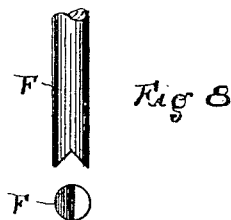
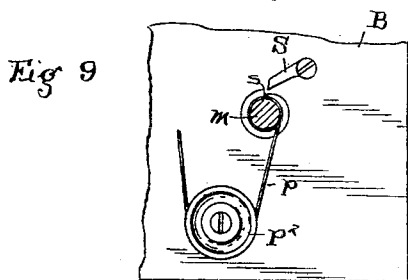
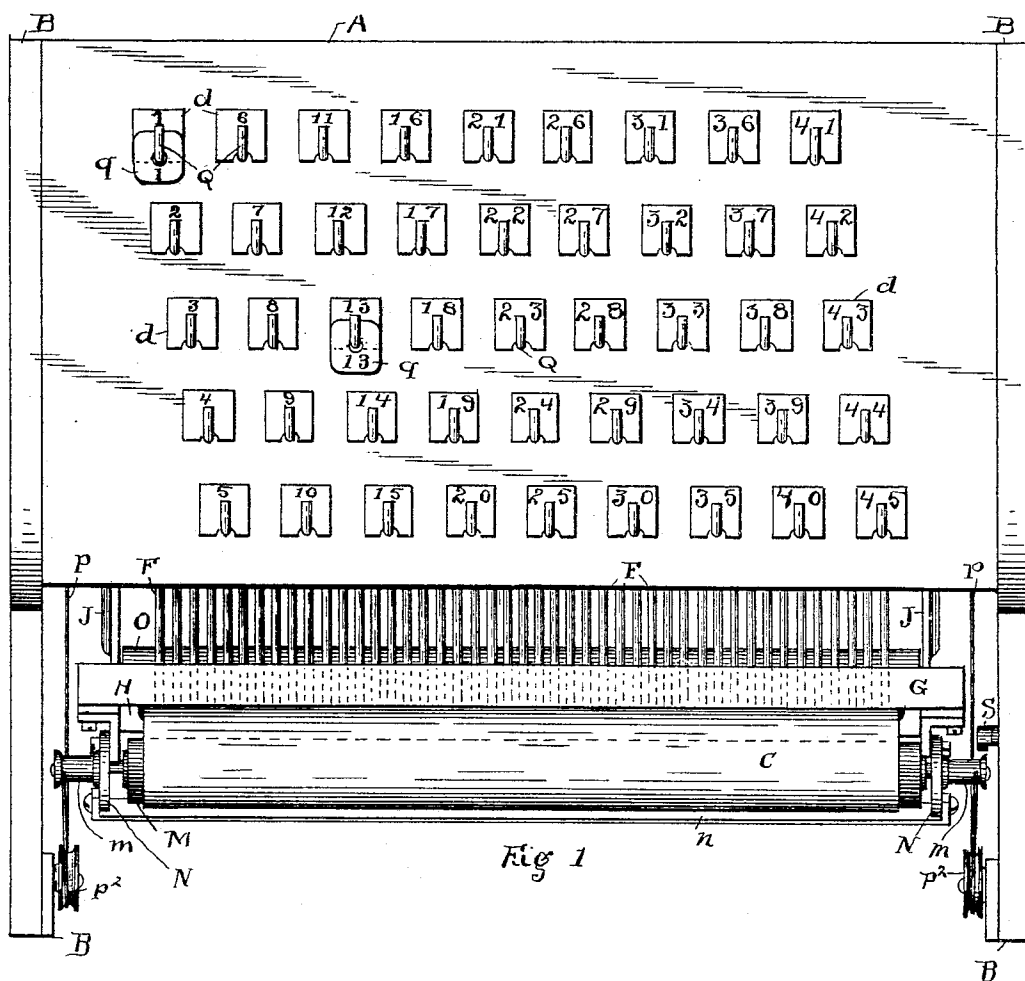


C. RUPRECHT.
WORKMAN'S TIME RECORDER.

No. 496,005.

Patented Apr. 25, 1893.



ATTEST.

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INVENTOR.

Charles Ruprecht

(No Model.)

3 Sheets—Sheet 2.

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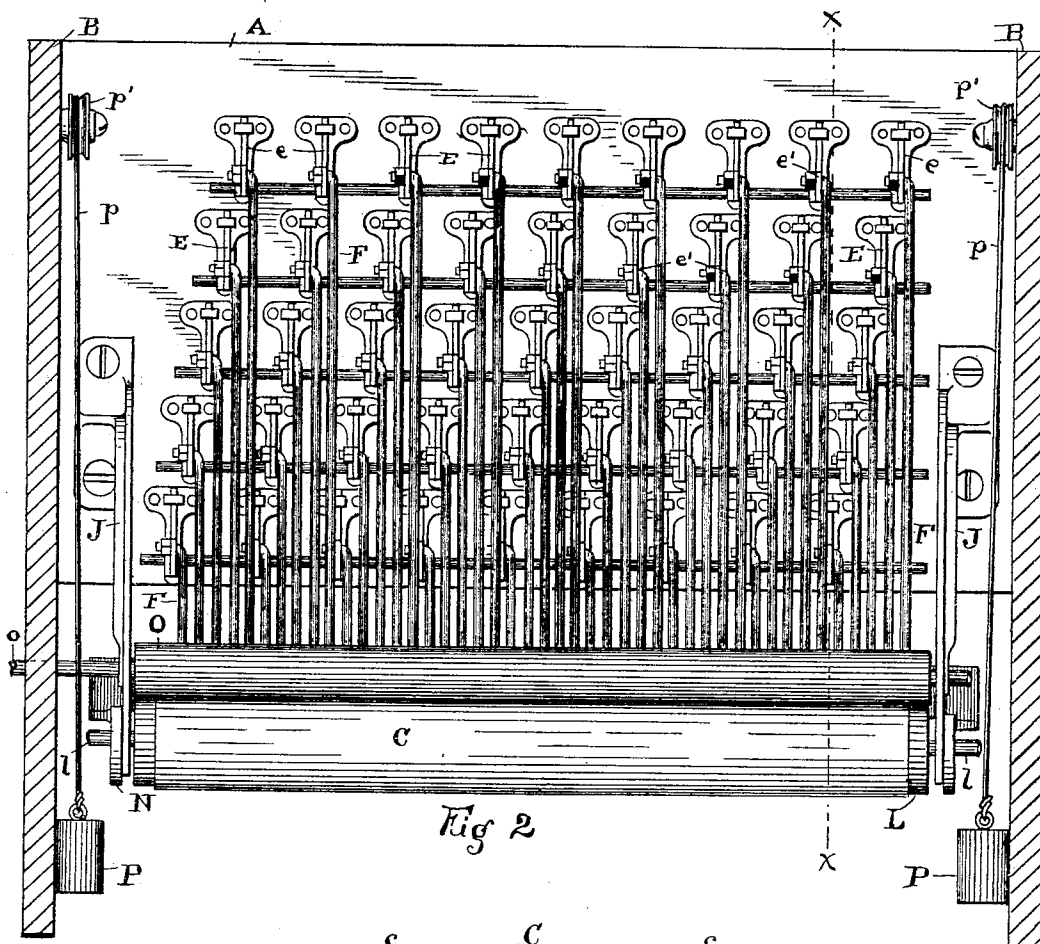


Fig 2

	c																				
AM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
7.00																					
7.15																					
7.30																					
7.45																					
8.00																					
8.15																					
8.30																					
8.45																					
9.00																					

Fig 3

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(No Model.)

3 Sheets—Sheet 3.

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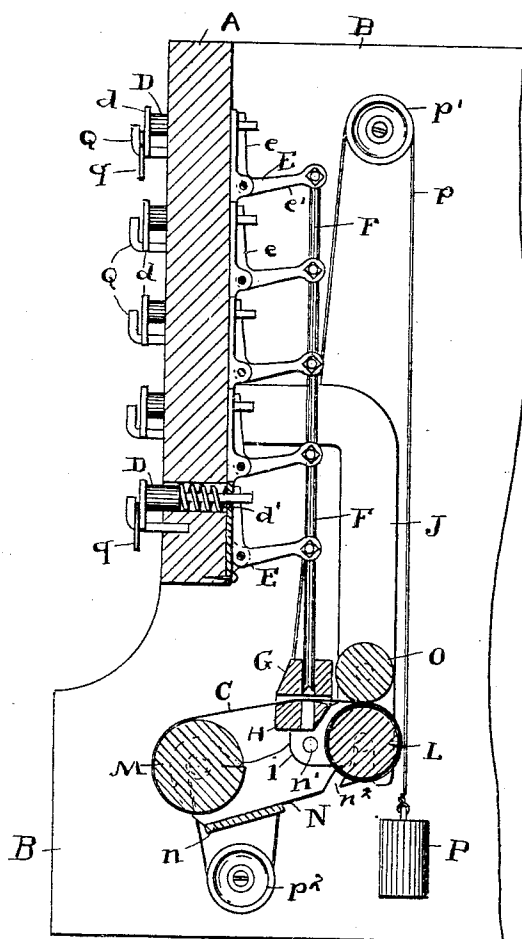


Fig 4

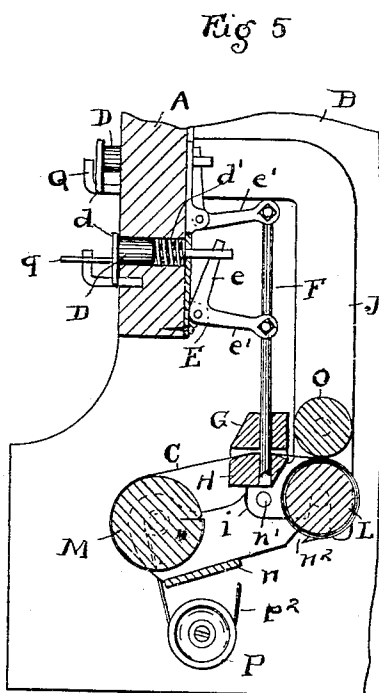


Fig 5

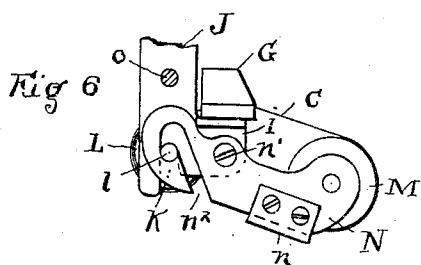


Fig 6

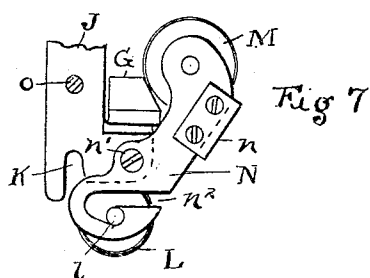


Fig 7

ATTEST
R. B. Moser,
Notary Public.

By Charles Ruprecht
H. J. Frohn
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES RUPRECHT, OF CLEVELAND, OHIO.

WORKMAN'S TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 496,005, dated April 25, 1893.

Application filed June 6, 1892. Serial No. 435,593. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RUPRECHT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Workmen's Time-Recording Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in workmen's time recording machines, and the object of the invention is to provide a simple, cheap, and reliable medium for noting the exact time when a workman enters upon his work and when he leaves it, and for keeping a record of such arrivals and departures so that at the end of a week, or at a longer or shorter time, the record thus made and kept can be reviewed and the number of hours of work of any given employé accurately ascertained.

To this end the invention consists in the construction of a device or machine substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of my improved machine, and Fig. 2 is a rear elevation thereof. Fig. 3 is an end section of the sheet or roll of paper used to receive and keep the record. Fig. 4 is a vertical section on line *x, x*, Fig. 2, showing the parts in their normal position. Fig. 5 is a similar cross section showing one of the punchers down in the act of puncturing the paper. Fig. 6 is a side elevation of the mechanism at one end of the paper feeding rolls showing the normal position of said parts; and Fig. 7 is a side elevation of same parts but reversed to remove the inner roll. Fig. 8, Sheet 1, shows side and end views, respectively, of one of my punches. Fig. 9 is a section of the drum and side view of dog that engages said drum.

A represents the upright or supporting board or frame of my recording mechanism, and this part may be composed of a single board of suitable size, or a number of boards joined together, or, it may be composed of metal or other material, if such other materials be found desirable, but preferably it is

made of wood and is adapted to be supported either on a base and side supporting frame B, as here shown, or it may be supported on the wall or in some other convenient position or way. This board or frame A is made in a number of different sizes, according to the demands of the shop, or place where it is used, and is adapted to be used to make a record for one or more persons, running up into the hundreds. Each person whose record is kept has an allotted number, and finds his own number at the front of the said board. Thus we have, in Fig. 1, several series of numbers running diagonally across the board from top to bottom in zigzag lines so as to make each number record in its own line upon the recording surface or paper C, as hereinafter described. The distance apart of the indentations or holes which are cut to make the respective records will depend on the arrangement of the mechanism on the board A, and if said board is to be made available for the greatest amount possible of recording capacity, this mechanism should be placed as close together as possible, having in view distinct lines of record for each man on the paper C. The numbers 1, 2, 3, &c., seen in front elevation in Fig. 1, are, in fact, placed upon the heads *d* of what may be called the push buttons or keys, D, which are set into the face of the board A, and adapted to slide back and forth therein within fixed or given limits. When these keys or push buttons are in their normal position they are out as shown in Fig. 4, and at the top in Fig. 5, but when they are pushed in, as they are in the act of puncturing the paper to make a record, they occupy the position shown also in Fig. 5, with the flange *d* resting against the board A. A spring *d'* serves to press these buttons or keys out after they have been used. Each button has a spindle D which projects through the rear of the board A, and is connected at that point with the upper arm *e* of the bell crank lever E, pivoted in its angle on the rear of the board A. The other arm, *e'*, of the said lever E has pivoted to it the puncturing wire or rod F. These puncturing wires or rods are of varying length, according to the elevation of the particular bell-crank lever with which they are connected, and ordinarily are made of wire of a suitable size to do the work. At their lower portion these wires or rods F

pass through the cross bar G, which serves as a guide for said rods or wires, and which said bar is fixed at its end by suitable means to a lower cross bar H, which latter is fixed at its ends to the lower extremities of the hangers J. These hangers are secured at their upper ends to the rear of the board A, as seen plainly in Fig. 5, and have forwardly projecting portions *i* at their lower extremities suitable for fastening thereto the lower cross piece H, and this cross piece H is separated from the cross piece G above a sufficient distance to permit the sheet of paper on which the record is made to pass freely through between said piece, and is perforated also for the passage of the puncturing rods or wires F, so that when said wires are depressed by the mechanism herein shown and described, they will cut a hole through the paper and immediately resume their normal position. The lower extremity of these rods or wires F have a V shaped notch formed therein, as clearly seen in Fig. 8, so as to make a clean, round perforation in the paper. The paper roll or sheet C is first placed upon the roller L, and is unwound from there, as the herein described mechanism permits, and onto the roller M. These two rollers are supported in a frame consisting of end piece, N, and a cross piece *n* rigidly connecting said end pieces, and are each pivoted at *n'* in the forward projecting portion of the hanger J and off the center or middle of the said side pieces N, so that normally the parts shall occupy the position shown in Figs. 4 and 5, without other means to hold them in said position than the greater weight of the parts outside of the pivot *n* as compared with what is on the short side of said pivot. It is desirable to remove the roller L when a supply of paper is to be placed thereon, and hence this pivot mechanism which enables the said roller to be lowered as seen in Fig. 7, for removal from the parts N. The said roller has bearings in the said parts N and an open slotted passage *n²* through which its spindles *l* are removed and inserted. These spindles project far enough through the said parts N to engage in the open slot *k* in the bottom of the hanger J. Hence, when the parts are in working position the spindles *l* of the roller L will rest both in the bearings in the parts N and in the open notch or slot *k* and when in this position the said roller L cannot escape from its bearings and is held securely in working position. Now, in order that the said roller L which carries the paper shall travel only at a given and uniform rate of speed, and at the speed to which all the parts herein described are timed, I employ another roller O, which is fixed in suitable bearings in the hangers J and bears upon the said roller L through the paper C wrapped about the same. The slots *k* are made of such depth that the spindles *l* will not ordinarily be limited in their vertical movement by said slot, so that the counter pressure upon the roll L will be upon the paper against the roll O above. This enables the wrapping of paper

about the said roll to be more or less heavy and yet have a uniform bearing against the roller O, and it also enables the roller O to serve as a feed roll for the paper. Clock mechanism is designed to be connected with the shaft *o* of the roller O, and this mechanism will be timed so that the said roller O shall have a given and uniform rate of movement. The paper passes from the roller L upon the roller M, and in going from one to the other is punctured to make the record as the coming and going of the employes may determine. In order that there may be some certain tension upon this roller M so as to stretch the paper and roll it tightly upon the roller M, but yet not interfere with its feeding over the roller L, I use a counter-weight P, which is connected by a cord *p*, over sheaves *p'*, *p²*, onto a sheave or pulley *m* fixed to the spindle of the roller M outside of the hanger J in which said roller M is supported.

In order that sheet of paper C may be utilized as herein described to keep the record for each employé separate from the others, the puncturing wires or rods are all arranged to strike the said sheet in different lines, and these lines are numbered 1, 2, 3, 4, &c., to correspond with the keys bearing like numbers. These lines *c* run longitudinally of the paper, while transversely of the paper are the time lines *c'*. These time lines are subdivided on the hours and fractions thereof, as 7 o'clock, 7.15, 7.30, 7.45, and so on, and the subdivisions may be on shorter or longer time. If, therefore, an employé comes at exactly seven o'clock, the paper is supposed to be at that point in its movement where a puncturing rod will strike exactly on the line corresponding to that hour. If the employé be fifteen minutes late, it will strike on the 7.15 line; if he be five or ten minutes late, the puncture will come between the two lines and indicate by its position in respect thereto about what time the employé arrived. In like manner he will record his leaving, and all will make their records as they come and go in like manner.

Now, in order that each employé may register his time aright, he is furnished with a pocket plate *q* which is of a size small enough not to be inconvenient in the pocket, and which bears his number corresponding to the number upon the head of the buttons or keys D. For example, two such plates are here shown, numbered 1 and 13 respectively, and are shown as hanging on the hooks or pins Q, one of which is provided for each key. These pins, as seen in Fig. 4, are bent at right angles so that they have a vertical portion which extends up about half way across the face of the flange *d*, of the button, and against which said flange may bear. At any rate, these parts are brought close together. The plates *q* have a central hole adapted to slide somewhat freely over the pin *q*, but owing to the right angled extremity of the said pins bearing against the flanges *d*, the said plates *q* can

neither be inserted nor removed without so pressing the buttons inward that they will puncture the paper C and make a record.

When the employé comes to his work in the morning he places the plate *q* in position on its pin, and to do so brings it to a horizontal position, substantially as seen in Fig. 5. This is also the position to which the said plate is brought to remove it from the said hook, so that in either case a puncture of the paper will be made. In going to work, the plate is placed in position, as shown in Fig. 1, and allowed to remain there until the employé wishes to quit work temporarily, or for the day. It is then removed and the puncture tells the exact time when the removal occurs, and thus the record of the day is made complete and the time of each employé is accurately recorded and can be afterward summarized or aggregated from the roll of paper wound upon the roller M, either at the end of the day or at the end of the week, or at any other convenient time.

The clock mechanism by which the instrument is actuated is not shown, and any suitable actuating mechanism or power may be employed for this purpose.

The recording mechanism being geared with the clock through shaft *o*, and the paper being placed to register exactly with the hour at which the clock is started, the two will move together, and the time on the paper and on the clock will always agree. As here shown, the paper is divided transversely on fifteen minute or quarter hour subdivisions, and the gearing through which the rolls are timed should be such as to move the paper just fifteen minutes ahead with each fifteen minute movement of the hands of the clock. If this movement of paper and clock be kept together there can be no mistake in the record, and the said record can be made for any fraction of an hour desired.

By the construction of roller frame shown, the paper receiving roller can be filled down, as seen in Fig. 7, so that the roller L can easily be taken out and replaced from the front of the machine. This is a great convenience in the practical operation of the machine.

The counter weight P serves to give a steady pull on the roller M through the drum *m* on the spindle of said roller and the cord *p*. This weight insures a tight wrapping of the paper on the roll and may be so considerable as to facilitate the feed of the paper through the rollers L and O, and thus help the clock, but in no case shall the paper travel faster than the clock allows. When the roll M is filled with paper, the paper is drawn off with the roll in position as shown, and in drawing the paper off, the cord *p* is wound upon the drum *m*, and the counter weight P is raised to its higher position. When the roll M is stopped, a dog, S, shown in Fig. 9, Sheet 1, is dropped into the notch *s* at the end of the said drum, and the said roll is thus held against its counter-weight. Then when the new sheet of paper

is fixed to the roll M everything is in readiness for operation, the dog S is thrown out, and the counter-weight immediately comes into action.

It will be noticed that the heads *d* of the push buttons D have notches overlapping partly the pins Q, so that the plates *q* cannot get beneath the said push buttons when they are being put on or taken off, and so that they cannot be put on or taken off without depressing the push button about as shown in Fig. 5.

I have described this invention as a workman's time recorder, and it is designed to be used as such, and is built for this purpose, but, obviously, it is not necessarily limited to the use of workmen or employés in shops and factories and other places where men are paid according to the time they engage in work, but it may be used for all purposes for which it may be found useful. It would serve as well as a watchman's time detector. I do not therefore consider the invention limited in its use to any particular class or classes, or for any special purpose or purposes.

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

1. The machine provided with push buttons and punches operated by said buttons, in combination with a hook for each of said buttons, having its free end opposite the outer extremity or head of the button and immediately in front thereof and arranged to hang a plate upon, substantially as described.

2. The series of push buttons and the punches operated thereby, in combination with substantially right-angled hooks having their free ends extending upward in front of the extreme outer portion of said buttons, and plates on said hooks in front of the said buttons and bearing against the outer extremity or head thereof, substantially as described.

3. The combination of the push buttons, D, having springs to press them forward, the bell crank levers, E, and the punches, F, in combination with right-angled hooks, Q, having a vertically arranged free end extending up part way across the face of the push button, and a separate plate having an orifice to engage upon said hook and to hang between the head of the push button and said hook and to bear against the push-button and press it in when the record is made, substantially as described.

4. The punches and the keys and connections to operate the same, in combination with the transverse guide piece provided with perforations for the passage of said punches, and a cross piece having holes registering with the perforations in said guide piece, in combination with the rolls and the sheet of paper on said rolls extending between said perforated cross pieces, substantially as described.

5. The main frame, the roll frame pivoted therein on its center, and having an open slot through which the paper supply roll is intro-

duced and removed to its bearings, and an open slot in the main frame into which the spindles of the said paper supply roll extend, substantially as described.

- 5 6. The main frame and the pivoted roller frame supported thereon on its center, the paper supply roll and the friction roller in engagement therewith to turn the same, the paper receiving roll and paper connecting
10 said rolls, in combination with transverse

perforated bars through which the paper is fed, and puncturing wires or rods operating through said perforated bars, substantially as described.

Witness my hand to the foregoing specification this 31st day of May, 1892.

CHARLES RUPRECHT.

Witnesses:

H. F. FISHER,
NELLIE L. McLANE.