H. ABBOTT.

CARD GATE.

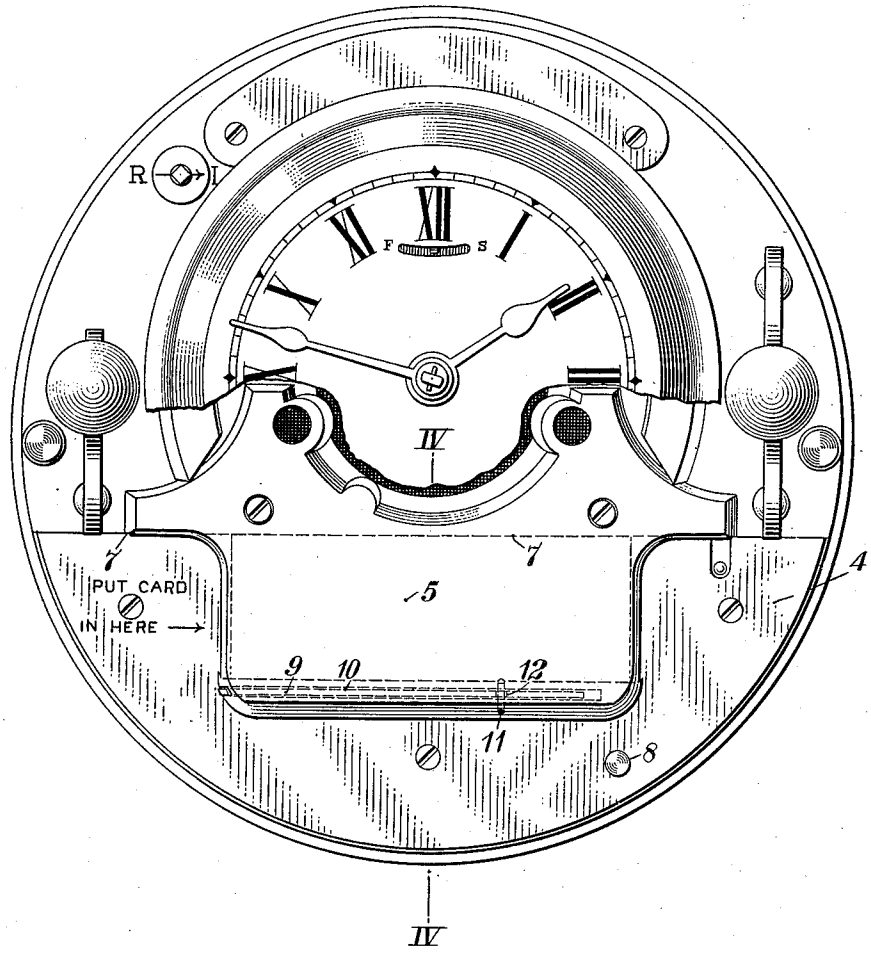
APPLICATION FILED JULY 6, 1912.

1,091,786.

Patented Mar. 31, 1914.

3 SHEETS—SHEET 1.

Fig. 1.



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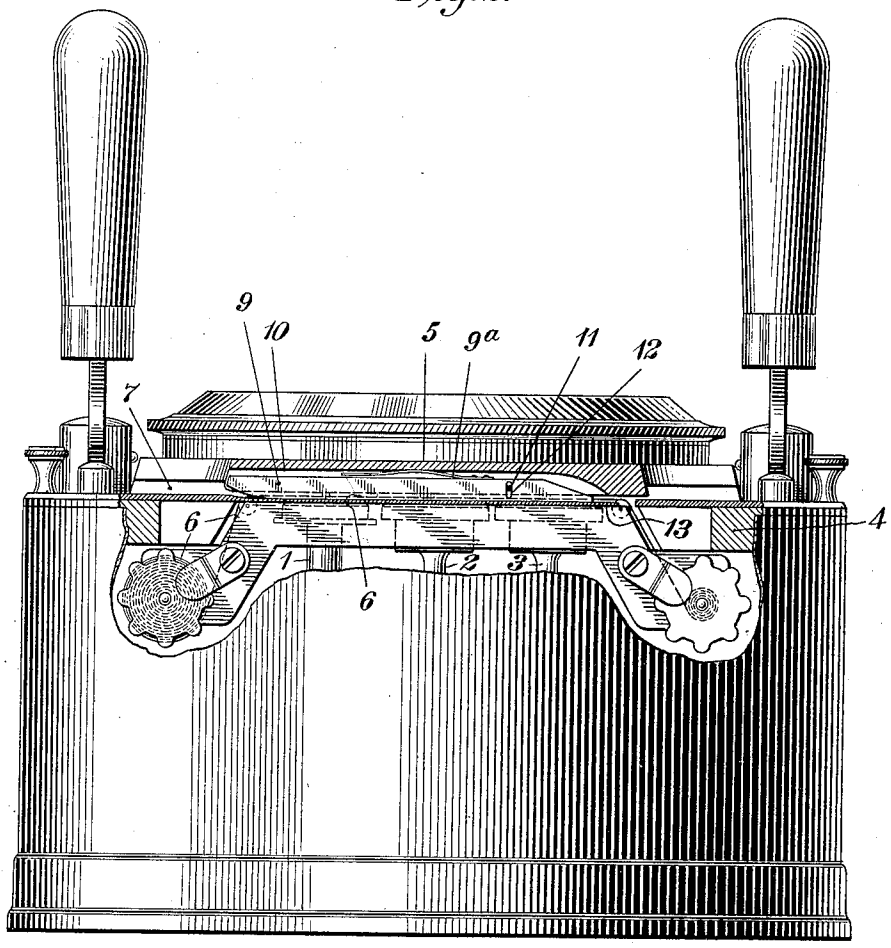
3 SHEETS—SHEET 2.

Fig. 2.



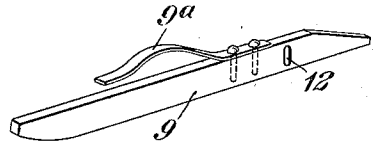


Fig. 5.

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3 SHEETS—SHEET 3.

Fig. 3.

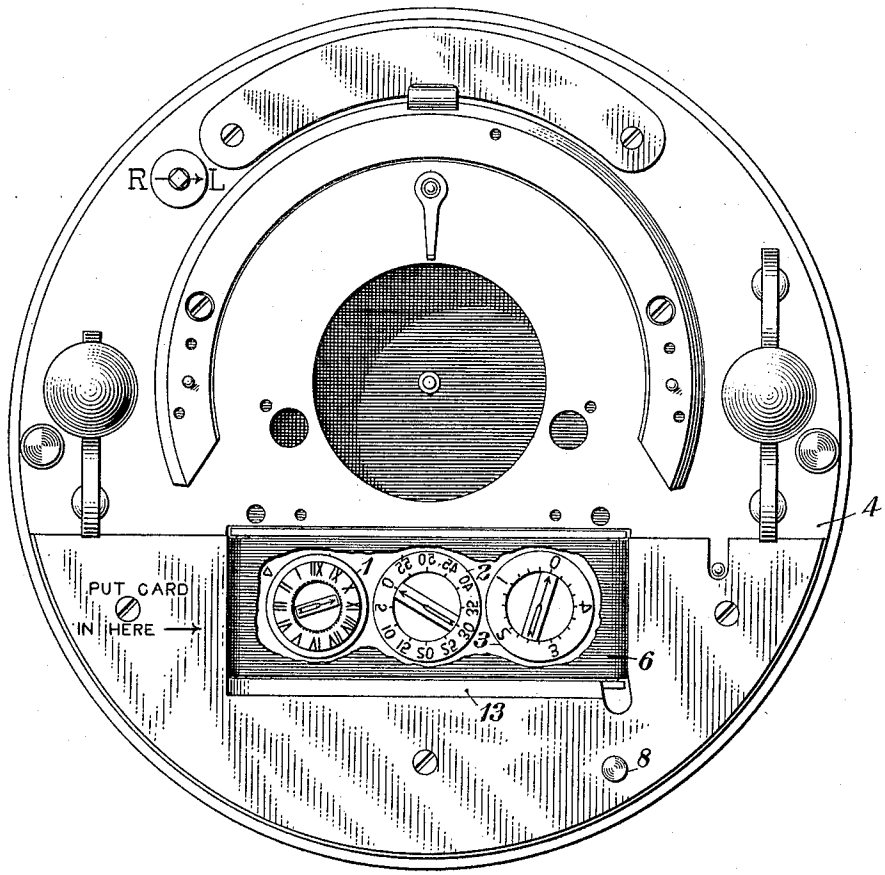
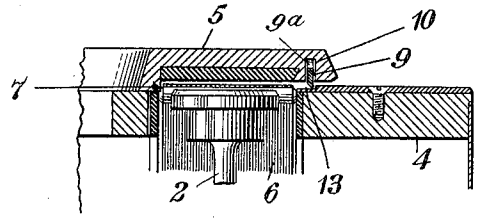


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY ABBOTT, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO CALCULAGRAPH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CARD-GATE.

1,091,786. Specification of Letters Patent. Patented Mar. 31, 1914.

Application filed July 6, 1912. Serial No. 707,991.

To all whom it may concern:

Be it known that I, HENRY ABBOTT, of East Orange, in the county of Essex, and in the State of New Jersey, have invented a certain new and useful Improvement in Card-Gates, and do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention has been to provide a device which I term a "card gate", which shall prevent the insertion of a card into a printing machine in any other than a desired direction, as will be hereinafter more fully explained, and to such ends my invention consists in the card gate hereinafter specified.

More specifically, my invention relates to card-printing machines in which a card is printed between a stationary plate and an inked ribbon by dies which press the ribbon against the card. The machines have heretofore been so made that the cards may be introduced from either of two directions, one parallel with the ribbon and the other perpendicular to the ribbon.

It is the object of my invention to provide a device, or card gate, which shall prevent the introduction of the card in a direction across the ribbon (in which direction it is liable to catch on the ribbon), and only permit its introduction in a direction parallel to the ribbon.

My invention is capable of embodiment in many different forms, and I have chosen to illustrate it in connection with a time-printing machine, but such embodiment is only one of many possible embodiments, and is to be regarded only as typical.

In the drawings—Figure 1 is a plan view of the said machine, the clock dial and bezel being broken away; Fig. 2 is a front elevation of Fig. 1, with parts in section and the casing broken away to show the "card gate", the ribbon and the ribbon holding and guiding devices; Fig. 3 is a view similar to Fig. 1, the clock face, bezel and abutment plate being completely removed; Fig. 4 is a partial vertical sectional view of the portion of Fig. 3 relating to the "card gate"; and Fig. 5 is a perspective view of the bar forming the card gate.

In the illustrated embodiment, the dies 1, 2 and 3 rotate in openings in a face plate 4 and are capable of being forced upward toward, and allowed to drop away from an abutment plate 5, by means not necessary to show, but which may be, for instance, of the type shown in my Patent No. 583,320, patented May 25, 1897. The ribbon 6 has its ends wound on spools; rises through a slot in the plate 4; passes over rollers near the ends of such slots and across the dies 1, 2 and 3 and descends through a slot in the opposite side of the said dies, and said ribbon is preferably fed step by step by mechanism not necessary to describe herein, but which may be such as in my said patent before referred to. The under side of the said abutment plate 5 is provided with a ledge or shoulder 7 at the back and a pin 8 is set into the plate 4 at the right-hand side, as seen in Fig. 1, and the card is positioned against both of said shoulders when being printed. It is intended that the card should be inserted from the left side (as seen in Fig. 1) in the direction of travel of the ribbon, as in this manner it does not catch on the ribbon nor interfere with it. Practice shows, however, that operatives frequently insert the card from the front by a movement toward the rear, which results in the cards catching on and disturbing the ribbon, and also results in the cards being mussed or injured. It is the object of my card gate to prevent the card being inserted from the front and to compel the operative to insert it from the side.

My card gate in the present embodiment consists of a bar 9 which is inserted in a vertical slot 10, formed in the under side of the abutment plate 5. The bar may have a spring 9^a fastened to it, or applied in any other manner, so as to press it downward in the slot 10. This is a convenience when the machine is fastened against a wall, in which position the slot 10 is horizontal and gravity cannot move the bar 9. When a slot 10 is vertical, I find it desirable to make the bar loose enough in the slot so that it falls by gravity until it rests upon the plate 4, omitting the spring. In order to prevent the bar from escaping laterally, I have, in the present instance, provided a pin 11 which is driven into a hole in the abutment plate 5, and passes through a vertical slot 12 formed in the bar 9. While the bar 9 might merely rest upon the surface of the face plate 4, I find it desirable to form a recess or slot 13 in the surface of the face plate into which the bar 8 may descend, and thus make

certain that at no point can the card find an entrance beneath it, for in this manner the lower edge of the bar 8 is at all points below the surface of the face plate 3.

In the operation of a machine provided with my card gate, if the operative attempts to insert a card from the front, transversely to the ribbon, the card is stopped by the gate and cannot reach the ribbon. On the other hand, the card can readily be inserted from the side (the left side, as seen in Figs. 1, 2 and 3), and passes under the gate without obstruction, the left end of the bar 9 being beveled for that purpose. Of course, the gate forms no obstruction to the withdrawal of the card toward the front after it has been printed. The action of the card gate or bar 9 is analogous to that of a pawl in that it permits movement in one direction while preventing it in another, and for that reason it may properly be termed a pawl.

I claim:

1. In a printing machine, the combination of a die and an opposing abutment, stops adapted to engage and position adjacent edges of a card, and automatic means to prevent the insertion of the card in a direction perpendicular to one of said stops while permitting its removal in such direction.

2. In a printing machine, the combination of a face plate, a die and an abutment relatively movable perpendicularly thereto, a ribbon lying across said die, and means to prevent the insertion but permitting the removal of a card transversely to said ribbon, while permitting its insertion longitudinally thereof.

3. In a printing machine, the combination of a face plate, a die and an abutment relatively movable perpendicularly thereto, a ribbon lying across said die, and means to prevent the insertion of a card transversely to said ribbon, said means comprising a bar adapted to rise and fall on said face plate.

4. In a printing machine, the combination of a face plate, a die and an abutment relatively movable perpendicularly thereto, a ribbon lying across said die, and means to prevent the insertion of a card transversely to said ribbon, said means comprising a bar adapted to rise and fall on said face plate, said bar being beveled at one end.

5. In a printing machine, the combination of a face plate, a die and an abutment relatively movable perpendicularly thereto, a ribbon lying across said die, a card stop parallel to such ribbon, a card stop to position said card along said first stop, and a pawl on the opposite side of the ribbon from said first-mentioned card stop, said pawl being movable to admit a card when presented in a direction parallel to the ribbon but serving as a stop to prevent the insertion of a card presented crosswise of the ribbon.

6. In a printing machine, the combination of a face plate, a die and an abutment relatively movable perpendicularly thereto, a ribbon lying across said die, a card stop parallel to such ribbon, a card stop to position said card along said first stop, and a pawl on the opposite side of the ribbon from said first-mentioned card stop, said pawl being in the form of a bar said pawl being movable to admit a card when presented in a direction parallel to the ribbon, but serving as a stop to prevent insertion of a card presented crosswise to the ribbon.

7. In a printing machine, the combination of a face plate, a die movable perpendicularly thereto, a ribbon lying across said die, an abutment adapted to resist the pressure of said die, a card stop parallel to such ribbon, a card stop to position said card along said first stop, and a pawl on the opposite side of the ribbon from said first-mentioned card stop, said pawl being in the form of a bar, said bar being loosely mounted in a slot in said abutment said pawl being movable to admit a card when presented in a direction parallel to the ribbon, but serving as a stop to prevent insertion of a card presented crosswise to the ribbon.

8. In a printing machine, the combination of a face plate, a die movable perpendicularly thereto, a ribbon lying across said die, an abutment adapted to resist the pressure of said die, a card stop parallel to such ribbon, a card stop to position said card along said first stop, and a pawl on the opposite side of the ribbon from said first-mentioned card stop, said pawl being in the form of a bar, the end of said bar removed from said second card stop being beveled.

9. In a printing machine, the combination of a face plate, a die movable perpendicularly thereto, a ribbon lying across said die, an abutment adapted to resist the pressure of said die, a card stop parallel to such ribbon, a card stop to position said card along said first stop, a pawl on the opposite side of the ribbon from said first-mentioned card stop, said pawl being in the form of a bar, the end of said bar removed from said second card stop being beveled, and a spring adapted to press said bar.

In testimony that I claim the foregoing I have hereunto set my hand.

HENRY ABBOTT.

Witnesses:

EDWIN J. PRINDLE,

LISETTE BRODERICK.