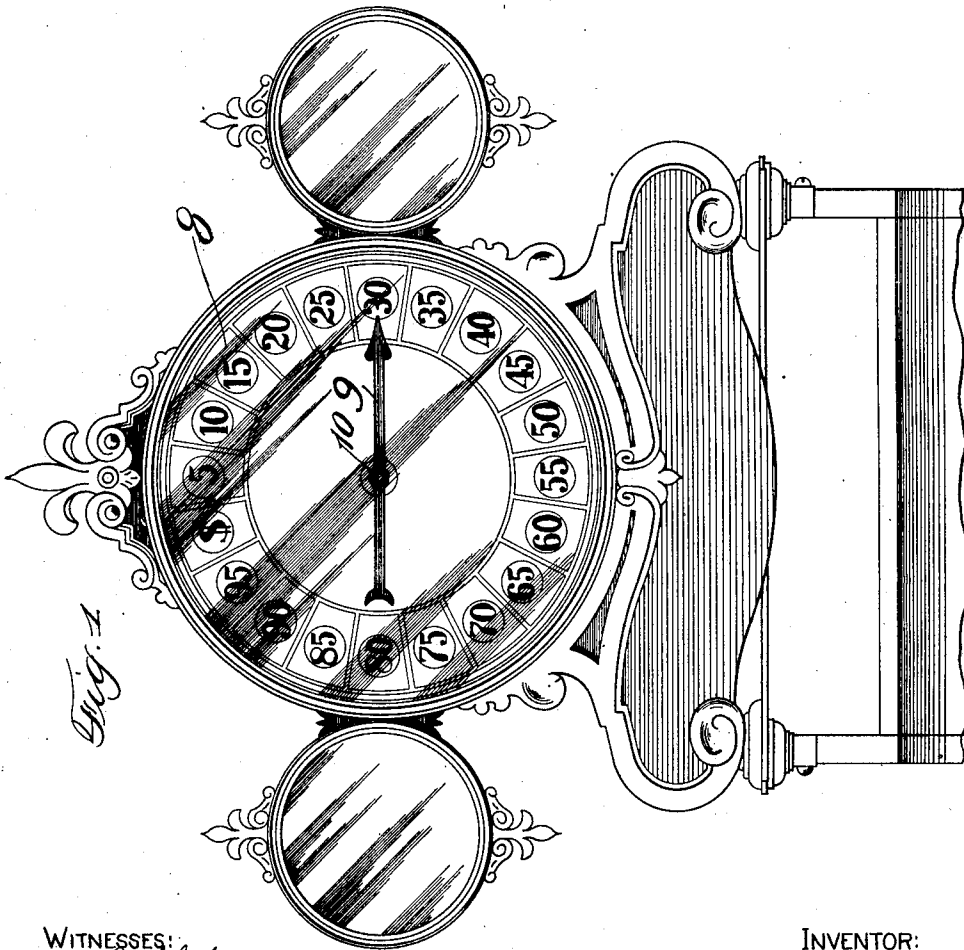
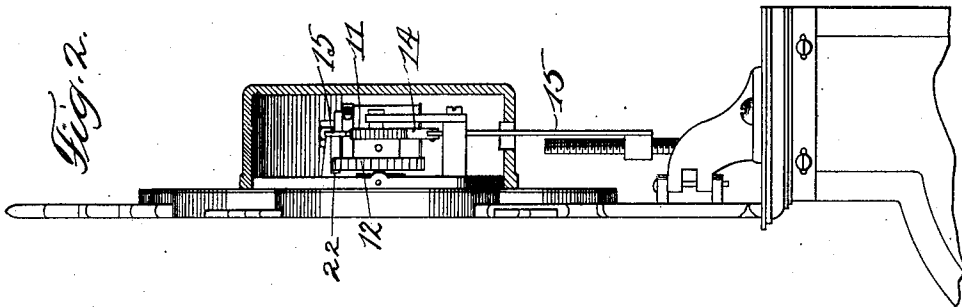


E. E. YAXLEY.
INDICATING MECHANISM.
APPLICATION FILED MAY 10, 1911.

1,001,795.

Patented Aug. 29, 1911.

2 SHEETS—SHEET 1.



WITNESSES:
Eta L. White.
Max S. Rosenzweig

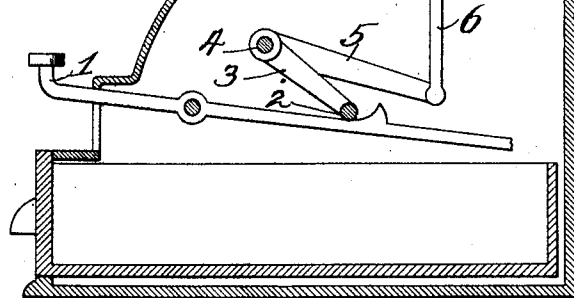
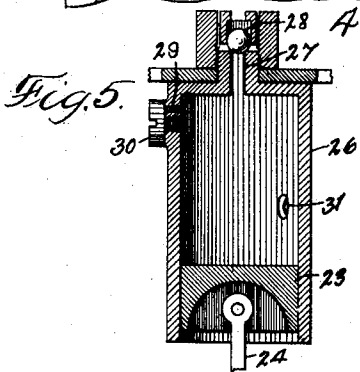
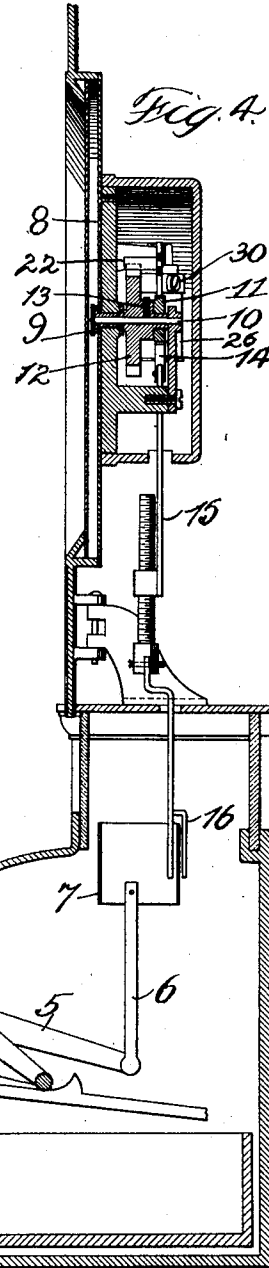
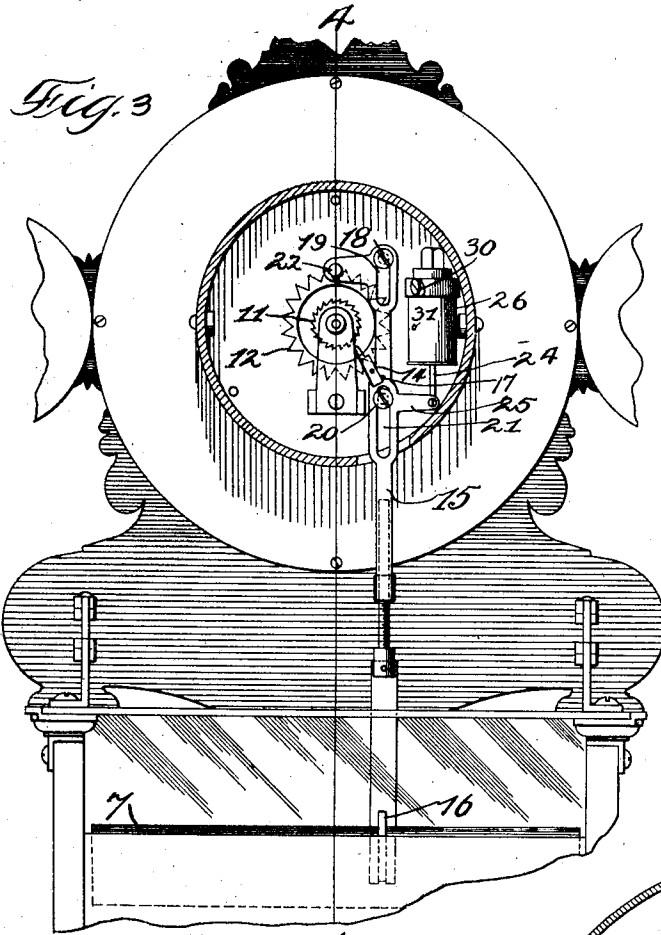
INVENTOR:
Ernest E. Yaxley
BY *E. L. Cragg*
ATTY.

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2 SHEETS—SHEET 2.



WITNESSES:
Edw. L. White
Max S. Rosenzweig

INVENTOR:
Ernest E. Yaxley
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UNITED STATES PATENT OFFICE.

ERNEST E. YAXLEY, OF CHICAGO, ILLINOIS.

INDICATING MECHANISM.

1,001,795.

Specification of Letters Patent.

Patented Aug. 29, 1911.

Application filed May 10, 1911. Serial No. 626,301.

To all whom it may concern:

Be it known that I, ERNEST E. YAXLEY, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Indicating Mechanism, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to indicating mechanism and is of particular service in connection with cash registers for the purpose of inviting the curiosity of purchasers to the operation of cash registers to thwart attempts on the part of those operating the cash register to falsely operate the same.

When the indicating mechanism is adapted to a cash register, I preferably cause it to be operated by the mechanical action of the flash bar actuating mechanism that usually enters into cash register construction, though I do not wish to be limited to such mechanical operation of the indicating mechanism. The indicator operating mechanism that is actuated by the flash bar operating mechanism includes a ratchet or toothed wheel that is mechanically connected with the shaft of the index needle or indicator, and an actuating pawl that is arranged to be in operative connection with the ratchet wheel for the purpose of operating the index or pointer and to be substantially freed of such engagement when the actuating pawl is being restored to normal position.

While I prefer to employ a ratchet wheel and actuating pawl for accomplishing the result which I have gained, I do not wish to be limited to this mechanism in all embodiments of the invention.

I also provide means for stopping the index needle or indicator at any of a plurality of prelocated positions. This means for checking the movement of the index needle is desirably sluggishly brought into operative position and when closely approached to a part moving with the needle, it is permitted quickly to act so as to cause the needle to stop in one of the prelocated positions. Hitherto the movement of the needle arresting means was sluggishly affected throughout its entire range of operation so that the needle would frequently be stopped in some position other than a prelocated position.

I will explain my invention more fully by

reference to the accompanying drawings showing the preferred embodiment thereof and in which—

Figure 1 is a front view of the top portion of a cash register structure with the indicating mechanism of my invention mounted above the same; Fig. 2 is a side elevation of the structure shown in Fig. 1 with the exception that the case for the indicating attachment is shown in section upon a vertical plane passing through the axes of rotation of the indicating needle; Fig. 3 is a rear view of the structure shown in Figs. 1 and 2, the casing for the indicating mechanism being shown in section; Fig. 4 is a sectional view on line 4 4 of Fig. 3; and Fig. 5 is a sectional elevation of the mechanism which is preferably employed for causing the means that is provided for arresting the needle to sluggishly approach an operating position.

Like parts are indicated by similar characters of reference throughout the different figures.

The cash register to which I have applied the form of my invention illustrated is of a common type and need not be described in detail.

I have shown one of the keys 1 that enter into the construction of the machine and to which key a flash bar operating mechanism is common. This flash bar operating mechanism includes a rod 2 common to the keys 1, an arm 3 connected to the rod 2 and pivoted at 4, a second arm 5 rigid with respect to the arm 3 and a link 6 connected with the arm 5 and united at its upper end with a well known form of flash bar 7.

I mount an indicating dial 8 upon the top of the cash register and place a rotatable index needle 9 before the face of the dial, the dial being subdivided into a number of predetermined locations with any of which the needle 9 may register, these predetermined locations or positions being clearly illustrated in Fig. 1 where they are denoted by numerals and a dollar sign. The needle 9 is fixedly mounted upon a needle shaft 10 that projects through the dial toward the rear where it is in connection with the actuating ratchet wheel 11 and a star wheel 12 that preferably enters into the mechanism for arresting the needle after it has been actuated.

Referring to Fig. 4, the ratchet wheel 11 preferably has driving fit with an extension of the hub of the star wheel 12, and a set

screw 13 is passed through the hub of the star wheel into engagement with the shaft 10. The ratchet wheel 11 is adapted to be operated by an actuating pawl 14 that has its ratchet wheel engaging end located to one side of the shaft 10 to enable the pawl 14 bodily to be moved in a substantially vertical direction. The actuating pawl 14 is pivotally connected at its lower end with a vertically movable actuating bar 15 that is mechanically connected with a bifurcated member 16 that straddles a part of the flash bar 7. A pin 17 serves to hold the ratchet wheel engaging end of the pawl 14 in alignment with the base of some ratchet wheel tooth so that the pawl is in position to operate upon the ratchet wheel when the flash bar 7 is suddenly elevated as a result of the operation of some registering key 1. When the bar 15 is moved upwardly, the ratchet wheel 11 is spun and the indicator 9 is spun therewith. When the actuating bar 15 has reached the upper limit of its travel it is permitted to descend, preferably by mechanism hereinafter to be described, the pawl 14, in its return movement, escaping the teeth of the ratchet wheel 11 so that this ratchet wheel, the index needle and other parts fixed with respect thereto are not materially retarded by the load of the actuating mechanism that set these parts into motion. The upward movement of the actuating bar 15 is desirably limited by a stop 18 working within a vertical slot 19 in the upper end of the bar 15, a post 20 desirably engaging another vertical slot 21 in the arm 15 to take part in guiding the actuating bar 15 in its vertical movement. The upper end of the bar 15 carries a stop 22 that desirably moves in a vertical line that passes through the axis of the shaft 10. This path of movement of the stop 22 is preferred as said stop is thereby adapted to evenly engage the converging faces of adjacent teeth between which the stop 22 is adapted to enter.

Mechanism, hereinafter to be described, is preferably employed for sluggishly permitting the stop 22 to descend, after the needle has been actuated, to a position closely approaching the circle passing through the points of the teeth of the moving star wheel 12, this mechanism then permitting the stop 22 suddenly to descend so as positively to enter the space between two adjacent teeth, the stop 22 sliding off a tooth apex of the moving wheel if the stop should happen initially to engage such apex, whereby the index needle 9 is brought into register with the middle portion of one of the spaces into which the peripheral portion of the dial 8 is divided off as indicated in Fig. 1. As I have shown 20 divisions upon the dial, I employ twenty teeth in the star wheel. The apexes of the teeth of the star wheel are in radial

the spaces upon the dial and the lines that define the intersections between converging faces of adjacent teeth are in radial alignment with central portions of the dial divisions. By causing the stop 22 suddenly to enter the space between adjacent star wheel teeth that has been presented to the stop as a consequence of the operation of the ratchet wheel 11 occasioned by the actuating pawl 14, the needle 9 is arrested in register with the middle portion of some dial division, for example as indicated in Fig. 1. The ratchet wheel 11 is also desirably provided with twenty teeth and is so fixed with respect to the star wheel that the space between adjacent teeth thereupon will be presented to the actuating end of the pawl 14 so that when said pawl is elevated it will be bottomed at the bases of the teeth it engages so as to enable said pawl to remain in engagement with the ratchet wheel throughout a fixed arcal distance.

I will now describe the mechanism which I prefer to employ for permitting the stop 22 slowly to approach the star wheel 12 and thereafter quickly enter into engagement therewith. This mechanism is shown in detail in Fig. 5 and the association thereof is illustrated in Fig. 3. This retarding mechanism is provided with a piston 23 flexibly connected with the upper end of a piston rod 24 whose lower end is flexibly connected with an arm 25 projecting laterally from the bar 15. The piston 23 works within a cylinder 26 whose upper end is provided with an air passage 27 communicating with the external air and in which air passage there is a ball valve 28 that seals the passage 27 by the operation of gravity and which gravity action is overcome to throw the passage 27 into communication with the external air when the piston 23 is suddenly raised, as it is through the action of the flash bar operating mechanism upon the actuating bar 15, as will now be clear. The movement of the piston 23 upwardly is thus made very free. The return movement of the piston 23 is retarded by causing the air to enter slowly above the same during a part of its descent preferably through a port 29 that is adjustable in capacity by a valve screw 30. By adjusting the screw 30 the rapidity with which the piston 23 descends may be regulated. I provide one or two openings 31 that are so located in the cylinder 26 as to be cleared or partially cleared by the piston 23 when the stop 22 has very closely approached the circle including the apexes of the star wheel teeth. When these openings 31 are thus cleared or partially cleared by the piston 23 in its downward movement, free passage for air above the piston 23 is permitted whereby the subsequent downward movement of the piston is rapid to cause the stop 22 to enter the space upon the

star wheel presented thereto with the results and for the purpose which have been described.

While I have herein shown and particularly described the preferred embodiment of my invention, I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit of my invention.

10 Having thus described my invention, I claim as new and desire to secure by Letters Patent the following:—

1. Indicating mechanism including an indicator adapted to be turned; mechanism for turning the indicator; a toothed wheel in mechanical connection with the indicator; a stop for engaging the teeth of this wheel for arresting the movement of the indicator; and mechanism for effecting the slow approach of the stop into close proximity with the teeth of said wheel and thereafter permitting quick movement of the stop into engagement with the teeth whereby the entry of the stop between two adjacent teeth is assured and the indicator is caused to be brought to a prelocated resting position.

2. Indicating mechanism including an in-

indicator adapted to be turned; indicator actuating mechanism; means for arresting the movement of the indicator; and means for causing the slow approach of said indicator arresting means to operative position and thereafter permitting the quick performance of the function of the indicator arresting means.

3. Indicating mechanism including an indicator adapted to be turned; a toothed wheel in mechanical connection with the indicator; pawl mechanism including an actuating pawl for engagement with said toothed wheel to turn it and the indicator mechanically connected with the wheel; a second toothed wheel in mechanical connection with the indicator; a stop for engaging the teeth of the second wheel for arresting the movement of the indicator; and an actuating element carrying the pawl and stop.

In witness whereof, I hereunto subscribe my name this 8th day of May A. D., 1911.

ERNEST E. YAXLEY.

Witnesses:

MARGARET D. ROBB,
ETTA L. WHITE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."