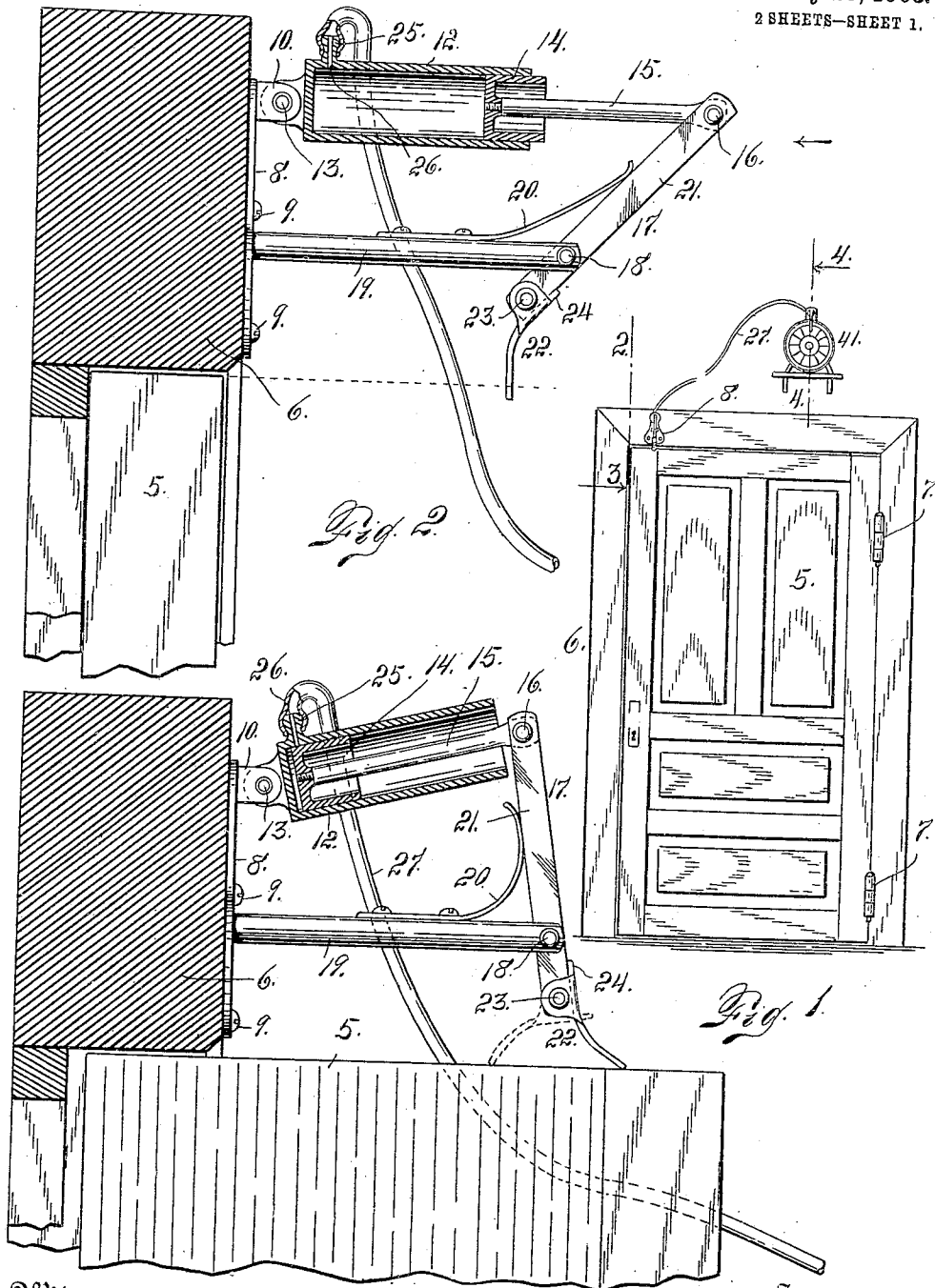


A. P. SCHMUCKER.
TIME RECORDER.
APPLICATION FILED JULY 7, 1908.

922,633.

Patented May 25, 1909.
2 SHEETS—SHEET 1.



Witnesses
Otto E. Haddick.
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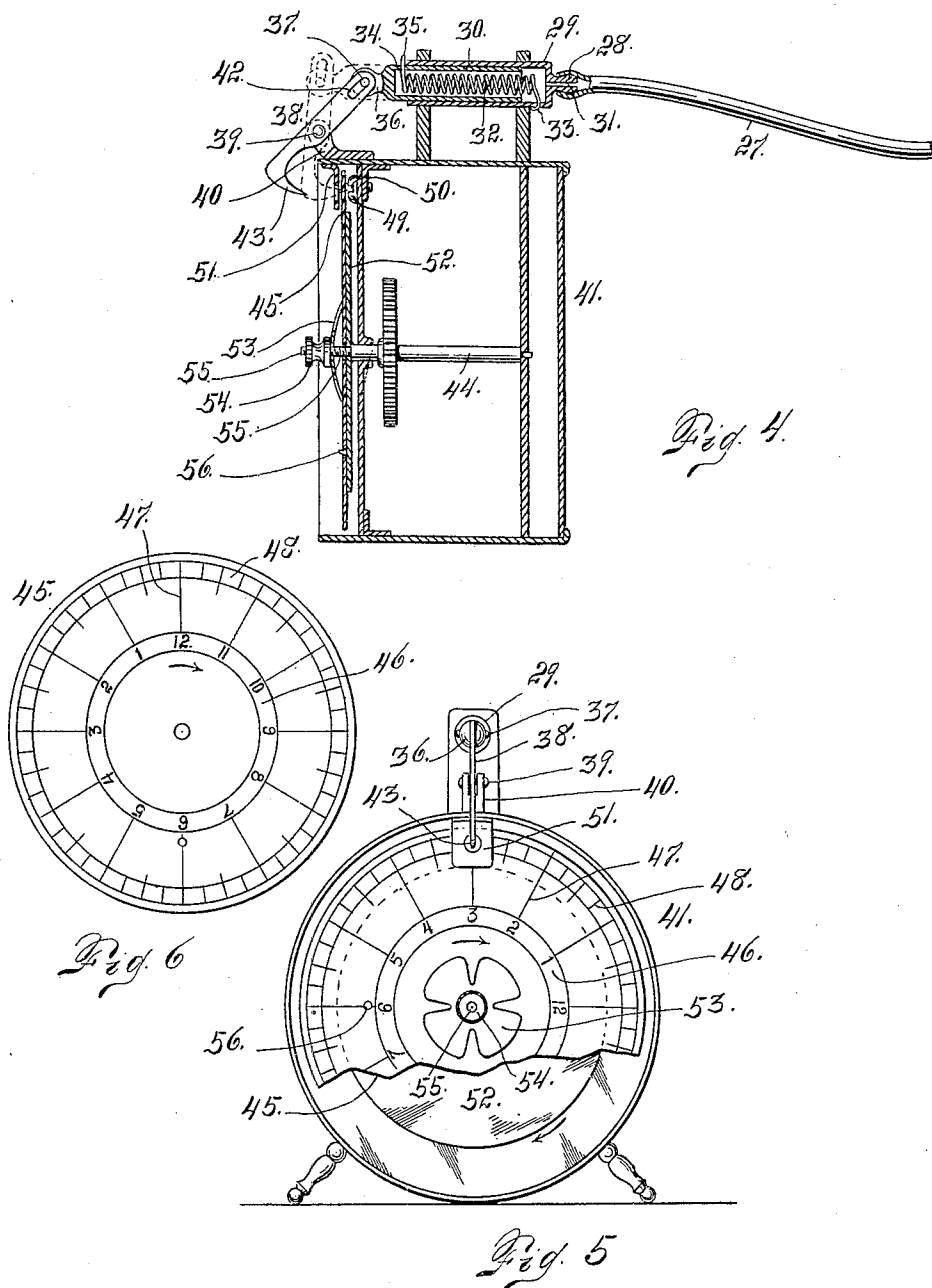
Fig. 3. Inventor
A. P. Schmucker.
J. A. D. Men
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Otto E. Huddick.
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Inventor
A. P. Schucker.
By: A. J. Porter Attorney

UNITED STATES PATENT OFFICE.

ALFRED P. SCHMUCKER, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO WILLIAM HICKEY, OF DENVER, COLORADO.

TIME-RECORDER.

No. 922,633.

Specification of Letters Patent.

Patented May 25, 1909.

Application filed July 7, 1908. Serial No. 442,410.

To all whom it may concern:

Be it known that I, ALFRED P. SCHMUCKER, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Time-Recorders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in time recorders, my object being to provide a device which, upon the opening of a door of an establishment, the time of such opening is automatically recorded. This apparatus includes an ordinary clock mechanism having a puncturable dial which moves with the hour hand arbor of the clock. Upon this dial are printed, or otherwise suitably designated, numerals or other characters to indicate the hours of the day. Upon the framework of the time piece is mounted a lever having a hook-shaped pointed extremity, its opposite extremity being connected with one member of a telescoping device arranged to be actuated by air pressure, the air being ejected from a cylinder by the opening of the door, through the instrumentality of a leverlike device, one arm of which is arranged in the path of the opening door. As the hook-shaped lever is actuated, its pointed extremity punctures the time-indicating dial near its periphery, thus leaving a mark to indicate the time of day when the door was opened. By virtue of this improvement it becomes practicable for employers to know accurately the time of day when an employee enters his place of business either in the morning or at any other time when it is desired to keep a check of this character.

Having briefly outlined my improved construction, as well as the object it is intended to accomplish, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing, Figure 1 illustrates my improved instrument arranged in operative relation to be actuated by the opening of a door. Fig. 2 is a section taken on the line

2—3, Fig. 1, viewed in the direction of the arrow, the parts being shown on a larger scale. Fig. 3 is a section taken on the line 2—3, Fig. 1, showing the parts in a different relative position; that is to say, when the device is actuated by the opening of the door. Fig. 4 is a section taken through the clock mechanism on the line 4—4, Fig. 1, the parts being shown on a larger scale. Fig. 5 is a face view of the clock equipped with my improved device. Fig. 6 is a face view in detail of the dial forming a part of the mechanism.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a door, and 6 the door frame, the door being hinged as shown at 7. Mounted upon the top of the frame above the door, is a plate 8, which is secured by screws 9. This plate is provided with a lug 10 with which an air cylinder 12 is pivotally connected, as shown at 13. This cylinder is provided with a piston 14 having a stem 15 whose outer extremity is pivotally connected, as shown at 16, with a lever 17, fulcrumed at 18 on the outer extremity of a pin 19 with which the plate 8 is provided. As shown in the drawing, this pin occupies a horizontal position and is provided with a leaf spring 20, which bears against the long arm 21 of the lever 17. The short arm of this lever is provided with a projection 22, which is pivotally connected with the lever, as shown at 23. Upon this projection is formed a part 24, which engages the edge of the lever and forms a stop to prevent the projection from turning upon the lever during the opening movement of the door 5, in whose path the projection lies. During the closing movement of the door, however, this projection turns readily upon its pivot, assuming the dotted line position (see Fig. 3). The inner extremity of the cylinder is provided with a nipple 25 having an orifice 26 communicating with the cylinder. With this nipple is connected one extremity of a flexible tube 27, whose opposite extremity is connected with a nipple 28, formed on one extremity of a stationary member 29, in which a cooperating member 30 telescopes. The nipple 28 is provided with an orifice 31, communicating with a chamber formed by the two members 29 and 30. These members are normally held in the closed position by a coil spring 32, one extremity of which

is connected with the stationary member as shown at 33, while the other extremity is connected with the movable member, as shown at 34. The last named extremity of the spring protrudes from the member 29, as shown at 35, sufficiently to form a stop, to limit the inward movement of the member 30, in response to the tension of the spring.

The telescoping member 30 is provided with a lug 36 with which is pivotally connected, as shown at 37, one arm of a lever 38 fulcrumed, as shown at 39, on a lug 40, mounted on the top of the time piece 41. The lever 38 is provided with a slot 42, through which the pivot pin 37 passes. The free extremity of the lever 38 is hook-shaped and pointed, as shown at 43.

Mounted on the hour hand arbor 44 of the clock movement, is a disk 45 composed of paper or other suitable, readily puncturable material. Upon an inner zone 46 of this dial are formed time designations from 1 to 12 inclusive, to indicate the hours of the day or night. The area of the disk is further provided with radial lines 47 leading outwardly from the zone 46 and dividing the space of the disk into twelve equal segments, whose outer portions are sub-divided into four spaces 48. This portion of the disk containing the spaces 48, is in position to be acted upon by the pointed extremity 43 of the lever 38 when the latter is actuated for time recording purposes. During this operation the said lever is thrown to the dotted line position in Fig. 4, by the outward movement of the telescoping member 34.

From the foregoing description the use and operation of my improved time recorder will be readily understood. Assuming that the door is closed, as shown in Figs. 1 and 2, and that the device is arranged, as shown in the said views, it will be understood that as the door is opened, its upper extremity will strike the projection 22 of the lever 17. This projection forms a yielding stop, and, as the movement of the door is continued, the lever 17 is actuated to cause the piston 14 to enter the cylinder 12, whereby the air is ejected from the cylinder, being driven through the orificed nipple 25 into and through the flexible tube 27, whence it passes into the chamber inclosed by the members 29 and 30. This air being forced into the chamber of the telescoping members, actuates the movable member 30, whereby the lever 38 is operated to cause its pointed extremity to puncture the time indicating disk in its outer margin or zone 48. In order to facilitate this operation, the disk, which is preferably composed of paper, is supported in the rear by a screw 49 whose nick or groove 50, forms a recess to receive the pointed extremity 43 of the puncturing lever. In order to hold the disk, or dial, in position during the outward movement of

the pointed extremity of the lever 38, a small plate 51 is secured to the clock casing and occupies a position just outside of the dial 45. During the puncturing act the pointed extremity of the lever passes through an orifice in this plate 51, which may be termed the stripping plate. Were it not for this plate, there would be a tendency for the pointed extremity of the lever to pull the paper dial outwardly with it as the puncturing extremity of the lever 38 moves away from the dial. This plate 51 obviates this difficulty.

The time-indicating dial 45 is readily removable from the arbor 44. Made fast to this arbor is an auxiliary dial 52, which forms a backing for the dial 45, the latter being held in place by a spring washer 53 which is secured in place by a thumb nut 54, screwed upon the threaded extremity 55 of the rotating arbor 44. The disk 53 is provided with a tooth or brad 56, which is pressed through the time indicating dial when the latter is put in position. This tooth causes the dial containing the time designations, to maintain its proper position upon the auxiliary dial at all times.

Having thus described my invention what I claim is;

1. In a time recorder, the combination with a door and a time piece having a movable dial containing time designations, of a lever fulcrumed adjacent to the time piece, a hollow stationary member, a tube telescoping in said member, the said tube being connected in operative relation with the said lever, a spring acting on the telescoping tube to normally hold the lever away from the said dial, a second lever fulcrumed adjacent to the door and having an arm projecting into the path of the door when opening the latter, a cylinder also mounted adjacent to the door, a piston therein, a stem connecting the said piston with the opposite arm of the second lever, a spring acting on the last named lever to hold the piston at its outward limit of movement, and a conduit connecting the said cylinder with the hollow member into which the said tube telescopes, the arrangement being such that as the door acts upon the second lever the telescoping tube is actuated to cause the first named lever to puncture the said dial of the time piece, substantially as described.

2. The combination with a door and a time piece having a dial movably mounted thereon and adapted to be punctured, of a lever fulcrumed adjacent to the time piece and having a pointed extremity which, when the lever is suitably actuated, will puncture the said dial, a cylinder mounted adjacent to the door, a piston therein, a lever connected in operative relation with the piston, the lever having an arm projecting into the path of the door during the opening move-

ment of the latter, and a suitable connection between the cylinder and the puncturing lever, whereby as the door operating lever is actuated, air is forced out of the cylinder and serves to operate the puncturing lever, substantially as described.

3. The combination with a door, and a time piece, the latter having a movable arbor, of a puncturable dial mounted to turn with the arbor, the said dial having time indications and an abutment located in the rear of the dial, a perforated plate located in front of the dial, a lever fulcrumed adjacent to the dial and having a pointed extremity which, when the lever is actuated, passes through the opening of the said plate, punctures the dial and enters a recess formed in the abutment, and a cylinder suitably connected between the door and the said lever, whereby as the door is opened the lever is actuated to puncture the dial, substantially as described.

4. The combination with a door and a

time piece, the latter having a rotatable arbor, of a dial mounted on the arbor to rotate therewith, the said dial having time indications formed thereon, a puncturing lever fulcrumed adjacent to the time piece and arranged when actuated to puncture the said dial, a hollow cylinder, a spring normally holding a tube at its inward limit of movement, a second cylinder, a piston therein, a conduit connecting the two cylinders and means acted on by the door during its opening movement for actuating the piston, whereby the air is forced from one cylinder into the other and the telescoping tube operated to actuate the puncturing lever, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED P. SCHMUCKER.

Witnesses:

A. J. O'BRIEN,
DAISY F. HUGHES.