R. S. BLAIR.

RECORDER.

APPLICATION FILED OCT. 14, 1907.

1,010,576.

Patented Dec. 5, 1911.

Fig. 1.

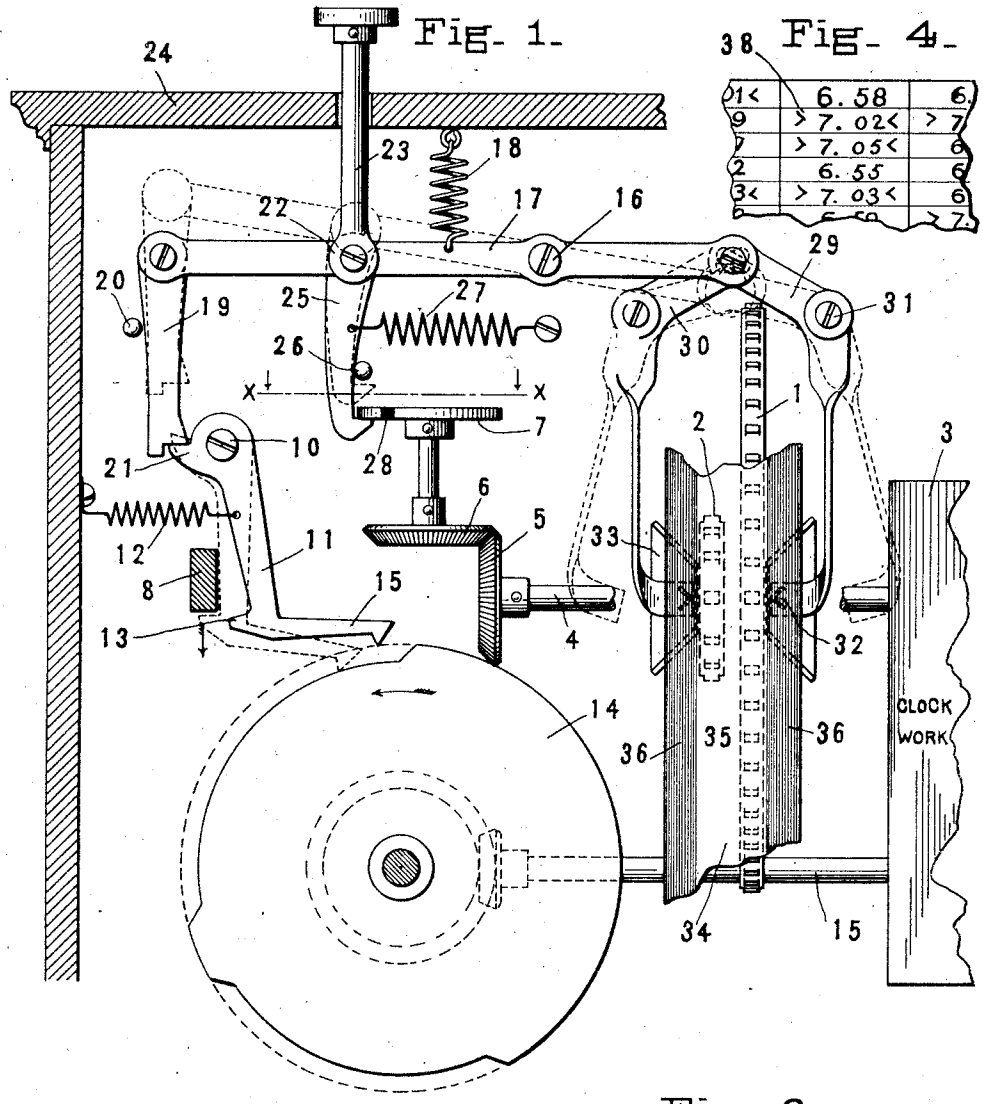



Fig. 4.

| | | |
|---|---|---|
| 01< | 6.58 | 6. |
| 9 | > 7.02< | > 7 |
| 7 | > 7.05< | 6 |
| 2 | 6.55 | 6 |
| 3< | > 7.03< | 6 |
| | | > 7. |

Fig. 3.

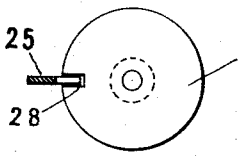



Fig. 5.

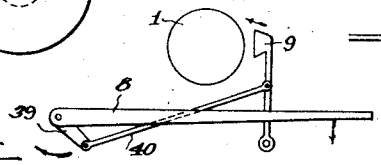
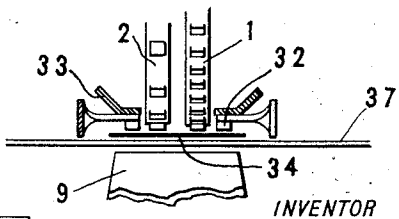



Fig. 2.




WITNESSES

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# UNITED STATES PATENT OFFICE.

ROBERT S. BLAIR, OF NEW ROCHELLE, NEW YORK, ASSIGNOR TO INTERNATIONAL TIME RECORDING COMPANY OF NEW YORK, OF ENDICOTT, NEW YORK, A CORPORATION OF NEW YORK.

## RECORDER.

1,010,576. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed October 14, 1907. Serial No. 397,261.

*To all whom it may concern:*

Be it known that I, ROBERT S. BLAIR, a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Recorders, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to workmen's time recorders and the like.

One of the objects thereof is to provide an efficient and practical time recorder, in which records of different classes are readily distinguished.

Another object is to provide a time recorder of the above type of simple and inexpensive construction, and characterized by an action which is reliable and economical of power.

Another object is to provide effective means for imparting a distinguishing characteristic to a record.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of constructions, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, wherein is shown one of the various possible embodiments of this invention, Figure 1 is a sectional front view of the same. Fig. 2 is a detailed view of type wheels and associated parts. Fig. 3 is a detailed view of a holding disk taken substantially along the section X—X of Fig. 1. Fig. 4 is a detailed view of a portion of a record card. Fig. 5 is a diagrammatic view showing connections of actuating mechanism.

Similar reference characters refer to similar parts throughout the several views of the drawings.

As tending to render certain features of this invention more readily understood, it may here be noted that in the use of workmen's time recorders the distinguishing of irregular records by forming the same in a distinctive color, is highly important, and if it be attempted to achieve this end by the shifting of a multi-colored ribbon, difficulties are found in shifting the same laterally at the proper times. The mechanism for achieving this end is usually of a more or less complicated and expensive character, and its action is likely to be, with most types of apparatus, somewhat unreliable. These defects are eliminated, and many advantages obtained by a radically different treatment of the subject as exemplified in the apparatus hereinafter described.

Referring now to the accompanying drawings, there are shown type wheels 1 and 2, which may be of any desired form and driven from the clock-work diagrammatically represented at 3. Also driven from this clock-work as through the shaft 4 and beveled gears 5 and 6, is a holding disk 7 hereinafter described in detail.

There is shown in cross section at 8 an actuating or printing lever, by means of which the record card is brought into operative relation to the type wheels, as by the platen 9, as shown in Fig. 2 of the drawings. The linkage, whereby this is accomplished, forms no part of the present invention, and may be of any type well known in the art.

Pivotally mounted as at 10, adjacent the lever 8, is a locking hook 11 adapted to swing under the lever 8, as indicated in dotted lines, and hold the same against a downward movement, thus preventing the use of the recorder. This hook 11 is normally urged as by the spring 12, so as to bring its locking portion 13 under the lever, but it is held out of working hours in an inoperative position by means of a cam 14, engaging the arm 15 formed thereon. Cam 14 is driven from the clock-work 3 as through the shafting 15 and appropriate gears, and is so formed as out of working hours to hold the hook 11 in raised or inoperative position, but during working hours to permit it to swing under and lock the lever 8, by reason of the portion 15 coming into operative relation to the depressed or cut away surface of the cam. There are provided means, however, for releasing this hook, in order to permit a tardy workman to form a record during working hours. Pivotally mounted as at 16 is a lever 17 normally swung upwardly as by the spring 18 and having at its free end a link 19 guided by the pin 20 into operative relation to a lug 21 upon the hook 11. Connect-

ed with lever 17 as at 22 is a push rod 23 extending without the casing 24 and thus accessible to the workman, whereas the remaining mechanism hereindescribed is inaccessible to him. By means of this rod 23 the lever 17 is swung in such a direction as to throw the hook 11 from under the lever 8, and thus permit the use of the instrument. This may, if desired, be merely momentarily released during the actuation of the recorder by a single tardy workman; but I provide, in order to permit of its being held open while several tardy workmen make their records, a hook 25 held against a guiding pin 26 by a spring 27. This hook upon the rod 23 being depressed, will snap under the holding disk 7, and be held in its lower position with the hook 11 swung from under the lever 8, as indicated in full lines in the drawings. There is provided, however, in disk 7, releasing slot 28 which, at each revolution of the disk, occurring in preferably about once every half hour, will release the hook 25 and permit the lever 17 again to swing upwardly.

In order to cause a distinctive characteristic to be imparted to the record of a tardy workman, I provide bell crank levers 29 and 30 pivoted as at 31 and having slotted connection at their upper free ends with the lever 17. These levers have upon their lower ends type of a distinctive character as, for example, the arrow heads 32 shown in the drawings, and upon the push rod 23 being depressed these type are swung adjacent the opposite sides of the type wheels 1 and 2 and supported in such position as by the guides 33. To coact with these type there is provided a vertical printing ribbon 34, preferably having one colored portion 35 to coact with the main type wheels and at each side a differently colored portion 36 positioned opposite the operative position of the auxiliary type 32. This ribbon is, of course, fed in a vertical direction, and thus its feed does not interfere with the relation of its colored portions to the several type. The card 37 is related to these several parts as best indicated in Fig. 2 of the drawings. As diagrammatically shown in Fig. 5 of the drawings, the actuating lever 8 may be connected with the platen 9 by a crank 39 fixed to the shaft upon which lever 8 is mounted and connected with the platen support by the link 40.

In order to do away with the chance of ambiguity in the interpretation of certain terms used throughout this description and the following claims, it is to be noted that they are intended to have the following significance: By "preventing" the operation of the instrument or the like, is meant any interference with or obstruction to the use of the entire instrument, whether the same concerns the record card, the printing lever or otherwise. By "working hours" is meant the regular hours of labor. By "side", as used with reference to the type wheels, is meant any adjacent position, whether laterally or vertically offset. By "platen" is meant any element for bringing the record card and printing members into operative relation one to another, irrespective of which of the elements moves. It may also be noted that the expression "type wheels" is used broadly to designate either revoluble wheels bearing type, or any equivalent member.

The method or use of the above described embodiment of this invention is substantially as follows: Assuming that it be desired to form a record by a tardy workman, the mechanism will be found to be in condition indicated in dotted lines in the drawings, due to the fact that the cam 14 is in such position as to permit the hook 11 to lock the lever 8. The workman thereupon merely depresses lever 23, whereby the lever 11 is swung into the position shown in full lines of the drawings, and held in such position by the hook 25. The instrument may then be freely used. The swinging of lever 17, however, has thrown the type 32 into operative position by the above described mechanism, and upon the record being formed there will be made at each side thereof a pair of arrow heads, as indicated at 38 in Fig. 4 of the drawings. These arrow heads will be of a distinctive color as, for example, red if green be the color for printing the time, and will readily attract attention to the irregular character of the record. The mechanism is held in this condition for the balance of the half hour, whereupon it is released by the slot 28 in disk 7 and again falls into locking condition unless the cam 14 has been driven in such manner as to raise the hook 11, this occurring at the end of the period of labor, as, for example, the noon hour, at which time it is of course desired to form records without the distinctive feature indicating irregularity.

It will thus be seen that there is provided means for achieving the several objects of this invention, and in which the above enumerated advantages are among others present. The entire construction is simple and inexpensive and is certain in action, it being understood that precision may be enhanced, if necessary, by the use of auxiliary elements, such as are indicated in certain of my copending applications. It is also to be understood that certain parts are herein somewhat diagrammatically shown. The mechanism herein shown, however, sets forth clearly a practical and thoroughly reliable form of apparatus, in which the delicate adjustments of certain former types are done away with, and the same thus better adapted to withstand hard use.

As many changes could be made in the

above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. In a workman's time recorder, in combination, clock-controlled record forming means, clock controlled means adapted to prevent the use of said record forming means, means adapted to release said last mentioned means and permit the use of the instrument, and means operated by said releasing means and adapted to change a characteristic of the records formed by said record forming means.

2. In a workman's time recorder, in combination, printing wheels, a multi-colored printing ribbon, clock controlled means adapted to prevent the use of said printing wheels, means adapted to bring into operation a portion of said ribbon of a different color, and means adapted to actuate said last mentioned means and release said clock controlled means.

3. In a workman's time recorder, in combination, printing wheels, a multi-colored printing ribbon, a printing lever adapted to cause said printing wheels to form a record, clock controlled means adapted to lock said printing lever, means adapted to bring into operation a portion of said printing ribbon of a different color, and means adapted to actuate said last mentioned means and release said printing lever.

4. In a workman's time recorder, in combination, record forming means, clock controlled means adapted to prevent the use of said record forming means during working hours and permit their use out of working hours, hand actuated means adapted to release the same and permit the use of the instrument during working hours, and means operated by said releasing means and adapted to change a characteristic of the records formed by the instrument, whereby the instrument is free for use out of working hours, and the records made during working hours are readily distinguished.

5. In a workman's time recorder, in combination, time-recording means, means adapted to interfere with the use of the recorder during working hours, means adapted to render said interfering means inoperative and permit the use of the recorder during said working hours, and means rendered operative by said last means and adapted to impart a distinctive characteristic to the record.

6. In a workman's time recorder, in combination, time-recording means, clock controlled means adapted to interfere with the use of the recorder during working hours, hand controlled means adapted to render said clock controlled means inoperative and permit the use of the recorder during said working hours, and means automatically rendered operative by said hand controlled means and adapted to impart a distinctive characteristic to the record.

7. In a workman's time recorder, in combination, record forming means, a printing lever adapted to actuate said record forming means, clock controlled means adapted to lock said printing lever during working hours, and release the same out of working hours, hand actuated means adapted to release said printing lever during working hours, and means operated by said releasing means and adapted to change a characteristic of the records formed by the instrument, whereby the instrument is free to use out of working hours, and the records made during working hours are readily distinguished.

8. In a workman's time recorder, in combination, time controlled printing wheels, means adapted to form a record therefrom, and a member adapted to be swung into and out of a position adjacent said printing wheels, and provided with means adapted to coact with said record forming means and form an additional record.

9. In a workman's time recorder, in combination, time controlled printing wheels, means adapted to form a record therefrom comprising a platen projecting laterally beyond said printing wheels, and a member adapted to be moved into and out of a position offset with respect to said printing wheels in a direction transverse to the plane thereof, and provided with means adapted to coact with said projecting portion of said platen and form an additional record.

10. In a workman's time recorder, in combination, time controlled printing wheels, means adapted to form a record therefrom, and a pair of members adapted to be manually moved into and out of positions upon opposite sides of said printing wheels, and provided with means adapted to coact with said record forming means and form an additional record.

11. In a workman's time recorder, in combination, time controlled printing wheels, means adapted to form a record therefrom, and a hand controlled member adapted to be moved into and out of a position adjacent said printing wheels, and provided with means adapted to coact with said record forming means and form an additional record, whereby a distinctive characteristic is imparted to the record formed by said printing wheels.

12. In a workman's time recorder, in combination, time controlled printing wheels, a multi-colored printing ribbon having a por-

tion of one color in operative relation to said printing wheels, means adapted to form a record from said printing wheels, and a member adapted to be moved into and out of position adjacent said printing wheels and operatively related to a differently colored portion of said printing ribbon, and provided with means adapted to coact with said record forming means and form an additional and differently colored record.

13. In a workman's time recorder, in combination, time controlled printing wheels, a multi-colored printing ribbon having a portion of one color operatively related to said printing wheels, means adapted to form a record from said printing wheels, and a hand controlled member adapted to be moved into and out of a position adjacent said printing wheels and operatively related to a differently colored portion of said printing ribbon and provided with means adapted to coact with said record forming means and form an additional and differently colored record.

14. In a workman's time recorder, in combination, time controlled printing wheels, a multi-colored printing ribbon having a portion of one color in operative relation to said printing wheels, means adapted to form a record from said printing wheels, and a member adapted to be moved into and out of position adjacent said printing wheels and operatively related to a differently colored portion of said printing ribbon, and provided with means adapted to coact with said record forming means and form an additional and differently colored record, said ribbon having its differently colored portions in the form of stripes, and being mounted to feed in the direction of its stripes.

15. In a workman's time recorder, in combination, time controlled printing wheels, means adapted to form a record therefrom, a pair of members adapted to be moved into and out of positions upon opposite sides of said printing wheels and provided with means adapted to coact with said record forming means and form an additional record, and a multi-colored printing ribbon having one portion thereof operatively related to said printing wheels and other portions thereof operatively related to said additional record forming means in their operative position.

16. In a workman's time recorder, in combination, time controlled printing wheels, means adapted to form a record therefrom comprising a platen projecting laterally beyond said printing wheels, a member adapted to be moved into and out of position offset with respect to said printing wheels in a direction transverse to the plane thereof, and provided with means adapted to coact with said projecting portion of said platen and form an additional record, and a multi-colored printing ribbon positioned to form the records from said printing wheels in one color and said additional record in another color.

17. In a workman's time recorder, in combination, time controlled printing wheels, means adapted to form a record therefrom, means adapted to interfere with the use of the recorder during working hours, means adapted to render said interfering means inoperative and permit the use of the recorder during working hours, and means automatically actuated by said last means and comprising a member adapted to be swung into a position adjacent said printing wheels and coact with said record forming means to form an additional record.

18. In a workman's time recorder, in combination, time controlled printing wheels, means adapted to form a record therefrom, clock controlled means adapted to interfere with the use of the recorder during working hours, a member adapted to be moved into and out of a position adjacent said printing wheels and provided with means adapted to coact with said record forming means and form an additional record, and hand controlled means adapted to render said interfering means inoperative and permit the use of the recorder during working hours and adapted automatically to swing said member into operative position and form an additional record.

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

ROBERT S. BLAIR.

Witnesses:
M. McFARLAND,
M. C. BLAIR.