Dec. 7, 1937. W. FRIEDRICHS 2,101,615

COIN CONTROLLED PREPAYING MACHINE FOR MAIL

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Fig.2.

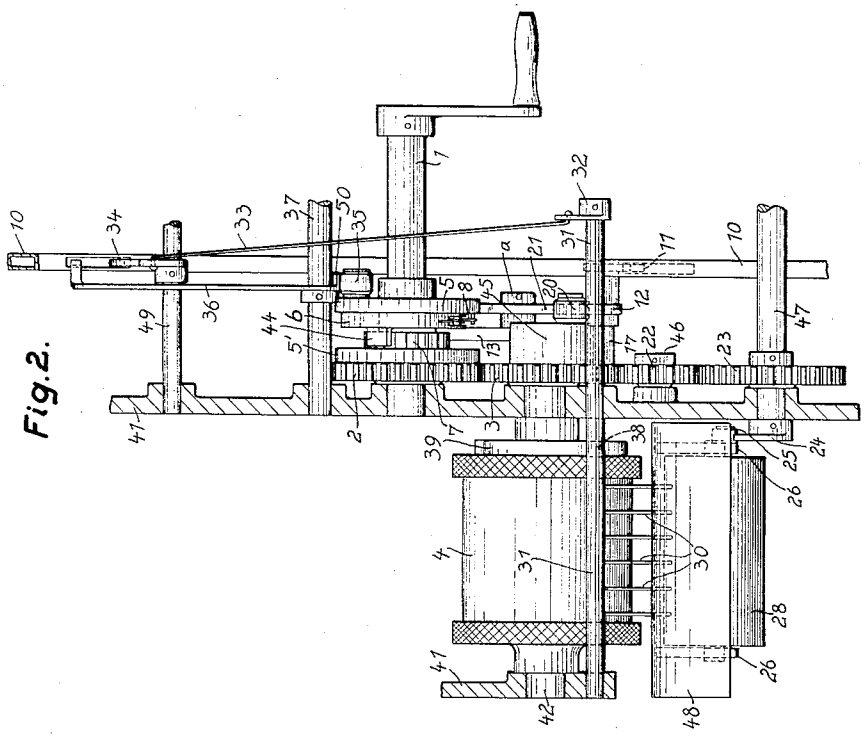
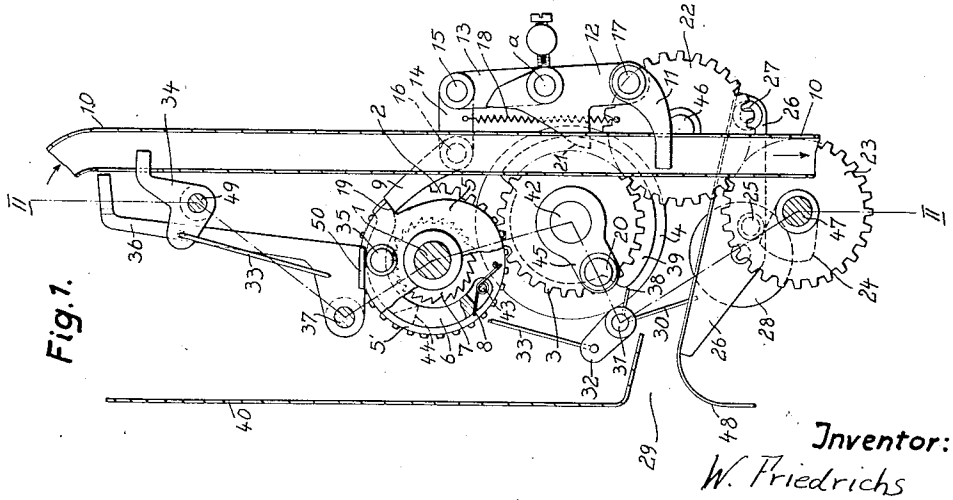


Fig.1.



Inventor:
W. Friedrichs

By: Glascock Downing & Seebold
Attys.

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COIN CONTROLLED PREPAYING MACHINE FOR MAIL

REISSUED

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Wilhelm Friedrichs, Reinickendorf-Ost, near Berlin, Germany

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14 Claims. (Cl. 194—19)

My invention relates to coin-controlled machines for prepaying mail, such as letters, post cards, and other articles.

It is an object of my invention to provide an improved machine of the type referred to.

To this end, in combination with a printing member, normally a printing cylinder, mechanism which may include a crank, a clutch, and gearing for operating the printing cylinder, means for locking the mechanism against operation, and coin-freed means for releasing it; I provide means for preventing operation of the releasing means by a coin before an article to be prepaid has been inserted in the machine.

The means for preventing the operation of the releasing means may be a gate which is so positioned as to be moved by an inserted article, and a stop which normally projects into the coin chute of the machine and retains a coin, or coins, which has been inserted in the chute, until it is retracted by the moving gate.

By these means, the mechanism is secured against operation until a letter or the like is inserted in the machine. The machine cannot be operated before such insertion so that starting of the machine by throwing in a coin is prevented in the absence of mail, such as a letter, a post card, etc. This also prevents soiling of the impression cylinder by the printing cylinder which would occur if the two cylinders were moved into operative relation without being separated by the article the printing cylinder prints on.

If the gate and stop are provided, as described above, it cannot occur that a coin is collected without the machine being operated.

It is another object of my invention to provide means for preventing interference of articles.

To this end, I provide means operatively connected to the mechanism for operating the printing cylinder, for locking the gate against movement while the mechanism is in operation, i. e., while an article is being printed. By these means, the gate can be moved only while the mechanism is at rest and the next article can therefore only be inserted after the printing of the preceding one has been completed. If the next article is inserted too early, it may occur that the print on the preceding one is not executed properly, or partly on the two articles.

Preferably, however, a yielding or elastic member is included in the gate-locking means so that the gate can yield if an article is inserted too early, and this article is not damaged by the gate.

In the accompanying drawing, a machine embodying my invention is illustrated by way of example.

In the drawing

Fig. 1 is an elevation of the machine, in section on the central plane of its coin chute, and

Fig. 2 is a section on the line II—II in Fig. 1.

Referring now to the drawing, the machine is equipped with a casing 40 partly shown in Fig. 1, and with a frame 41 partly shown in Fig. 2. 10 is its coin chute, and 29, Fig. 1, is a slot in the front wall of casing 40 for inserting articles to be mailed, such as letters, postcards, etc.

The driving shaft 1, here shown as a crank shaft, is mounted in the frame 41. A clutching member including a spur gear 2, and a pair of end plates 5 and 5′ which are rigidly connected to the spur gear 2, is mounted to turn freely on the driving shaft 1. The spur gear 2 meshes with another spur gear 3 on the shaft 42 of a printing cylinder 4. A pawl 6 is pivoted to the end plate 5 at 43. The end plate 5 is shown partly broken away in Fig. 1 to expose the pawl 6. The pawl has a ratchet tooth 44 which projects from its rear face, i. e., the face which is opposite the end plate 5′, and is adapted to engage in the teeth of a ratchet wheel 7. The ratchet wheel is positively connected to the driving shaft 1 and rotates with the shaft.

A spring 8 on the pivot 43 of pawl 6 tends to throw the tooth 44 in engagement with the teeth of ratchet wheel 7 but the tooth 44 is held disengaged from the teeth of wheel 7 by a check 9 which is fulcrumed in the frame at 16. In the position illustrated, the check 9 also engages a step 19 on the end plate 5 on which the pawl 6 is pivotally mounted, as described. The check 9 is part of a bellcrank, and a spring 18 is connected to the other arm 14 of the bellcrank. A link 13 is pivotally connected to the free end of arm 14 at 15, and to the arm 12 of another bellcrank at *a*. The other bellcrank is fulcrumed in the frame of the machine at 17. Its shorter arm, in the position illustrated, projects into the coin chute 10, and its longer arm 12 is equipped with a cam 21 projecting into the path of a camming roller 20 at the free end of an arm 45 on the shaft 42 of printing cylinder 4.

The spur gear 3 on the shaft 42 meshes with a spur gear 22 on a lay shaft 46 and this spur gear, in turn, meshes with a spur gear 23 on a cam shaft 47. The cam shaft which is mounted in the frame 41, supports a cam 24 for cooperation with a lug 25 on the frame 26 of a table 48 for the reception of the articles. The table 48 is ful-

crumed at 27 and supports an impression cylinder 28.

A gate, or grate, 30 which is mounted on a shaft 31, projects into the slot 29, Fig. 1, with its lower free end bearing on table 48. An arm 32 on the shaft 31 is connected by a link 33, to one arm of a coin stop 34 which is fulcrumed at 49 and whose other arm projects into the coin chute 10 when the gate 30 bears on the table 48, as shown.

An angular lever 36 is fulcrumed above the driving shaft 1 at 37 and, in the position illustrated, rests on a roller 35 which is secured to end plate 5, with a lug 50. The upper end of angular lever 36 is adapted to enter the coin chute 10 under certain conditions, as will be described.

38 is an arm, preferably of elastic material, which is secured to the gate shaft 31 in line with a cam 39 at one side of the printing cylinder 4.

The operation of my machine is as follows:

In the position of parts illustrated, the upper end of angular lever 36 clears the coin chute 10, and coin stop 34 projects into the chute. When a coin is inserted, it is arrested by the coin stop 34 until an article is inserted in the slot 29 and pushes aside the gate 30. The movement of gate 30 is transmitted to the coin stop 34 through link 33, the stop is retracted and the coin descends in the chute, where it strikes the arm 11, and finally is delivered to a collector, not shown. The link 13 and the long arm of lever 11, 12 form a sort of toggle which is normally straight. While it is so, the spring 18 is without influence but, when a coin strikes arm 11, the arm is lowered, the toggle joint is broken, and the spring 18 moves the check 9 out of the way of pawl 6 and of step 19 so that the pawl now engages in the teeth of ratchet wheel 7 under the action of spring 8, and the shaft 1, which formerly could be rotated freely, now imparts rotation to the mechanism by which the printing cylinder 4 is rotated. Movement of the crank in opposite direction may be prevented by any suitable means old in the art and therefore not disclosed. As the driving shaft rotates in the proper direction, i. e., clockwise, the lug 50 of angular lever 36 is released by the roller 35 of end plate 5, and the free end of the lever closes the chute 10 so that no coin can be inserted while the machine performs its cycle. The cam 39 is so long that it remains engaged with the elastic arm 38 while the machine performs its cycle and resists the raising of gate 30 by an article, but not to such an extent as to damage the article which is inserted before it is time. Cam 24 on shaft 47 which, as shown in Fig. 1, is partly concentric, raises the table 48 and the impression cylinder 28 toward the printing cylinder 4, and, at the end of the cycle, the camming roller 20 on arm 45 engages the cam 21 on the longer arm 12, and straightens the toggle, placing the machine in readiness for the next cycle. The article which passes through the machine while being printed, releases the gate 30 and stop 34 returns into its position in the chute. The table 48 is released by cam 24 and, with the impression cylinder 28, returns into its initial position. The roller 35 moves the free end of angular lever 36 out of the chute 10, and a coin which has been intercepted by the lever, now descends as far as stop 34 where it waits for the next movement of gate 30.

It will appear that the machine according to my invention is entirely foolproof, as its operation is not interfered with by insertion of too many coins at a time, nor by insertion of another article before the one that is in the machine has been printed and that damage to an article thus inserted is prevented by the elasticity of arm 38.

I claim:

1. In a coin-controlled prepaying machine for mail, a printing member, coin controlled mechanism for operating said printing member, a coin chute for conducting coins to said mechanism, a gate adapted to be moved by an article to be mailed, and means operatively connected to said gate for retaining a coin inserted in said chute and adapted to be rendered inoperative upon movement of the gate by an article to be mailed.

2. In a coin-controlled prepaying machine for mail, a printing member, mechanism for operating said printing member, a gate adapted to be moved by an article to be mailed, a coin chute, a stop projecting into said coin chute for retaining a coin therein, and means operatively connected to said gate for retracting said stop when said gate is moved by such article.

3. In a coin-controlled prepaying machine for mail, a printing member, mechanism for operating said printing member, a gate adapted to close a slot for inserting articles to be mailed and to be moved by an article to be mailed, a coin chute, a stop projecting into said coin chute for retaining a coin therein, and a link operatively connecting said gate to said stop, for retracting said stop when said gate is moved by such article.

4. In a coin-controlled prepaying machine for mail, a casing, a movable table defining, with said casing, a slot for inserting articles to be mailed, a printing member, mechanism for operating said printing member, an impression cylinder on said table, means operatively connected to said mechanism for reciprocating said table and presenting the impression cylinder to the printing member, a gate pivotally arranged in said casing so as to bear on said table with its free end and to close said slot, a coin chute, a stop projecting into said coin chute for retaining a coin therein, and means operatively connecting said gate to said stop, for retracting said stop when said gate is raised from said table by an article inserted in said slot on said table.

5. In a coin-controlled prepaying machine for mail, a casing, a movable table defining, with said casing, a slot for inserting articles to be mailed, a printing member, mechanism for operating said printing member, an impression cylinder on said table, means operatively connected to said mechanism and including a cam, for reciprocating said table and presenting the impression cylinder to the printing member, a gate pivotally arranged on said casing so as to bear on said table with its free end and to close said slot, a coin chute, a stop projecting into said coin chute for retaining a coin therein, and means operatively connecting said gate to said stop, for retracting said stop when said gate is raised from said table by an article inserted in said slot on said table.

6. In a coin-controlled prepaying machine for mail, a printing member, coin-controlled mechanism for operating said printing member, a coin chute for conducting coins to said mechanism, a gate adapted to be moved by an article to be mailed, means operatively connected to said mechanism for holding said gate against movement while the mechanism is in operation, and

means operatively connected to said gate for retaining a coin inserted in said chute and adapted to be rendered inoperative upon movement of the gate by an article to be mailed.

7. In a coin-controlled prepaying machine for mail, a printing member, coin-controlled mechanism for operating said printing member, a coin chute for conducting coins to said mechanism, a gate adapted to be moved by an article to be mailed, means including a yielding member operable by said mechanism for holding said gate against movement while the mechanism is in operation, and means operatively connected to said gate for retaining a coin inserted in said chute and adapted to be rendered inoperative upon movement of the gate by an article to be mailed.

8. In a coin-controlled prepaying machine for mail, a printing member, coin-controlled mechanism for operating said printing member, a coin chute for conducting coins to said mechanism, a gate adapted to be moved by an article to be mailed, means including an elastic member operable by said mechanism for holding said gate against movement while the mechanism is in operation, and means operatively connected to said gate for retaining a coin inserted in said chute and adapted to be rendered inoperative upon movement of the gate by an article to be mailed.

9. In a coin-controlled prepaying machine for mail, a printing member, coin-controlled mechanism for operating said printing member, a coin chute for conducting coins to said mechanism, a gate adapted to be moved by an article to be mailed, a cam which is operatively connected to said mechanism and whose length corresponds to the period for which said mechanism is in operation, an arm which is operatively connected to said gate and controlled by said cam, for holding said gate against movement during the said period, and means operatively connected to said gate for retaining a coin inserted in said chute and adapted to be rendered inoperative upon movement of the gate by an article to be mailed.

10. In a coin-controlled prepaying machine for mail, a printing member, coin-controlled mechanism for operating said printing member, a coin chute for conducting coins to said mechanism, a gate adapted to be moved by an article to be mailed, a cam which is operatively connected to said mechanism and whose length corresponds to the period for which said mechanism is in operation, an elastic arm which is operatively connected to said gate and controlled by said cam, for holding said gate against movement during the said period, and means operatively connected to said gate for retaining a coin inserted in said chute and adapted to be rendered inoperative upon movement of the gate by an article to be mailed.

11. In a coin-controlled prepaying machine for mail, a printing member, a driving mechanism for said printing member, coupling means for operatively connecting said driving mechanism and said printing member, controlling means for said coupling means, said controlling means being actuated by a coin, a gate adapted to be moved by an article to be mailed, a coin chute, a stop projecting into said coin chute for retaining a coin therein before having acted upon said controlling means, and means operatively connected to said gate for retracting said stop when said gate is moved by such article.

12. In a coin-controlled prepaying machine for mail, a printing member, coin-controlled mechanism for operating said printing member, a coin chute for conducting coins to said mechanism, means for retaining a coin inserted in said chute, means operated by an article inserted in the machine for displacing and rendering said retaining means inoperative, and means operated by said mechanism for closing said chute against the insertion of a coin during the operation of the machine.

13. In a coin-controlled prepaying machine for mail, a printing member, driving mechanism for said printing member, coupling means for operatively connecting said driving mechanism and said printing member, coin actuated means for controlling said coupling means, coin retaining means for preventing actuation of said controlling means, and means controlled by an article inserted in the machine for rendering said coin retaining means inoperative.

14. In a coin-controlled prepaying machine for mail, a printing member, a driving mechanism for said printing member, coupling means for operatively connecting said driving mechanism and said printing member, coin actuated means for controlling said coupling means, a coin chute for conducting a coin to said coin actuated controlling means, means for retaining a coin inserted in said chute, to prevent actuation of said controlling means, and means operated by an article inserted in the machine for rendering said retaining means inoperative.

WILHELM FRIEDRICHS.