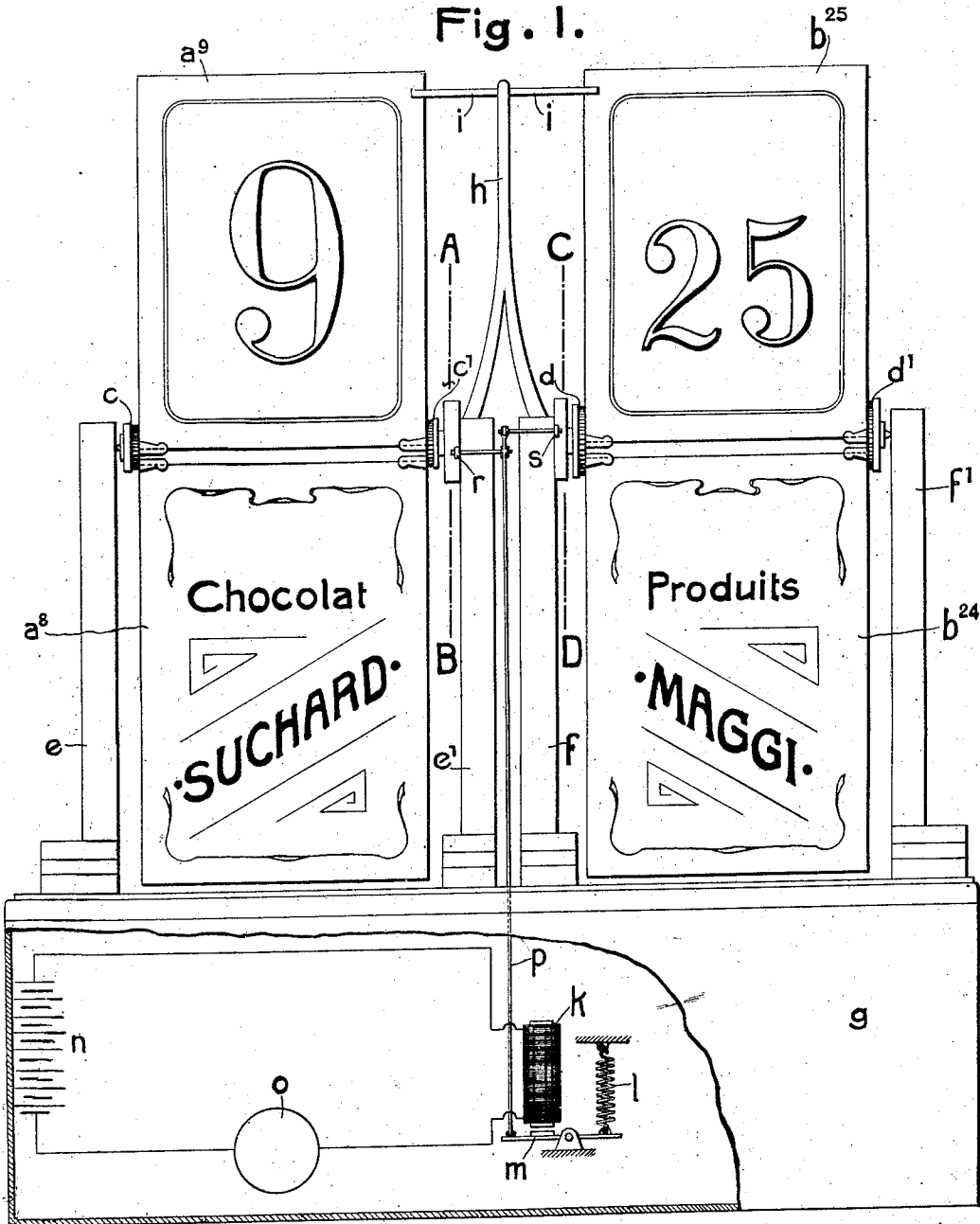


1,064,577.

Fig. 1.



Witnesses
Thos. J. Mattern
A. W. Primmer

Inventor
Nathan Weil
E. W. Mattern, Trading With Thompson
W. H. Mattern
his Attorney

1,064,577.

Patented June 10, 1913.

2 SHEETS-SHEET 2.

Fig. 2.

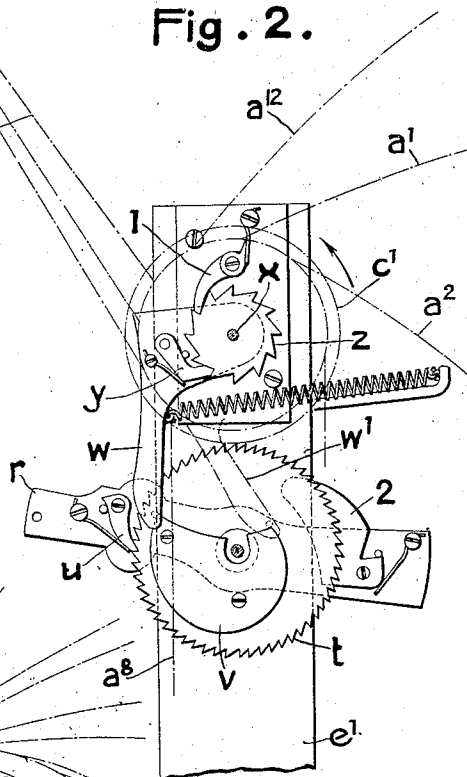
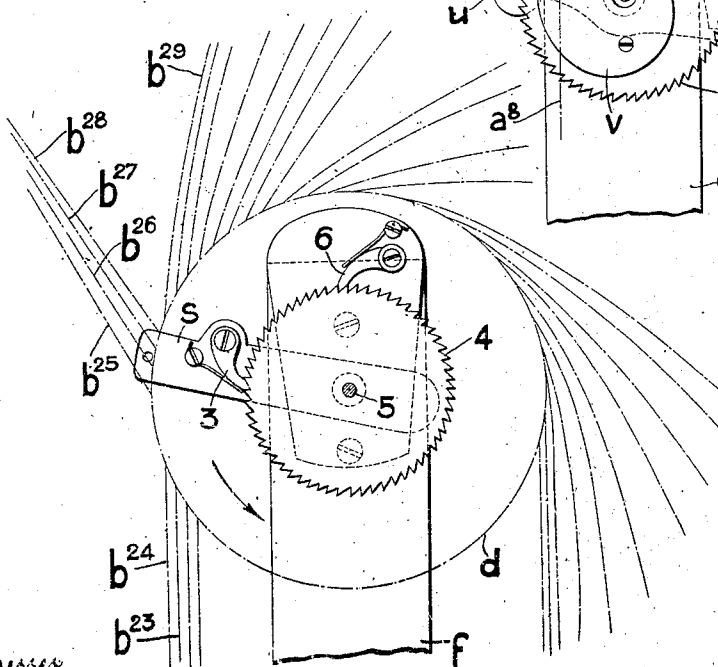


Fig. 3.



Witnesses
 Louis H. Hatter.
 H. L. Primm.

Inventor
 Nathan Weil
 William H. Thompson
 Attorney

UNITED STATES PATENT OFFICE.

NATHAN WEIL, OF CHAUX-DE-FONDS, SWITZERLAND.

ADVERTISING-CLOCK.

1,064,577.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed May 21, 1912. Serial No. 698,710.

To all whom it may concern:

Be it known that I, NATHAN WEIL, manufacturer, a citizen of the French Republic, and resident of Chaux-de-Fonds, Switzerland, have invented new and useful Improvements in and Relating to Advertising-Clocks, of which the following is a full, clear, and exact specification.

The present invention relates to advertising clocks of the kind comprising hinged plates which are adapted to fall periodically, each plate bearing a numeral constituting a time indication and also on the back one or more advertisements.

The invention has for its object to provide an improved advertising clock of the character above indicated. According to the present invention two horizontal arbors, with which two separate series of plates are connected by means of hinges or pivots are arranged to be actuated by two separate operating mechanisms controlled by a common electromagnetic device in accordance with current impulses of an electric clock, in such a manner that at suitable intervals of time, for instance every minute, the arbor corresponding to one of the two series of plates undergoes an angular displacement, such that one of the plates of its appropriate series is permitted to escape from a fixed stop and falls into a vertical position, while after a multiple of such intervals of time have elapsed, for instance every hour, the shaft corresponding to the other series of plates undergoes a similar angular displacement, thus permitting the next successive plate of the other series to escape from its corresponding stop and fall into a vertical position.

The invention is illustrated in the accompanying drawings of which—

Figure 1 is a view in front elevation of one form of advertising clock embodying the invention, a portion of the controlling mechanism for the plates being indicated diagrammatically. Fig. 2 is a view in sectional elevation on the line A—B of Fig. 1 showing on an enlarged scale one portion of the controlling mechanism of the hour plates. Fig. 3 is a view in sectional elevation on the line C—D of Fig. 1 showing on an enlarged scale a portion of the controlling mechanism of the minute plates.

Referring now to the drawings, the advertising clock comprises two series of movable plates $a^1 a^2 a^3 \dots a^{12}$ and $b^1 b^2 b^3 b^4 b^5$

$b^{50} b^{60}$ which are each pivotally mounted between two disks $c c^1$ and $d d^1$ which are mounted on arbors carried in vertical brackets $e e^1$ and $f f^1$ attached to a base g . Each of the plates is as shown capable of freely rotating upon pivots near the edges of the disks $c c^1$ and $d d^1$.

The series of hour plates $a^1 a^2 a^3 \dots$ comprises twelve plates bearing on one face (see Fig. 1) the numerals 1, 2, 3 $\dots$ 12 corresponding to the hours, while the series of minute plates $b^1 b^2 b^3 \dots$ comprises sixty plates bearing the numerals 1 to 60 corresponding to the minutes in one hour. The opposite face of each of the plates of the two series is provided with an advertisement as indicated for example on the plates below the plates bearing the numerals "9" and "25", in Fig. 1.

Under the action of gravity the plates attached to the lower portion of each of the disks occupy a vertical position, while the plates at the upper portion of the disks are spread out like a fan as shown in Figs. 2 and 3. The brackets e^1 and f are provided with a common support h having a cross piece i at the top arranged in such a manner as to retain the plates $a^1 a^2 \dots$ and $b^1 b^2 \dots$ in an inclined position ready to rotate on their pivots and fall into a vertical position. A lateral view of the cross piece i is shown in Fig. 2 only.

With the arrangement of the plates on the disks $c c^1$ and $d d^1$ above described it will be understood that the plates as they rotate display successively the advertisement on one of the faces of a plate and at the same time the time indication corresponding to the next successive plate.

The plates are displaced at equal intervals of time under the action of an electromagnetic device which is operated by the impulses of current from an electric clock. The electromagnetic device comprises a powerful electromagnet k having an armature m controlled by a spring l and connected in the circuit of a suitable battery n , the circuit of the electromagnet being arranged to be closed at intervals of one minute by the contact-making device of an electric clock o . The movement of the armature m due to the current impulses is transmitted to the supporting disks of the plates by a rod p connected to the rocking levers r and s (see Figs. 2 and 3) one of which controls the hour plates and the other the minute plates.

The controlling mechanism for the hour plates (see Fig. 2) comprises a ratchet wheel *t* having sixty teeth adapted to rotate on the same pivot as the rocking lever *r* which is provided with a spring controlled pawl *u* for operating the ratchet wheel. The latter is provided with a cam or "snail" *v* which is engaged by one end of a lever *w* loosely mounted on the arbor *x* of the disks *c* and *c'*. The lever *w* is provided with a spring controlled pawl *y* adapted to engage with the teeth of a ratchet wheel *z* having twelve teeth and secured rigidly on the arbor *x*. Another spring-controlled pawl *l* mounted on the bracket *c'* is provided for preventing the backward movement of the ratchet wheel and of the disks as the plates fall into position. Backward movement of the ratchet wheel *t* is also prevented by a pawl 2 carried by the lever *r*.

The operation of this form of clock is as follows: At each movement of the armature *m* of the electromagnet *k* the rod *p* acting upon the lever *r* rotates the ratchet wheel *t* by one tooth. The cam or "snail" *v* moving with the ratchet wheel *t* displaces the lever *w* until the latter falls into the notch in the cam so as to take up the position indicated in the dotted lines at *w'*. The rapid movement of the lever *w* thus effected serves to rotate the ratchet wheel *z* by one tooth carrying with it the disks and plates. This angular movement takes place once in each rotation of the ratchet wheel *t*, that is once in every hour. The cross piece *i* is arranged in such a manner that at each movement of the disk it allows one plate to fall, which rotating on its pivots assumes a vertical position displaying the advertisement on that face of the plate which is opposite to the one bearing the time indication. The operation above described is repeated at each hour, the minute plates (see Fig. 3) being similarly actuated every minute by the rocking lever *s* with its pawl 3 engaging on the teeth of a ratchet wheel 4 having sixty teeth, the ratchet wheel 4 being rigidly secured to the arbor 5 of the disks *d* *d'*. A pawl 6 pivoted on the bracket *f* prevents any backward movement of the disks and the ratchet wheel 4 as the plates fall into position. The position of the cross piece *i* relative to the minute plates is such as to permit one plate to be released for each angular movement of the disks, that is to say at each minute of the hour. The advertising clock above described thus indicates the time to approximately one minute, the minute plates changing their indication each minute and the hour plates every hour.

The constructional details above described

may evidently be varied in carrying the invention into practice without departing from the scope of the invention.

What I claim is:

1. In an advertising clock of the kind described, the combination of two separate series of plates pivotally connected with two horizontal arbors arranged in the same vertical plane and bearing each on one face a numeral constituting a time indication and also on the opposite face an advertisement, and of stops to allow one of the plates of each series to be released and to fall at predetermined intervals of time, with two ratchet wheels and two rocking levers provided with spring-controlled pawls for operating said ratchet wheels and controlled by a common electromagnetic device in accordance with the impulses of current of an electric clock, one of the said ratchet wheels being arranged on one of the said arbors, while the second ratchet wheel bears a snail engaged by one end of a lever loosely mounted on the second of the said arbors and provided with a spring controlled pawl adapted to engage with the teeth of a third ratchet wheel rigidly mounted on the said second arbor, substantially as described.
2. In an advertising clock of the kind described, the combination of two separate series of hour and minute plates bearing advertisements on that of their faces which is opposite to the one bearing the time indication and pivotally connected with two horizontal arbors arranged in the same vertical plane, of a stop to allow one of the hour plates and to be released and to fall after each hour and of a stop to allow one of the minute plates and to be released and to fall after each minute, with two ratchet wheels and two rocking levers provided with spring-controlled pawls for operating said ratchet wheels and controlled by a common electromagnetic device in accordance with the impulses of current of an electric clock, one of the said ratchet wheels being arranged on one of the said arbors, while the said ratchet wheel bears a snail engaged by one end of a lever loosely mounted on the second of the said arbors and provided with a spring-controlled pawl adapted to engage with the teeth of a third ratchet wheel rigidly mounted on the said second arbor, substantially as described.

In witness whereof I have hereunto signed my name this 9th day of April, 1912, in the presence of two subscribing witnesses.

NATHAN WEIL.

Witnesses:

GEORGE GIFFORD,
ARNOLD ZUBER.