

(No Model.)

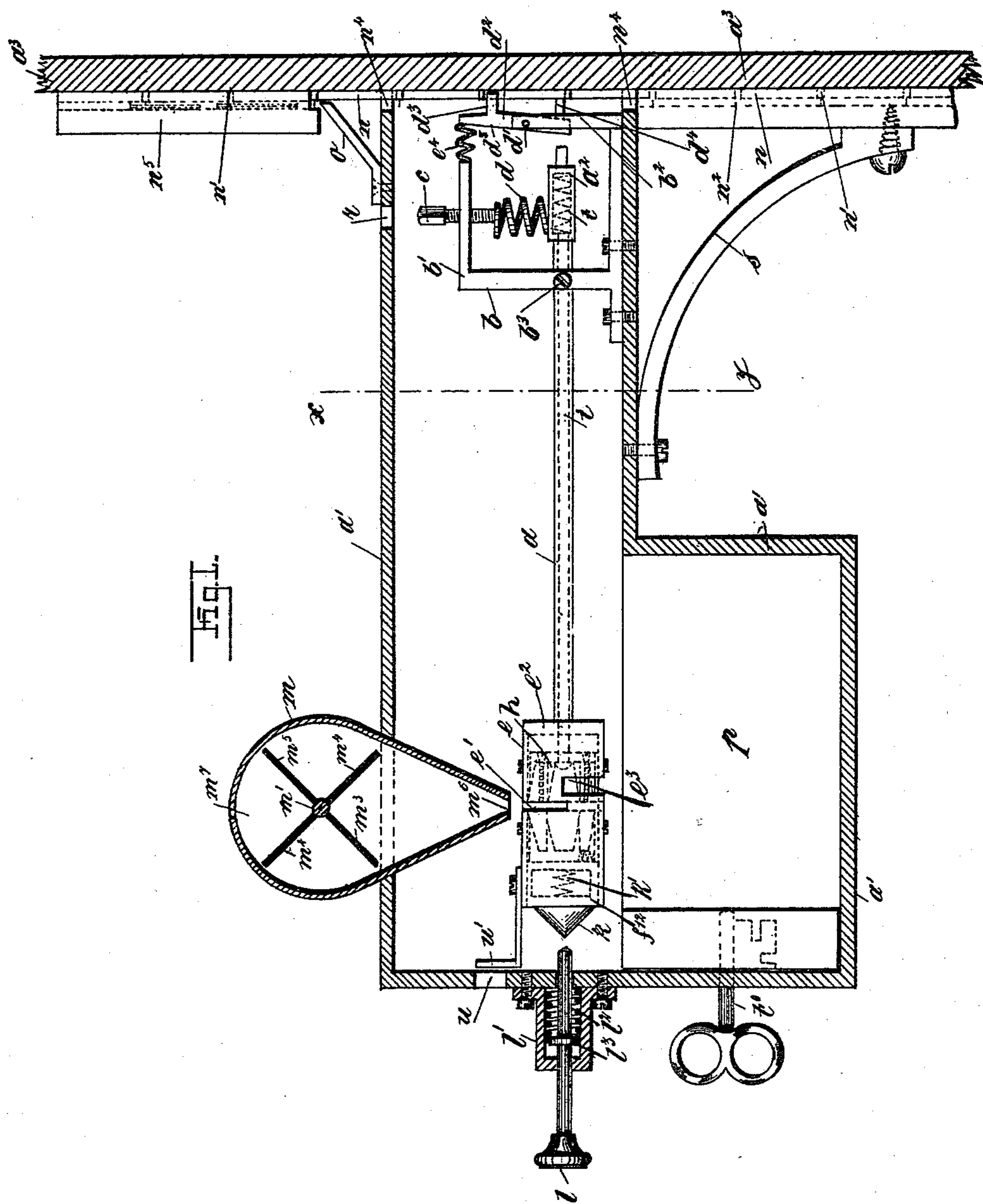
5 Sheets—Sheet 1.

A. BRÄU.

COIN OPERATED VENDING MACHINE.

No. 457,700.

Patented Aug. 11, 1891.



Witnesses:

E. M. Clark

C. E. Tolson

Inventor

Alphons Bräu

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Attorneys

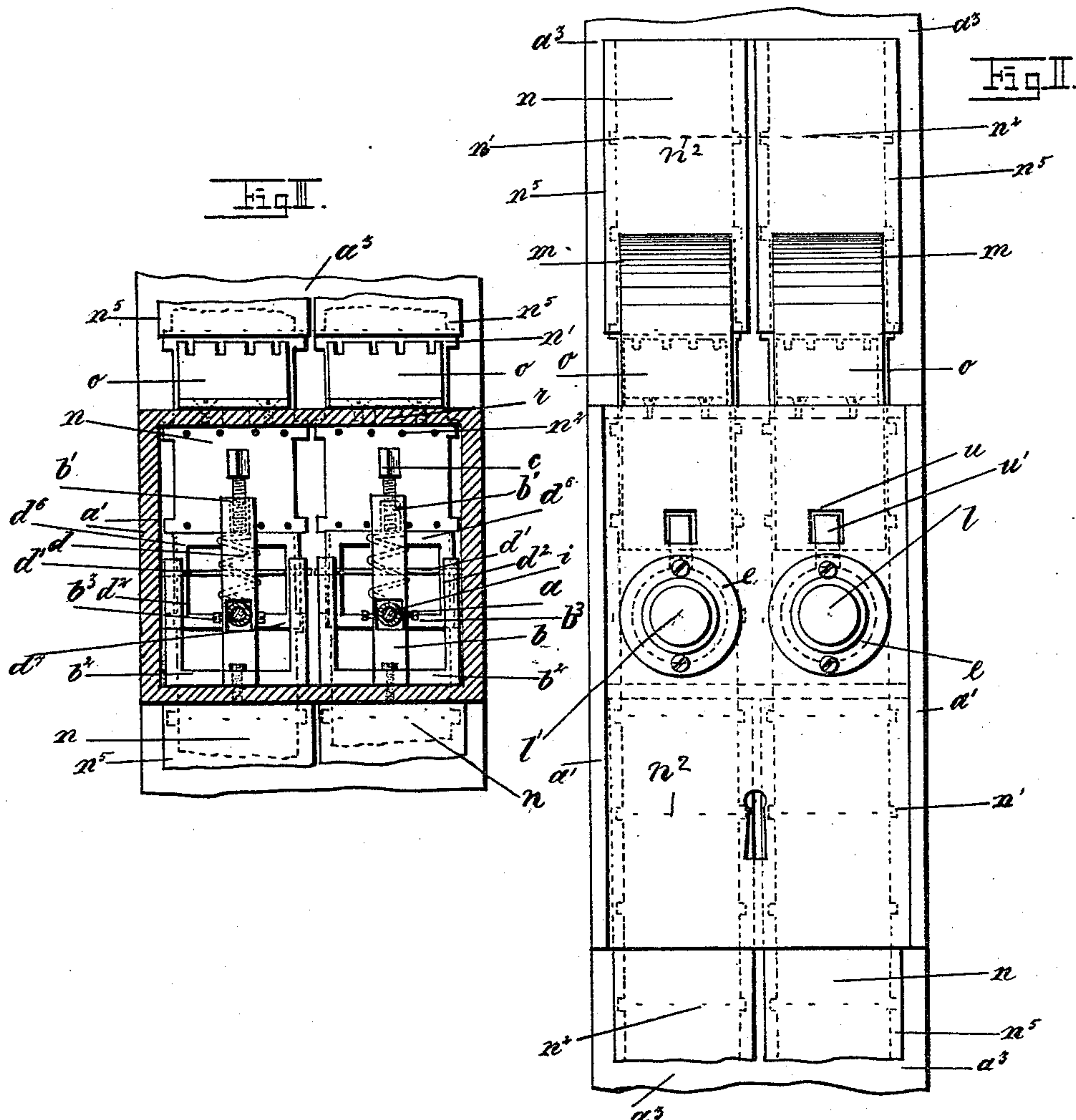
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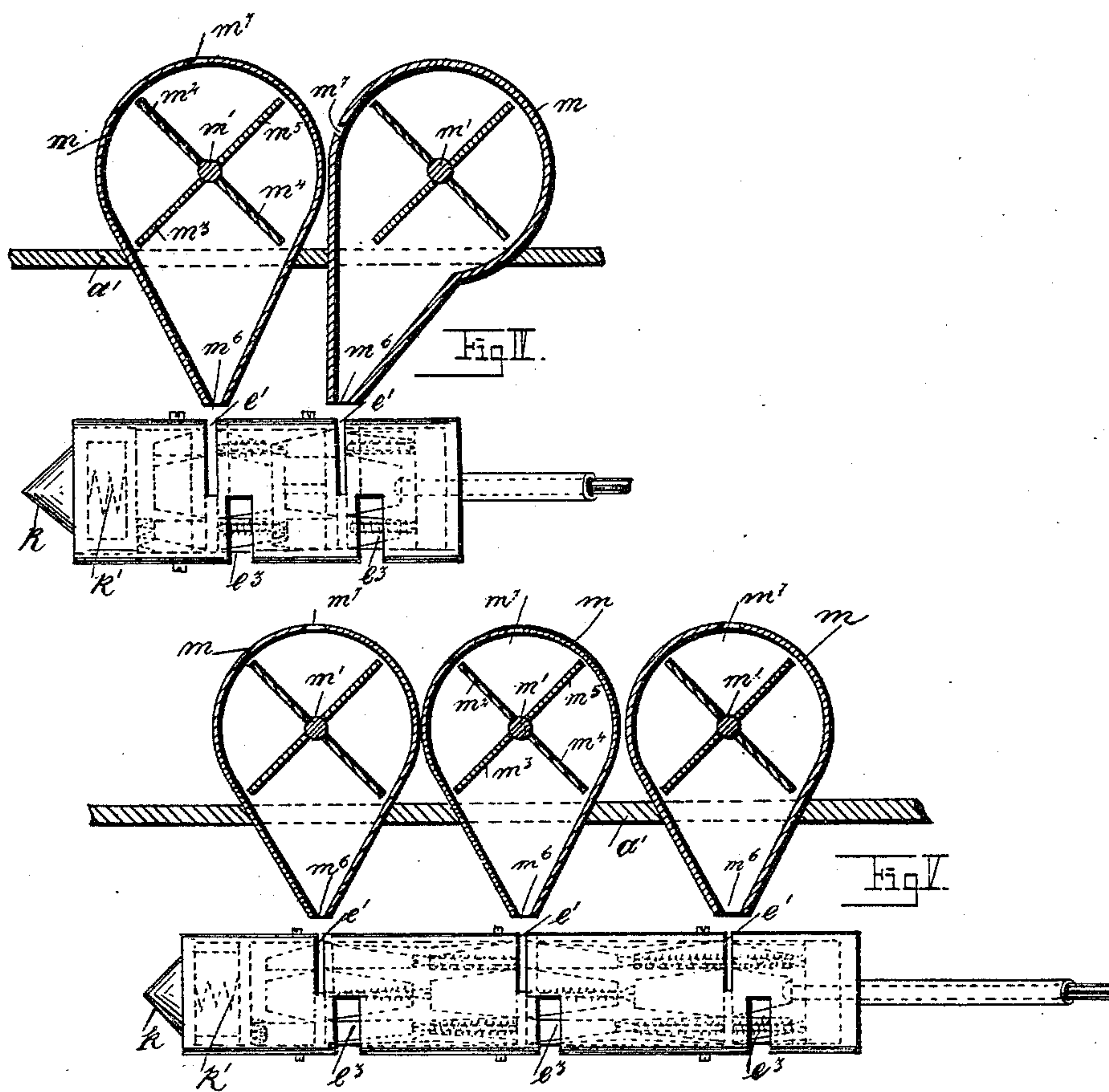
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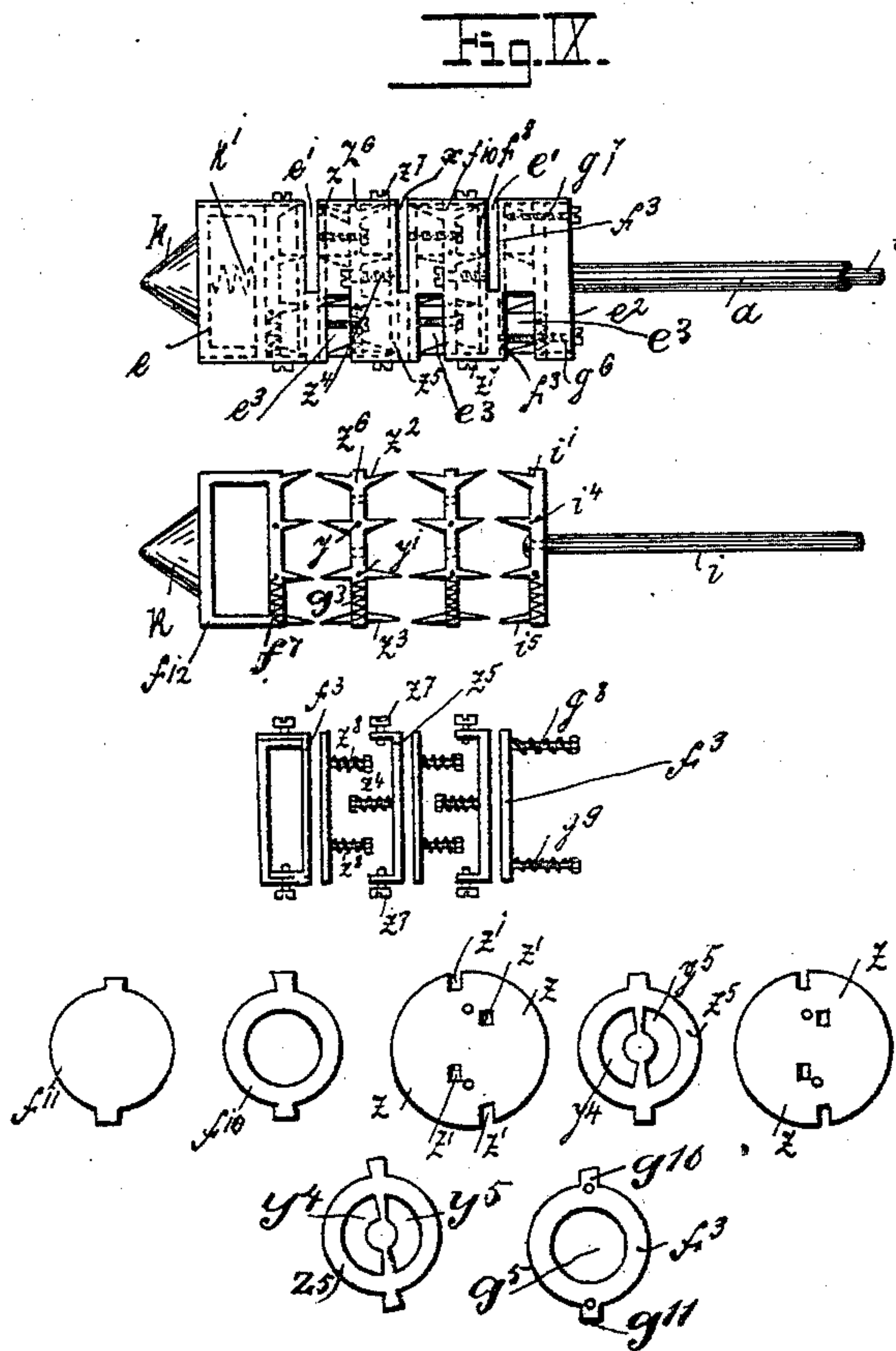
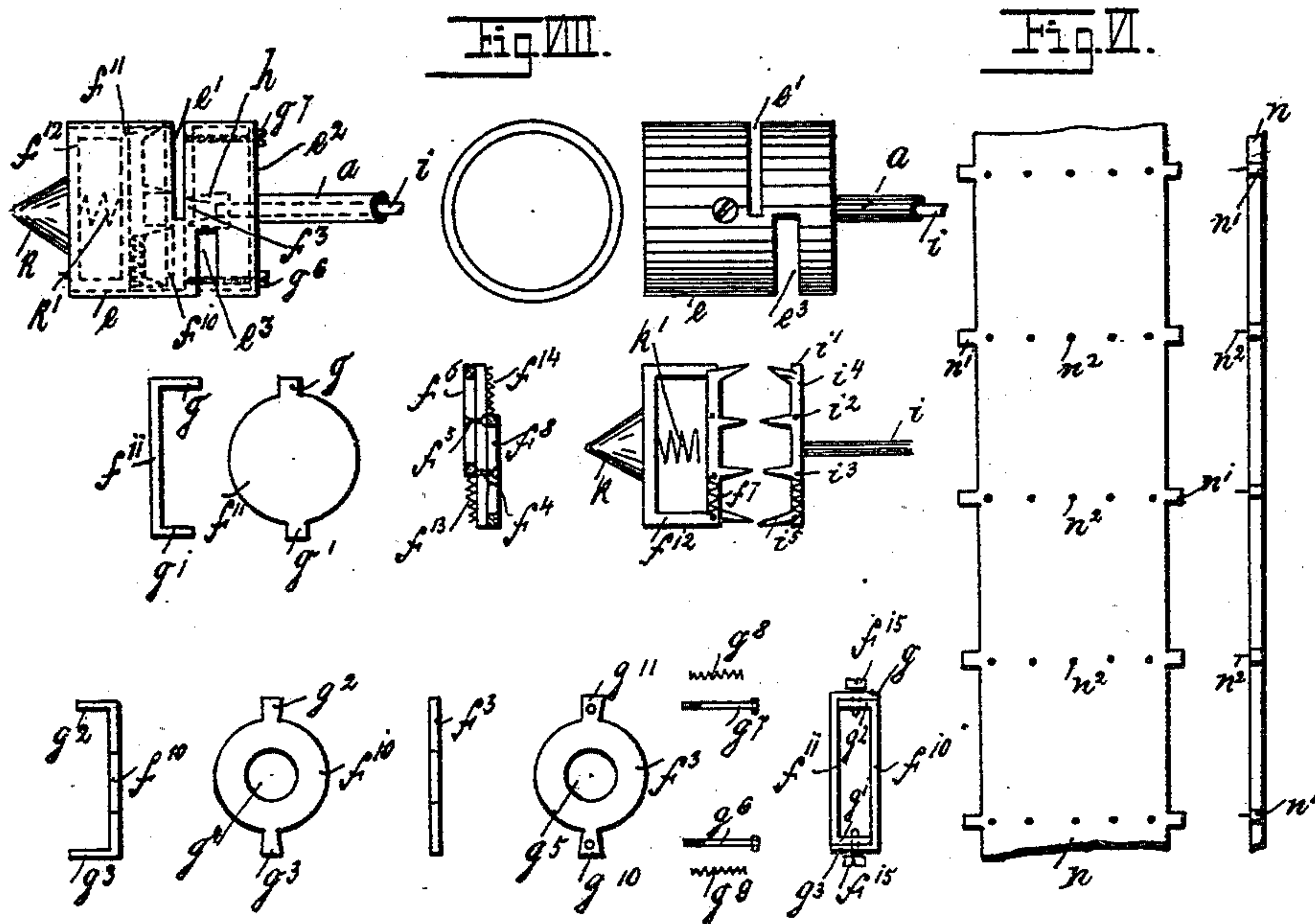
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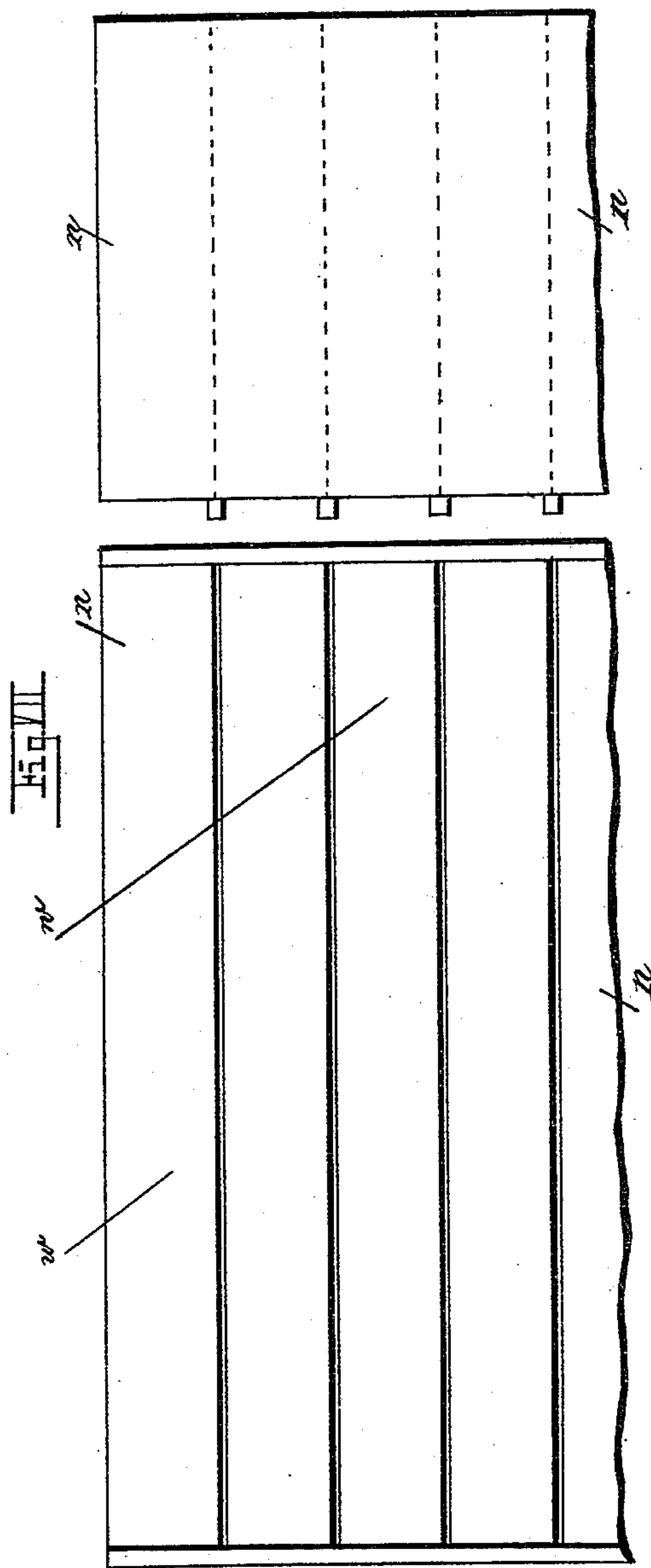
(No Model.)

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UNITED STATES PATENT OFFICE.

ALPHONS BRÄU, OF AMBERG, GERMANY.

COIN-OPERATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,700, dated August 11, 1891.

Application filed March 9, 1891. Serial No. 384,253. (No model.)

To all whom it may concern:

Be it known that I, ALPHONS BRÄU, overman, of Amberg, in the Kingdom of Bavaria and German Empire, have invented new and useful Improvements in Coin-Operated Vending-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of this invention is to automatically deliver postage-stamps and other similar articles, such as railway, theatrical, and other tickets, checks, or passes, postal-cards, postal-orders, and commercial articles of similar size, these articles being delivered free when the mechanism which holds them fast is released by the insertion of a definite coin in an opening provided for the purpose in the apparatus.

In the accompanying drawings, Figure I is a side sectional view of a machine in which two of my improved delivery mechanisms are joined together. Fig. II is a front view of the same. Fig. III is a transverse section on line xy of Fig. I. Fig. IV shows the form of drum used for the insertion of two coins for effecting the release of the mechanism and corresponding funnel-shaped coin-receptacles m . Fig. V illustrates a drum designed to receive three coins and provided with a similar number of funnel-shaped coin-receptacles. Fig. VI shows a front and side view of the plate n upon which the stamps are carried, and Fig. VII illustrates a modification of such plate for the sale of other articles. Fig. VIII shows details of the drum for the insertion of a single coin, and Fig. IX shows details of the drum arranged to receive three coins.

The apparatus consists of a casing or frame-work a' , which is fixed in position in a suitable manner to a vertical wall a^3 by means of the brackets s , or which may, if desirable, be placed upon a suitable stand. An upright frame b , arranged on the inside of the casing a' , supports a lever a , which is bored throughout its length and capable of oscillating, being pivoted or suspended between the pointed screws b^3 . The shorter arm of this lever a is provided with a tubular extension a^2 , which incloses a spring t for firmly holding in position a rod i , passing centrally through the lever, while the other or longer arm of the lever a is provided with a drum

e to receive the coin as it is dropped from the receptacle m .

The horizontal arm b' of the upright frame b is furnished with a set-screw c , by means of which the tension of the spiral spring d can be regulated by a key inserted through the opening r of the frame-work a' . This spring d bears at one end against the set-screw c and at the other against the extension a^2 . A lever d^2 is mounted and oscillates on the axis d' of the upright arm b^2 and has projections d^3 and d^4 bent at right angles, as illustrated. A spiral spring e^4 is connected at one end to a projection d^5 of the arm d^3 , its other end being affixed to the arm b' of the upright frame b . The projections d^3 and d^4 engage at the required instant with a device, hereinafter more fully described, to regulate the delivery of the postage-stamps, tickets, or other articles to be disposed of. The drum e , serving to receive the coins and mounted upon the longer arm of the double lever a , consists of a cylinder furnished with a slot e' , into which the coin drops, and with another slot e^3 , formed in the lower half of the cylinder, through which the coin falls and escapes into the compartment beneath. A slide f^{12} is arranged in the drum e and carries the plate f^7 , (see Fig. VIII,) the forks f^6 and f^8 of which are capable of turning upon the axes f^5 and f^4 and which are held in predetermined positions by the forks f^6 and f^8 . The forks f^6 and f^8 are arranged on both sides of the frames f^{12} , are each provided with two or more teeth, and are pivoted on the axes f^5 and f^4 , in order to enable their teeth to touch coins inserted in any position in the receiving-slots of the drum e to actuate the drum and also that they may catch bent and damaged coins. The slide f^{12} is held in position by the spring k' , the extremities of which are respectively fixed to the slide f^{12} and to the plate f^{11} . The said slide f^{12} is capable of sliding in the cylinder or drum e , and is guided by the casing formed by the two plates f^{10} and f^{11} . The diameter of the plate f^{11} is equal to the clear width of the slide f^{12} , and the projections g and g' of the same are bent at right angles. The plate f^{10} is also furnished with projections g^2 g^3 , bent at right angles and with a central opening g^4 . (See Fig. VIII.) The plates f^{10} and f^{11} are connected

together by screws f^{15} , which likewise fix them in the drum. The drum further contains the plate f^3 , furnished with a central opening g^5 and two projections g^{10} g^{11} . This last plate is firmly held in connection with the rear wall e^2 of the drum e by the pins g^6 g^7 , screwed through the plate f^3 , and is under the control of the springs g^8 g^9 . The rod i passes through the rear wall e^2 of the drum and is inclosed in the tubular or hollow lever a , as hereinbefore described, its outer end carrying the fork h , the prongs of which have a tendency to enter the opening g^5 of the plate f^3 or an arm i' , which, like the frame f^{12} , supports the two forks i^4 i^5 , arranged on one side thereof, oscillating upon the two axes i^2 i^3 and held by springs in a suitable position against the arm i' . The lower half of the drum e is provided with the slot e^3 , through which the coin is dropped into the coin-box. The frame f^{12} carries the point k , upon which a pusher l is capable of operating, the latter being located in an extension l' of the framework or casing a' and held by the spring l^2 in a predetermined position, limited by the collar l^3 .

Above the drum is arranged an opening for coins, consisting of a funnel m , mounted upon the frame or casing a' in such a manner that the opening or outlet m^6 of the same is situated exactly above the slot e^3 in the drum e . Mounted in the funnel m are the extremities of an axis m' , carrying four radiating blades m^2 m^3 m^4 m^5 , which turn freely therewith. The coin is inserted in the slot m^7 .

The improved mechanism for carrying the supply of postage-stamps, tickets, and the like is constructed in the following manner—that is to say, upon a plate n , furnished upon its face with needles n^2 , are placed the articles which are to be delivered. This plate has formed on its edge at suitable distances apart a number of projections or teeth n' . The plate n , thus furnished with articles for sale, is introduced in the slot n^4 of the casing a' and firmly held therein by the arms d^3 of the lever d^2 , these arms being connected together by the cross-bars d^6 d^7 (see Fig. III) and normally held in this position by the spring e^4 . The part of the plate n protruding through the slot n^4 is surrounded by a casing n^5 , which is fixed upon the back plate a^3 of the apparatus. The casing a' carries immediately in front of the slot n^4 the inclined or slanting plate o , which comes into contact with the plate n at its free extremity. The space or receptacle p is designed to receive the coins as they drop from the drum e .

The action of the machine is as follows: When the apparatus is in its normal position, the lever a is not in horizontal position, as shown in the drawings, the arm carrying the drum e being, on the contrary, a little higher. As soon, however, as the coin representing the value of the article which is to be purchased is inserted in the slot m^7 it falls into

the drum e and re-establishes the equilibrium of the lever—that is to say, brings it in such a position that the pusher l when operated strikes the point k of the drum e and pushes forward the slide f^{12} , so that the forks f^6 and f^8 of this frame bear firmly upon the dropped coin and move at the same time the forks i^4 and i^5 of the rod i . This rod i , by overcoming the power of the spring t , causes the lever d^2 , oscillating upon the axis d' , to release the teeth n' of the plate n , which slides down until the arms d^3 are brought again into play under the action of the spring e^4 , and thus arrest the motion of the plate n . The stamps held by the needles n^2 are released as the plate n moves downward, owing to their being caught by the slanting plate o . These stamps or other articles for sale are thus placed upon the plate o , from whence they can be readily obtained by the purchaser. When the pressure on the knob of the pusher l is withdrawn, the same is brought back into its normal position by the spring l^2 , in consequence whereof the slide f^{10} and forks f^6 and f^8 , which now release the coin, are likewise brought back by the spring k' into their former position. The spring t now pushes forward the rod i , with the forks i^4 i^5 , and the coin is laid in front of the plate f^3 . As the coin passes by the slot e^3 it falls through the same into the storage-receptacle p .

When the machine is used for the sale of articles the price of which has to be paid for by means of different coins—for instance, one-cent and two-cent stamps—the said machine is provided with a drum having two or three slots e' to receive the coins and an equal number of slots e^3 to allow them to drop through, while a corresponding number of funnel-shaped receptacles m are also provided. The said drums are in such cases arranged as follows: Upon the slide f^{12} , furnished with a point k and the movable forks f^6 and f^8 , the prongs of which have a tendency to press upon the disk f^{10} , is further mounted a disk z , (see Fig. IX,) having four openings z' to allow for the entrance of the four prongs z^2 z^3 , two of which extend to the left and two to the right hand side, and the rack z^6 , holding the two forks, is fixed to the disk z^5 by the pins z^4 . The disk z^5 is fixed to the drum e by means of its projections, which are bent at right angles, and of the screws z^7 . The rack z^6 is movable laterally, as well as the disk z , and is firmly held in position by the springs z^8 . The forks z^2 z^3 , which oscillate on the axes y y' , are also held in corresponding and determined positions by the springs y^3 . The disk z^5 is furnished with two notches or openings y^4 and y^5 , through which the right-hand prongs of the forks z^2 z^3 nearest to the pin z^4 have a tendency to meet, while the right-hand prongs farthest from the pin z^4 can move over the periphery of the disk z^5 , which has for this purpose a less diameter than the distance between the two forks, the points of which pass away over z^5 . The disk

5 z^5 follows also the second slot x , through which the second coin is dropped, and this slot x (as well as in the drum arranged for the reception of only one coin) is limited by the plate f^3 , furnished with an opening g^5 and projections g^{10} g^{11} and connected to the rear wall e^2 of the drum by screw-pins passing through the said plate f^3 , which is controlled or held in position by the springs g^8 g^9 . The rod i , with the arm i' , carrying the two forks i^4 i^5 on one side, is inserted, as in the drum here-
 10 inbefore described, through the rear wall e^2 of this drum. The lower half of the drum e is furnished with the two slots e^3 e^3 , through
 15 which the coins drop into the storage part p of the casing.

The mode of operation of a drum arranged for the insertion of two coins is as follows: After the latter have both been dropped, on
 20 the pusher l being actuated the same pushes forward the slide f^{12} of the drum e , the forks f^6 f^8 of which press in consequence against the coin inserted through the slot e' and move the same forward, as well as the disk z and
 25 the rack z^6 , furnished with forks, which rack seizes hold of the second coin and pushes it along, the latter on its part pushing the arm i' of the rod i . The rod i now releases the levers holding the stamp-plate n , and when
 30 the pressure is removed from the pusher l the mechanism moves back, and on its return stroke the inserted coins are freed by the respective forks, so as to be able to drop through the slots e^3 of the drum e into the
 35 receptacle below. If it is desired that the machine should allow of the insertion of three coins, three funnel-shaped receptacles m are provided and plates z z^5 , rack z^6 , with forks z^2 z^3 , are arranged before the arm i' of
 40 the rod i . The drum e then has another slot upon its upper half for the insertion of another coin, and a corresponding slot on its lower half to allow the said coin to drop through into the storage space or receptacle.

45 When instead of postage-stamps other objects—such as postal-cards, railway, omnibus, and theatrical tickets, checks, or passes, or commercial articles of similar size—are required to be sold, the plate n is accordingly
 50 differently constructed—that is to say, is furnished with divisions, compartments, or chambers, in each of which is placed one of the articles for sale, and the slot n^4 is enlarged to allow of the passage of corresponding
 55 plates n , the inclined plate o being dispensed

with, while the double levers d^2 are connected together by cross-bars d^6 d^7 of a length corresponding to the width of the compartments or chambers w .

The apparatus operates exactly as above 60 described.

In the casing a' is arranged an opening u , closed by a glass pane, through which the position of the lever a may be controlled by means of an index u' , carried by the drum e . 65

The coin-box p is opened or closed by the key t' .

Figs. II and III show two corresponding delivery mechanisms surrounded by one common casing for the delivery of various stamps 70 or checks; but several such delivery mechanisms may be likewise inclosed in one common casing, each separate mechanism being constructed in exactly the same manner as if it were furnished with a distinct casing. 75

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a coin-operated vending-machine, the combination, with a slotted funnel-shaped coin-receptacle having a transverse shaft 80 therein provided with radial arms, of a hollow longitudinally-ranging lever pivoted to rock vertically in the casing of the machine, a slotted coin-receiving drum on the outer end of said lever, a spring-cushioned rod slid- 85 ing in said lever, plates on said rod provided with prongs to engage coins entering the drum, and a spring-pusher for operating said rod, substantially as shown and described.

2. In a coin-operated vending-machine, the 90 combination, with a hollow longitudinally-ranging lever pivoted to rock vertically in the casing of the machine, a slotted coin-receiving drum on the outer end of said lever, a spring-cushioned rod sliding in said lever pro- 95 vided with pronged plates to engage coins entering the drum, and means, substantially as shown, for operating said rod, of an angular spring-pressed lever pivoted in the path of said rod, and a goods-carrying plate sliding 100 in the path of the said lever and having projections engaged thereby, substantially as shown and described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ALPHONS BRÄU.

Witnesses:

JOSEF SOLLEDER,
HAMMER LORENZ.