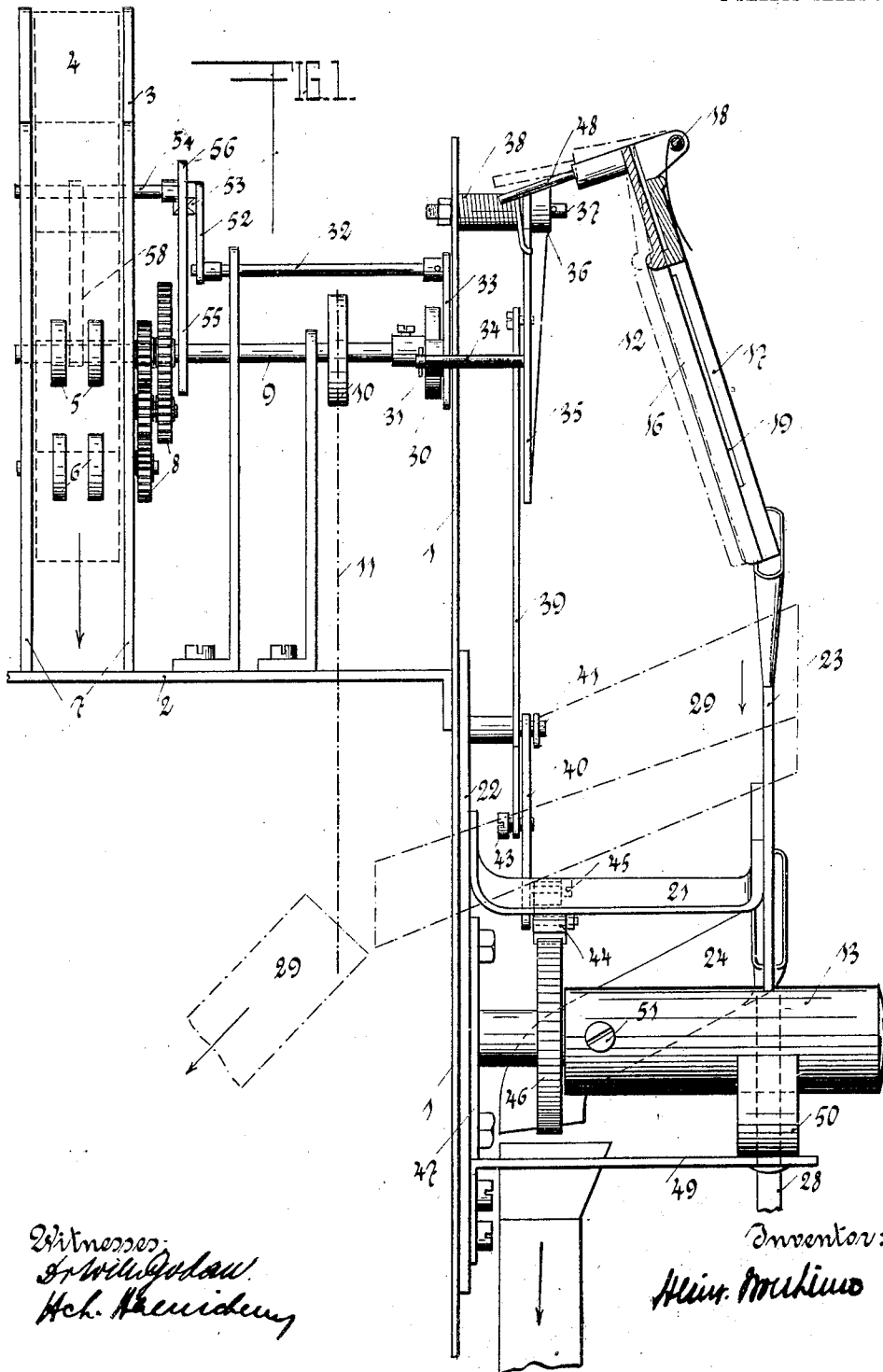


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 AUTOMATIC COIN TESTER FOR COIN FREED APPARATUS.
 APPLICATION FILED JUNE 14, 1909.

980,040.

Patented Dec. 27, 1910.

2 SHEETS—SHEET 1.



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AUTOMATIC COIN-TESTER FOR COIN-FREED APPARATUS.

980,040.

Specification of Letters Patent. Patented Dec. 27, 1910.

Original application filed November 27, 1908, Serial No. 464,592. Divided and this application filed June 14, 1909. Serial No. 502,174.

To all whom it may concern:

Be it known that I, HEINRICH WOLLHEIM, manager, a subject of the Emperor of Germany, residing at Berlin, in the Empire of Germany, have invented certain new and useful Improvements in Automatic Coin-Testers for Coin-Freed Apparatus, of which the following is a specification.

This invention relates to a coin controlled apparatus and is a division of the application filed Nov. 27, 1908, Serial No. 464,592.

The object of the invention is to provide locking means which is automatically released, to engage the operating means of the apparatus when the merchandise has become exhausted.

In the accompanying drawings an example of a form for carrying out the invention is illustrated.

Figure 1 is a front elevation of a part of the mechanism of the coin freed apparatus for postage-stamps or the like, with the outer casing removed; and in combination with the coin tester which is shown partly in section. Fig. 2 is a side elevation of the coin tester, partly in section, the outer casing being removed. Fig. 3 is a side elevation of a part of the selling mechanism which shows the connection between the driving mechanism for the coin tester and the means for the automatic stopping of the apparatus where the goods are exhausted.

To a partition-wall 1 of the casing inclosing the whole mechanism a bracket 2 is attached upon which the mechanism for the automatic delivering of the postage-stamps or the like is supported. From this mechanism the peculiar construction of which is not of importance for this invention, only some principal parts are illustrated in the drawings. It consists essentially of a casing having two side parts 3 which inclose between them the diverse means for feeding the stamp-strip 4 and to separate single cuts of it after a coin has been thrown in. The feeding mechanism for the strip consists of a pair of rollers 5, 6 arranged one beneath the other which are at best shown in Fig. 3. The front pair 5, 6 is journaled in a separate and removable part 7 of the casing 3 to enable an opening or detachment of the feeding mechanism. This feeding mecha-

nism is operated in a known manner by the gear wheels 8 which are actuated from the main shaft 9 and which rotate the feeding rollers 5 and 6 simultaneously and in the same direction. The main shaft 9 is driven by a chain-wheel 10 and chain 11 by means of a suitable motor which is, not being an essential part of the invention, not illustrated in the drawings. The rollers 5, 6 located in the casing part 7 are automatically rotated by the stamp-strip which is moved forward by the rollers in the direction indicated by the arrow. The stamp-strip is fed forward a determinate distance in known manner by the rollers 5, 6 and is separated into cuts of a determinate length. The separated strip-part falls into a delivery opening on the front side of the apparatus, the same being also not illustrated in the drawings as it is not of importance for this invention.

The coin tester consists essentially of two separated parts which the coins thrown in must pass successively. The one part 12 is arranged directly behind the introducing opening 15 located in a plate 14 fixed on the front side of the casing. This part 12 is of a construction well known and consists of two parts 16, 17 which oscillate on a common shaft 18, see Fig. 1, and form a channel 19 to let pass the coins thrown in. The channel 19 or the parts 16, 17 forming it are made at the end in an angle 20, as shown in Fig. 2, and discharge into a chute 23 arranged below them which is attached in a suitable manner, for example by a bracket 21, to a supporting plate 22 fixed on the partition-wall 1. This chute leads the coins discharging from the tester 12 to the second tester 13. The latter consists of a sleeve or cylinder which, as is more clearly described later on, at each operation of the selling mechanism described above by a coin thrown in, is automatically rotated by a part of its circumference.

Each of the testers 12 and 13 has to accomplish a determinate function, i. e. the tester 12 the construction of which is well known serves to test the coins introduced in respect to their size, shape and weight, that is to say it leads only such coins to the chute 23 which have the size, shape and weight required to actuate the apparatus in

the regular manner. The second tester 13 the particular combination of which with the tester 12 is an essential feature of the invention, has the function to test the coin introduced in respect to its material, this tester being so arranged and constructed that the coin discharging from the tester 12 at first must fall a determinate height (through the chute 23) before it drops upon the tester 13 and is forwarded from this into a chute 24 which leads the coins to the mechanism actuating automatically by the weight of the coin the driving motor of the vending apparatus. The entering slot 25 of the chute 24 is located in such a position in respect to the tester 13 that the coins dropping from the chute 23 upon the tester must have a certain elasticity which causes them to rebound somewhat from the tester whereby they arrive at the entering slot of the chute 24. The discharging-opening 26 of the chute 23 is in a suitable manner enlarged or cut out to procure a free passage for the coin rebounded. On the other hand the chute 23 and the entering opening 25 of the chute 24 are arranged inclined to the tester in such a manner that they lie nearly in the direction of the dropping and rebounding of the coins so that any dropping out of a coin into the interior of the casing of the apparatus is prevented. Thus the coin 27 thrown in, if it has the required elasticity, will rebound from the bounding-piece 13, as shown in Fig. 2, and will thereby enter into the slot 25 of the chute 24 as shown in dotted lines at 27^a. On the contrary, if a coin is of bad or spurious material, it will only slightly rebound and roll down from the piece 13, as shown in dotted lines at 27^b and arrive at a conduit 28 which may be so arranged that the bad or spurious coin will be returned to the customer or brought to the usual or a special receptacle for such coins without having released the vending mechanism. Spurious coins being held back by the tester 12 and released from it at each operation of the apparatus drop directly from the tester to a catch device 29 which leads back these coins directly to the delivery opening. The arrows in the drawings indicate the paths which take the diverse coins passed through the testers.

The mechanism for the automatic operating of the coin testers is the following: Upon the main shaft 9 of the vending mechanism is fixed an eccentric 30 which works against a roller 31 of an oscillating lever 33 attached rigidly to a shaft 32 lying parallel to the shaft 9. The lever 33 rests against a pin 34 which is fastened rigidly to the arm 35 of an angle-lever 35, 36 which oscillates upon a shaft 37 journaled in the partition-wall 1 of the casing. Upon the shaft 37 is a spring 38 which governs the angle lever in such a manner that it always

returns automatically the lever to its position of rest. Jointly connected with the lever arm 35 is further a draw-bar 39 the other end of which is attached to a shaft 41 bearing in the plate 22. The end of the rod 39 is adjustable on the lever 40 by means of a slot 42 and screw 43, to regulate the stroke of the lever 40. At the free end of the lever 40 a pawl 44 is journaled which is governed by a spring 45 attached to the lever. The pawl meshes with a ratchet-wheel 46 rigidly fastened to the bounding-piece 13 and rotating with it on a shaft 47 bearing in the plate 28. The other arm 36 of the angle-lever works against a pin 48 attached to the movable part 16 of the tester 12, oscillating on the journal 18.

The tester device operates as follows: After one has thrown in a coin through the opening 15 and the same has passed the testers 12 and 13 in the manner described before and has arrived through the chute 24, the releasing mechanism of the apparatus and thereby the driving motor is started and the vending mechanism comes in action during which the shaft 9 makes always one whole rotation. Thereby the eccentric 30 attached thereto also rotates once wholly in the direction of the arrow in Fig. 3, working against the roller 31 of the lever 33 so that the latter oscillates aside. Thus the lever moves the pin 34 of the lever arm 35 also aside so that further the angle-lever 35, 36 oscillates aside whereby its upper arm 36 works against the pin 48 of the tester 12, which pin is raised, while the other arm 35 draws forth the rod 39 connected therewith. Thereby the pawl 44 attached to the lower end of the rod moves the ratchet-wheel of the tester 13 forward. Thus, after each throwing in of a coin simultaneous action of both parts of the testing device takes place, i. e. by lifting the pin 48 by the lever arm 36 the tester 12 is opened while both parts 16 and 17 are opened (see the position indicated by dotted lines in Fig. 1) so that coins which are thrown in during the operation of the apparatus fall out from the tester without further passing and are led back by the catch device 29 to the delivery opening of the apparatus. Therefore the correct operation of the apparatus is not hindered by coins which are thrown in at a time at which a throwing in shall not take place. Furthermore the bounding-piece 13 is simultaneously rotated forward by the other lever so that each coin thrown in drops upon another, fresh surface of the bounding-piece. Thereby the always correct function of the latter is insured. Simultaneously at each time an automatic cleaning of the bounding-piece takes place.

As the drawings show beneath the bounding-piece a bow 50 is supported upon a bracket 49, and the arms of the bow terminate

y on the bounding-piece so that they
 slide upon them if it rotates. Thereby any
 dirt which rests on the bounding-piece and
 which is mainly supplied by the coins
 5 thrown in is removed again and the bound-
 ing-piece always kept clean. This cleaning
 by the scraper 50 takes place at each mov-
 ing forward of the bounding-piece while it
 slides along both bow-arms. The changing
 10 of the rebounding surface and the automatic
 cleaning of the bounding-piece at each throw-
 ing in of a coin causes the result of an ut-
 most and exact operation of the tester. If
 desired, the bounding-piece may also be ad-
 15 justed lengthwise to vary the bounding-sur-
 face also in the direction of its length. It is
 held in its position upon the shaft 47 by an
 adjusting screw 51. By the acting of the lever
 33 through the main-shaft 9 a further device
 20 is simultaneously operated which causes
 the automatic stopping of the vending mecha-
 nism if the whole vending material placed in
 the apparatus has passed the mechanism.
 This device is described following in refer-
 25 ring to the Figs. 1 and 3. The shaft 32
 bears on its other end, opposite to the lever
 33, an arm 52 the upper end of which is
 provided with a pin, preferably of an angular
 shape. Furthermore, outside of the cas-
 30 ing 3 of the vending mechanism upon a
 shaft 54 bearing in the casing 3 a weighted
 lever 55, 56 is rigidly fixed the upper arm 56
 of which has at its outer end an angle-notch
 57. The lower arm 55 is heavier than the
 35 upper so that it has always the tendency to
 oscillate in the direction of the arrow of
 Fig. 3 and thereby to move the other lever
 arm 56 downward in the direction of the ar-
 row. Rigidly fastened upon the shaft 54 is
 40 further a lever arm 58 situated inside of the
 vending mechanism which is located be-
 tween the upper rollers 5 in such a manner
 that it always slides against the material-
 strip 4 which passes through the rollers. As
 45 both lever arms 55 and 58 are rigidly con-
 nected with the shaft 54 the lever arm 55
 is always retained from its tendency to
 swing forward in the direction of the arrow,
 by the lever arm 58 sliding always against
 50 the strip, so that the lever arm 56 is held
 up in a position shown in Fig. 3 in full lines.
 Now if the whole of the strip-shaped material
 placed in the apparatus, has passed the
 rollers 5, 6 and the lever arm 58 finds no
 55 more a support on the strip the lever arms
 58, 55 by the overweight of the latter, swing
 forward into the position shown in Fig. 3
 by dotted lines. Thereby the lever arm 56
 60 comes also in the lowered position indicated
 by dotted lines.

At each movement of the shaft 32 in the
 direction of the arrow Fig. 3, which move-
 ment takes place, as described before, at each
 throwing in of a coin, the arm 52 swings in

the direction of the rotation of this shaft, 65
 i. e. in regarding Fig. 3, it swings to the
 right into the position shown by dotted
 lines. The delivering of the separated strip-
 pieces now takes place in such a manner
 at every time that strip-piece is separated and
 70 delivered which lies between the lower rollers
 6, while simultaneously the strip-piece
 which was before between the upper rollers
 5, leaves these rollers and enters between the
 lower rollers until it is delivered by a fur-
 75 ther operation of the apparatus. The ar-
 rangement of levers as described is put
 in action now if there is the last strip-
 part between the upper rollers 5 and the last
 but one strip-part to be delivered between
 80 the lower rollers 6. In this position of
 both strip-parts remaining in the apparatus,
 if a coin is thrown in, the last but one strip-
 part held between the rollers 6 is separ-
 85 ated and through the rollers carried out-
 ward of the vending mechanism, to the de-
 livery opening. At the same time the test-
 ers are operated in the manner as described
 before, while the shaft 32 and the lever-arm
 52 connected therewith swing in the direction
 90 of the arrow in Fig. 3, and the lever-arm 52
 comes into a position indicated by dotted
 lines. After the delivering of the last but
 one strip-part by the rollers 6 the last strip-
 part enters between these rollers in leaving
 95 the rollers 5. Thereby the lever-arm 58 loses
 its support which it had before on the strip,
 so that the lever-arm 55 swings forward in
 the direction of the arrow and the arm 56
 sinks in the direction of the arrow. By this
 100 the notch 57 of this arm comes into a posi-
 tion before the pin of the arm 52 moved lat-
 erally so that therefore after delivering of
 the last but one strip-part the arm 52 is
 not able to go back into its position of rest
 105 and thus the shaft 32 rests also in the posi-
 tion of action. Thus also the levers 33 and
 35, 36 remain in their position of operation
 indicated by dotted lines in Fig. 3, so that
 on the one hand the tester 12 is held in
 the opened position indicated by dotted lines
 in Fig. 1, and on the other hand the ratchet
 mechanism 39, 40, 44, 46 for the tester re-
 110 mains stopped. Thus, before the apparatus
 is filled fresh with strip-material and the
 lever-arm 56 is released from the pin of
 the arm 52 by the control-officer, a further
 operating of the apparatus is prevented, as
 the coins which may be further thrown in
 115 drop from the open tester 12 into the catch-
 device 29 and are therefore led back to the
 delivery opening of the apparatus without
 having any influence upon the mechanism.
 The essential feature of the invention in
 view of this arrangement is, the combination
 125 of the testers with the stopping mechanism
 and the common operating of all three
 mechanisms by only one shaft, namely by the

main-shaft 9 of the mechanism. The last strip-part remaining in the apparatus may be in a condition to be used or not.

It is understood of course that the invention is not limited to the modifications of the single parts given as an example in the drawings, but regards every modification under its scope which enables the same or nearly the same effects.

10 What I claim is:

1. In coin-controlled apparatus, a coin-testing device open to receive coins and operable to deliver them at either of two different points, and merchandise delivering means operatively connected to said device to provide movements thereto, said device being positionable to deliver coins at but one of said points upon exhaustion of the merchandise being tested.

20 2. In coin-controlled apparatus, a coin-testing device open to receive coins and operable to deliver them at either of two different points, merchandise delivering means operatively connected to said device to provide movements thereto, and a detecting device, said latter device being operably positionable to automatically position the testing device to deliver coins at but one of said points upon exhaustion of the merchandise being vended.

3. In a coin-controlled apparatus, a pivoted coin tester, a rotatable coin tester, an operating shaft for the merchandise delivery means, means operated by said shaft for oscillating said pivoted coin tester, 35 means whereby oscillation of the pivoted coin tester causes partial rotation of said rotatable coin tester, a pivoted weighted element normally engaging the merchandise and held inoperative thereby and means whereby when the merchandise is exhausted and said pivoted weighted element has been released said shaft will be locked against operation. 40

4. In a coin-controlled apparatus, in combination with coin-controlled delivery operating means for vending the merchandise in strip form, means for automatically locking said first means against movement, when the merchandise has become exhausted, a coin catch device leading to the delivery opening of the apparatus, and means whereby 50 when said first means is locked the coin will be placed in said coin catch device to be returned thereby to the delivery opening.

In testimony whereof I affix my signature 55 in presence of two witnesses.

HEINRICH WOLLHEIM.

Witnesses:

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HCH. HAENICHEN.