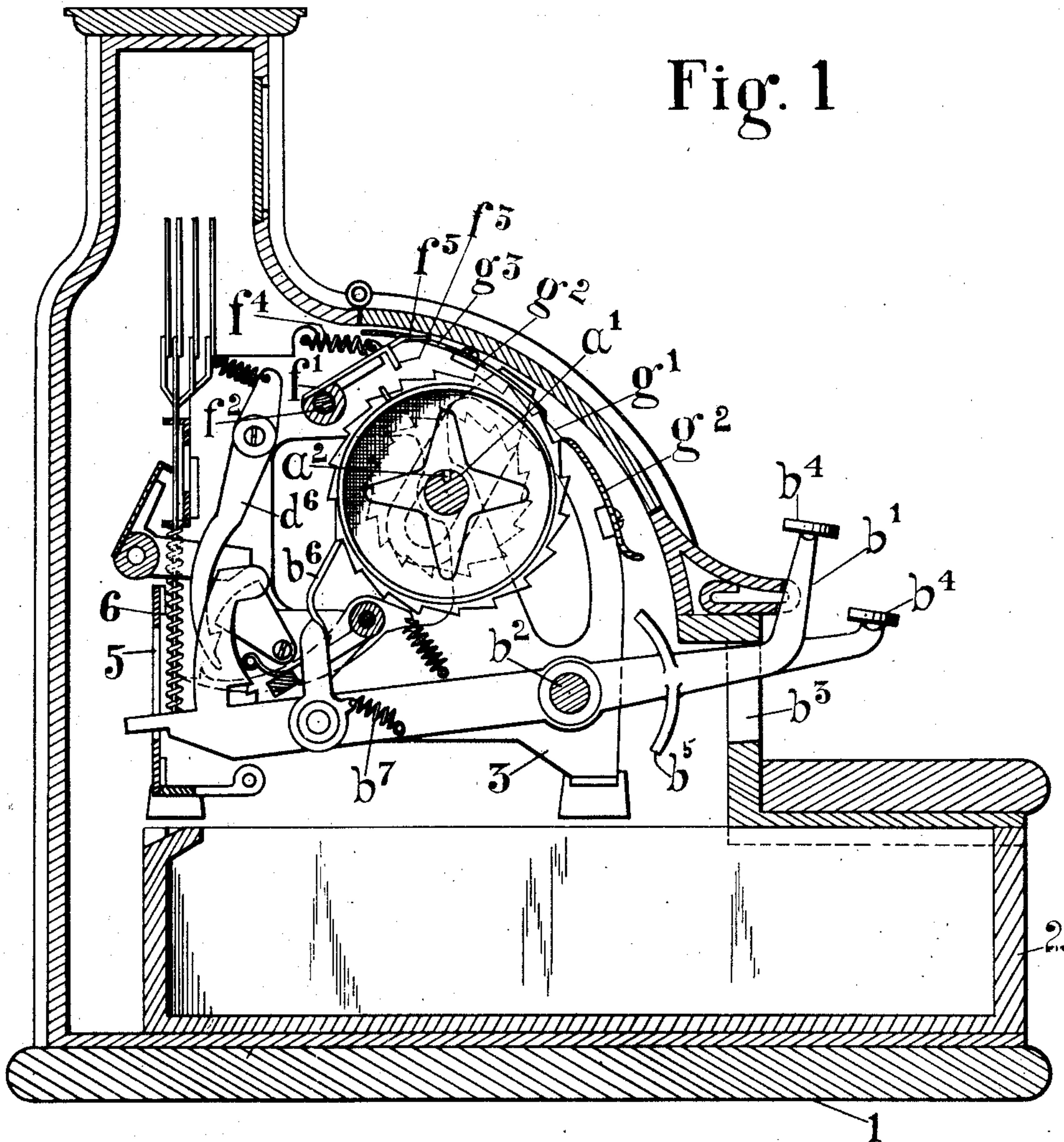


983,590.

Patented Feb. 7, 1911.

4 SHEETS—SHEET 1.

Fig. 1



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*A. M. Shannon.*

INVENTOR

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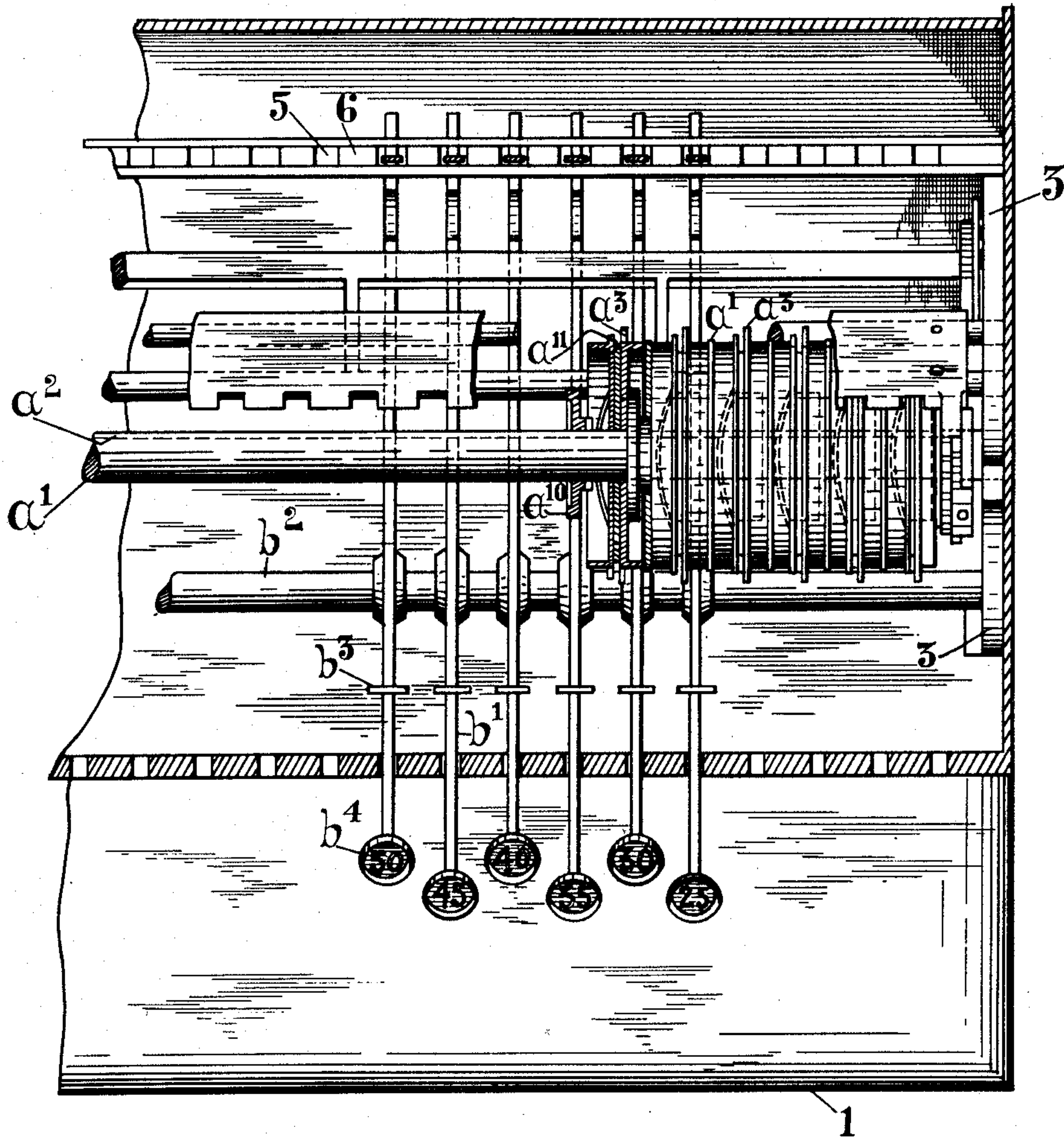
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983,590.

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4 SHEETS—SHEET 2.

Fig. 2



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4 SHEETS—SHEET 3.

Fig. 3

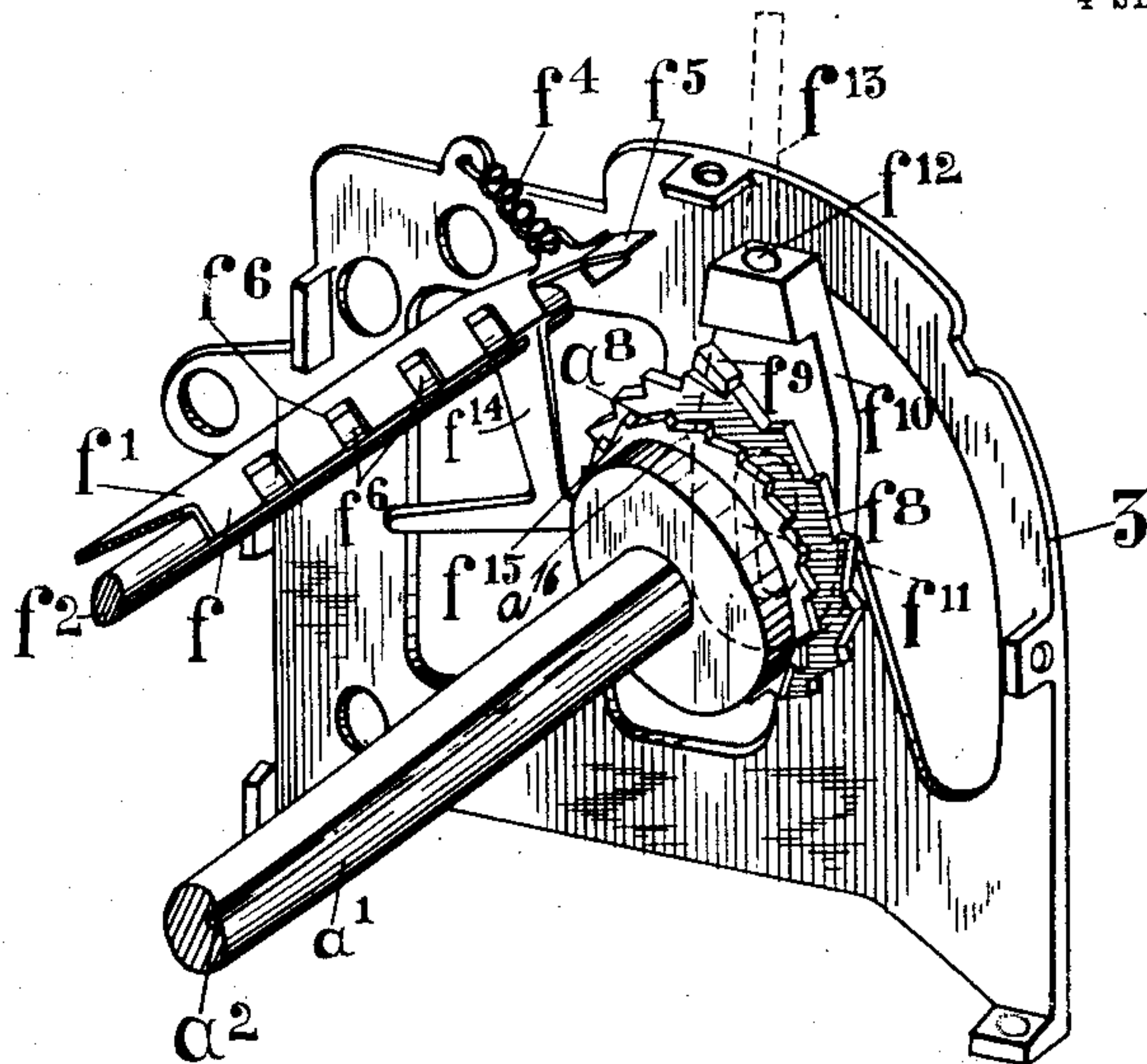
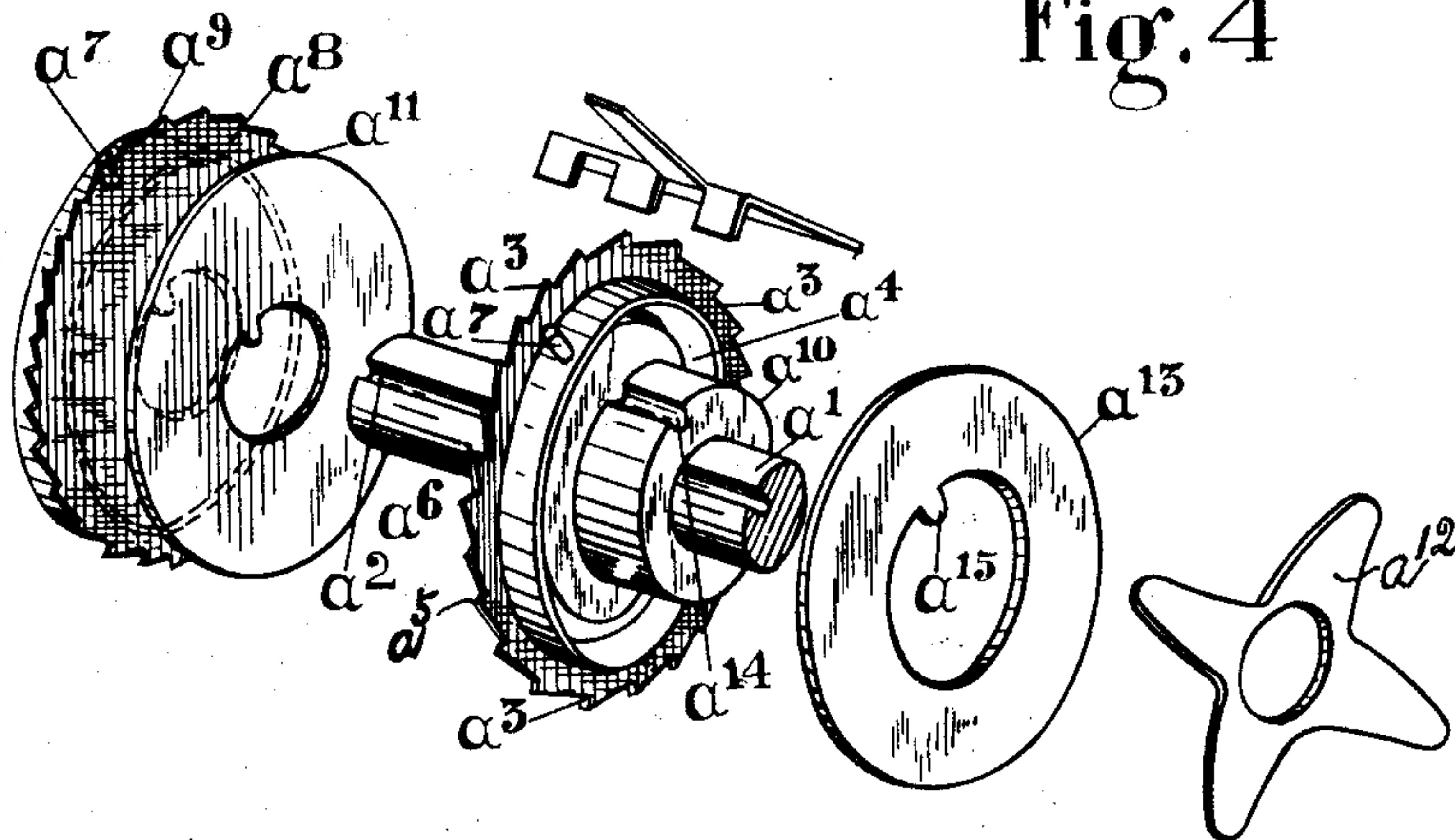


Fig. 4



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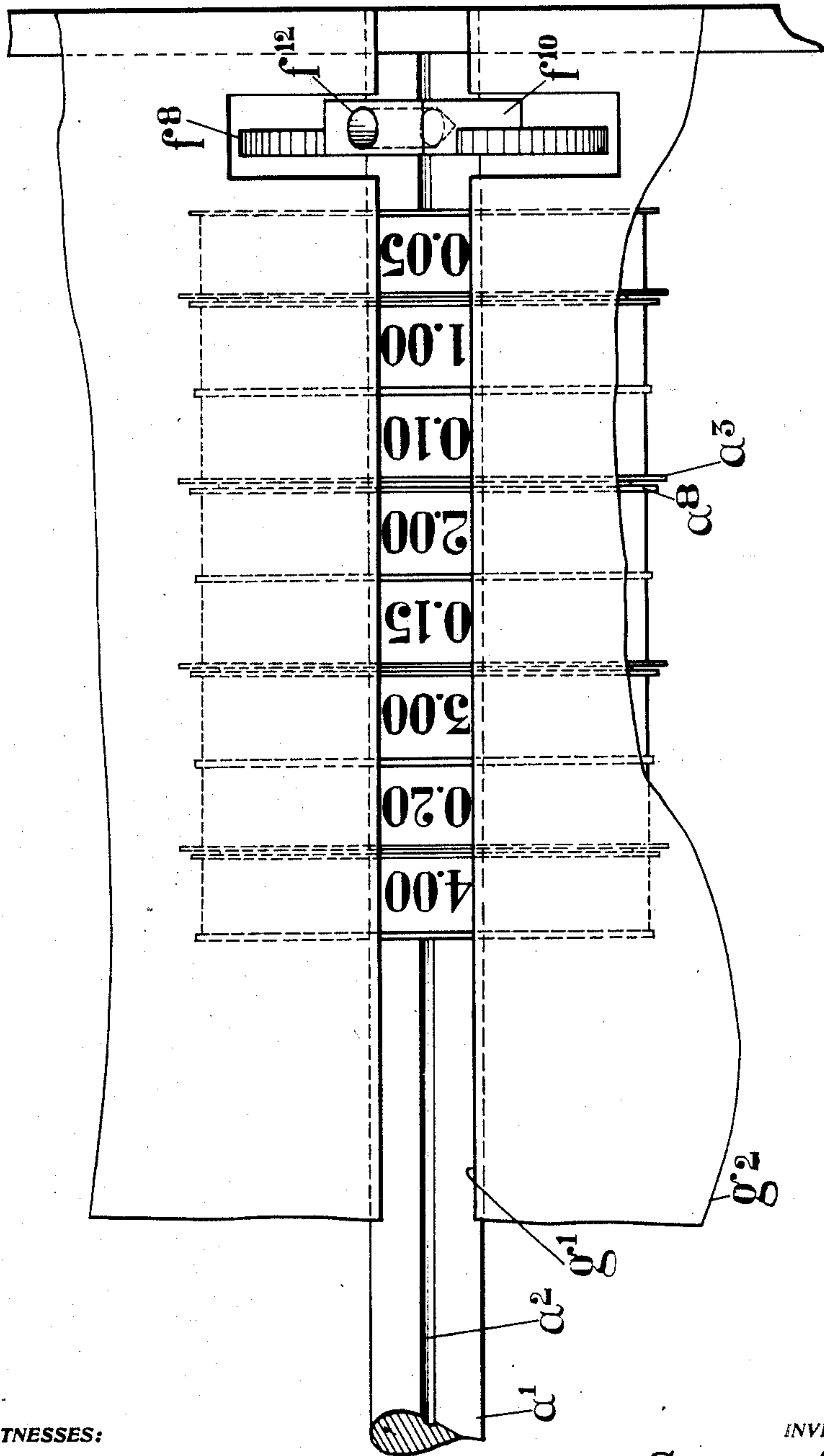


983,590.

Patented Feb. 7, 1911.

4 SHEETS—SHEET 4.

Fig. 5



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# UNITED STATES PATENT OFFICE.

GUSTAVE A. WINEMAN, OF DETROIT, MICHIGAN.

CASH-REGISTER.

983,590.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Original application filed April 17, 1908, Serial No. 427,573. Divided and this application filed March 25, 1909. Serial No. 485,611.

*To all whom it may concern:*

Be it known that I, GUSTAVE A. WINEMAN, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to cash registers, and more especially to the registering mechanism proper.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

The invention is herein illustrated in connection with a cash register which incorporates the other features of cash till locking and release means or till controlling mechanism, means for returning the registering device to initial position or resetting mechanism, together with interlocking members all of any suitable type, but preferably as shown in my Patent No. 952,554, issued March 22, 1910 for cash registers, of which this is a divisional application.

In the drawings, Figure 1 is a view in transverse section of a cash register provided with registering mechanism embodying features of the invention. Fig. 2 is a plan view, with parts of an exterior casing in section and broken away, showing the general arrangement of the registering mechanism together with parts of resetting means. Fig. 3 is a view in detail, enlarged and partially broken away, of the resetting mechanism. Fig. 4 is a view in detail of a pair of registering wheels with spacing collars and star spring in position for assembling, with the position of a universal stop bar indicated. Fig. 5 is a view in detail showing the register wheels and the arrangement of the numerals thereon in reference to a view slot of an inner casing cover.

Referring to the drawings, 1 indicates an exterior casing of suitable design, having a cash drawer or till 2 in its base, over which the registering mechanism is secured, and end frames 3 being provided for carrying the working parts.

As herein illustrated, the registering mechanism has a main shaft  $a^1$  journaled at each end in the frame 3, and provided with a key seat or groove  $a^2$  extending throughout its length. A series of pairs of ratchet wheels

are rotatably secured in regular spaced relation on the shaft. In a preferred form of construction the master wheel of each pair is a thin disk  $a^3$  having a flange ring  $a^4$  on one face thereof and regular ratchet teeth  $a^5$  in its periphery, one of which is more deeply cut than the others to form a master tooth  $a^6$ . The flange ring  $a^4$  has on its periphery a series of numerals corresponding to the teeth in number, and a radial stop  $a^7$  which, for convenience in arrangement of coacting mechanism, is several spaces or teeth ahead of the master tooth  $a^6$ . The second or follower wheel  $a^8$  is of like construction, but of less diameter, its ratchet teeth  $a^9$  coming in register one by one with the master tooth  $a^6$ , so as to be engaged simultaneously therewith by any operating pawl. The wheels of each pair are set back to back against a stop or spacing collar  $a^{10}$  secured to the shaft  $a^1$ , a washer  $a^{11}$  being placed between the wheels with a star or spider spring  $a^{12}$  rotatable on the shaft in compression between the outer wheel and the spacing collar  $a^{10}$  of the adjacent pair. Other suitably disposed forms of friction spring members may be used. The outer margins of the adjacent flange rings  $a^4$  of adjoining wheels are separated by circular division plates  $a^{13}$ , of slightly greater diameter than the rings, which are secured on the spacing collars  $a^{10}$ , a longitudinal key-seat or groove  $a^{14}$  in the collar being engaged by a lug or feather pin  $a^{15}$  on the plate. A locking ratchet wheel  $a^{16}$  with teeth opposed to the register wheel teeth is keyed or otherwise secured to the shaft  $a^1$ , with a detent or latch pawl  $f^{14}$  engaging it and preventing the rotating of the register wheels from accidentally turning the shaft. A bank of operating lever keys  $b^1$  are pivoted below the registering wheels on a rod  $b^2$  parallel to the shaft  $a^1$  secured to the end frames 4. The outer arms of the keys play in guide slots  $b^3$  in the outer casing and finger buttons  $b^4$  with numerals thereon are secured in the upturned extremities with segmental shields  $b^5$  preferably integral with the levers just behind the guide slots. The inner arms of the keys oscillate in guide slots 5 in an upright plate 6 connecting the end plates. A pawl  $b^6$  is pivoted on the inner arm of each key and is held by a suitably disposed spring  $b^7$  in engagement with the master ratchet wheel  $a^3$  of the pair of registering wheels in whose



plane of rotation the key swings. The pawl may be conveniently stamped out of sheet metal as herein illustrated, and given a half twist to provide a bearing end sufficiently wide to engage both master and follower wheel teeth when engaging the master tooth  $a^8$ .

The numerals on the wheel flanges are disposed transversely as indicated and are so arranged that when the wheels are in initial position, the zeros appear under a view slot  $g^1$  of a plate  $g^2$  acting as an inner cover over the wheels; thus by opening the outer casing at any time after the wheels are set, a column of figures is presented across the machine in such position that they may be readily added, thus giving the total registered sum without any trouble of transferring the items to paper.

The numerals on the lever finger plates give the value or amount registered by each key in the usual manner while each follower wheel of a pair is a totaler of the numerals on the master wheel ring, the series on the latter being multiples of the engaging lever button numeral as usual in this class of machines.

A universal stop plate  $f^1$  is secured at its rear edge to a pivot bar  $f^2$  so journaled in the end frames parallel to the register wheel shaft  $a^1$  that a downturned front flange  $f^3$  on the plate overhangs the bank of register wheels. A suitable spring  $f^4$  holds it clear of the wheels normally but it may be pressed down by a finger lever  $f^5$  underlying an aperture  $g^3$  in the inner cover plate  $g^2$  so that its flange  $f^3$ , which has notches  $f^6$  adapted to bridge the register wheel division plates  $a^{11}$ , is in the paths of the stop pins  $a^7$  on the wheel rings.

A ratchet wheel  $f^8$  oppositely disposed to the locking ratchet  $a^{10}$  is engaged by a dog  $f^9$  on a yoke  $f^{10}$  oscillating on the shaft  $a^1$ , its elongated bearing slot  $f^{11}$  permitting it to be returned over the ratchet teeth, and a handle socket  $f^{12}$  being provided for a removable handle bar  $f^{13}$ . The latch pawl  $f^{14}$  previously described in connection with the locking ratchet  $a^{10}$ , is a rock arm of the pivot bar  $f^2$  and has a safety trip finger  $f^{15}$  which strikes the segment pawl  $d^6$  and moves it back when the stop plate is depressed.

When the rocking of the resetting yoke has brought all the stop pins against the flange  $f^1$ , the zeros of the wheel rings are all alined under the view slot  $g^1$  of the inner cover  $g^2$ .

One feature is the fact that the registering wheels are not loaded or engaged with the resetting mechanism at all save through the frictional engagement of the main shaft, while the resetter itself is noiseless in action except on the return of the yoke over the single ratchet wheel.

One especial point of advantage is the

throwing up of the cumulated values of the several wheels in a column that can be added or totaled without transcribing the items, as usually has to be done in machines of this kind. Another feature is the arrangement whereby the division disks are keyed or splined to the shaft between the register wheels so that they prevent dragging of one wheel by its rotating companion in case dirt or the like drops between them or their rings become sprung so as to run together.

Obviously, changes in the construction may be made without departing from the spirit of the invention, and I do not limit myself to any particular form or arrangement of parts.

What I claim as my invention is:—

1. In a cash register, a rotatable main shaft, a series of independent register wheels journaled thereon, and resetting mechanism consisting of spacing collars secured on the shaft between the wheels, a spring member on the shaft in compression between each collar and adjacent wheel, means adapted to positively arrest the wheels in predetermined position when moved into engagement therewith and to lock the shaft when not in position to engage the wheels, and means to rotate the shaft when it is unlocked.

2. In a cash register, a rotatable main shaft, a series of independent register wheels journaled thereon, and resetting mechanism consisting of spacing collars secured on the shaft between the wheels, a star spring secured on the shaft in compression between each collar and adjacent wheel, means adapted to positively arrest the wheels in predetermined position when moved into engagement therewith and to lock the shaft when not in position to engage the wheels, and means to rotate the shaft when it is unlocked.

3. In a cash register, a rotatable main shaft, a series of independent register wheels journaled thereon, and resetting mechanism consisting of friction driving means on the shaft engaging the wheels, a stop pin on the periphery of each wheel, a stop plate yieldingly supported parallel to the shaft adapted to be moved into the path of the stop pins, a rock arm on the plate engaging a ratchet wheel secured on the shaft when the plate is in normal position and clearing the ratchet when the plate is in position to arrest the stop pins and means to rotate the shaft.

4. In a cash register, a rotatable main shaft, a series of independent register wheels journaled thereon, and resetting mechanism consisting of spacing collars secured on the shaft between the wheels, a star spring secured on the shaft in compression between each collar and adjacent wheel, a stop pin on the periphery of each wheel, a stop plate yieldingly supported parallel to the shaft adapted to be moved into the path of the



stop pin, a rock arm on the plate engaging a ratchet wheel secured on the shaft when the plate is in normal position and clearing the ratchet when the plate is in position to arrest the stop pins, a ratchet drive wheel secured on the shaft, and a ratchet yoke adapted to operatively engage the drive wheel when oscillated.

5 5. In a cash register, a registering mechanism comprising a shaft journaled therein, spacing collars secured at intervals on the shaft, a pair of register wheels rotatable on the shaft between each pair of collars each consisting of a ratchet disk and a numeral ring secured on one face thereof, said wheels being disposed with their disks adjacent, a spring disk rotating with the shaft in compression between one wheel of each pair and the adjacent spacing collar, a division plate of greater diameter than the rings secured on each spacing collar between the adjacent rings, and means to independently operate each pair of wheels.

25 6. In a cash register, a registering mechanism comprising a shaft journaled therein,

spacing collars secured at intervals on the shaft, a pair of register wheels rotatable on the shaft between each pair of collars each consisting of a ratchet disk and a numeral ring secured on one face thereof, said wheels being disposed with their disks adjacent, a spring disk rotating with the shaft in compression between one wheel of each pair and the adjacent spacing collar, a division plate of greater diameter than the rings secured on each spacing collar between the adjacent rings, a cover shielding the wheels provided with a view slot parallel to the shaft over all the wheels, the rings having numerals disposed circumferentially thereon whereby columns of figures are formed and means adapted to operate each pair of wheels whereby a column of figures is brought in register with the view slot.

In testimony whereof I affix my signature in presence of two witnesses.

GUSTAVE A. WINEMAN.

Witnesses:

OTTO F. BARTHEL,  
C. R. STICKNEY.