

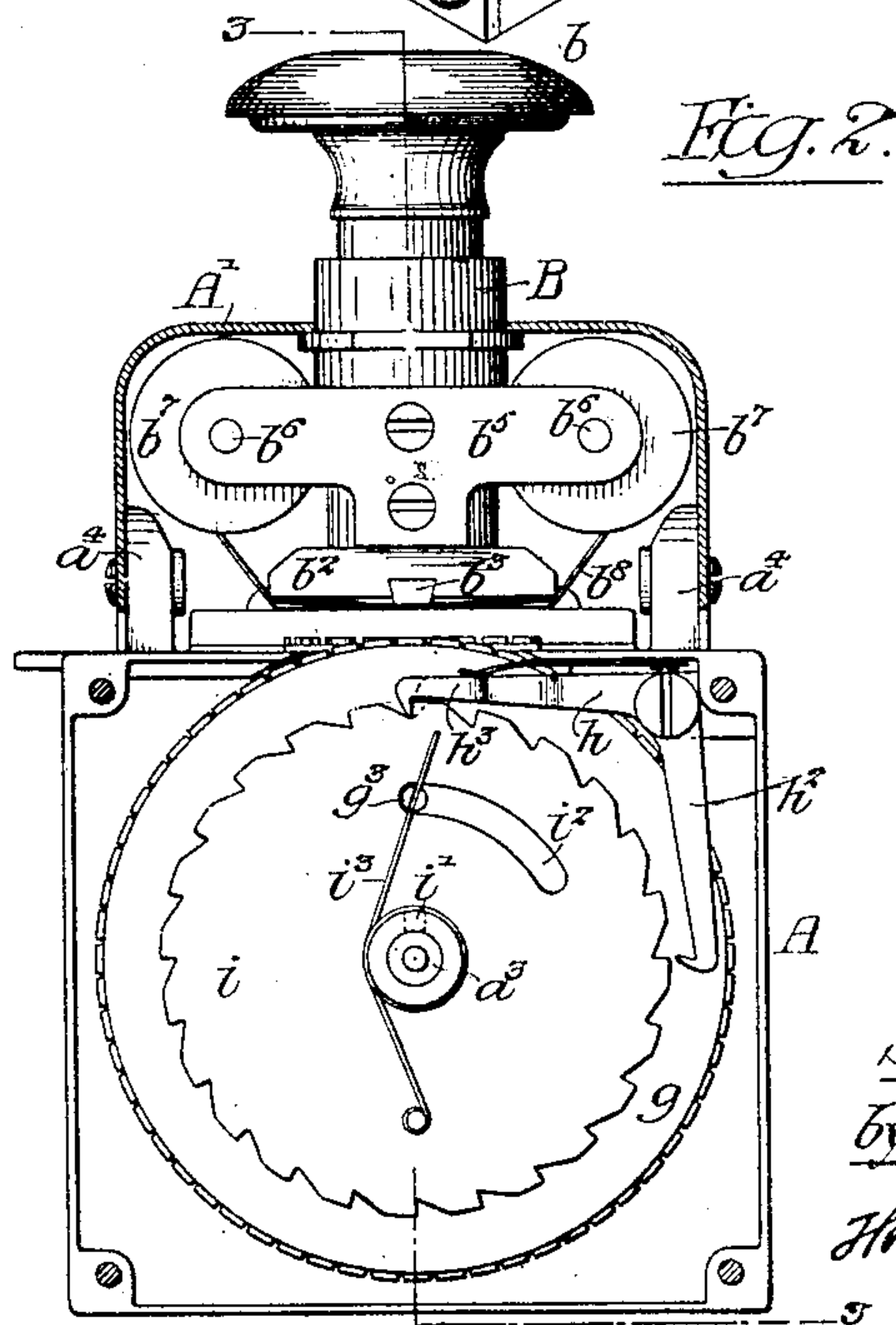
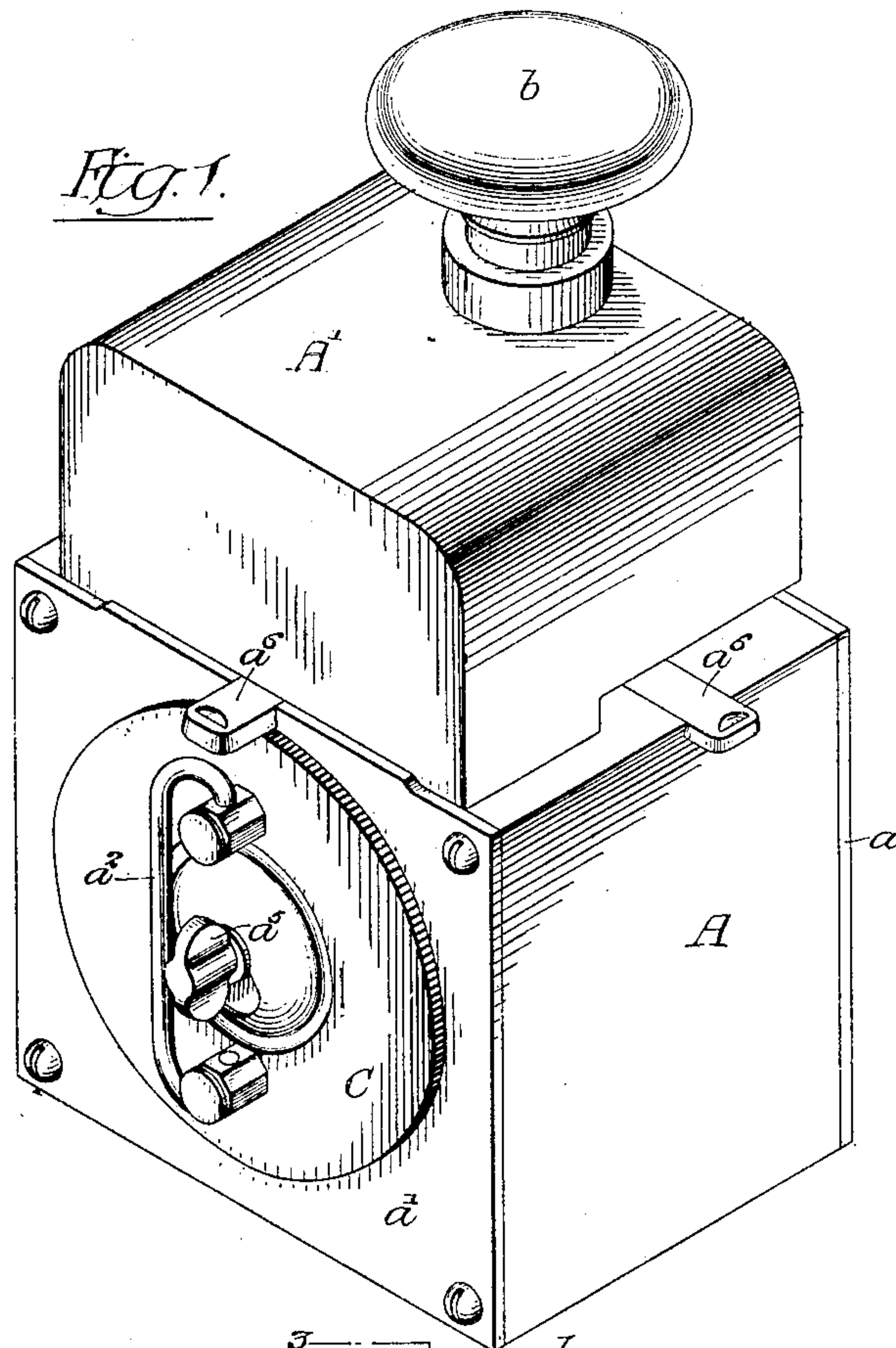
S. G. MILLER.

TIME STAMP.

(Application filed Apr. 24, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:-

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Inventor:-
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S. G. MILLER.

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(Application filed Apr. 24, 1901.)

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2 Sheets—Sheet 2.

Fig. 4.

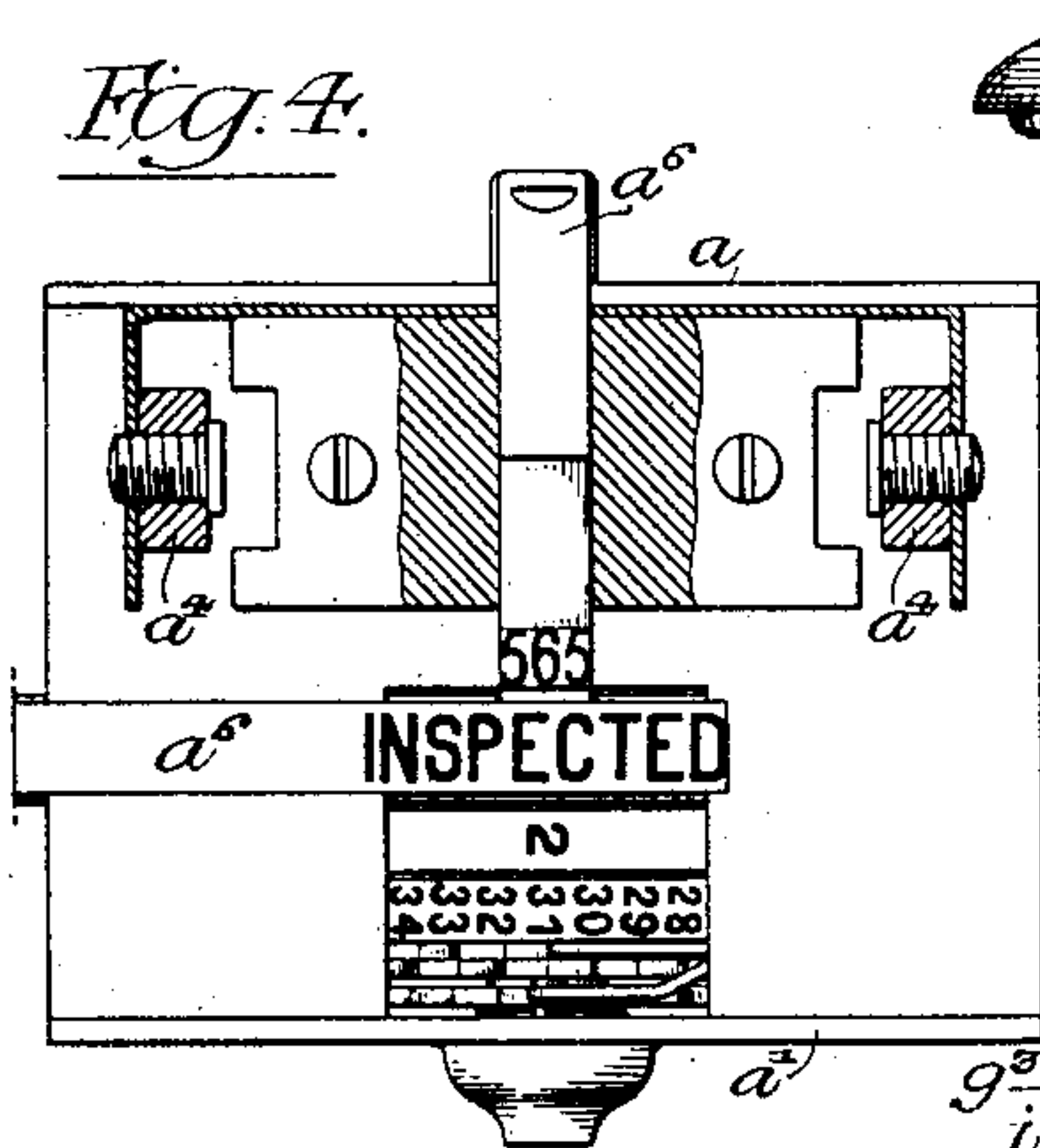


Fig. 5.

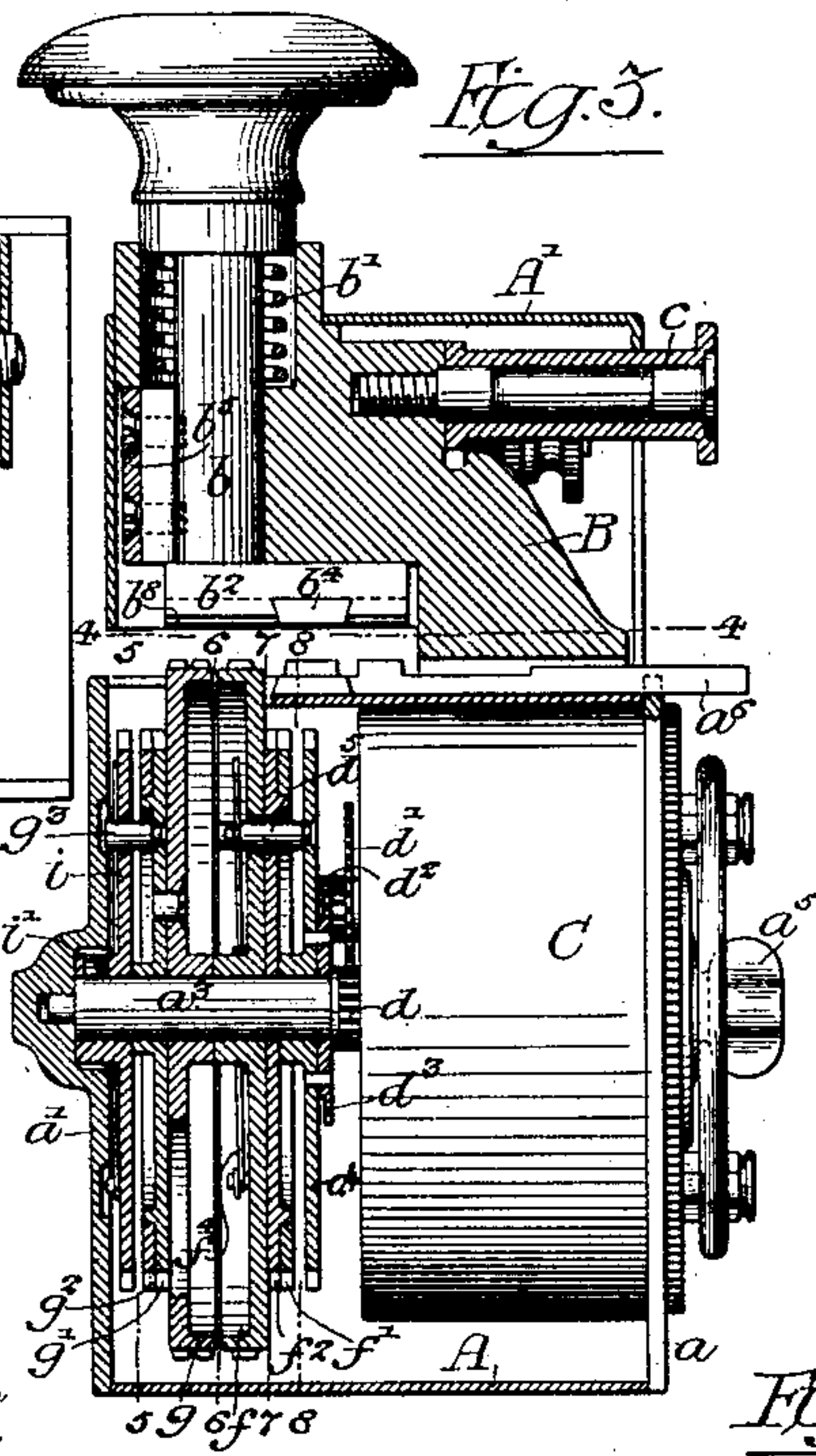


Fig. 9.

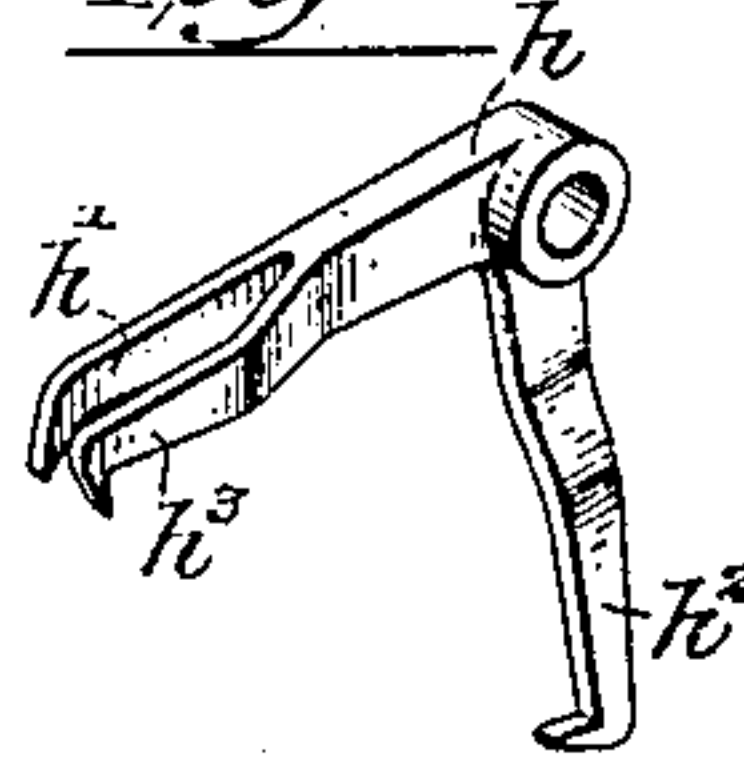


Fig. 10.

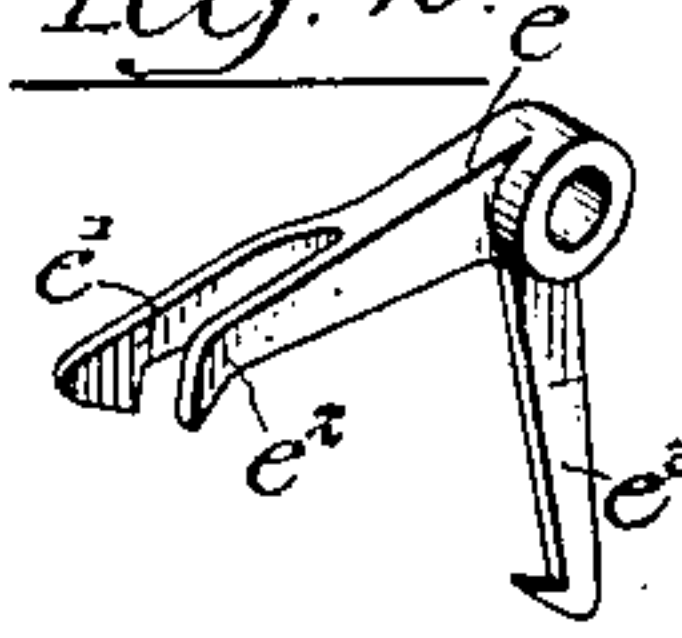


Fig. 11.

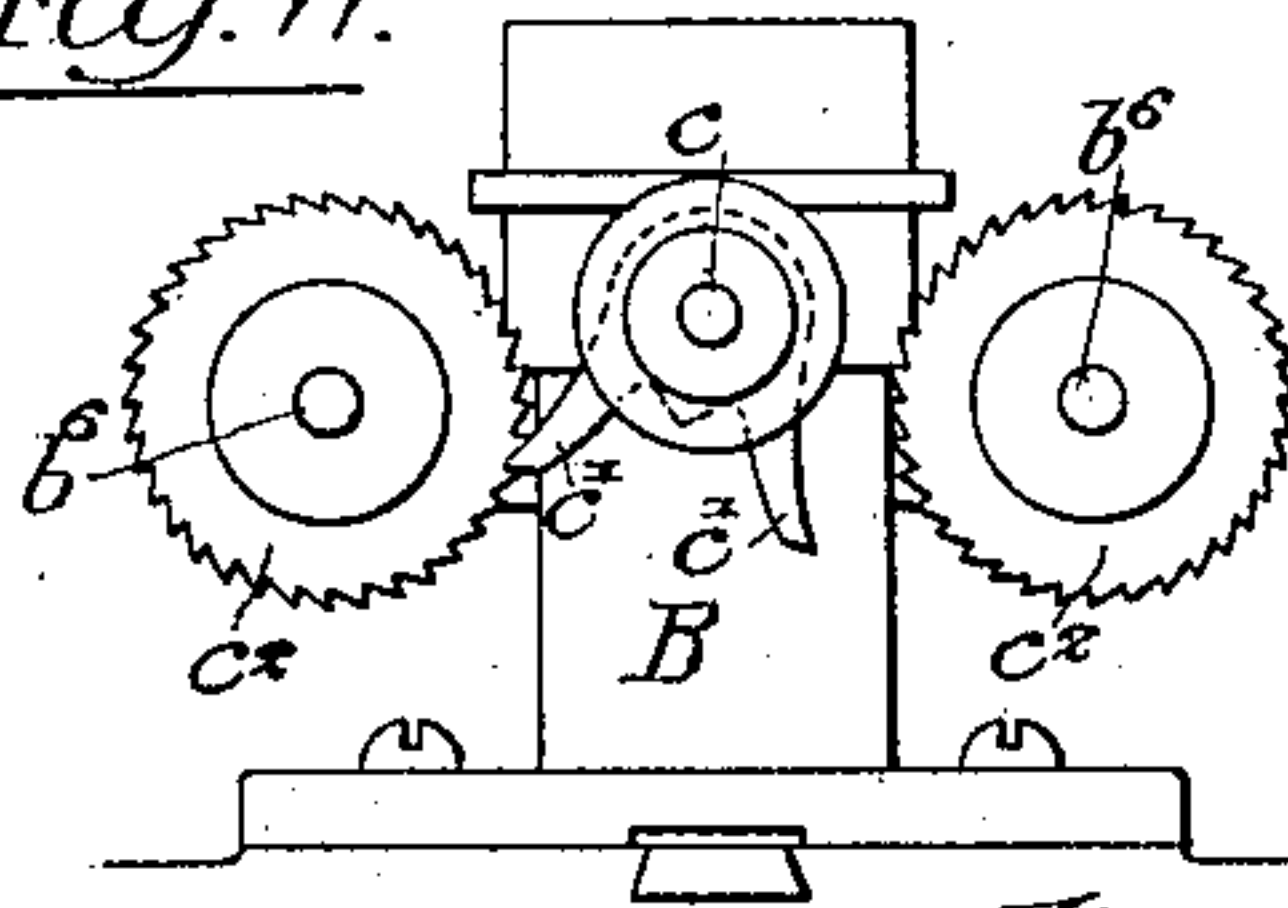


Fig. 5.

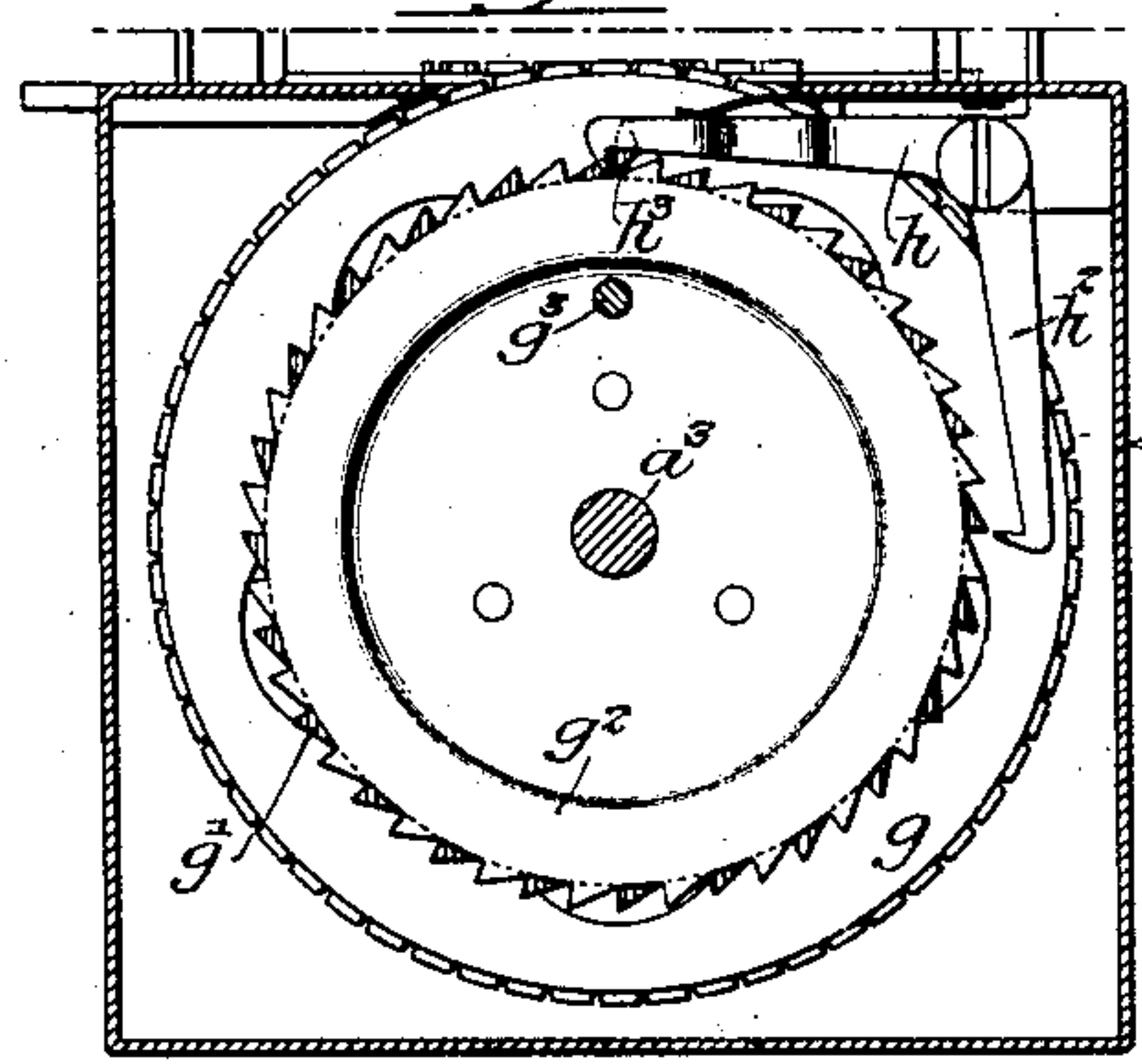


Fig. 7.

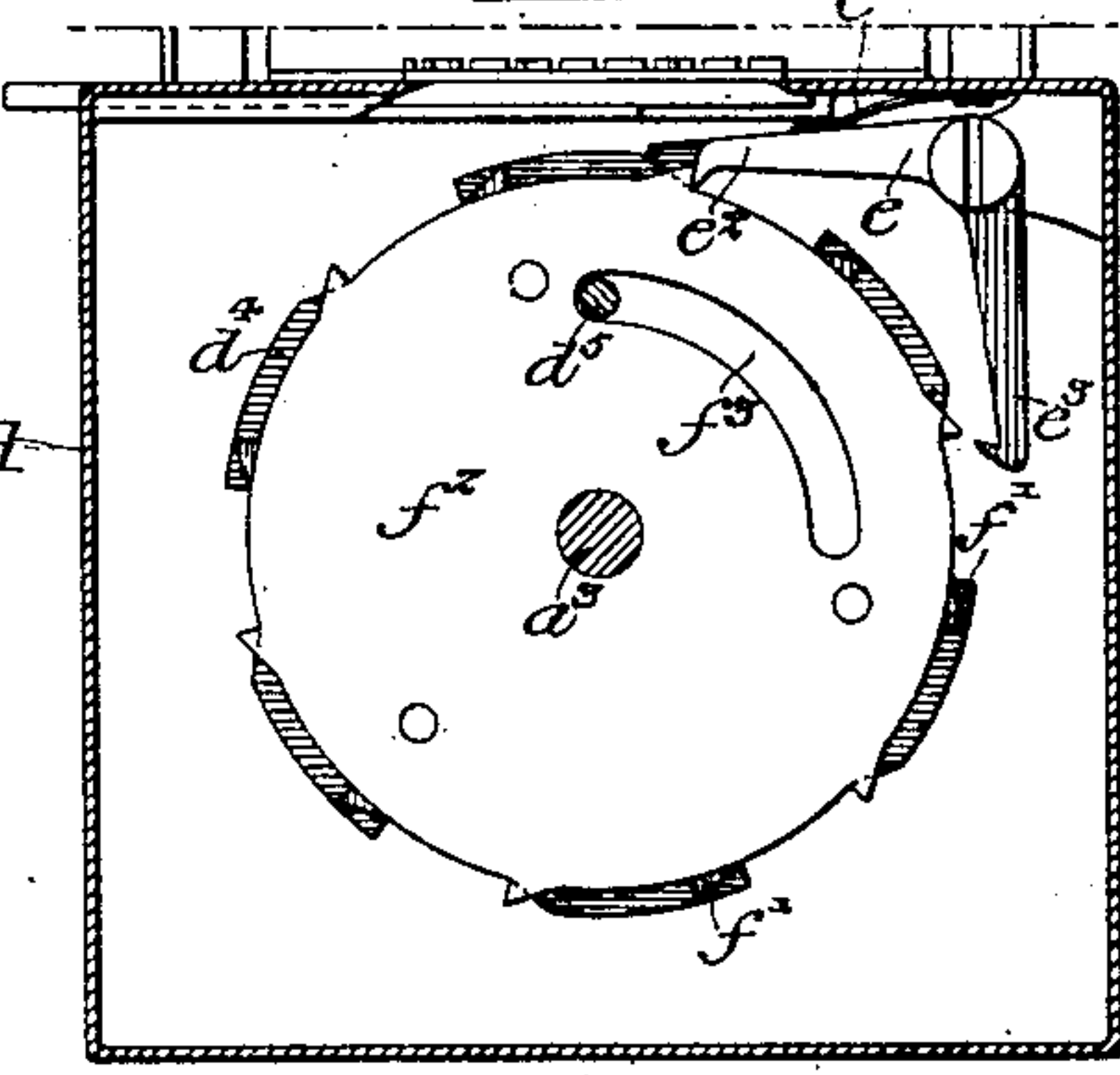


Fig. 6.

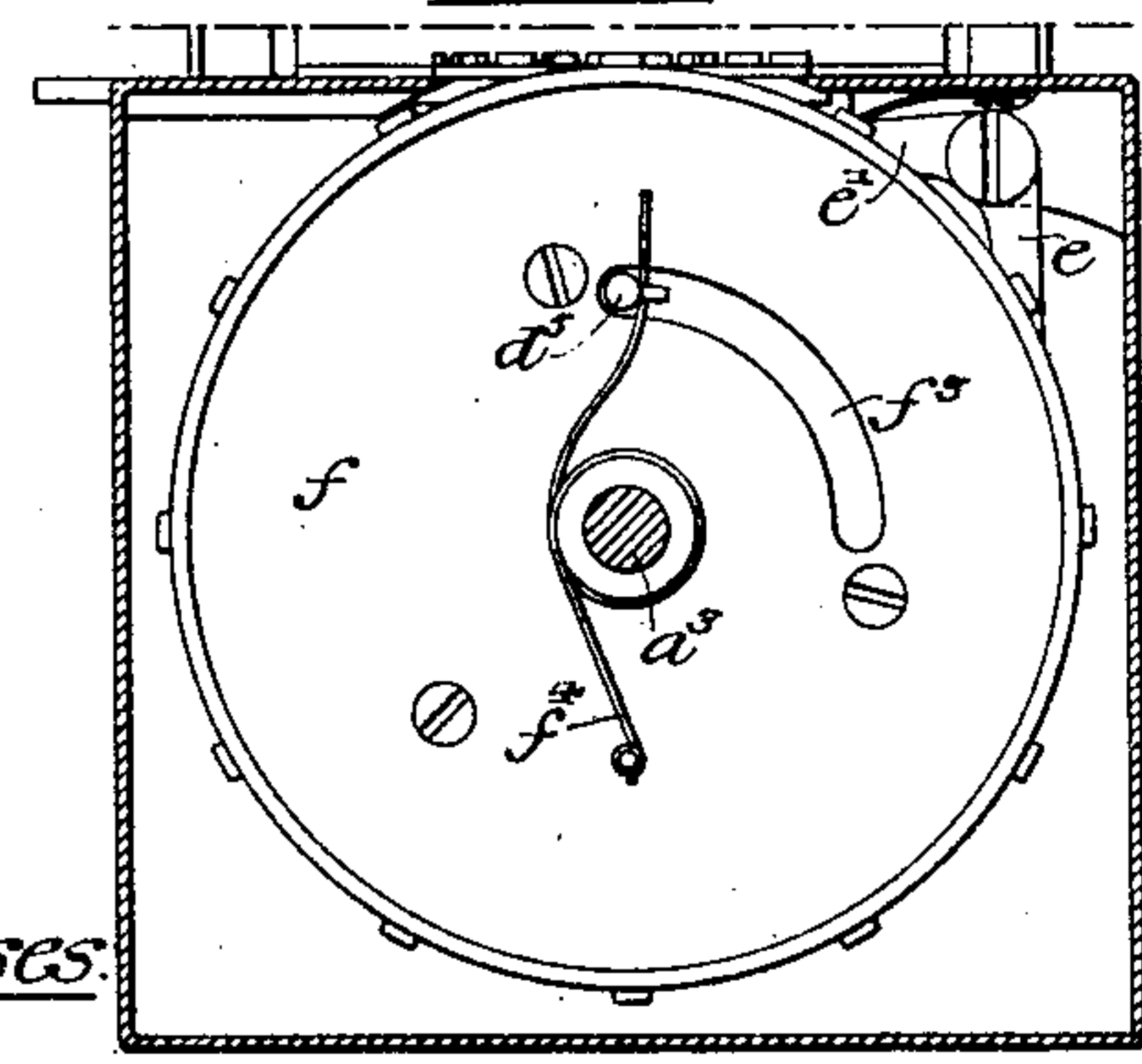
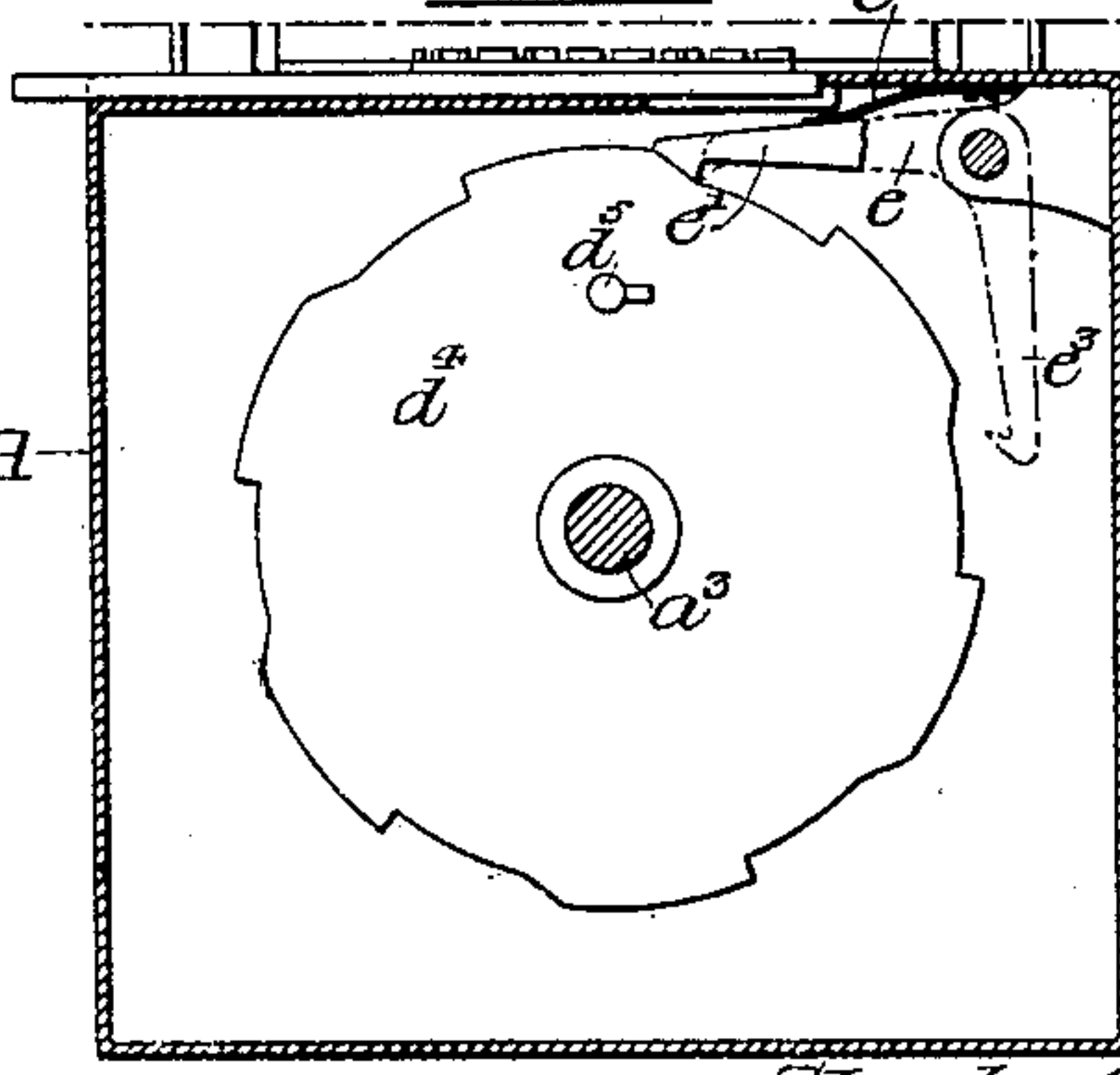


Fig. 8.



Witnesses:

Samuel D. Turner
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Inventor:

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UNITED STATES PATENT OFFICE.

STANLEY G. MILLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
JOHN WANAMAKER, OF PHILADELPHIA, PENNSYLVANIA.

TIME-STAMP.

SPECIFICATION forming part of Letters Patent No. 702,229, dated June 10, 1902.

Application filed April 24, 1901. Serial No. 57,204. (No model.)

To all whom it may concern:

Be it known that I, STANLEY G. MILLER, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Time-Stamp, of which the following is a specification.

My invention relates to certain improvements in time-stamps, having for its object the provision of a device which will automatically change certain type, so that whenever
10 the stamp is operated it will always print the correct time, together with any desired symbols. This object I attain as hereinafter set forth, reference being had to the accompanying
15 drawings, in which—

Figure 1 is a perspective view of my improved stamp. Fig. 2 is an end view with one of the covers removed. Fig. 3 is a sectional view on the line 3 3, Fig. 2. Fig. 4 is a sectional view on the line 4 4, Fig. 3. Figs. 5, 6,
20 7, and 8 are sectional views of the lower part of the stamp, taken on the line 5 5, 6 6, 7 7, and 8 8, respectively. Figs. 9 and 10 are perspective views of details, and Fig. 11 is a front
25 view of the mechanism for moving the inking-ribbon over the die-plate.

In the drawings, A is the casing of my improved time-stamp having a removable upper section A', a front a, and a back a', the
30 latter being held to it by screws, as shown. Supported on the back a' is a clock mechanism C of any desired construction, in the present instance provided with a winding-key a² and having a main spindle a³, projecting
35 beyond its own mechanism into the casing, the end thereof being supported in a recess or bearing in the front cover a of the casing. A winged nut a⁵ is attached to the
40 rear end of the spindle a³, and by means of it said spindle may be rotated independently of the clock mechanism.

Held to the top of the casing A is an overhung casting B, having an opening through its upper part in which is supported a head-
45 ed plunger b, this opening being enlarged at its upper end and having in it a spring b' for normally retaining said plunger in its highest position. There is a die-plate on the lower
50 end of the plunger in which are dovetailed grooves having in them pieces b³ and b⁴ of hardened metal. A bearing-plate b⁵ is se-

cured to the front of the plunger, and there are spindles b⁶ b⁶ extending rearwardly therefrom, which support spools b⁷ b⁷ for an inking-ribbon b⁸. The ribbon extends from one
55 spool down over the face of the die-plate and then up to the other spool. A headed spindle c, having on it a double ratchet c', is supported on a projection from the casting B, this being constructed to engage ratchet-
60 wheels c² c², fixed to the ribbon-spindles b⁶.

A' is a cover held to the casing A by screws which extend into projections a⁴ a⁴ on each side of the top of the casing A. The cover incloses the inking mechanism and the lower
65 portion of the plunger.

In the top of the casing are dovetailed slots, two in number in the present instance, having in them correspondingly-shaped removable bars a⁶, on which are type for printing
70 any desired words or symbols.

On the clock-spindle a³, which is geared so as to make one complete revolution in an hour, is fixed a pinion d, meshing with a toothed wheel d', constructed to turn loosely
75 on a spindle projecting from the clock-casing. The wheel d' is connected to a pinion d², which in turn meshes with a second toothed wheel d³, rigidly pinned to a comparatively large notched wheel d⁴. The notched wheel is
80 loosely mounted on the spindle a³, and the gearing is so designed that the wheel d⁴ will make one complete revolution to twelve revolutions of said spindle, or, in other words, will make one revolution in twelve hours. This wheel
85 has six projections on its periphery of the form shown in Fig. 8, there being an escape-piece e pivoted to a projection on the casing A, preferably constructed as indicated in Fig. 10, one arm e' of the same sliding upon
90 the teeth of the wheel d⁴. The said arm e' is in a different plane from each of the arms e² and e³ of the piece e, these latter being placed so as to alternately engage the teeth of two wheels f' and f² secured together and rigidly
95 pinned to a type-wheel f, and all loosely supported on the spindle a³. The wheel f' is, in fact, a toothed ring mounted on a flange on the wheel f² and secured thereto, so that the teeth of one will alternate with the teeth of
100 the other. A spring e⁴, attached to the casing A, is provided to press upon the piece e

and keep the arms e' and e^2 in a depressed position. A pin d^5 , fixed in the wheel d^4 , projects through a slot f^3 in the wheels f , f' , and f^2 , the slot being cut concentric with the spindle a^4 . A spring f^4 , having one end fixed to a pin on the wheel f , passes around the hub thereof and bears against the pin d^5 , there being a projection on this for retaining the spring in position. Owing to the action of this spring the wheel f always tends to revolve, but is prevented from so doing by either one or the other of the arms e^2 or e^3 , one of them always being in engagement with the teeth of one of the wheels f' or f^2 .

Around the periphery of the wheel f are raised figures ranging from "1" to "12," and the spindle a^3 is so placed in the casing A that this wheel projects through a slot in the top of the said casing, the letters being slightly above the surface of said top. Similarly loosely journaled on the spindle a^3 is a second type-wheel g independent of and separate from all of the mechanism heretofore described. This has raised numbers, ranging from "1" to "60" on its periphery, which, like that of the wheel f , projects slightly above the level of the top of the casing, as shown, there being also two toothed wheels g' and g^2 , Figs. 3 and 5, the wheel g^2 being in the form of a toothed ring and mounted on the wheel g' , which is rigidly pinned to the type-wheel. The wheel g' has a pin g^3 projecting from its side. A second escapement-piece h , (shown in Fig. 9,) pivoted like the piece e to a projection from the casing A, has three arms h' , h^2 , and h^3 , all lying in different planes, two of them, h' and h^2 , being placed so as to alternately engage the teeth of the two wheels g' and g^2 . These two wheels, like the wheels f' and f^2 , are connected together, so that the teeth of one alternate with the teeth of the other. The third arm h^3 of the escapement-piece is so shaped as to engage a wheel i , also on the spindle a^3 , but like the others rigidly held thereto by a set-screw i' through its hub. (Shown in dotted lines in Fig. 2.) There is a slot i^2 in this wheel, through which projects the pin g^3 from the wheel g^2 , and a spring i^3 , held at one end to the wheel i , engages the pin, always tending to turn the said wheel and normally being prevented by one of the arms h' or h^2 . There are thirty projections or blunted teeth of the shape shown in Fig. 2 on the periphery of this wheel, upon which slides the arm h^3 of the escapement-piece h .

The operation of my device is as follows: The clock having been wound and started the type-wheels are set so that the numbers uppermost indicate the proper time. Whenever now it is desired to mark a time-slip or any paper of a similar nature upon which it is advisable to note the time of inspection, for instance, the said slip is placed under the die-plate b^2 of the plunger, and this latter is given a sharp blow. By this means type upon the bars $a^5 a^5$ prints on the paper in the well-

known manner. For example, the mechanism described prints the word "Inspected" and the inspector's number, "565." The time at which the impression was made is also noted, the type-wheels indicating thirty-one minutes after two, as seen from Fig. 4. At the end of each minute the wheel g is moved forward one unit, and at the end of each hour the wheel f^2 changes its position also to the amount of one unit. This action is accomplished as follows, the various parts of the mechanism occupying the relative positions shown in Figs. 2, 5, 6, 7, and 8: The notched wheel d^4 being revolved uniformly by the spindle a^3 through the gearing g , d' , d^2 , and d^3 causes the arm e' of the escapement-piece e , which slides upon its periphery, to gradually rise upon the inclined end of one of the projections. The arms of said piece being rigidly connected, by the time this arm e' has risen to the top of its projection the arm e^2 has been forced out of engagement with a tooth on the wheel f^2 , and it, together with the wheels d^4 and f , are made to revolve under the action of the spring f^4 until such revolution is stopped by the engagement of the arm e^3 with a tooth on the wheel f' , the said arm having been thrown inwardly by the raising of the arm e' . This revolution has caused the next following hour-number of the wheel to be brought uppermost, it being held in this position by the engagement of the arm e^3 until at the end of an hour the wheel d^4 has moved far enough to allow the arm e' to drop under the influence of the spring e^4 into the space between two projections. When this occurs, the arm being thrown outwardly releases the wheel f' , and the series again moves forward until stopped by the arm e^2 striking a tooth of the wheel f^2 . Similarly the type-wheel g is moved through the toothed wheels g' and g^2 , the notched wheel i causing the escapement-piece h to oscillate periodically and by the construction described to move the type-wheel forward one unit at the end of each minute.

The bars $a^5 a^5$ may be made to carry any desired wording and may be changed from time to time. By turning the head of the spindle c so as to bring its ratchet into engagement with the toothed wheels on the ribbon-spindles when the plunger is depressed the spindles, with their spools, may be made to revolve, thereby feeding the inking-ribbon from one spool to the other and renewing that part immediately under the die-plate in contact with the type.

I claim as my invention—

1. In a time-stamp the combination of clock mechanism having a main spindle, a type-wheel loosely carried thereby having fixed to it a toothed wheel, an escapement for governing the motion of the toothed wheel, a second wheel also on the spindle, having teeth constructed to engage said escapement and operatively connecting said first wheel to the shaft and means for flexibly connecting the type-

wheel to the second wheel, substantially as described.

2. In a time-stamp, the combination with a device for printing from type, of clock mechanism, a spindle connected thereto having a type-wheel loosely mounted upon it, a toothed wheel geared to the clock, a spring operatively connecting the said wheel with the type-wheel and an escapement actuated by the toothed wheel and governing the action of the type-wheel whereby the latter is allowed to periodically move forward, substantially as described.

3. In a time-stamp, the combination with a device for printing from type, of clock mechanism, a spindle connected thereto having on it a toothed wheel turned by said mechanism, a type-carrying wheel having teeth also on the spindle, a projection on one of said wheels, and a spring on the other wheel engaging said projection whereby the operation of the clock mechanism has a tendency to revolve the wheel, an escapement actuated by the toothed wheel and engaging the teeth of the type-wheel whereby the said type-wheel is allowed to move periodically forward, substantially as described.

4. The combination in a time-stamp, of a device for printing from type with a clock mechanism, a spindle revolved thereby, a toothed wheel loosely mounted on the spindle constructed to be turned by the clock mechanism at a rate different from that of the said spindle, a second toothed wheel fixed to the spindle, type-wheels with a flexible connection between them and the said toothed wheels, an escapement mechanism actuated by the toothed wheels and engaging with the type-wheels whereby the said type-wheels are allowed to periodically move forward under the action of the clock mechanism transmitted to them through the flexible connection from the toothed wheels, substantially as described.

5. In a time-stamp the combination of a clock mechanism having a main spindle, a type-wheel loosely carried thereby having fixed to it a wheel provided with two sets of teeth in parallel planes, an escapement for governing the motion of the toothed wheel, a second wheel also on the spindle having teeth constructed to engage and operate said escapement, gearing connecting said second wheel with the shaft and means for connecting the type-wheel and the second wheel, said means being constructed to permit of motion of said second wheel to a limited extent independently of the type-wheel, substantially as described.

6. In a time-stamp, the combination of a clock mechanism having a main spindle, a type-wheel loosely carried thereby having fixed to it a toothed wheel, an escapement for

governing the motion of the toothed wheel, a second wheel also on the spindle, having teeth constructed to engage and operate said escapement, gearing connecting the said second wheel with the shaft, a piece projecting from the second wheel, a spring connected to the type-wheel engaging said piece and means for limiting the motion of the type-wheel relatively to the said second wheel, substantially as described.

7. In a time-stamp the combination of a clock mechanism, having a main spindle, a type-wheel loosely carried thereby having fixed to it a toothed wheel, an escapement for governing the motion of the toothed wheel, a second wheel also on the spindle having teeth constructed to engage and operate said escapement, gearing connecting said second wheel with the shaft, a bar projecting from one face of the second wheel and passing through an opening in the first toothed wheel, a spring connected to the type-wheel engaging said projection, said spring being placed so that the clock mechanism operates the second wheel against the action of the same, substantially as described.

8. In a time-stamp the combination of a clock mechanism having a main spindle, two type-wheels adjacent to one another loosely carried thereby, each having fixed to it a toothed wheel, escapements for governing the motion of the toothed wheels, a second pair of toothed wheels also on the spindle for operating the respective escapements and connected to their respective type-wheels so as to allow limited movement thereof independently of the said second pair of toothed wheels, one of said second pair being geared to the main spindle and the other being fixed directly to said spindle, substantially as described.

9. In a time-stamp the combination of a clock mechanism having a main spindle, a wheel fixed thereto having depressions in its periphery forming teeth, each tooth having a face equal in length to the distance between the teeth, a second wheel loosely carried by the spindle provided with two sets of teeth, those of one set coming opposite to the spaces between the teeth of the other set, a type-carrying wheel fixed to the said second wheel and an escapement operated by the first toothed wheel and governing the action of the second toothed wheel, and means for operatively connecting the said toothed wheels, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

STANLEY G. MILLER.

Witnesses:

WILLIAM E. BRADLEY,
JOS. H. KLEIN.