

(No Model.)

2 Sheets—Sheet 1.

E. G. WATKINS.
WORKMAN'S TIME RECORDER.

No. 527,304.

Patented Oct. 9, 1894.

Fig: 2.

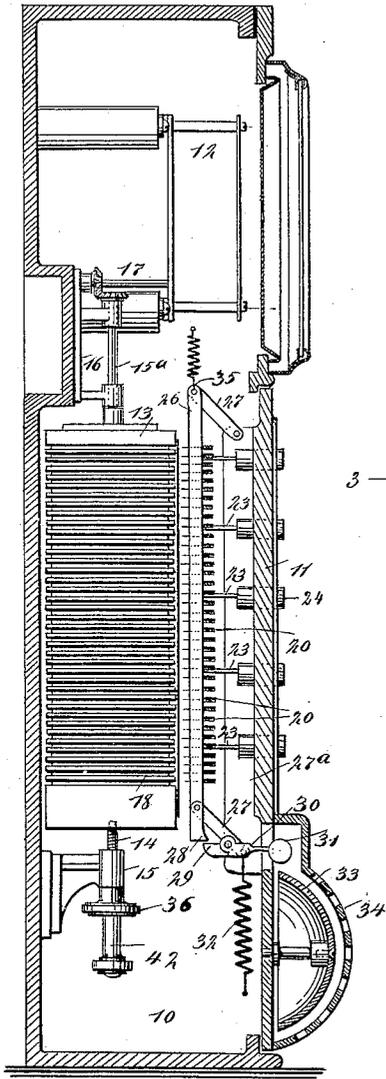


Fig: 1.

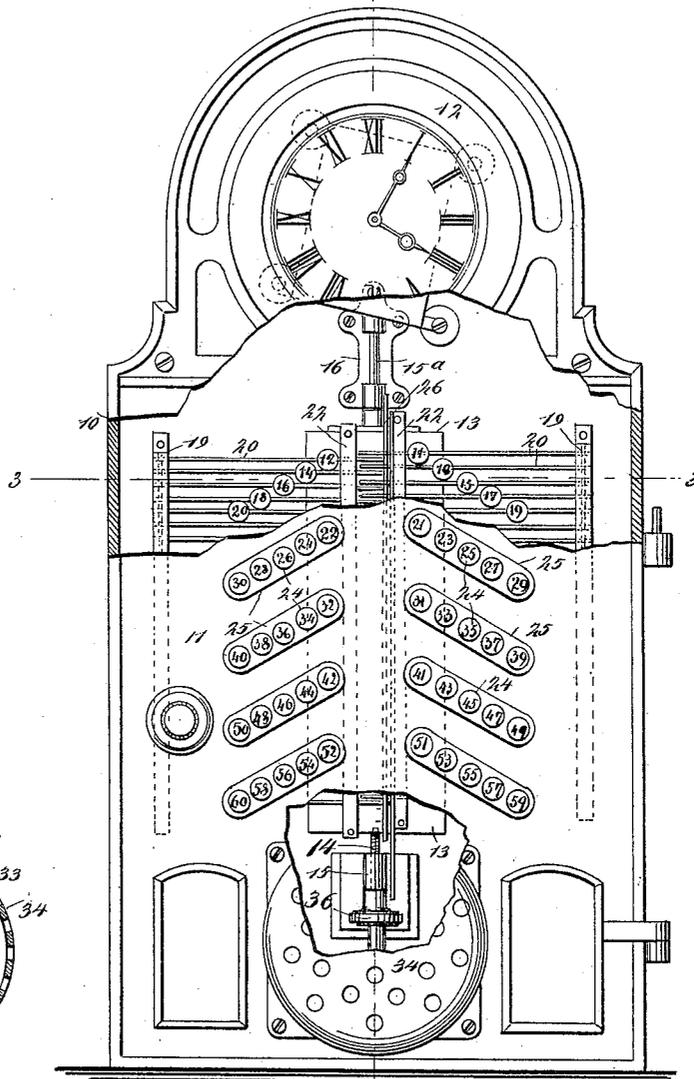
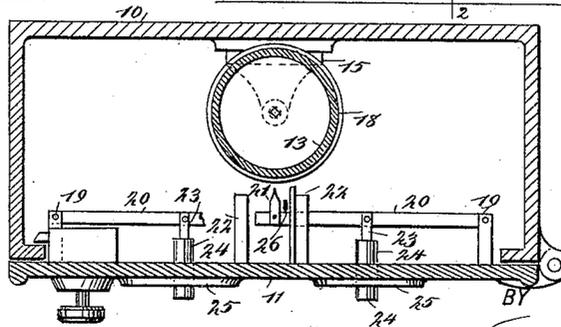


Fig: 3.



WITNESSES:

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

EDWARD G. WATKINS, OF GARDNER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO HEYWOOD BROS. & CO., OF SAME PLACE.

WORKMAN'S TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 527,304, dated October 9, 1894.

Application filed July 22, 1893. Serial No. 481,181. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. WATKINS, of Gardner, in the county of Worcester and State of Massachusetts, have invented a new and Improved Time-Recorder, of which the following is a full, clear, and exact description.

My invention relates to improvements in time recorders such as are used to record the time of employes in factories, shops, stores, offices, &c., and the object of my invention is to produce a machine of the greatest simplicity, which may be cheaply made and is extremely durable, which is operated by the individual employes when they begin and leave off work, which keeps an accurate record of the time during which the individuals are at work, and which has a time sheet adapted to be detached after being passed through the machine and which shows a complete record of the time of the several employes, and may therefore be filed away for future reference.

To these ends, my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken front elevation of the machine embodying my invention. Fig. 2 is a vertical section on the line 2—2 in Fig. 1. Fig. 3 is a sectional plan on the line 3—3 in Fig. 1. Fig. 4 is an enlarged vertical section of the lower end of the cylinder 13 and its bearing. Fig. 5 is an elevation of the cam sleeve 42; and Fig. 6 is a plan view of the time sheet, part of the same being broken away.

The machine is provided with a suitable case 10, which may be of any desired form, and this has a swinging lid 11, and is also provided with a clock 12, which may be of any desired construction, although a clock capable of running at least eight days is preferably employed. Within the case, and extending longitudinally thereof, preferably at a point near the center, is a revoluble cylinder 13, which is supported on the upper screw

threaded portion 14 of a socket 36, said socket being adapted to screw into a female threaded bearing or bracket 15.

A pin, 37, is inserted into the bore of the socket 36, the said pin being provided with a square portion, 38, near its upper end, which portion fits into a correspondingly shaped opening in the bottom of the cylinder 13, as will be seen in Fig. 4.

A spring, 39, is coiled between the lower end of the pin 37 and the bottom of the bore of the socket 36, whereby the pin is pressed upward into engagement with the square opening in the bottom of the cylinder 13. Transversely to the pin 37 a catch pin or stud, 40, projects through or into a curved cam slot 41 provided in a sleeve 42, which is adapted to fit over the lower end of the socket 36.

A longitudinal slot, 43, in the said socket 36, allows the pin 40 to move vertically when the cam sleeve 42 is turned. The spring 39 also keeps the cam sleeve 42 in contact with the shoulder 44 of the socket 36.

At its upper end the cylinder is connected to a shaft 15^a to slide thereon and rotate therewith. Said shaft turns in a suitable bracket 16, and is geared, as shown at 17, to the clock mechanism, this mechanism not being shown in detail as it is of the usual kind.

There are a series of parallel swinging levers 20, pivoted in supports 19 on opposite sides of the cylinder. These levers extend about tangentially to the cylinder and to a point opposite the same, the levers on one side overlapping those on the other, as shown clearly in Fig. 1, and each lever is provided with a stylus 21, which is adapted to be pressed against the cylinder and perforate the time sheet carried thereon.

The cylinder is corrugated, as shown at 18, the grooves coming opposite the several styluses so as to prevent them from striking the body of the cylinder, or the cylinder may be covered with some soft substance, and the time sheet carried by the cylinder will be hereinafter described in detail.

The levers 20 swing in guides 22, and have shanks 23, which are secured to buttons 24, and the latter extend upward through guide

plates 25 on the top of the case, that is, on the lid 11, and the buttons are consecutively numbered, and each number represents a person, as every person in the building where the register is used is known by a certain number.

The several levers 20, near their free ends extend opposite and above a swinging rod 26, which is supported by links 27, pivoted to the rod and to a support 27^a on the lid 11, and the rod at one end has a toe 28 adapted to contact with one end 29 of the hammer 30, which is pivoted within the case and has a head 31 adapted to strike a gong 33, the head being normally pressed against the gong by a spring 32, as shown clearly in Fig. 2. The gong is held in a perforated case 34 on the front of the main case, the case 34 protecting the gong, while the perforations permit the emission of sound when the gong is struck.

The rod 26 is held normally retracted, as in Fig. 2, by a spring 35, which is secured to one end of the rod and to an adjacent support, but when any of the levers 20 is pressed downward it presses upon the rod and causes it to swing against the tension of this spring 35, so that the toe strikes the end 29 of the hammer shank, thus drawing the head 31 away from the gong 33, and as soon as the toe 28 passes the shank, the spring 32 returns the head and causes it to strike the gong. When pressure is removed from the rod the spring 35 returns it and also raises the lever 20 which has been depressed.

The time sheet 45, shown clearly in Fig. 6, is wrapped around the cylinder when the machine is to be used, and this sheet is provided at one end with spaces 46 in which the names of the employés are placed. There are small spaces 47 opposite the spaces 46 in which the employé's number is recorded, and extending longitudinally across the sheet are lines 48, these being produced parallel with the lines of the spaces 46 and 47, and there are twice as many lines as there are spaces 46, as a series of these lines, marked 48^a in Fig. 6, are intermediate between each two lines forming the spaces 46 and 47.

The lines 48 and 48^a are intersected by cross lines 49 representing the hours of the day, and these hour spaces may be subdivided as finely as desired. As shown in the drawings, the hour spaces range from seven a. m. to six p. m., but this arrangement is arbitrary and may be varied as desired. The sheet 45 is further provided with spaces 50 for marking the days of the week. There are also two lines of spaces 51 and 52 for the time during the week and the total time respectively, a line of spaces 53 for the price, and a line of spaces 54 for the total amount.

When the sheet is applied to the cylinder the names of the workmen or employés, that is, the spaces 46 are lapped over the opposite end of the sheet, so that one end of the sheet nearest the name spaces will come opposite the day spaces 50, and the other spaces from

50 to 54 are used after the sheet has been removed from the cylinder, and when the amount of time, price, &c., is carried out.

It will be understood that the time sheet may be fastened to the cylinder in any suitable manner, care being taken that the position of the hour lines 49 should be such as to bring them opposite the several styluses at the correct time.

In order to remove the cylinder 13 from the casing, the cam sleeve 42 is turned so as to bring the pin 40 to the lower ends of the slots 41 and 43, whereby the upper end of the pin 37 is withdrawn from the central aperture in the bottom of the cylinder 13. The cylinder can then be removed after turning the socket 36, if necessary, to lower the same and allow the upper end of the cylinder to disengage itself from the shaft 15^a. When the cylinder is again put in place upon its bearing or socket 36, the cam sleeve 42 is turned in the opposite direction to bring the square portion 38 of the pin 37 into engagement with the bottom of the cylinder 13. The paper time sheet is secured to the cylinder by means of small points which project radially from the cylinder and puncture the paper.

In using the machine, the sheet is applied to the cylinder as described, and rotates regularly as it is driven by the clockwork mechanism described, so that it moves at a rate corresponding to the lapse of time. When an employé begins work he presses one of the buttons 24, representing his number and this causes one of the levers 20 to be pushed down so that the stylus 21 perforates the paper in one of the spaces between the lines 48 opposite the employé's name, and beneath one of the hour marks. When he does this the bell is rung as described, so that it is known that an employé has used the recorder. When the employé leaves off work the same operation is performed, and the longitudinal distance between the two perforations will represent the time he has been at work.

It will be seen that if an employé begins and leaves off work several times during the day, his total time may be easily computed by adding the amounts of time represented between the several pairs of perforations.

While the cylinder 13 rotates, the pin 37 which is engaged thereby rotates together with the cylinder, and the transverse pin 40 causes the socket 36 to partake of this rotary movement, so that the threaded portion 14 of the socket screws down in the bracket 15, and the cylinder 13 is lowered accordingly.

The apparatus is so constructed in relation to the time sheet, that the perforations during the first revolution of the cylinder will be below the intermediate lines 48^a, while during the second turn of the cylinder the perforations will be made above the intermediate lines 48^a, so that one time sheet can be used for two consecutive days.

It will be obvious that instead of one intermediate line 43^a, several such lines may be used to divide the space allotted to each employé, so that one time sheet will suffice for three or four days, or a week, &c.

5 It will be further obvious that instead of causing the cylinder to be lowered during its rotation, the cylinder and the parts connected therewith may be constructed in such manner as to raise the cylinder a predetermined distance for each revolution.

10 The apparatus is considered particularly advantageous on account of the fact that the indications produced thereby are sharply defined and cannot be removed or altered, and furthermore, no ink being employed, the time sheet will not be liable to become disfigured by blots, and there are no parts, such as an ink ribbon, which require constant care and frequent renewal.

15 The time sheet is so arranged that it is not necessary to transfer the record made by each person to another sheet before the pay roll can be made up. Provision is made for footing up each person's pay for each day or for a week, and placing it in the proper column, so that the pay roll of a whole department may be made up in total on the same sheet.

20 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a time recorder, the combination, with the case, the rotatable cylinder adapted to carry the time sheet, and the parallel pivoted marking levers, of two links pivoted to the case, a rod having its respective ends connected with the free ends of the said links, said rod being arranged in the path of travel of the marking levers and essentially perpendicular thereto, a bell, and an operative connection between the said rod and the bell, substantially as described.

2. In a time recorder, the combination, with the revoluble cylinder adapted to carry the time sheet, and a marking mechanism located adjacent to the cylinder, of a screw adapted to rotate together with the cylinder, and a stationary screw-threaded bearing for supporting the said screw, whereby the cylinder is displaced axially during its rotation, substantially as and for the purpose specified.

3. In a time recorder, the combination, with the revoluble cylinder adapted to carry the time sheet, and a marking mechanism located adjacent to the cylinder, of a socket adapted to support the cylinder and formed with a screw-threaded portion, a pin constructed to slide in the socket yet to rotate therewith, one end of said pin being adapted to engage

a central opening in the bottom of the cylinder, to rotate with the latter, means for moving the said pin into and out of engagement with the cylinder, and a stationary female-threaded bearing constructed to receive the screw-threaded portion of the said socket, substantially as and for the purpose specified.

4. In a time recorder, the combination, with the revoluble cylinder adapted to carry the time sheet, and a marking mechanism located adjacent to the cylinder, of a socket adapted to support the cylinder and formed with a screw-threaded portion, a pin constructed to slide in the socket yet to rotate therewith, the angular outer end of said pin being adapted to engage a correspondingly shaped central opening in the bottom of the cylinder, to rotate with the latter, a transverse pin projecting from the first named pin and outwardly through an opening in the socket, a sleeve inclosing the socket and provided with a cam slot for the reception of the said transverse pin to move the same longitudinally of the socket when the sleeve is rotated, means for preventing a displacement of the said sleeve longitudinally of the socket, and a stationary female-threaded bearing constructed to receive the screw-threaded portion of the socket, substantially as and for the purpose specified.

5. In a time recorder, the combination, with a revoluble cylinder adapted to carry the time sheet, and a marking mechanism located adjacent to the cylinder, of a socket formed with a shoulder and with a screw-threaded portion above the same adapted to support the cylinder, a stationary female-threaded bearing constructed to receive the screw-threaded portion of the said socket, a pin capable of sliding longitudinally in the socket, said pin having an angular section near its upper end adapted to engage a correspondingly shaped central opening in the bottom of the cylinder to rotate with the latter, a transverse pin secured to the first named pin and projecting outwardly therefrom through a longitudinal slot in the socket, a sleeve inclosing the lower end of the socket and provided with a cam slot for the reception of the said transverse pin to move the same longitudinally of the socket when the sleeve is rotated, and a spring located in the socket and adapted to press the longitudinal pin upward, and hold the upper end of the sleeve in contact with the shoulder of the socket, substantially as and for the purpose specified.

EDW. G. WATKINS.

Witnesses:

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DAVID R. COLLIER.