

J. SANGSTER.  
Fare-Register.

No. 167,623.

Patented Sept. 14, 1875.

Figure 1

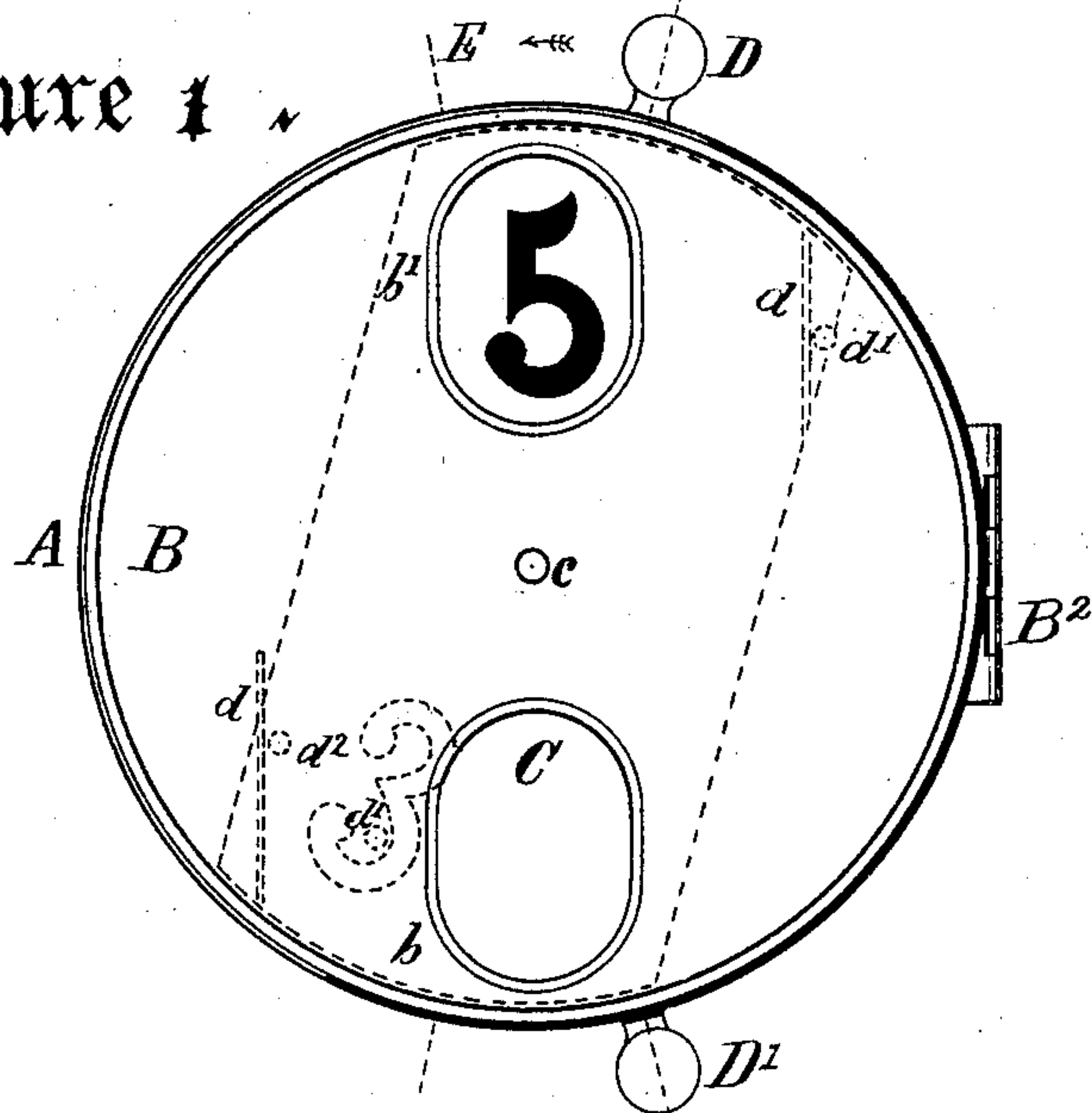


Figure 2

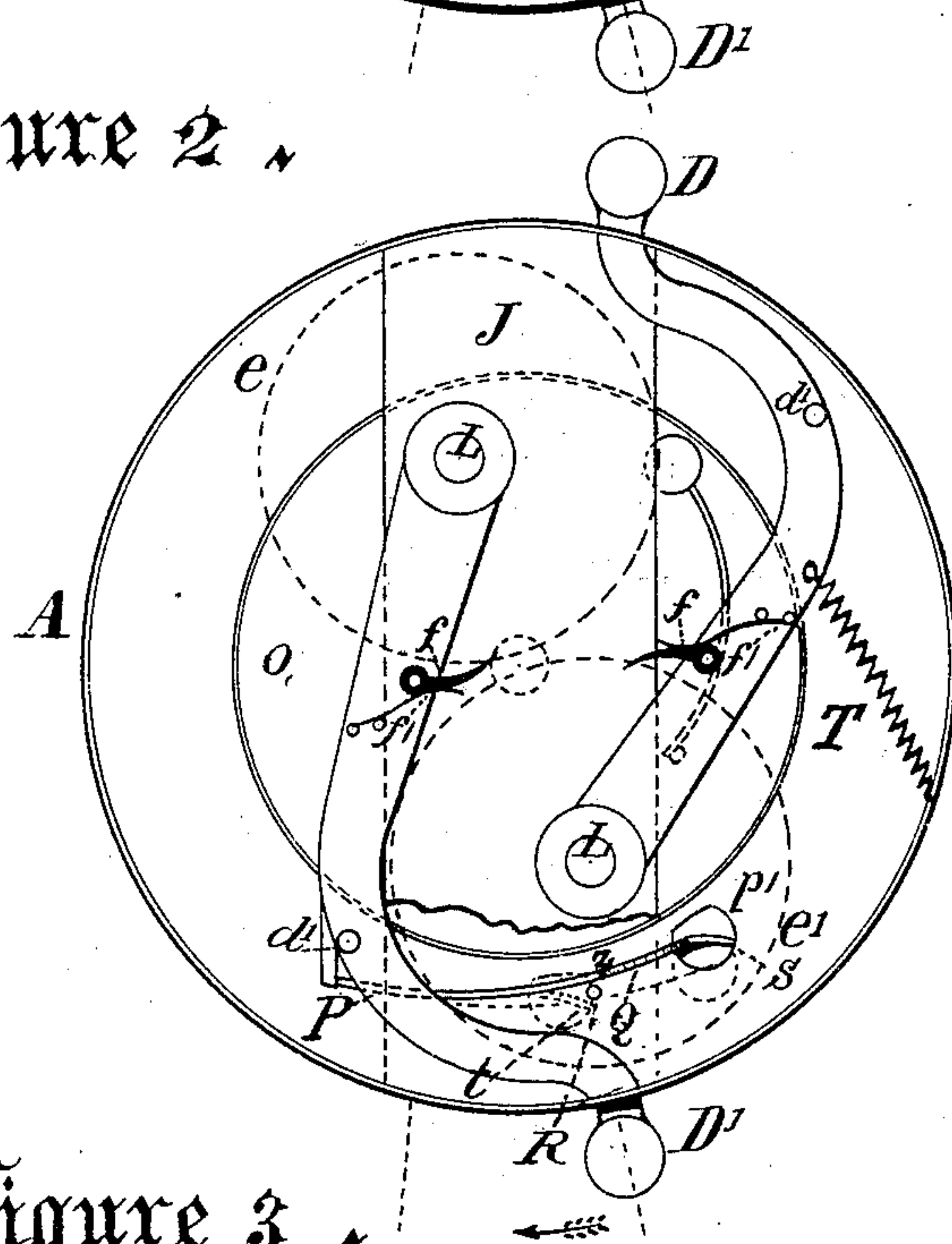
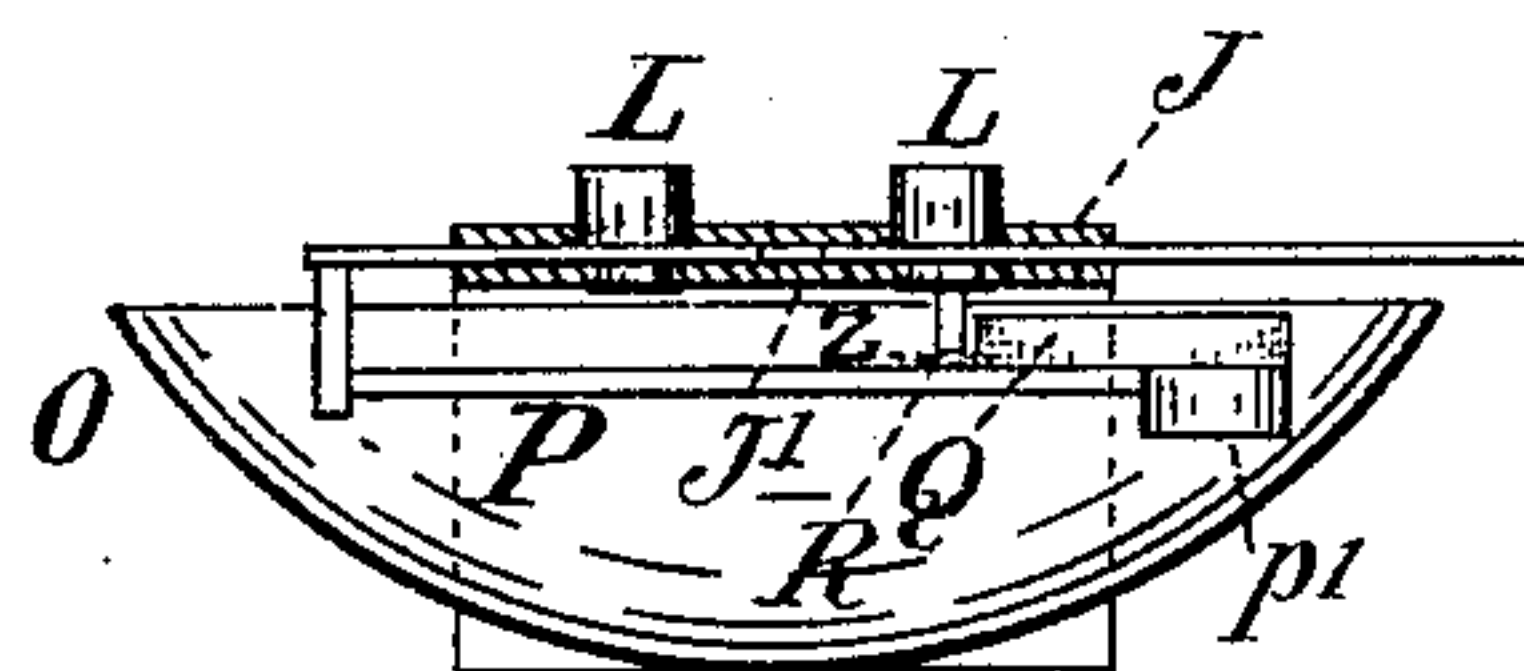


Figure 3



Witnesses,  
*A. C. J. C. C.*  
*A. M. Darrell*

Inventor..  
*James Sangster*

J. SANGSTER.  
Fare-Register.

No. 167,623.

Patented Sept. 14, 1875.

Figure 4,

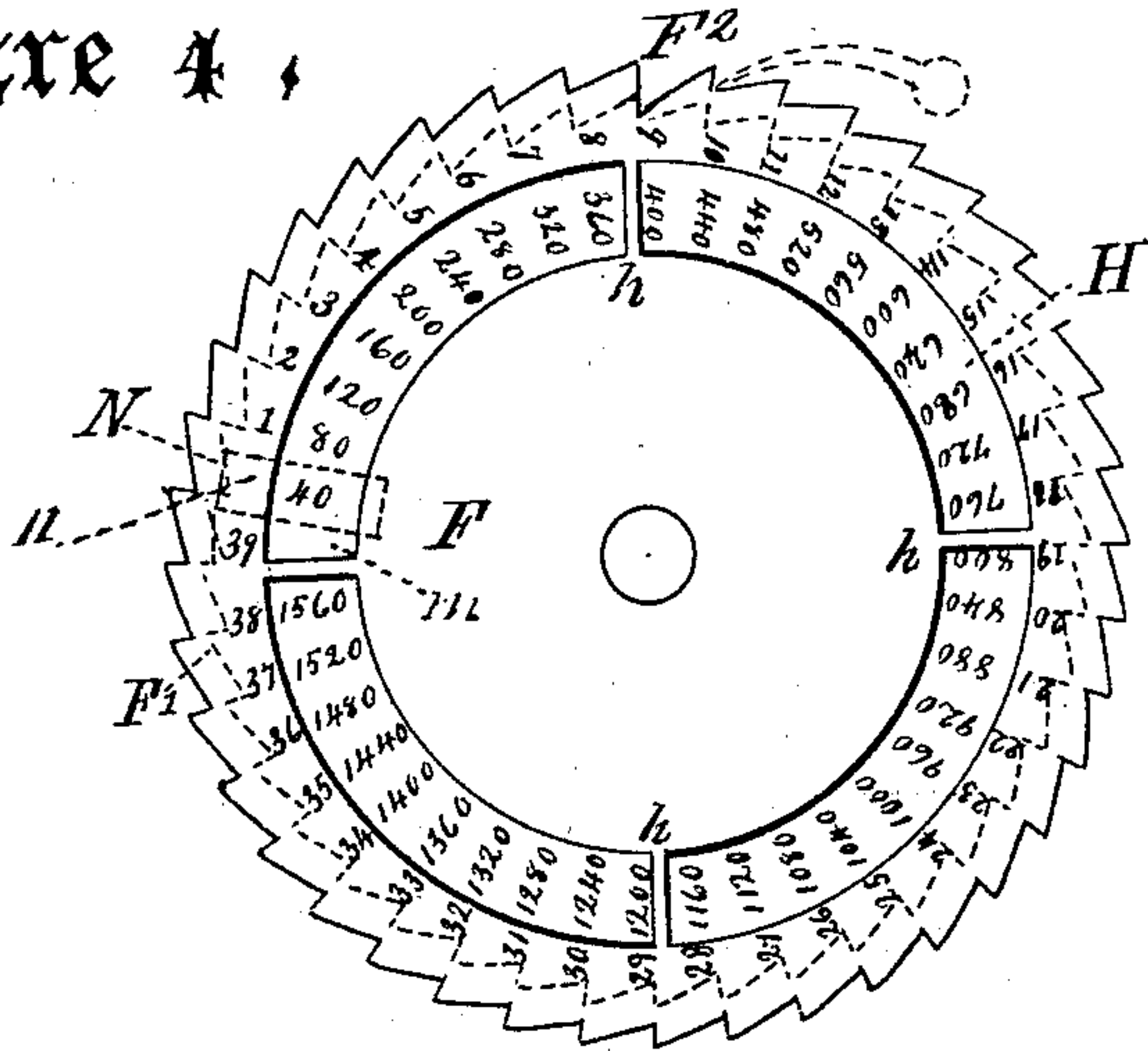


Figure 5,

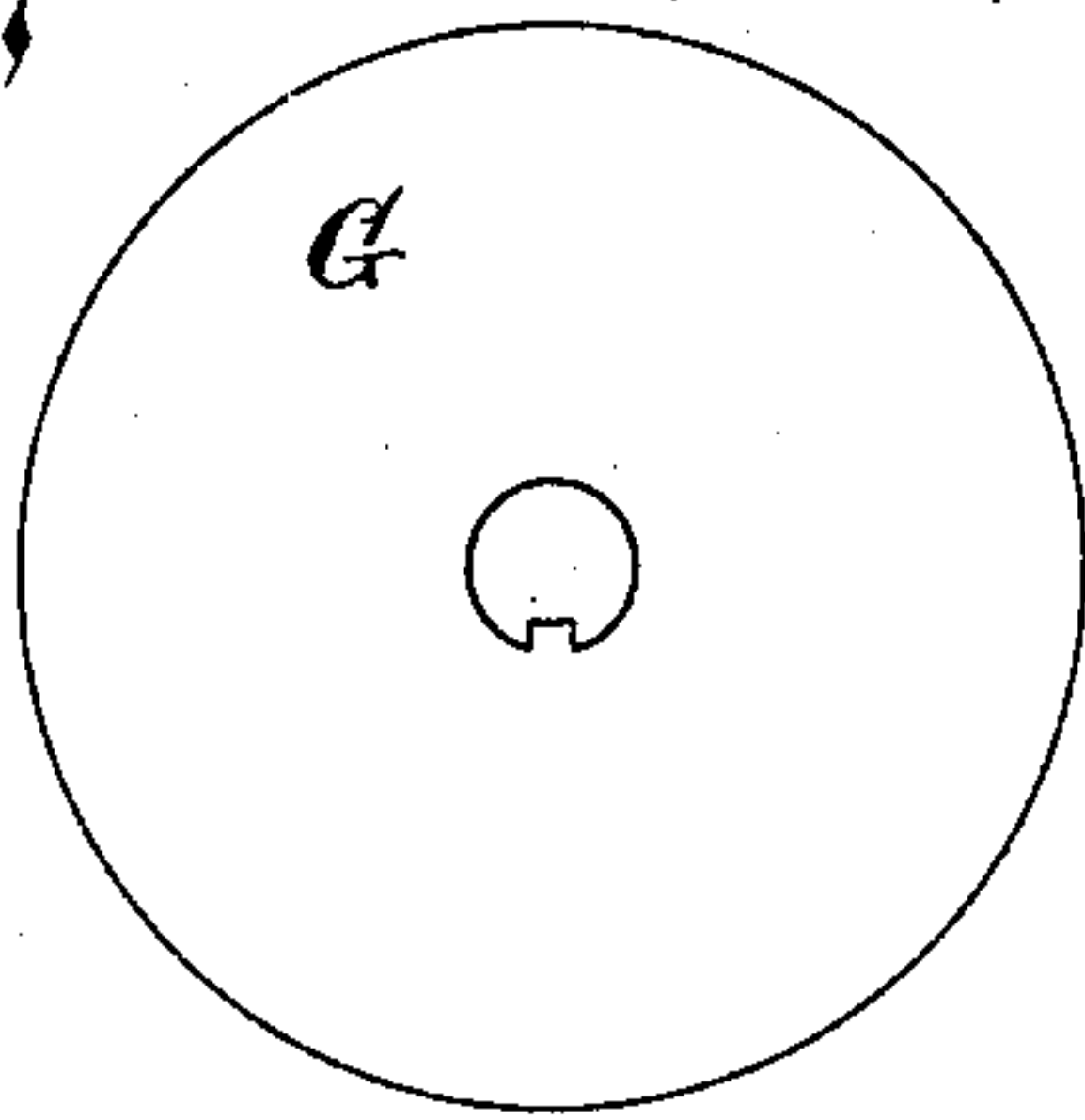


Figure 6,

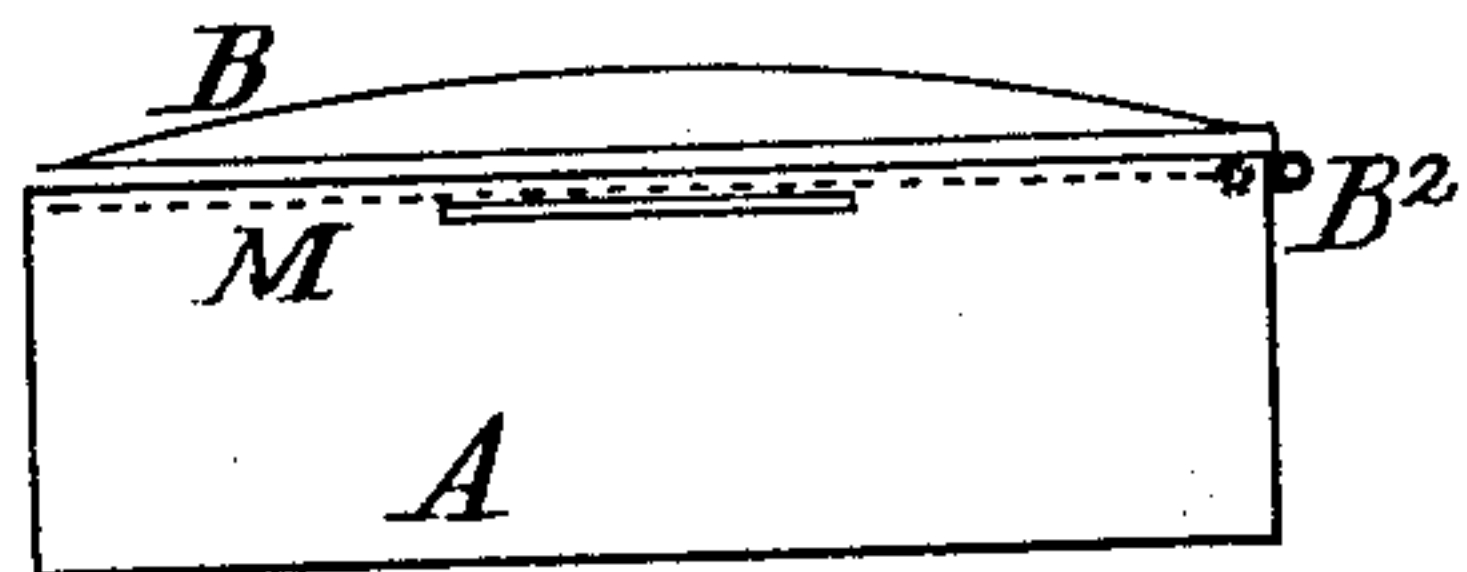
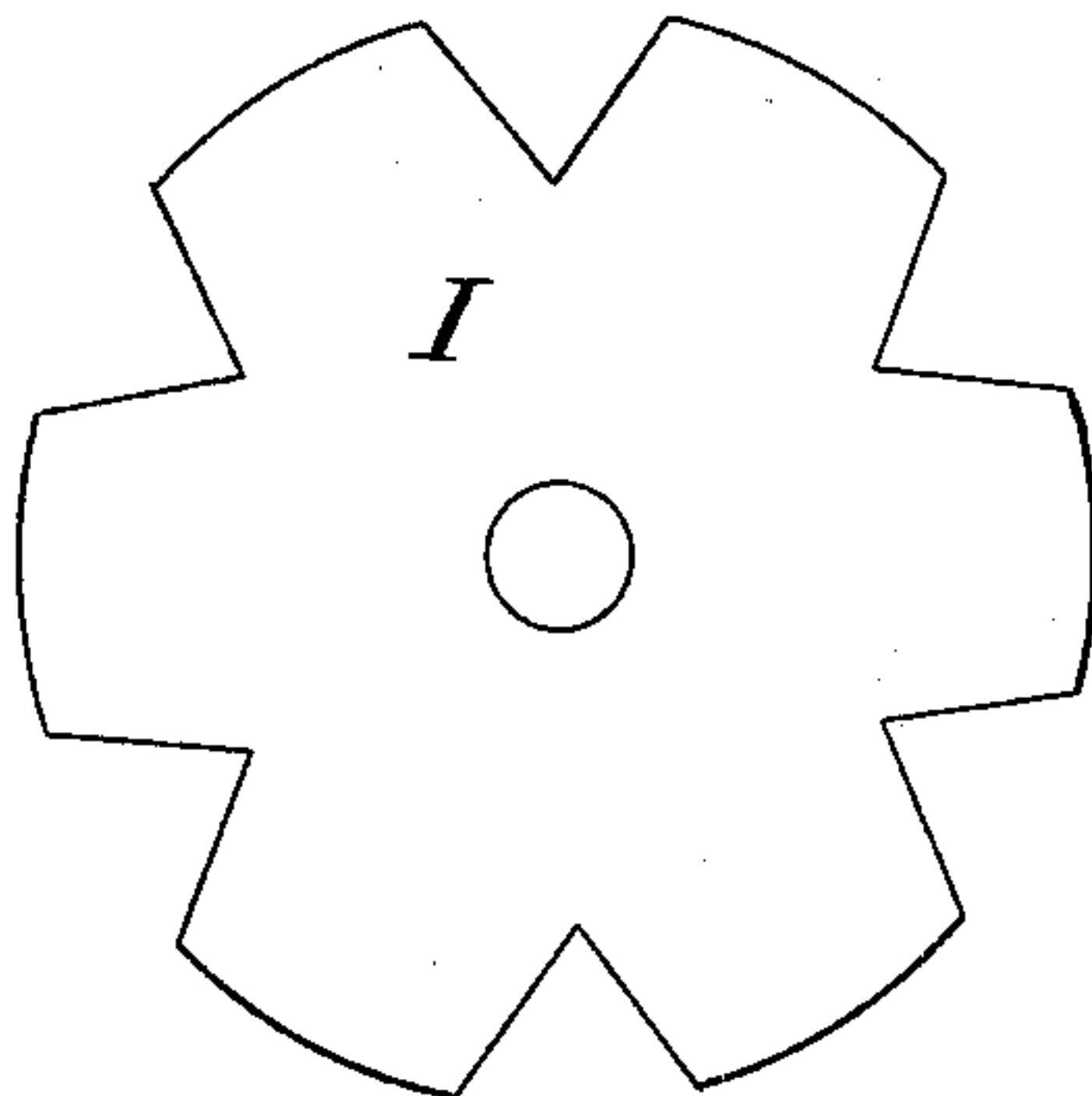
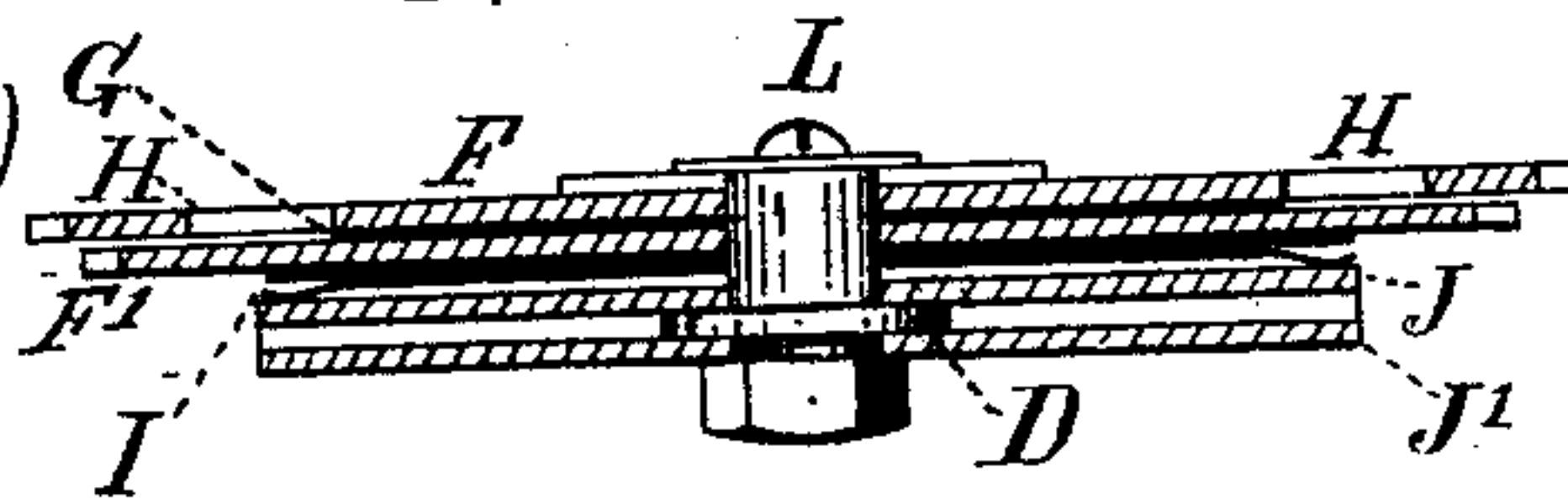


Figure 7,



Witnesses,  
R. E. J. Cile  
A. M. Darrell

Figure 8,



Inventor,  
James Sangster.



# UNITED STATES PATENT OFFICE.

JAMES SANGSTER, OF BUFFALO, NEW YORK.

## IMPROVEMENT IN FARE-REGISTERS.

Specification forming part of Letters Patent No. **167,623**, dated September 14, 1875; application filed August 2, 1875.

*To all whom it may concern:*

Be it known that I, JAMES SANGSTER, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Fare-Registers, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in fare-registers for cars, but more especially for street-cars, where there is a small number of different fares. Its object is to provide the means for recording every fare collected, and to show clearly to the passenger that the proper fare has been recorded by the conductor; and it consists, first, in the combination of a bell or other equivalent means for producing an alarm, a pawl, and handle for operating it, and a movable disk or plate for showing to the passenger, by presenting a number or word through an opening for the purpose, that the right fare has been recorded, there being upon the disk a number of figures or words showing the exact amount of each and every fare used on the road, the arrangement being such that every time a record of a fare is made the corresponding number representing it will be presented, so as to be plainly seen, and so that said number or character will remain in sight until a different fare has been registered.

The second part of my invention relates to the alarm device; and it consists in the combination, with the mechanism for moving the register, of a spring having the hammer connected thereto and a thin plate set at an angle or curved with a stationary pin, the arrangement being such that when the recording device is moved forward until the end of said plate passes the pin, it springs past it, and a blow is struck by the hammer upon the bell. On the return movement said plate passes onto the opposite side of the stationary pin until its opposite end springs by it. The length of said plate can be regulated so that the alarm cannot be given until the action of the registering device is complete.

In said drawings, Figure 1 is a front view of the register, representing the movable disk or plate in dotted lines, by which the fare recorded is shown to the passenger. Fig. 2 rep-

resents a front view of the mechanism below the face for operating the register and sounding the alarm. Fig. 3 is a side elevation of the bell and its striking mechanism, the part for supporting the stationary pin being in section. Fig. 4 is an enlarged view of the ratchet-disks; Fig. 5, a thin plate to be placed between them. Fig. 6 is a side elevation of the registering-box on a smaller scale; Fig. 7, a front view of the friction-spring for the registers; and Fig. 8, a vertical section through the register-disks, friction-plate, spring, and plate for supporting them.

A is the register; B, the face of the same; *b' b*, two openings therein for showing the kind of fare recorded. This answers where only two different fares are to be represented, there being as many openings *b' b* as there are different fares to be shown. C is the movable disk. It is fastened to the face B on the inside by a pin, *c*. The large number, 5, on its face, which is exposed, would represent a five-cent fare. It will be readily seen that if the plate C be moved upon its center until the figure 3 (shown in dotted lines) comes into view at the opening *b*, the large figure, 5, would slide past the openings *b'* and be covered, which would represent that a three-cent fare had been recorded. The plate C is moved only when a different fare from the one exposed is registered. *d* represents a thin strip projecting down from the face on the lower side of C, of which there is one for each different fare. *d'* is a pin projecting upward from each of the registering-levers D D'. A movement of the lever D in Fig. 1 toward the letter E will cause the pin *d'* to press against *d* and move C so as to cover the large figure 5, and present figure 3, at the same time operating the registering mechanism for the three-cent fares, and so the five-cent fares are operated or presented and registered by moving the lever D', as there is a separate register for each rate of fare. The face or cover B is hinged to the case at B<sup>2</sup>. The dotted lines *e e'* in Fig. 2 show the position of the ratchet-registering disks F. *f f* represent two pawls on the levers D and D', for operating said disks. They are kept in place by the springs *f'*. The registering-disks are represented in Figs. 4 and 8, F being the larger



one, and  $F^1$  the small one.  $G$  is a thin plate, made so as to fit the pin and be held stationary, so that when placed between  $F$  and  $F^1$  it will prevent the movement of one from interfering with the other.  $H$  is an opening through the disk  $F$ , of which there are four, as shown, for the purpose of exposing the figures on the smaller disk, the arms  $h$  being so placed as not to interfere with said figures.  $I$  is a friction-spring for holding the disks, so that they will not move unless moved by the proper means. The whole are connected to the pins  $L$ , as shown in Fig. 8. The registering-disks are entirely covered by a hinged cover,  $M$ , shown by dotted lines, Fig. 6, except a small opening for each register, similar to that shown by dotted lines  $N$ , Fig. 4.  $F^2$  represents a deep notch in disk  $F$ , which allows the pawl to reach into a notch in the smaller disk  $F^1$  and push it one tooth forward, after which it remains stationary until the notch  $F^2$  by the revolution of the disk reaches the pawl again. The registering-numbers are arranged as shown in Fig. 4. The register is there represented as capable of registering from one to fifteen hundred and sixty, although the same arrangement may be used for more or less. The large disk has forty teeth and thirty-nine numbers, advancing by one, a blank space,  $n$ , being between the first and last numbers. The smaller disk has also forty teeth and numbers opposite thirty-nine of them, beginning with forty and advancing by forty to fifteen hundred and sixty, leaving a blank space,  $m$ , similar to  $n$  in  $F$ . In the large disk every movement of one tooth ahead indicates one, and every such movement of  $F^1$  indicates forty. As shown in Fig. 4, the register indicates that  $F^1$  has moved ahead one notch, and consequently,  $F$  has made one revolution or forty notches forward, thereby indicating forty. In stating, the blank  $m$  would be where the 40 now is, and the numbers only on  $F$  would be seen until 39 had been reached. The alarm mechanism is shown in Figs. 2 and 3.  $O$  is the bell.  $P$  represents a bell-hammer spring,

connected to the lever  $D'$ .  $p'$  is the bell-hammer.  $Q$  is a projecting strip or plate of thin metal, fastened to the hammer and spring  $P$ .  $R$  represents the stationary pin, by which the hammer is operated while moving the levers for registering. It is connected to the cross-brace  $J'$ . In Figs. 2 and 3 the bell-hammer is represented in its forward movement just after striking a blow. In its backward movement the point  $S$  of the plate  $Q$  springs back over the pin  $R$ , and assumes the position shown by the dotted lines  $t$ . A forward movement will now force the hammer away from the bell until the end  $Z$  of plate  $Q$  passes the pin  $R$ , when it springs forward and strikes an alarm at the same instant the register has completed its movement if the plate  $Q$  is made the proper length. The levers  $D D'$  are provided with springs similar to  $T$  in Fig. 2, for drawing them back after a forward movement has been given to them. This register is designed to be fastened to the inside of a car and operated by means of one or more cords or straps arranged so as to be conveniently reached by the conductor from any part of the car, or by a rod that shall move one register by turning it one way, and the other by turning it in an opposite direction. An equivalent device for presenting the large figures or characters would be to make the disk  $C$  stationary, and the part with the openings  $b'$   $b$  so as to be movable; but it would not be as good a device for the purpose.

I claim as my invention—

1. In a fare-register, the combination of the movable disk  $C$  with the mechanism for operating a register, substantially as and for the purposes described.

2. The combination of the spring  $P$ , plate  $Q$ , hammer  $p'$ , and stationary pin  $R$  with the operating mechanism of a register, substantially as and for the purposes specified.

JAMES SANGSTER.

Witnesses:

B. EDW. J. EILS,  
A. M. DARRELL.