

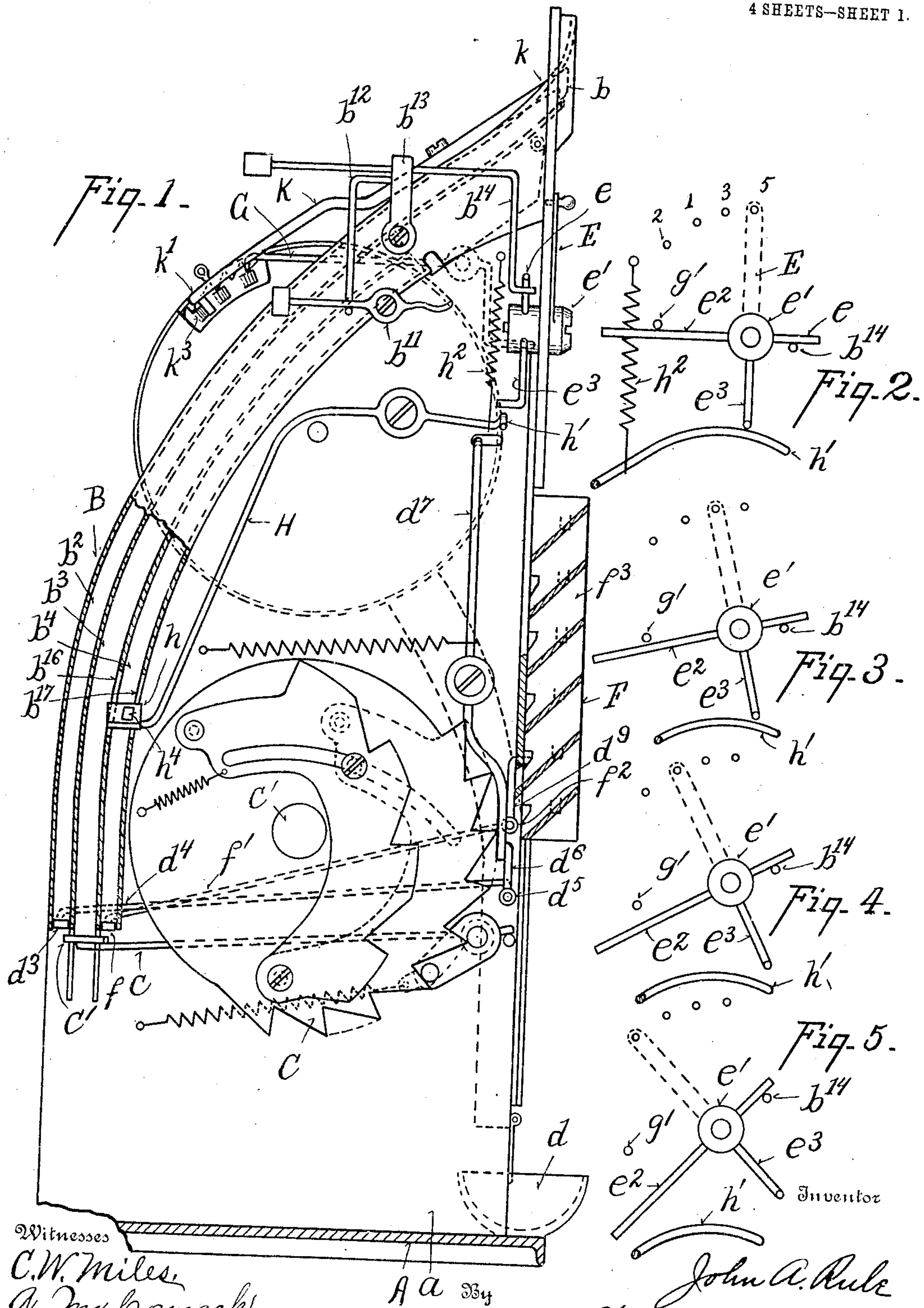
No. 871,824.

PATENTED NOV. 26, 1907.

J. A. RULE.  
COIN OPERATED VENDING MACHINE.

APPLICATION FILED DEC. 10, 1908.

4 SHEETS—SHEET 1.



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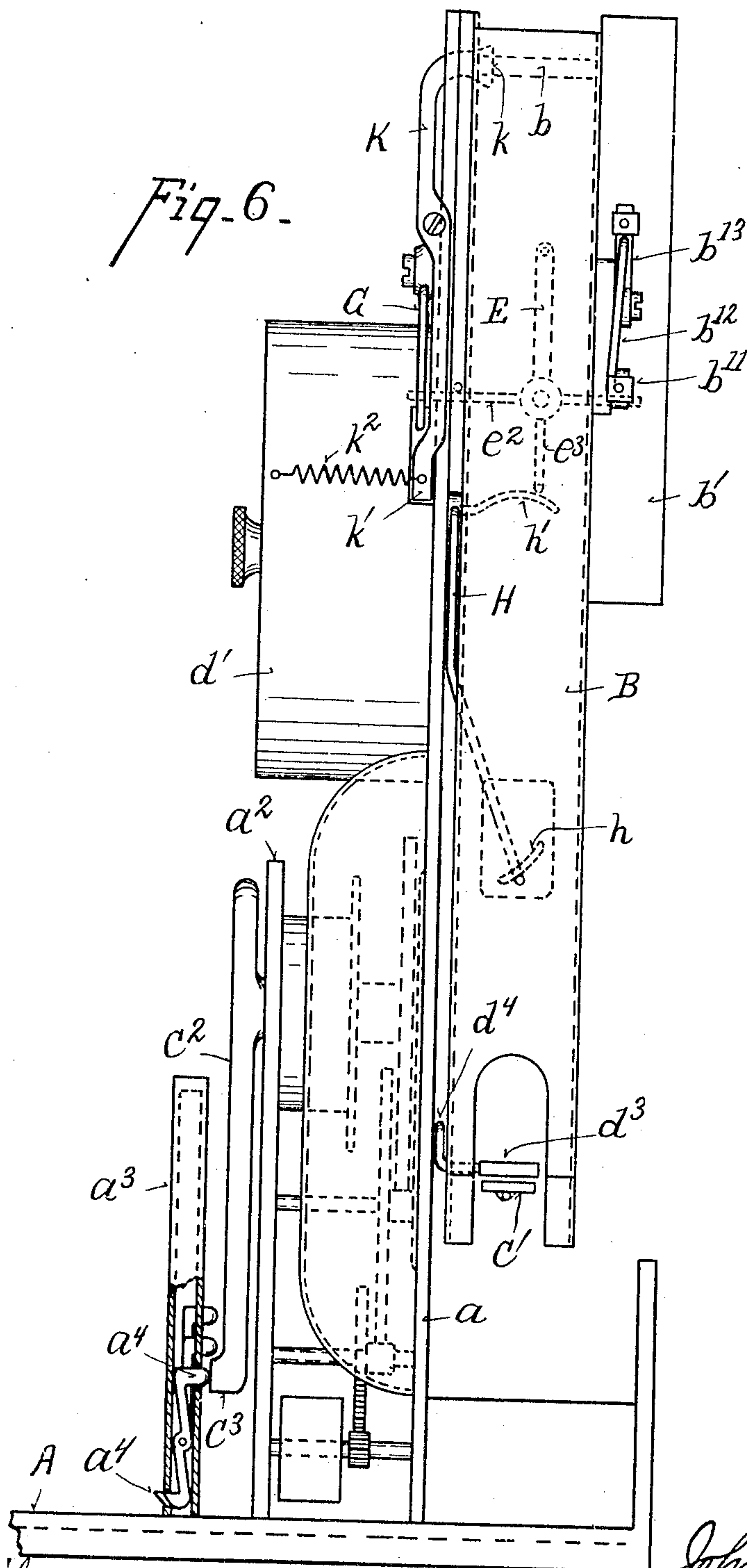
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4 SHEETS—SHEET 4.

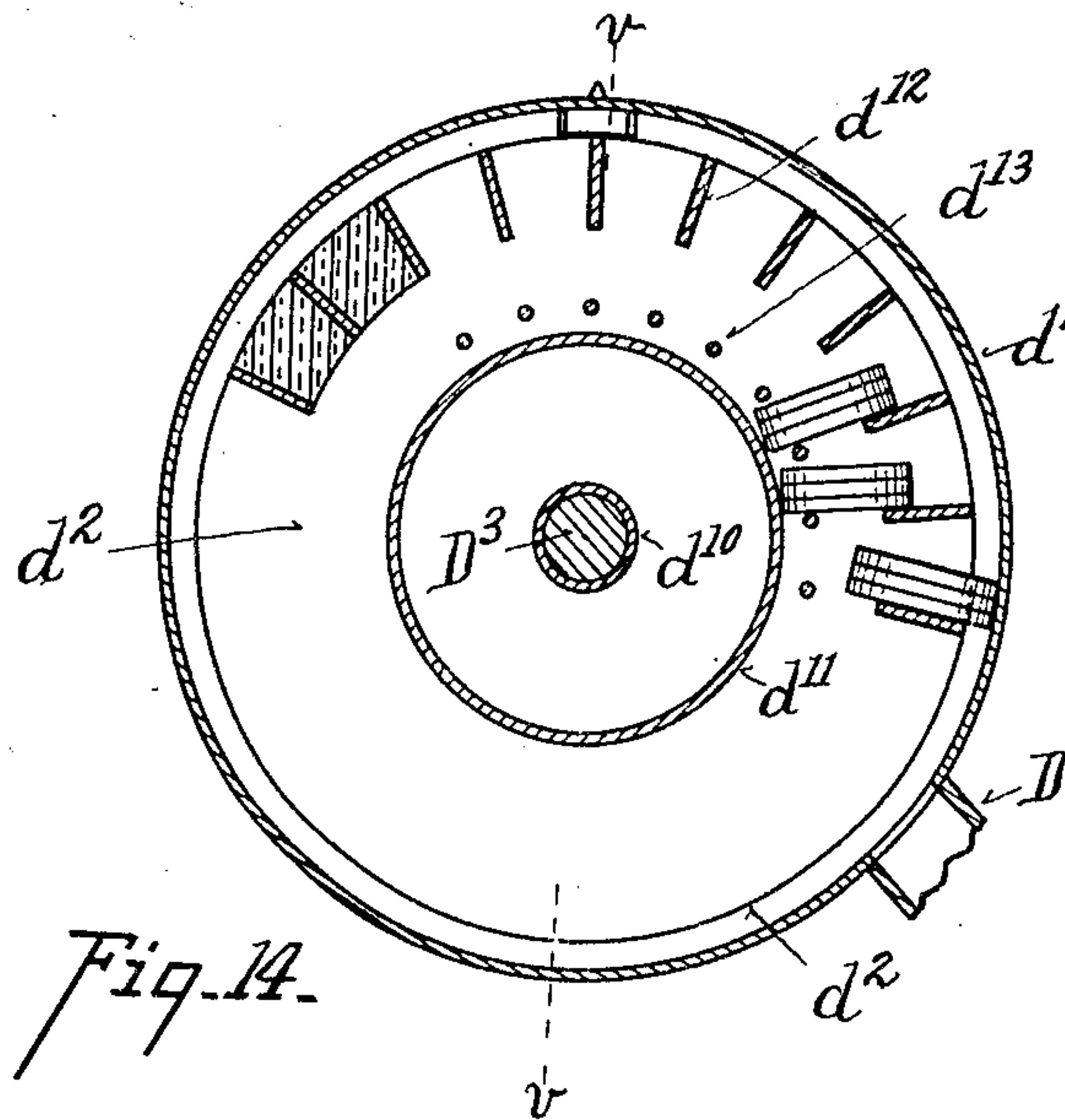


Fig. 14.

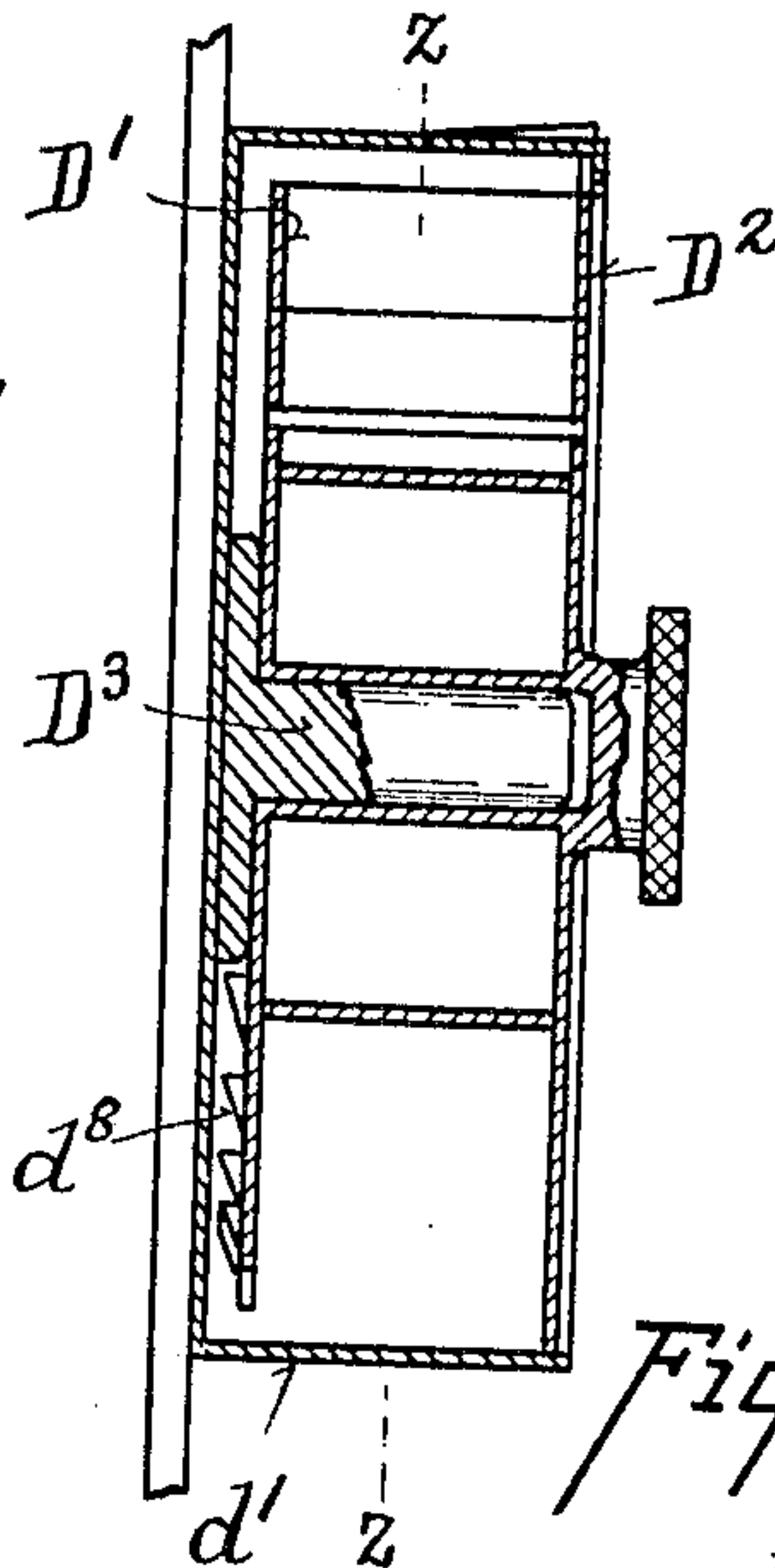


Fig. 16.

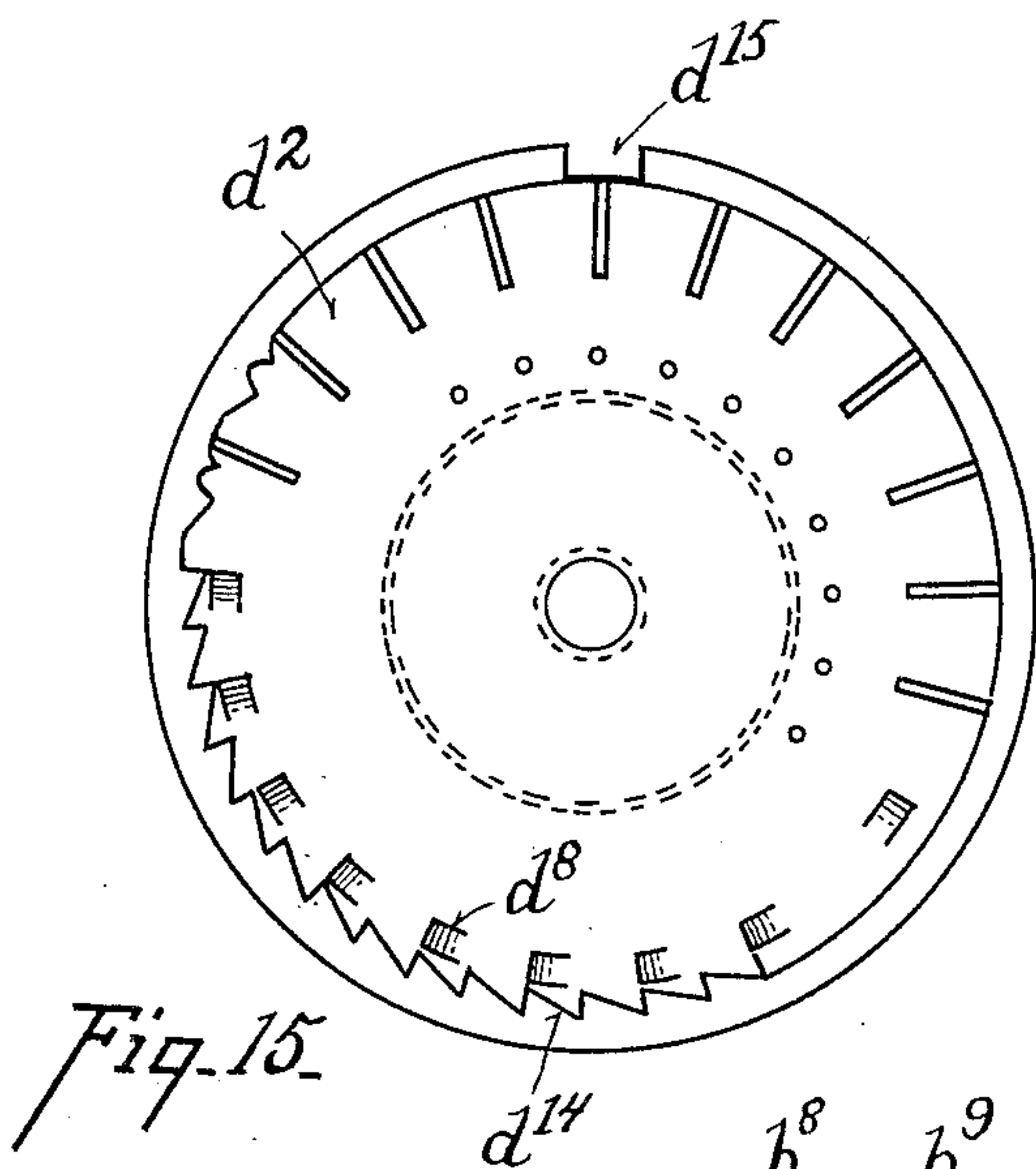


Fig. 15.

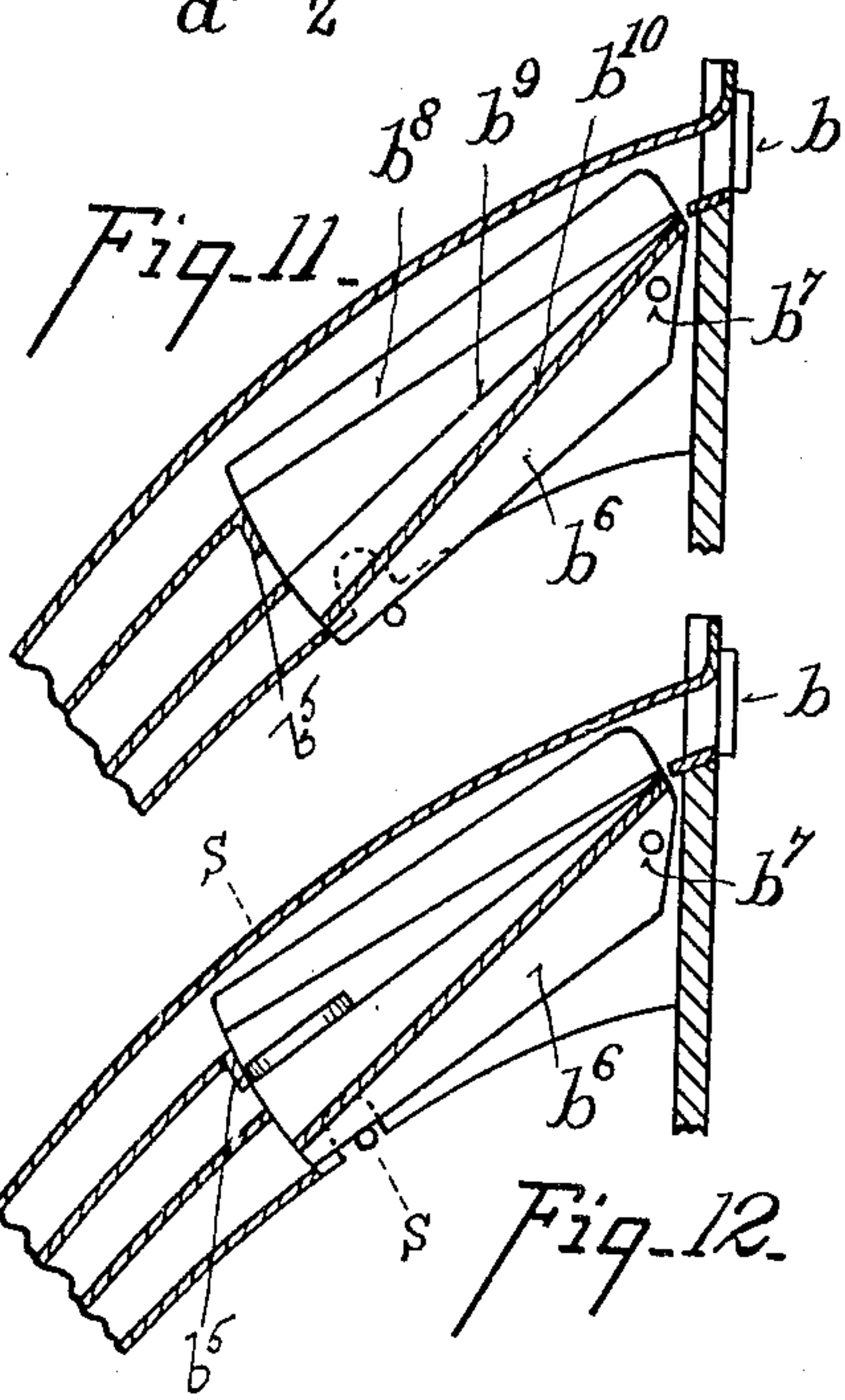


Fig. 11.

Fig. 12.

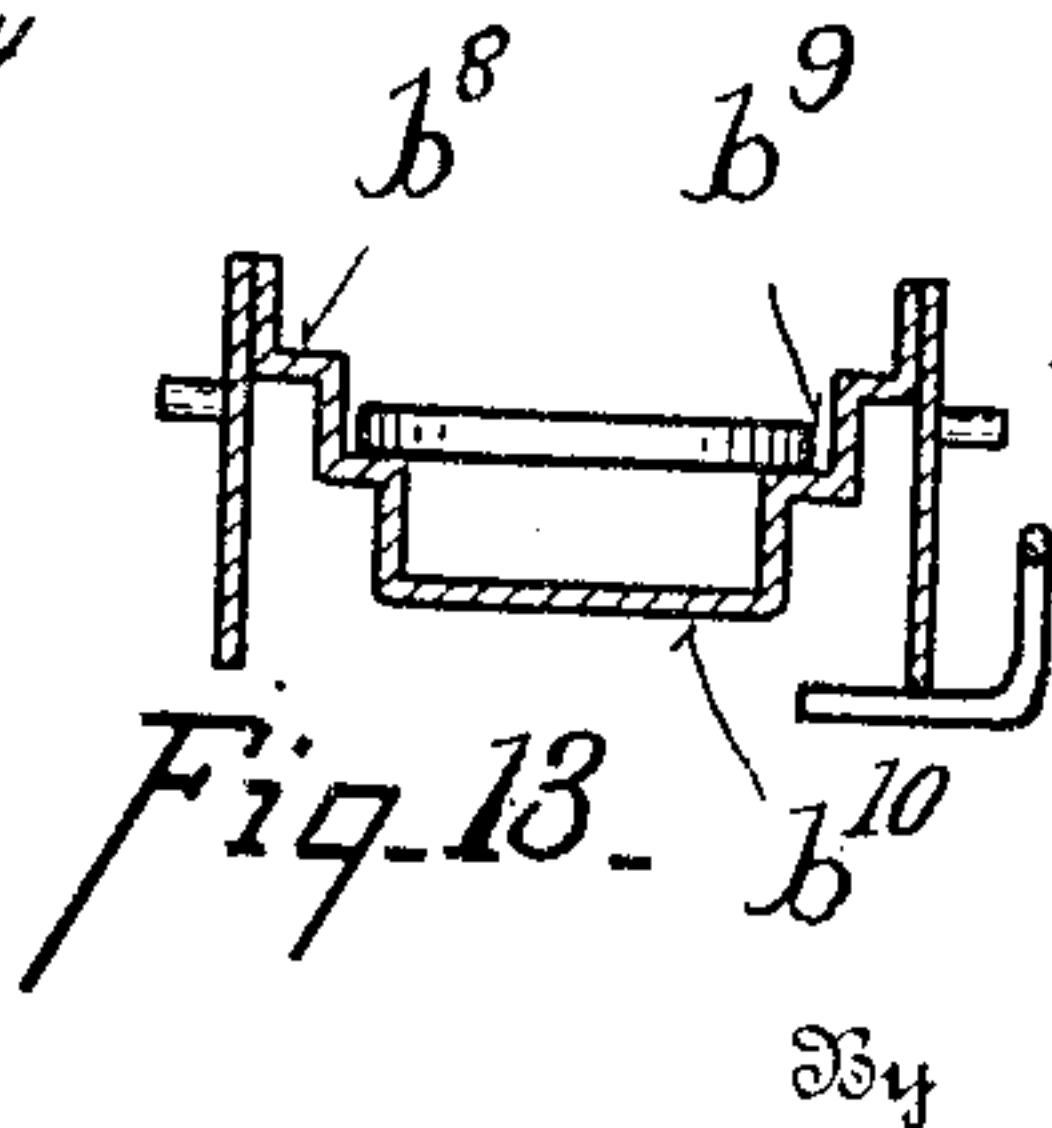


Fig. 13.

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# UNITED STATES PATENT OFFICE.

JOHN A. RULE, OF CINCINNATI, OHIO.

## COIN-OPERATED VENDING-MACHINE.

No. 871,824.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed December 10, 1906, Serial No. 347,166,

*To all whom it may concern:*

Be it known that I, JOHN A. RULE, a citizen of the United States of America, and resident of Cincinnati, county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Coin-Operated Vending-Machines, of which the following is a specification.

My invention relates to coin operated vending machines which may be set to vend articles of the value of one or more coins of small denomination or those of the value of a coin of larger denomination, in which when the machine is set in the first named position, the machine will deliver the article only when the coins of small value are dropped into it, and when the coin of large denomination is dropped into it will deliver both the article and the proper change, and in the second position will only deliver the article when the coin of larger denomination is deposited.

The object of my invention is a convenient means for setting the machine in its various aforesaid positions, to provide a means of preventing a coin of large denomination being deposited when the change has been exhausted, and to provide an expedient means of replenishing the change supply.

Referring to the accompanying drawings in which like parts are indicated by similar reference letters wherever they occur throughout the various views. Figure 1 is a view partly in side elevation of and partly in transverse section of the coin operated mechanism embodying my invention. Fig. 2, 3, 4 and 5 are diagrammatical detail views of the regulating arm the position of which sets the apparatus in positions for vending articles of different values. Fig. 6 is a rear elevation of the apparatus. Fig. 7 is a front elevation of the same, the sliding change receptacle of same being removed. Figs. 8 and 9 are transverse sectional detail views of the upper end of the coin chute, showing the movable auxiliary chute in different positions. Fig. 10 is a longitudinal sectional view of the auxiliary chute. Fig. 11, 12 and 13 are views similar to Fig. 8, 9 and 10, but of a modified form of chute. Fig. 14 is a sectional view of rotating change receptacle. Fig. 15 is a detail rear elevation of the change receptacle. Fig. 16 is a sectional view of the change receptacle.

Referring to the parts: upon base A are mounted a supporting wall  $a$ , two standards  $a'$  and  $a''$  and a box  $a^3$ , within which are journaled the levers  $a^4$  for opening doors (not shown) for discharging the article to be vend- 60 ed. Upon wall  $a$ , a coin chute B is secured which directs the coins from the deposit slot  $b$ , in the plate  $b'$  to the lever  $c$  which controls the ratchet wheel C mounted upon one end of main shaft  $c'$ , the other end 65 of which carries swinging arm  $c^2$  whose end  $c^3$  stands in the path of levers  $a^4$ , to strike them successively each time ratchet wheel C is released by lever  $c$ .

Secured to standard  $a''$  is a change chute 70 D whose lower end stands above change cup  $d$ , and whose upper end extends into the cylindrical housing  $d'$  which is secured to wall  $a$  and within which is journaled the cylindrical coin receptacle  $d^2$ . 75

Coin chute B is divided by partitions into three ways, a nickel way  $b^2$ , a penny way  $b^3$  and a dime way  $b^4$ . Penny way has above its upper end a flange  $b^5$  (shown in Figs. 8, 9, 11 and 12). The coins are directed into 80 these ways by an auxiliary chute  $b^6$  (see Figs. 11-13) which is pivoted at  $b^7$  in coin chute B below deposit slot  $b$ . Auxiliary chute  $b^6$  has a nickel ledge  $b^8$ , a penny ledge  $b^9$  and its bottom  $b^{10}$  is of the width of the 85 diameter of a dime. These respective nickel, penny and dime ledges of the auxiliary chute register with the corresponding ways in the coin chute B.

The purpose of pivoting the auxiliary 90 chute is to adapt it for regulating the passing one penny or two pennies at a time into the penny way. It may be fixed so that the penny ledge normally registers with flange  $b^5$  (as shown in Fig. 12) from which position 95 it is moved by the weight of an additional penny, so that the penny ledge falls to register with the penny way. The position of the auxiliary chute is regulated by a weighted arm  $b^{11}$  which is pivoted to wall  $a$ , one of 100 whose ends supports the auxiliary chute and the other of which is itself supported by an arm  $b^{12}$ , which is secured to a block  $b^{13}$  which is pivoted to wall  $a$ . Block  $b^{13}$  has secured to it a weighted lever arm  $b^{14}$  whose un- 105 weighted end stands in the path of a finger  $e$  which projects from a hub  $e'$  mounted in plate  $b'$ . Hub  $e'$  carries an index finger E. Index finger E may be turned to one of four positions, indicated upon plate  $b'$  by numer- 110



als 2, 1, 3 and 5. When it occupies position 2, as shown in Fig. 5, lever arm  $b^{14}$  permits the weighted end of lever  $b^{11}$  to occupy its lowermost position in which that lever then carries auxiliary chute  $b^6$  upward so that the penny ledge registers with flange  $b^5$ ; the weight on lever  $b^{11}$  is such that then it will take two pennies to overbalance it and permit the auxiliary chute to deposit the two pennies into the penny way. When index finger E occupies position 1, the penny ledge of the auxiliary chute stands below flange  $b^5$ .

Into the lower end of penny way  $b^3$  projects lever  $c$  which controls ratchet wheel C. The end of lever  $c$  carries a block  $c'$  which stands below all of the coin ways. Above block  $c'$  a block  $d^3$  is located in nickel way  $b^2$ , and a block  $f$  in dime way  $b^4$ . Block  $d^3$  is carried by a lever  $d^4$  which is pivoted at  $d^5$  to wall  $a$ , and carries a finger  $d^6$  to contact arm  $d^7$ , which is pivoted to the wall and at its upper end has a finger projecting through a perforation in wall  $a$  to engage teeth  $d^{14}$  upon the periphery of change receptacle  $d^2$ . When a nickel strikes block  $d^3$ , it lowers it so that it strikes block  $c'$ , thereby simultaneously moving arm  $c$  to actuate the vending apparatus and moving arm  $d^7$  to release the change receptacle to give the purchaser his change.

The device for setting change receptacle into position to be actuated by lever  $d^7$ , and for preventing a nickel being inserted into the machine when the change receptacle has been emptied, is as follows: Pivoted to wall  $a$  is a lever K, whose end  $k$  stands adjacent to deposit slot  $b$ , and whose opposite end  $k'$  is held by a coiled spring  $k^2$  in contact with the periphery of change receptacle  $d^2$ , which has a recess at  $d^{15}$  into which end  $k'$  takes when the last radial change compartment has reached change chute D. This carries end  $k$  across slot  $b$  and limits its size to a degree such that a nickel cannot be inserted through it. Stud  $k^3$  upon lever K engages teeth  $d^8$  upon the back of change receptacle  $d^2$ . When a nickel is inserted at slot  $b$  it moves lug  $k^3$  out of engagement with one of teeth  $d^8$  and permits the weight of the coins in the change receptacle to rotate it slightly about journal pin D<sup>3</sup>, so that the lever  $d^7$  takes in the teeth at  $d^{14}$  and holds the receptacle from rotation. When lever  $d^7$  is drawn out of a tooth  $d^{14}$  the receptacle rotates until checked by the stud  $k^3$  engaging the next tooth  $d^8$ . Coins in the penny way, it is seen, actuate only lever  $c$  to move the vending apparatus. Block  $f$  is carried by a bell crank lever  $f'$ , pivoted to wall  $a$  at  $f$  and having its other arm engaging a sliding change receptacle F, which is mounted upon wall  $a$  adjacent to the change chute D. Receptacle F is divided by inclined partitions into compartment  $f^3$  for receiving small coins. At each release of the receptacle a

fresh compartment  $f^3$  is lowered to register with the slot  $d^9$  leading into chute D to deposit its supply of coins therein. (See Fig. 1.)

Change receptacle  $d^2$  consists of two circular disks D' D<sup>2</sup> secured together by cylindrical walls  $d^{10}$   $d^{11}$  and having between them a series of radial partitions  $d^{12}$  and pins  $d^{13}$ , dividing it into a series of radial change compartments. Upon the back of disk D' are formed the teeth  $d^8$  which are engaged by lug  $k^3$  upon lever K, and upon the periphery of disk D' are formed teeth  $d^{14}$ , which may be engaged by a lever G for locking the change receptacle when the machine is adjusted for selling a five cent paper.

Lever G is pivoted upon wall  $a$  at  $g$  and has its end  $g'$  projecting into the path of an arm  $e^2$  which is secured to the hub  $e'$ . As shown in Figs. 2—5, in all positions of index finger E, except the position 5, arm  $g'$  is lowered so as to hold lever G out of engagement with the change receptacle, but that in position 5, arm  $e^2$  raises the end  $g'$  and causes lever G to lock the change receptacle  $d^2$ .

To prevent a penny's operating the device when it is set for a five cent article, I have provided the following mechanism: Pivoted to wall  $a$  is an arm H, which carries at its lower end a block  $h$  which has a perforation  $h^4$  through it large enough to pass a dime but not a penny. The upper end  $h'$  of arm H projects into the path of an arm  $e^3$ , which is secured to hub  $e'$ . A spring  $h^2$  normally holds block  $h$  out of the penny and dime ways in chute B, but in position 5 arm  $e^3$  contacts end  $h'$  and carries block  $h$ , through holes  $b^{16}$   $b^{17}$  in chute B across the penny and dime ways. In this position pennies put into slot  $b$  would strike block  $h$  and be thrown out of chute B through holes  $b^{16}$   $b^{17}$ , while dimes would pass through perforation  $h^4$ .

If desired the machine may be made so that it will not be operated by a dime, in which case the dime way would be omitted from chute B and the auxiliary chute shown in Figs. 8, 9 and 10 would then be used.

What I claim is:

1. In a coin operated vending machine, the combination of a means for releasing a vending apparatus, a coin chute, a change receptacle, a means for causing a coin in the chute to actuate the means for releasing the vending apparatus, means for moving the change receptacle; means for directing coins of different denominations into the coin chute; an index arm and a means of connecting it with the change receptacle and with the means of directing the coins into the chute, whereby when the coin of larger denomination is directed into the chute, by the setting of the arm it locks the change receptacle, and when the arm is set to direct coins of both denominations into the chute, it unlocks the change receptacle.

2. In a coin operated vending machine the



combination of a swinging arm for releasing the vending apparatus; a coin chute divided into ways for receiving coins of different denomination, levers for regulating the locking of the swinging arm and extending below the ways in the chute; a movable change receptacle, an auxiliary chute movable to direct coins into the ways of the main chute; a hub, an index arm mounted upon the hub, means for connecting the hub and the change receptacle, and the hub and the auxiliary chute, whereby when the index arm is set to direct coins of larger denomination only into the chute, the change receptacle is locked, and when it is set to direct either the large or small coins into the chute, the receptacle is unlocked.

3. In a coin operated vending machine a coin chute divided into ways for directing coins of various denominations to the releasing mechanism of a vending machine, an arm mounted adjacent to the chute for entering the ways for coins of lesser denomination; a change receptacle, a means for directing coins of different denominations into the main chute; an index hand, a means for connecting the index hand with the arm, and a means of connecting the index hand with the change receptacle, and a means for connecting the index hand with the means for directing coins into the chute, whereby when the index hand is set for vending articles only of the value of the larger coin, the change receptacle is locked and the arm is swung into the chute to divert coins of lesser denomination from the releasing mechanism of the vending apparatus.

4. In a coin operated vending machine, a coin chute for receiving coins of various denominations and directing them to a releasing mechanism for a vending machine, said releasing mechanism, a change receptacle, said coin chute having a deposit slot for the coins, a means for connecting the change receptacle and the deposit slot, whereby the slot is limited in size so as not to receive a larger coin when the change receptacle is empty.

5. In a coin operated vending machine the combination of a coin chute, a releasing mechanism for a vending apparatus, means for directing a coin in the chute to the releasing mechanism, a cylindrical change receptacle mounted to rotate, change compartments in the receptacle so located that when released the weight of the coins moves the change receptacle, a change chute with which the compartments are made to register, and a releasing mechanism for the change receptacle operated by the releasing mechanism of the vending machine.

6. A coin chute for a coin operated vending machine divided by ledges into ways for coins of different denominations, an auxiliary chute pivoted adjacent to the ledges of the

main chute and having ledges to be brought to register with the ledges of the main chute for directing the coins into the respective ways.

7. In a coin operated vending machine, a coin chute divided by partitions into ways for receiving a coin of larger denomination and a coin of smaller denomination, a flange at the head of the way for the smaller coins, an auxiliary chute for directing the coins into the ways, a means of causing the auxiliary chute to register with the flange until overweighted by more than one of the coins of smaller denomination; an index arm and the means for connecting it with the auxiliary chute so that the setting of the arm regulates the position of the auxiliary chute.

8. In a coin operated vending machine a rotating change receptacle, a means for exerting a normal pressure upon the receptacle tending to rotate it, a chute having a passage for large and a second passage for small coins, a lever pivoted with one end engaging the change receptacle and forming a primary lock therefor and with its other end projecting over the coin receiving end of the chute, a delivery mechanism, a second lever engaging the change receptacle and forming a secondary lock therefor, a third lever engaging the delivery mechanism and projecting beneath the coin passages, a fourth lever, one of whose ends is adapted to engage the second lever and the other of which projects below the chute for coins of larger denomination.

9. In a coin operated vending machine the combination of a means for actuating a vending apparatus, a coin chute divided into ways for receiving coins of various denominations, a change receptacle, a means for controlling the passage through the way for the coins of smaller denomination, an index arm, means for connecting it with the change receptacle and with the mechanism for regulating the passage through the way for the coins of smaller denomination whereby the movement in one direction of the index arm simultaneously locks the change receptacle and closes the way for coins of smaller denomination, or the movement of the arm in another direction simultaneously unlocks the change receptacle and opens the way for coins of smaller denomination.

10. A change receptacle for a coin operated vending machine consisting of a cylindrical casing provided near its periphery with a series of radial change compartments, a housing within which the receptacle may be rotatably mounted and a change chute leading into the housing.

11. In a coin operated vending machine a locking mechanism for the vending apparatus, a coin chute divided into three ways for coins of three different denominations, a change chute, a rotating change receptacle and a sliding change receptacle, both



mounted adjacent to the change chute, a means for locking the rotating change receptacle and a second means for locking the sliding change receptacle, means for connecting the rotating change receptacle with one of the ways for coins of larger denomination and means for connecting the sliding change receptacle with the other way for coins of larger denomination, a means for connecting all of the coin ways with the locking mechanism for the vending apparatus whereby a coin in the way for the coins of smaller denomination operates the locking apparatus for the vending machine only, and a coin in either of the other two ways operates the locking mechanism for the vending machine and its respective change receptacle.

12. In a coin operated vending machine a chute divided into three ways for directing coins to the releasing mechanism of a vending machine, independent change receptacles for the coins of larger denomination, an arm to be moved across the way of a coin of smallest denomination, an index arm, means for connecting it with the change receptacles

and with the coin diverting arm whereby when the change receptacles are locked by the movement of the index hand, the coin diverting arm obstructs the passage for the smallest coin.

13. In a coin operated vending machine the combination of a means for releasing a vending apparatus a coin chute, a change receptacle, a means for directing a coin in the chute to the means for releasing the vending apparatus, means for moving the change receptacle, means for directing coins of different denomination into the coin chute, a connection between the means of directing the coin into the chute and the change receptacle whereby when the connection is set to direct the coin of larger denomination into the chute the change receptacle is locked and when the connection is set for directing both coins of large and small denomination into the chute the change receptacle is unlocked.

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