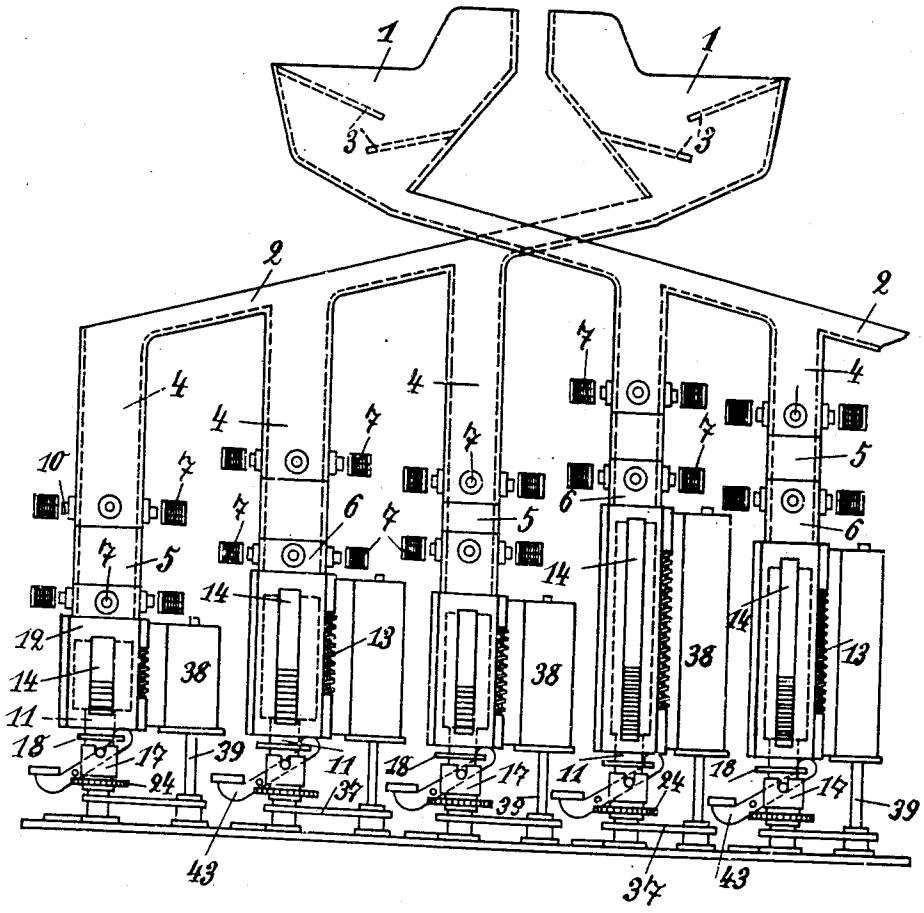
March 7, 1939. G. KOHLMANN 2,149,444

AUTOMATIC COIN COUNTING AND WRAPPING MACHINE

Filed Dec. 24, 1936 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

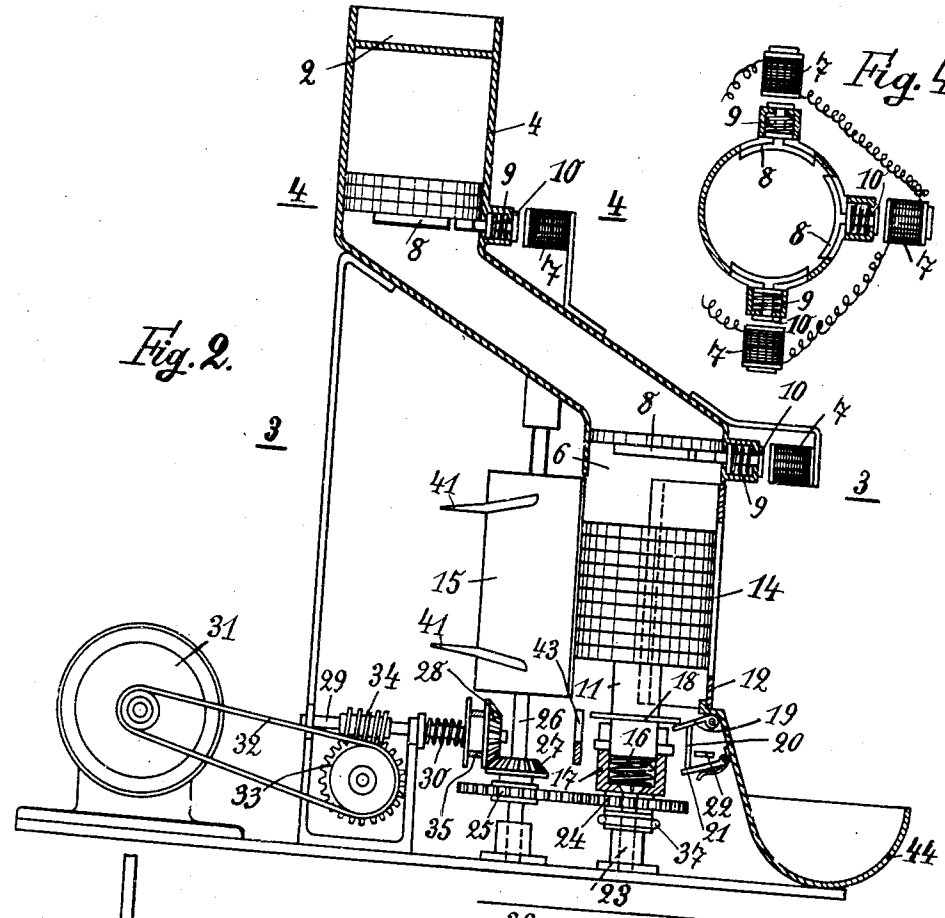
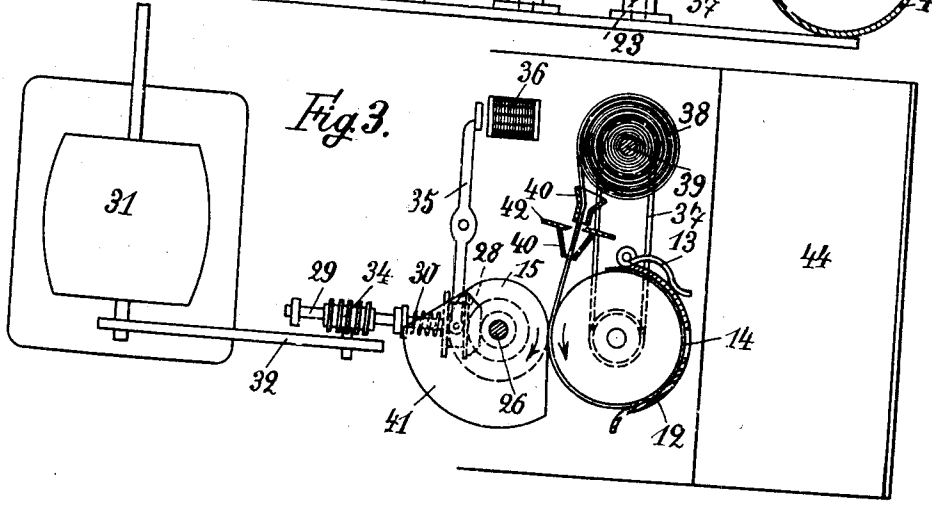


Fig. 4.

Fig. 3.



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AUTOMATIC COIN COUNTING AND WRAPPING MACHINE

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Application December 24, 1936, Serial No. 117,555
In Germany October 25, 1935

2 Claims. (Cl. 93—2)

Automatic coin counting and wrapping machines are known. In these machines all parts are mechanically operated so that a great number of gear elements, toothed and ratchet wheels, levers and the like are necessary for carrying out the coin counting and wrapping operations. This objection is overcome in the coin counting and wrapping machine according to the invention in that electromagnets are substituted for a great number of the mechanical means in the known machines. When the pile of coins to be wrapped gradually descends under the weight of the coins fed, a circuit is interrupted, when the pile has attained the necessary weight, so that the armatures of the magnets liberate barring members which move into their operative position under spring action. By interruption of a second circuit the pile of coins and a roller which wraps the coins in paper are rotated whereupon the wrapped pile of coins by depressing a key is ejected from the machine and drops into a trough.

An embodiment of the invention is illustrated, by way of example, in the accompanying drawings in which:—

Fig. 1 shows the machine in front elevation.

Fig. 2 is a cross section through the counting shaft.

Fig. 3 is a section on line 3—3 of Fig. 2.

Fig. 4 is a section on line 4—4 of Fig. 2.

The machine comprises two inclined chutes 2 open at their upper end and provided with feed hoppers 1. Guide plates 3 are provided in the feed hoppers 1 and designed to feed the coins into the chutes 2 in flat position. Vertical shafts 4 are provided along chutes 2, only two such shafts being shown on the right in Fig. 1. The number of shafts depends upon the number of different sized coins to be counted. The shafts of smallest diameter are arranged nearest the hoppers 1. In sliding in the chutes 2 the coins separate and drop into the shafts intended for them. An inclined shaft 5 extends from each shaft 4 and leads to a vertical shaft 6 (Fig. 2). The shaft 5 can be closed to prevent the coins which run off the chute from dropping immediately into the shaft 6. Furthermore it is necessary to prevent more than a predetermined number of coins from dropping into the shaft 6. For this purpose barring members are provided both in the shaft 4 and also in the upper part of the shaft 6. These barring members comprise electromagnets 7 which, when they are connected in a circuit, pull curved blocking members 8 biased by springs 9, out of the shafts by attracting armatures 10 connected with the barring members. The coins then drop freely through the shafts on to a pin 11 arranged at the lower end of shaft 6 until the necessary number of coins, which may be 10 to 50, have collected. The lower part of shaft 6 is open at the rear, whereas its front side is formed by a flap 12 acted upon by a spring 13. This flap has a longitudinal slot 14 to enable it to be ascertained from the outside how many coins are in the shaft. On the rear open end of shaft 6 a vertical roller 15 is arranged against which the coins bear. When the prescribed number of coins has been reached, the total weight of the coins overcomes the pressure exerted by spring 16 so that the pin 11 descends. A collar 18 on pin 11 comes into contact with a movable arm 19 an extension 20 of which lifts a contact spring off a contact bar 22 thereby interrupting a circuit in which the electromagnets 7 are connected, which thus become currentless so that the armatures 10 are pulled by the springs 9 off the magnets and the barring members 8 swing into the shafts 4 and 6. The barring members in the shaft 6 prevent additional coins from dropping into the shaft 6 when it is barred.

A sleeve 17 is rotatably mounted on a pin 23. It is rotated by a spur wheel 24 driven by a second spurwheel 25 keyed on the shaft 26 of the roller 15. The shaft 26 also carries a bevel wheel 27 driven by a second bevel wheel 28. This latter is shiftable on the shaft 29 and acted upon by a spring 30 which maintains the two bevel wheels 27, 28 in mesh. The shaft 29 is driven by an electric motor 31 through the intermediary of a belt transmission 32 or the like and a worm wheel 33 meshing with a worm 34 keyed on shaft 29. The shaft 26 is rotated as soon as the contact spring 21 is lifted off the contact bar 22 (Fig. 2). Up to this time the bevel wheel 28 is continually rotated by the motor 31 but is disengaged from the bevel wheel 27 by a two-armed control lever 35 (Fig. 3) one end of which is constructed as an armature and attracted by an electro magnet 36. When this magnet is currentless the spring 30 presses the bevel wheel 28 into mesh with the bevel wheel 27. The pair of spur wheels 24, 25 are then set in motion. At the same time a cord transmission 37 or the like drives a paper roll 38 slipped onto a vertical shaft 39. The paper unwound from this paper roll is guided by two guide funnels 40 between the pile of coins and the roller and wraps round the pile of coins. The projecting ends of the paper strip are folded over by two blades 41 mounted on the roller 15. Two shearing members 42 (Fig. 3) sever the paper strip after a predetermined number of revolutions by the closing of an electric circuit current.

When the coin piles have been wrapped, the switching over is attained by the attraction of the armature of the lever 35 by the electromagnet 36 so that the bevel wheel 28 is disengaged from the bevel wheel 27. The pile of coins and the roller then come to a standstill. The pile of coins is ejected from the winding device by the depressing of a key 43. The key lifts the pile at one side so that it strikes against the flap 12 and drops into a trough 44.

A counting mechanism may be provided for the individual shafts, and a bell signal or an incandescent lamp can also be operated when a coin pile has been wrapped.

I claim:—

1. In a machine for counting, and packaging coins, containers for the sorted coins, a counting device arranged on each container and including electric means, controlled by the weight of the coins in the corresponding container, for barring the admission of coins to the container when the prescribed number of coins is in the container, a packaging device, means for actuating the packaging device, and electric means under the control of the weight of the coins in the container for throwing in the actuating means when the prescribed number of coins is in the container.

2. In a machine for counting and packaging coins, containers for the sorted coins, a counting device arranged on each container and including a plurality of arcuate barring members, a spring for moving each barring member into the path of the coins entering the container, an electromagnet allotted to each barring member for withdrawing it from the path of the coins, a circuit connected to the electromagnets, means controlled by the weight of the coins for making the circuit before, and for breaking it after the prescribed number of coins is in the container, a packaging device, means for actuating the packaging device, and electric means under the control of the weight of the coins in the container for throwing in the actuating means when the prescribed number of coins is in the container.

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