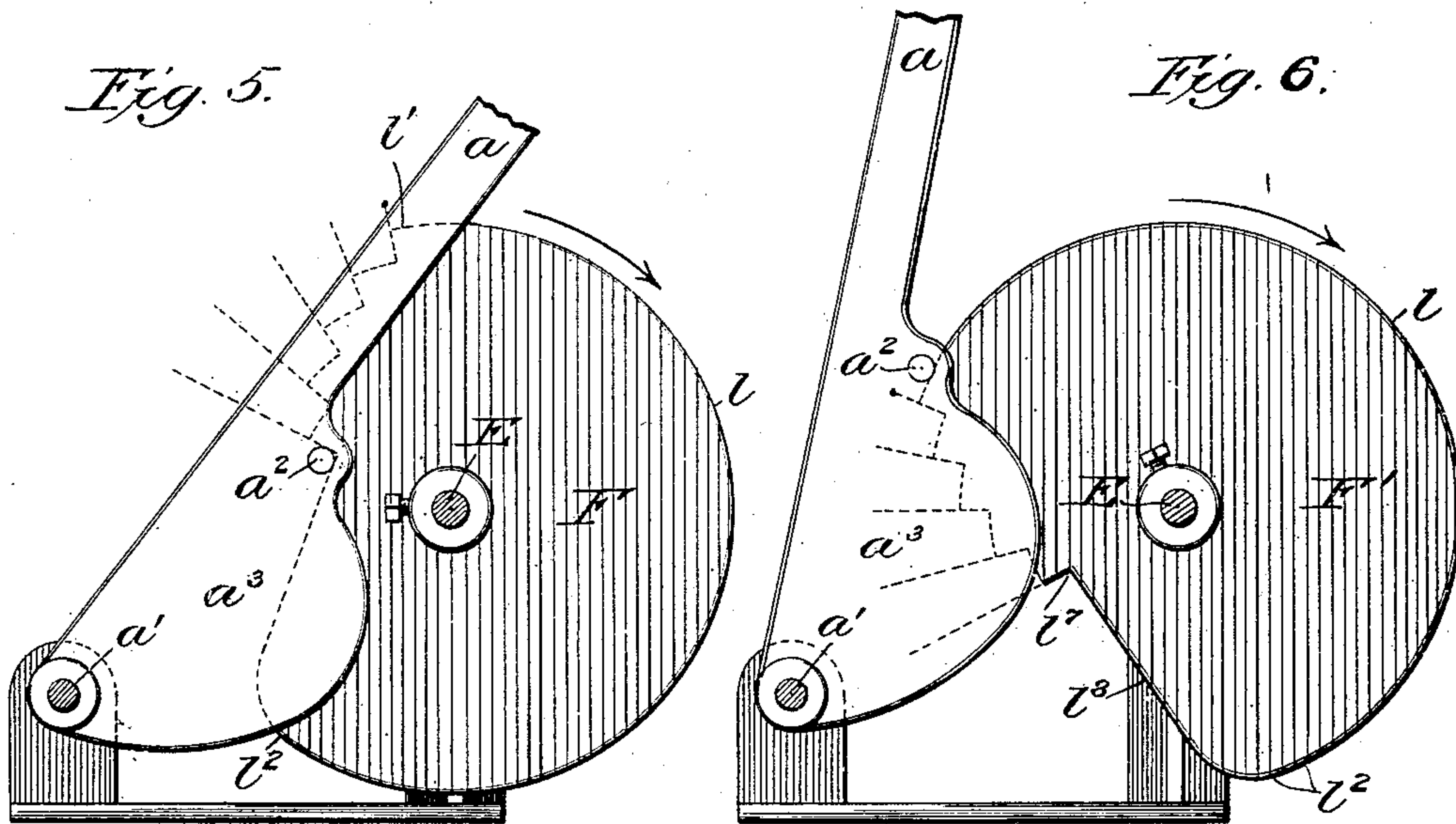
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VENDING MACHINE.

(Application filed Dec. 14, 1901.)

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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

MORTIMER B. MILLS, OF CHICAGO, ILLINOIS.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 713,324, dated November 11, 1902.

Application filed December 14, 1901. Serial No. 85,952. (No model.)

To all whom it may concern:

Be it known that I, MORTIMER B. MILLS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Vending-Machines, of which the following is a specification.

My invention relates particularly to coin-controlled vending-machines for use in dispensing small articles or parcels, such as cigars.

The improved machine may be operated by any suitable coin-controlled mechanism, but is particularly adapted to be operated through the medium of the coin-controlled mechanism described in my application of even date, Serial No. 85,951.

My primary object is to provide a simple and efficient machine of this character well adapted to the purpose of vending articles from the original package, though, as will be readily understood, the invention is applicable to vending-machines generally.

In the accompanying drawings my invention is illustrated in its preferred form in connection with a cigar-vending machine for the purpose of vending cigars from cigar-boxes of novel construction, said boxes constituting the original packages for the goods.

In the drawings, Figure 1 represents a vertical section perpendicular to the front of the machine; Fig. 2, a plan sectional view taken as indicated at line 2 of Fig. 1; Fig. 3, a plan section taken as indicated at line 3 of Fig. 1; Fig. 4, an enlarged broken vertical section parallel to the section shown in Fig. 1 and showing the machine in operation; and Figs. 5 to 9, inclusive, detail views showing a series of cams employed and the relative positions of the cams.

A represents a casing, preferably divided into compartments A' A²; B, a discharge-chute for the cigars or parcels; C, a case or box of novel construction employed in connection with the improved machine; D D' D² D³ D⁴, a series of cigar or parcel supports carried by a series of levers *a*, pivotally supported on a shaft *a'* and provided with cam-engaging studs *a*², said levers being provided with weights *a*³, serving to hold the studs *a*² in engagement with their respective cams; E, a shaft supported on brackets *b* and bearing a series of

suitably-secured cams F F' F² F³ F⁴, controlling the positions of the parcel-supports; G, a ratchet-wheel fixed to the shaft E and normally held against retraction by a pawl *c*, held by springs *c'*, and H a lever pivotally supported at *d* and equipped at its rear end with a pivoted arm or pawl *d'*, having a stud *d*², engaging the teeth of the ratchet-wheel G, said lever being held by a spring *d*³, the free end of the lever resting in practice upon a coin-actuated member of any suitable coin-controlled mechanism.

The casing preferably is constructed with a horizontal partition *f*, which separates the compartment A' from the compartment A², said partition having an opening for receiving the box C and being equipped with lugs *f'* for supporting said box. The box C is provided with a series of transverse partitions and a series of longitudinal partitions, which divide the box into a plurality of individual receptacles for the cigars. By preference the box is provided with a rearwardly-swinging lower cover *g*, a rearwardly-swinging upper cover *g'*, and a downwardly-swinging front section *g*², while the compartment A' is provided with a transparent front wall *h*, through which the cigars may be viewed. As shown, the perforation receiving the box C is large enough to receive said box when the cover *g* is swung to a vertical position, and this permits the box to be used without detaching said cover *g*. In practice the cover *g'* is thrown rearwardly and the cover *g*² downwardly to expose the cigars to view.

The lower compartment A² is provided at its front side with a receptacle I, into which the articles are discharged from the chute B. The vending mechanism is contained within the compartment A², and said compartment is provided at its front wall with an opening *k*, whereat any suitable coin-controlled mechanism may be applied for operating the machine—such, for instance, as the mechanism described in my above-designated application.

Each cigar or parcel support comprises one of the levers *a* and a forwardly-projecting longitudinally-reciprocable arm *m*, which extends across the upper end of the chute B and supports a row of cigars *m'*. The construction and arrangement of the above-mentioned

cams are such that as the shaft E is turned in the direction indicated by the arrow in Fig. 1 the first support D is moved rearwardly by a step-by-step movement, allowing the cigars of the first row to fall successively into the chute B, after which the support D' is moved rearwardly by a step-by-step movement, and so on throughout the series until the box is emptied. During the rearward movement of the support D' the support D is automatically returned to its first position, and so on throughout the series. When a new box is supplied to the machine, the attendant turns the shaft far enough to bring the last support to its first position.

The positions of the cams shown in Figs. 5 to 9, inclusive, correspond to the position shown in Fig. 4, the cam F having been moved to a position to permit the cigar-support D to move to the rear end of its traverse, while the cam F' is in position to permit the support D' to begin its rearward movement at the next operation of the machine. As appears, each cam has a circular surface l , which ends at shoulders l' . At the shoulder l' begins a series of steps or descending teeth $l^3 l^4 l^5 l^6 l^7$, the latter being flush with an inclined surface l^7 , which extends to the shoulder l^2 . As will be perceived, the steps are included within angles which correspond with the pitch of the teeth on the ratchet-wheel G, so that when a pin a^2 on a lever a engages a series of steps it is permitted to drop step by step until the lever reaches the rear side of its arc, after which the lever is restored to its former position by the inclined surface l^8 . It will now be understood that when the lever H is actuated by means of suitable coin-controlled mechanism the ratchet-wheel G is advanced through the space of one tooth.

The operation will be readily understood from the foregoing detailed description. The box or package containing the articles to be vended is placed with its under side open in the position shown in Fig. 1, with the cigars or parcels resting in rows on the series of parcel-supports. By any suitable mechanism the lever H is actuated through an arc of sufficient size to move the ratchet-wheel through the space of one tooth. Preparatory to placing the box C in position the shaft E is turned into a proper position to bring the aligned circular portions of the cams beneath the stud a^2 of the corresponding lever a , so that all the parcel-supports are in the position indicated in Fig. 1. It should be added that there is but one position of the shaft which corresponds to this condition of affairs, and that as soon as the ratchet-wheel G is moved through the space of one tooth from this position the support D begins its rearward movement. The cigars of the first row are caused to drop successively into the discharge-chute, from which they are delivered to the customer at the receptacle I, and after the first row of cigars is exhausted the next operation of the machine causes the first cigar of the

second row to be delivered. Likewise the cigars of the second row are delivered in succession to the discharge-chute, and the next operation of the machine delivers the first cigar of the third row, and so on.

It is obvious that a box of any desired size may be employed for holding the articles to be vended and that cigars or other articles or parcels of cigars or other articles may be delivered; also, it will be understood that the principle of my invention may be employed in other forms of mechanism than the one herein shown. Hence no undue limitation is to be understood from the foregoing detailed description.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a vending-machine, the combination of an article-receptacle, an article-support, one of said members being automatically reciprocally movable longitudinally with relation to the other, and mechanism for actuating the movable member by a step-by-step movement.

2. In a vending-machine, the combination of an article-receptacle, a longitudinally-reciprocable support against which the articles rest, and automatic mechanism for reciprocating said support and producing a step-by-step movement thereof in one direction.

3. In a vending-machine, the combination of an article-receptacle provided with divisions for holding the articles in rows therein, a plurality of reciprocable independently-movable article-supports, and mechanism for moving said article-supports by a step-by-step movement in one direction and restoring them to their original positions, substantially as described.

4. In a vending-machine, the combination of an article-receptacle, a plurality of longitudinally-reciprocable article-supports, levers carrying said supports, and automatic means for actuating said levers in succession by a step-by-step movement in one direction and restoring them to their original positions substantially as described.

5. In a vending-machine, the combination of an article-receptacle provided with divisions for holding the articles in rows therein, a plurality of reciprocable independently-movable article-supports, and mechanism for moving said article-supports by a step-by-step movement in one direction and automatically restoring them to their original positions, substantially as described.

6. In a vending-machine, the combination of an article-receptacle, a plurality of longitudinally-reciprocable article-supports, levers carrying said article-supports, and means for actuating said levers in succession by a step-by-step movement and restoring them automatically, substantially as described.

7. In a vending-machine, the combination of an article-receptacle, a plurality of longitudinally-reciprocable article-supports, a series of similar cams arranged at angles to each

other and serving to actuate said supports in succession by step-by-step movement in one direction, and means for producing simultaneous step-by-step movement of said cams.

5 8. In a vending-machine, the combination of an article-receptacle, a series of longitudinally-reciprocable article-supports, oscillating levers carrying said supports, a shaft, a series of cams fixed to said shaft and regulating the positions of said levers and means
10 for producing step-by-step movement of said shaft.

9. In a vending-machine, the combination of an article-receptacle, a series of longitudinally-reciprocable article-supports, a discharge-chute arranged beneath said supports, oscillating levers carrying said supports, and mechanism for actuating said levers.
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10. In a vending-machine, the combination of an article-support, a cam provided with a series of steps, a stem connected with said support and having a bearing resting on said cam, a ratchet-wheel fixed to revolve with said cam, and means for moving said ratchet-wheel.
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11. In a vending-machine, the combination of a series of longitudinally-reciprocable article-supports, a series of oscillating levers carrying said supports, a shaft, a series of similar cams fixed to said shaft and having their corresponding elevations located at angles to each other, and means for actuating said shaft.
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12. In a vending-machine, the combination of a series of article-supports, a series of cams serving to regulate the positions of said supports, each cam being provided at one portion of its periphery with a series of steps and adjacent thereto with a restoring-incline, the corresponding parts of the cams being separated by angles, and mechanism for producing simultaneous step-by-step movement of said cams.
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13. In a vending-machine, the combination of a series of article-supports, a series of levers
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carrying said supports, a shaft, a series of cams fixed to said shaft, each cam being provided at one portion of its periphery with a series of steps, corresponding parts of the several cams being located at angles to each other, a ratchet-wheel through which motion is imparted to said shaft, and means for actuating said ratchet-wheel, substantially as described.
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14. In a vending-machine, the combination of a casing, an article-receptacle supported therein and having means for holding the articles in rows, a series of independent longitudinally-reciprocable article-supports beneath said receptacle, and mechanism for producing a step-by-step movement of said article-supports in succession in one direction and automatically restoring them, substantially as described.
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15. In a vending-machine, the combination of an article-receptacle, a series of article-supports, a shaft, and a series of cams fixed to said shaft and serving to regulate the movements of said article-supports, said cams having in alinement corresponding elevated portions and having a series of steps separated from each other by angles, whereby said supports are held in their advanced position when the shaft is in one position, and are successively moved by step-by-step movements when the shaft is rotated.
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16. In a vending-machine, the combination of an article-receptacle, a discharge-chute located beneath said receptacle, a series of longitudinally-reciprocable article-supports arranged between the upper end of said chute and the open bottom of said receptacle, a series of oscillating levers connected with the rear ends of said supports, and mechanism for producing step-by-step movements of said levers in succession in one direction and restoring them in succession.
80 85

MORTIMER B. MILLS.

In presence of—

L. HEISLAR,

ALBERT D. BACCI.