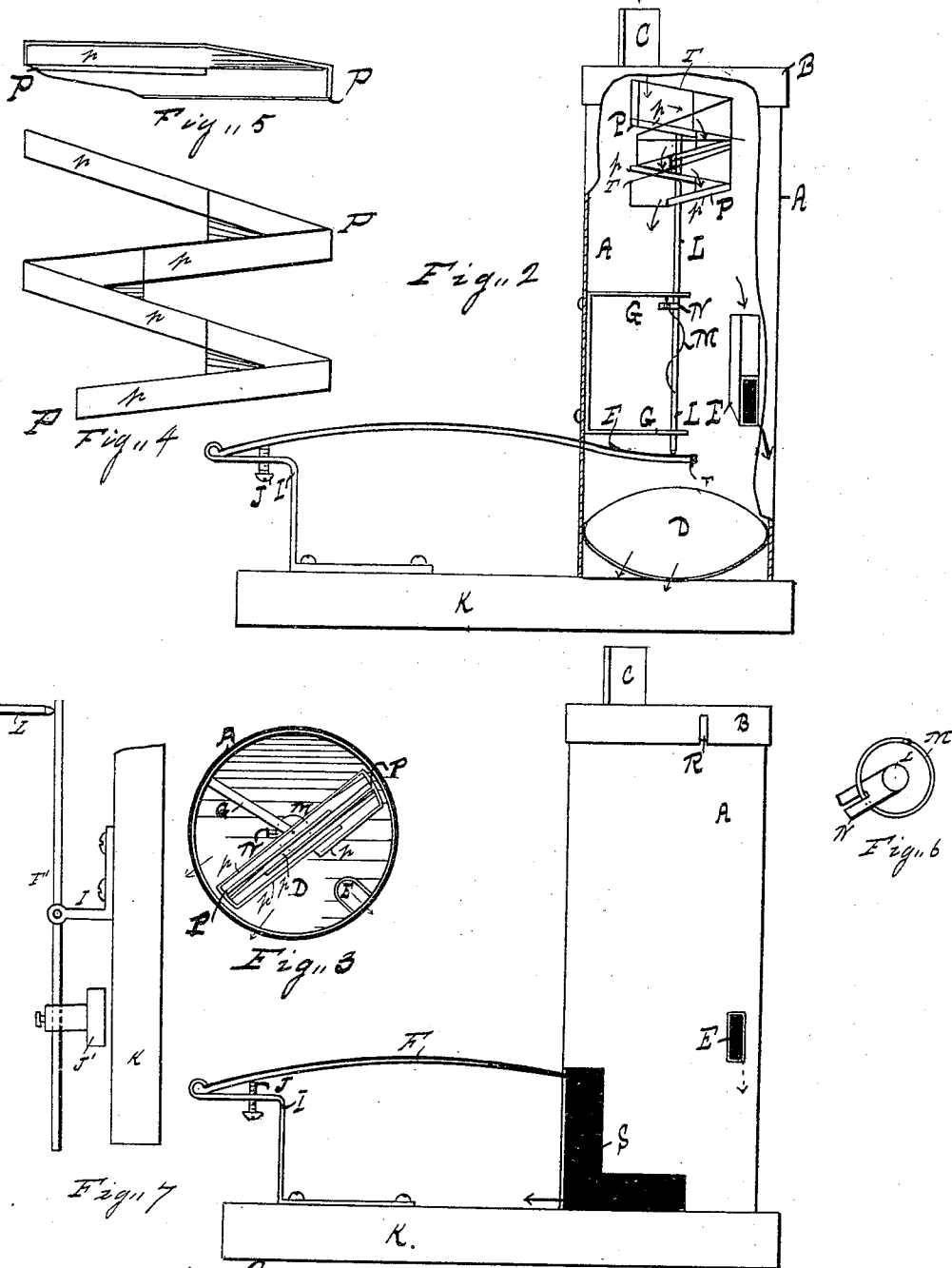


(No Model.)

H. C. HART.
MACHINE FOR THE ASSORTMENT OF COINS.

No. 461,704.

Patented Oct. 20, 1891.



Witnesses
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Fig. 1
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UNITED STATES PATENT OFFICE.

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MACHINE FOR THE ASSORTMENT OF COINS.

SPECIFICATION forming part of Letters Patent No. 461,704, dated October 20, 1891.

Application filed September 1, 1890. Serial No. 363,701. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. HART, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful
5 Improvement in Mechanism for the Assortment of Coins or Disks Intended for Use in Automatic Vending-Machines, of which the following is a specification.

My invention consists in a mechanism for
10 the assortment of coins or disks, and is intended for use in automatic vending-machines.

As my invention relates only to the coin-assorting mechanism, I have illustrated this
15 without any connection whatever with a vending-machine, it being understood that it may be connected with any known form of automatic vending-machine.

Figure 1 is an elevation of my mechanism;
20 Fig. 2, an elevation with the casing broken away; Fig. 3, a plan view with the cover removed; Fig. 4, a side elevation of a race; Fig. 5, a plan view thereof; Fig. 6, a plan view of the rotating mechanism; and Fig. 7 is a partial
25 side elevation of an equivalent for the supporting-spring.

For purpose of illustration I have mounted the mechanism on a block K, it being understood that in putting the mechanism into an
30 automatic vending-machine it will be carried on a suitable support inside the casing of the machine.

A represents a casing, preferably in the form of a cylinder, having a chute E opening
35 through one side thereof and an opening S at its lower end, the bottom of said cylinder being made of an incline D, adapted to throw any articles falling thereon out through the opening S.

F represents a spring carried on a bracket
40 I, its free end extending within the cylinder A.

J represents a set-screw in said bracket for regulating the tension of spring F.

L represents a vertical shaft within cylinder A, running through guides G G carried
45 on said cylinder and resting freely at its lower end upon the free end of spring F, so that the weight of said shaft and its attachments is carried on said spring. P represents a coin-
50 race carried on the upper end of rod L.

As illustrated in the drawings and more

particularly shown at Fig. 4, the coin-race P is a zigzag composed of several oppositely-inclined short sections *p*, the object of this construction being to give the race sufficient inclination to cause a coin to traverse the race
55 freely and yet to retain the coin on the race sufficiently long to permit the assorting mechanism to act. The race may of course be made of other forms than that shown; but I
60 think the one shown economizes space and it has been found satisfactory in its operation. It is probable, however, that the specific form of this part of the device will require to be
65 modified to suit the available space of different forms of automatic vending apparatus.

The coin-race being supported on the spring F, it is evident that the weight of a coin on the coin-race will to a greater or less extent depress the spring. The apparatus is so arranged that as the race P and shaft L are depressed by the weight of a coin on the race, the said race and shaft have a rotary or horizontal as well as a vertical movement. The mechanism illustrated for this purpose consists of a split pin N fastened to shaft L,
70 and a spiral wire M secured to the guide G, encircling shaft L and running through the split pin N, whereby the shaft L in rising or falling is compelled to follow the spiral course
75 of the wire M. The principle is that of a screw traversing in a nut, and may be attained in any of the known ways of combining a reciprocating and rotary motion.

C represents the coin-chute of a vending-
85 machine of any type, the lower end of which is directly above the upper end of the race P when that is at its highest position.

B represents a cover to cylinder A, which I have illustrated for the purpose of supporting the chute C, and R indicates a pin in the cylinder connecting with a slot in the flange or cover B, to insure correct position of chute C. In constructing a complete vending-machine the cover B will not be necessary, as
95 the chute C will be otherwise supported.

T, Fig. 1, represents the upper edge of each section of the race P, which may be simply a wire to hold the coin in position when it is not desired to stamp the section *p* complete
100 out of sheet metal.

The operation of my invention is as fol-

lows: When in a state of rest the parts will be in the position shown in Figs. 2 and 3. If now a coin be dropped through the chute C, it will fall upon the race P and begin to travel
 5 down said race. The weight of said coin will overcome the resistance of the spring F and carry the race P and shaft L downward and horizontally, until the delivery end of the race P will assume a vertical position at that
 10 point where the increased tension of the spring F counterbalances the weight of the shaft L and race P with the coin, and a horizontal position, which is determined by the spiral wire M. Under this point is placed a
 15 chute E, which is made sufficiently wider than the thickness of the proper coin to compensate for differences in weight between new and worn coins. The result is that the coin when it leaves the race P falls into
 20 the chute E, and thence travels to the delivery mechanism of the machine. If, however, a disk lighter than the proper coin be passed through the chute C, the race P and shaft L will not be depressed as far as
 25 by the proper coin, and therefore the horizontal position of the delivery end of race P will not register with chute E, and the disk or coin will be dropped outside of said chute and fall on the inclined bottom D and be conducted
 30 out of the machine. If a disk or coin heavier than the proper coin be dropped through chute C it will depress the race P and shaft L farther than a proper coin will do, and therefore the delivery end of the race P will be
 35 turned farther than by the proper coin, so that the disk or coin will be delivered beyond the chute E onto the inclined bottom D.

It is evident that instead of the spring F a counterbalanced lever or scale-beam may be
 40 used to support the shaft L, as indicated in Fig. 6, in which F' represents a lever pivoted on bracket I, and J' represents an adjustable weight on said lever.

It will be noticed that the balance race or chute in this machine is not pivoted so that
 45 it tilts or turns under the weight of a coin, but that the whole race rises and falls together in the same plane, whereby the inclination of the race is the same at all times, thus preventing undue acceleration of move-
 50 ment, which always ensues where a coin descends the tilting race.

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

1. In an automatic vending-machine, a balanced coin-race carried on a movable support
 55 and free from connection with any stationary part of the machine, whereby the inclination of the race in its rise and fall remains invariable, substantially as and for the purposes set
 60 forth.

2. In an automatic vending-machine, a balanced coin-race and mechanism for giving said race a rotary movement when moved vertically, substantially as and for the purposes set
 65 forth.

3. A coin-weighing mechanism consisting of a balanced race, a spiral connected with said race, and a coin-receiving chute at a pre-
 70 determined point in said spiral, substantially as shown and described.

4. A balanced coin-race, in combination with a pin and a spiral wire, whereby said coin-race is compelled to rotate as it moves
 75 vertically, substantially as and for the purposes set forth.

5. A balanced zigzag coin-race having its upper end normally registering with a chute for the reception of coin, a spiral connected with said race, and a coin-chute at a pre-
 80 determined point on said spiral, substantially as and for the purposes set forth.

HENRY C. HART.

Witnesses:

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