

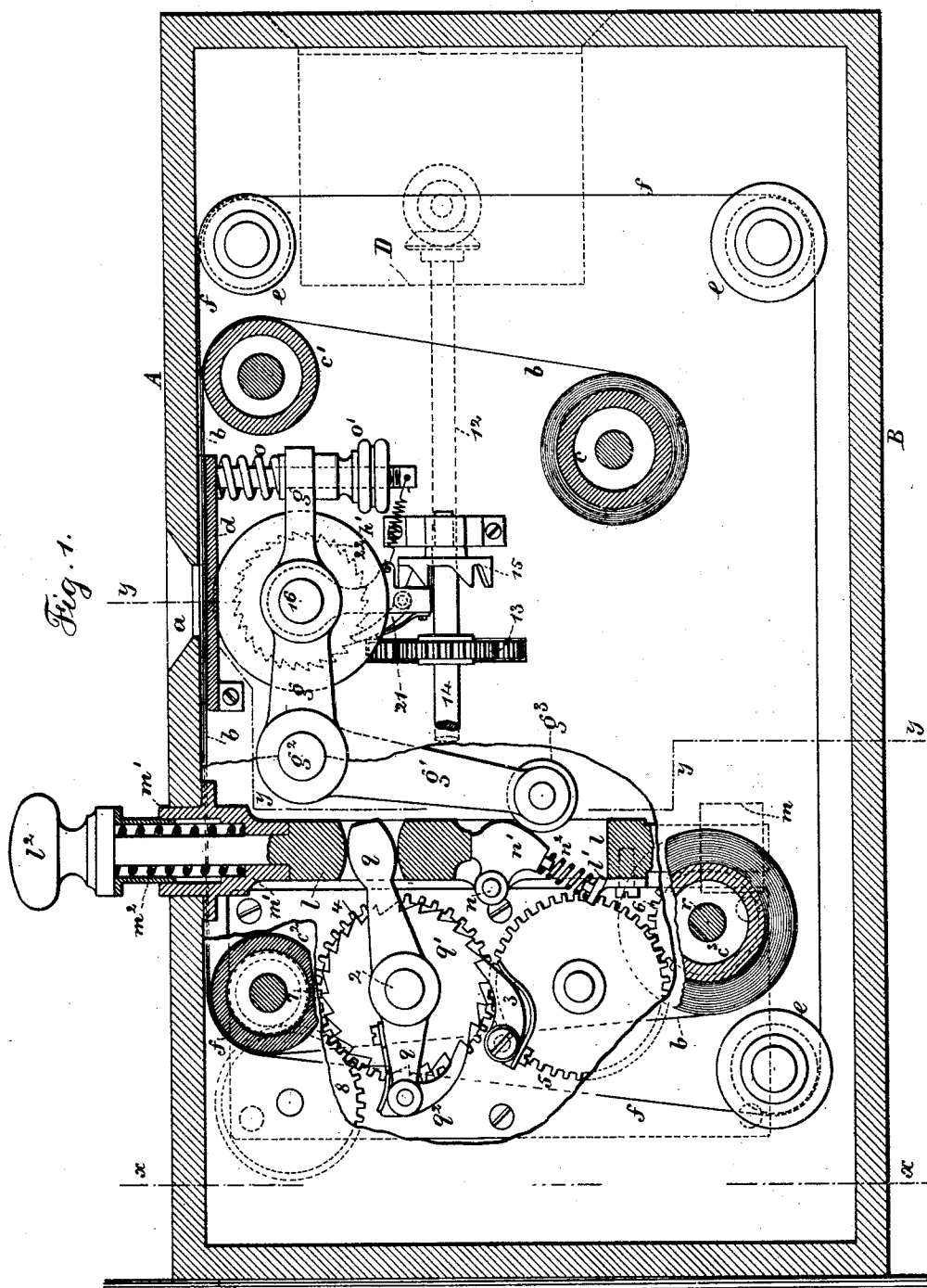
(No Model.)

3 Sheets—Sheet 1.

J. C. KOCH.
WORKMAN'S TIME RECORDER.

No. 478,284.

Patented July 5, 1892.



Witnesses:
J. Stait
Chas H Smith

Inventor:
John Caspar Koch
per Lemuel W. Sewell atty

(No Model.)

3 Sheets—Sheet 3.

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Fig. 4.

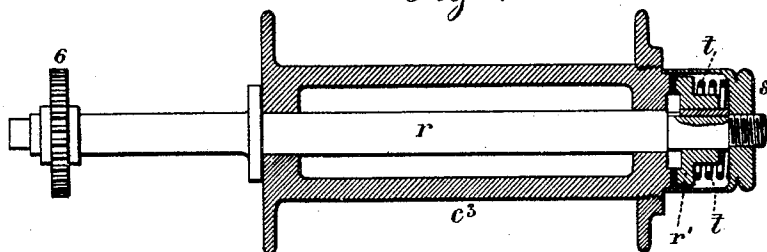


Fig. 5.

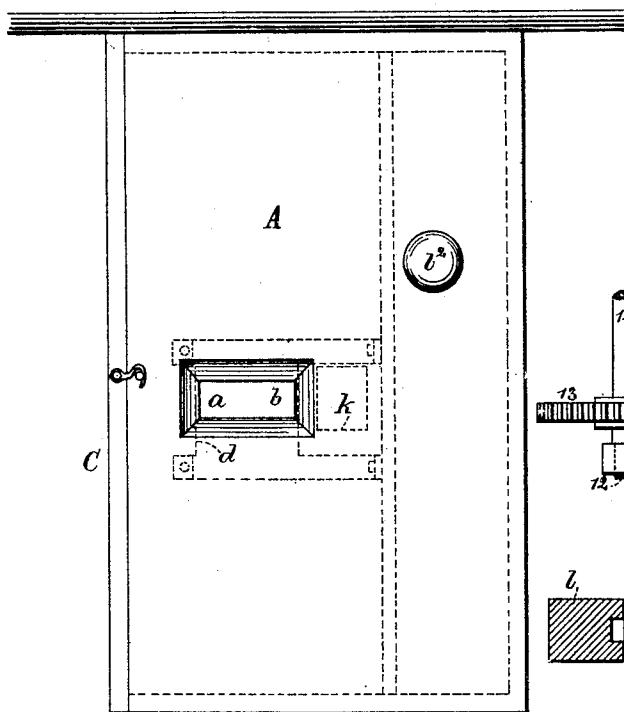
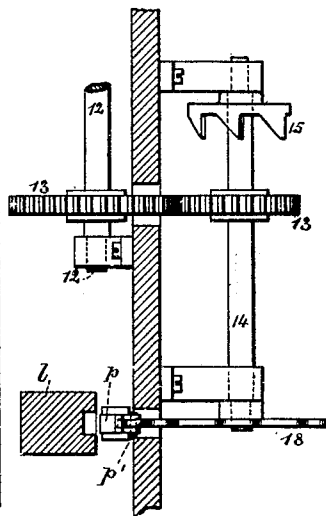


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN C. KOCH, OF BERLIN, GERMANY.

WORKMAN'S TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 478,284, dated July 5, 1892.

Application filed October 28, 1889. Serial No. 328,472. (No model.)

To all whom it may concern:

Be it known that I, JOHN CASPAR KOCH, a citizen of the United States, residing at Berlin, Prussia, Germany, have invented an Improvement in Recording Apparatus, of which the following is a specification.

The object of this invention is to give opportunity for recording a name and the time at which the name is written upon a strip or web of paper, so that workmen or others going into a factory or building or passing a given place can record their names and the hour at which the record is made, and the same apparatus is available as a register for a hotel to indicate the time of arrival simultaneously with the recording of the name, and it may also be used in public or private offices for the names of callers, whether the office is open or closed.

In my improvement a strip or web of paper is within a case having an opening adapted to allow the name or number of the person to be written upon the surface of the paper, and by a push-button the paper is moved along progressively a sufficient distance for the reception of each name or number, and in connection with this apparatus are recording-wheels containing the hour and minutes and the day of the month and the year or any other desired registration indicating time, and where the hours or hours and minutes are provided for a clock-work is employed to move the recording apparatus and an impression is made upon the paper adjacent to the name or number written thereon automatically by a connection with the push-button made use of in moving the paper along progressively.

In the drawings, Figure 1 is a vertical section at the line $z z$, Fig. 2, with part of the partition of the case broken open and some of the parts behind it in section. Fig. 2 is a section at the line $x x$, Fig. 1; and Fig. 3 is a section at the line $y y$, Fig. 1. Fig. 4 is a section through the axis of the winding-roll for the paper. Fig. 5 is a plan view, in smaller size, of the surface of the case; and Fig. 6 is a diagram, partially in section, representing the connection from the clock-work shaft to holding-catch of the slide.

The case employed for containing the apparatus may be of any suitable material, and the case may stand vertically or be supported

horizontally. I prefer the latter, in which instance the top A of the case will lie horizontally, or nearly so, and the bottom B of the case will rest upon a table or other support, or one end may be placed against the wall, as shown, and it is preferable to hinge the side C, as illustrated in the drawings, so that the case can be opened to give access to the parts for introducing a fresh roll of paper and for setting such of the recording-wheels as may be actuated by hand.

In the part A of the case is an opening a , behind which opening is a table d , there being a space between the inner side of the top A of the case and the table d for the passage of the strip or web of paper b , and this web of paper is upon a roll c and passes around the roll c' c^2 and is wound upon the roll c^3 . The rolls c' and c^2 are in such a position that the web of paper b will pass over the surface of the table d and in close proximity to the inner surface of the top A of the case, and the opening a in the case is sufficiently large to allow the name or number of the person to be written upon the paper web b through the opening a , and the paper is to be moved progressively after each name or number that is written by pushing upon the button l^2 . The button l^2 is at one side of the web of paper, so as not to interfere with the same, and the stem of the button passes through the case and is connected with the slide l , and there is around the stem of the button and within a fixed case m' a helical spring m^2 , that serves to project the button l^2 and move the slide l in an opposite direction to that given by hand. The slide l is supported at its rear end by a bearing m , through which it is free to move, and there is a cross-shaft 2 supported within the case and carrying a ratchet-wheel q' , adjacent to which is a retaining pawl and spring 3 to hold said ratchet-wheel as it is moved progressively by a lever q , which has the shaft 2 for its pivot, and it is provided at the end with a spring-pawl q^2 , and the other end of this lever q passes into a mortise in the slide l , so that as this slide l is moved by the push-button and spring the ratchet-wheel q' is moved progressively one or more teeth each time the button l^2 is pressed upon, and upon the shaft 2 is a gear-wheel 4, giving motion to an intermediate gear-wheel 5, and this

wheel 5 rotates a gear 6 upon the shaft r of the winding-up roller c^3 . In Fig. 4 I have represented a friction-spring t and friction-coupling r' between the end of the winding-up roller c^3 and the nut s upon the end of the shaft r , so that the shaft r may turn sufficiently to wind up the paper; but the shaft may move after the paper is wound without drawing the paper along, the friction-coupling r' sliding upon the end of the wind-up roll c^3 , and there is a gear-wheel 7 upon the shaft of the roller c^2 and an intermediate wheel 8 between the gear 7 and the gear 4 upon the shaft 2, so that this roll c^2 will be moved the proper distance for carrying along the paper every time the button l^2 is acted upon, so that this roller c^2 becomes the measure of the amount of paper drawn along, and the duty of the roll c^3 is simply to wind up the slack of the paper, and the journals of the rolls c and c' afford the necessary friction to maintain a slight tension upon the paper as it is drawn along.

In cases where an impression is made upon the paper at the same time that the push-button l^2 is acted upon I provide a web of ribbon f , prepared with carbon or coloring-matter and passing around rolls e and between the paper and the inner surface of the case-top A, preferably near one margin of the paper, and in consequence of this printing-ribbon f passing over the roller c^2 while in contact with the surface of the paper such printing-ribbon will be moved along from time to time similarly to the ribbon made use of in type-writing machines, and it is preferable to make use of a pad k of rubber or similar material let into the inner surface of the top A of the case opposite to where the impression is to be made by type or character wheels $h h'$. These type or character wheels $h h'$ are upon a shaft supported by a lever $g g'$, pivoted at g^2 and having a roller g^3 at the end, against which the cam n' upon the slide l acts to move the lever and give an impression from the type or character wheels $h h'$ against the back of the paper, and thereby cause the printing-ribbon f to mark the surface of the paper as the types or characters press the paper and the ribbon toward the pad k . The cam n' is hinged at n and has a spring n^2 between the end of the cam and the support l' upon the slide l , and the cam n' is preferably within a notch or mortise in the slide l , so that when the slide l is moved by the button l^2 the cam n' operates upon the roller g^3 and lever $g g'$ to move the character-wheels and give the impression, and as the slide l is moved in the opposite direction by the spring m^2 the cam n' swings upon its pivot n against the action of the spring n^2 and passes by the roller g^3 without giving a second impression by the letter or character wheels upon the paper, and I prefer to make use of a spring o and an adjusting-nut o' around the screw that passes through the spring and the end of the lever g , so that such lever and the character-wheels may be held in the proper position ad-

jacent to the paper; but the spring o will yield as the cam n' acts to give the impression.

It is now to be understood that the type or character wheels $h h'$ may be of any desired kind, and that where the hours and minutes only are to be recorded one wheel will have characters upon it to indicate the hour of the day from "1" to "12" or from "1" to "24" and the other wheel the minutes or, say, the five or other minute divisions, and the minute-wheel will receive motion from a clock-work and rotate the hour-wheel one division each revolution of the minute-wheel by any suitable mechanism, such as that made use of in a counting-register. I have represented a shaft 12 to be rotated by clock-work, and the gearing 13 drives a second shaft 14, and from the second shaft 14 motion is to be given to the minute-wheel h by any suitable connection. I have represented a series of inclined planes upon a wheel 15, which inclined planes act upon a lever that has the shaft 16 for its pivot and carries the pawl 21, that acts upon a ratchet-wheel 22, adjacent to the minute-wheel h , to turn the same progressively by the action of the inclines and in harmony with the clock-work.

If desired, two other wheels may be added upon the shaft 16 for containing the day of the month and the month of the year, similar to the wheels made use of in the well-known stamps for dating the reception of letters or other communications, and these wheels may be turned by hand, the one that indicates the day of the month being set each day, and all of these type and character wheels, being moved by the lever $g g'$, print the proper characters upon the strip of paper adjacent to the opening a , and it will be apparent that when the push-button l^2 is operated the paper with the name or number upon it is moved along and the marks are out of sight and the proper space furnished for the reception of the next name or number.

It is preferable to move the character-wheel periodically and with rapidity and then to allow such character-wheel to remain quiescent during the time that the printing operation may be performed. For this reason it is desirable to make the inclined planes around the wheel 15 at intervals, and upon the same shaft 14 is a cam-wheel 18, acting against the roller p' of the latch p , the other end of the latch being adapted to pass into a hole in the slide l by the action of the spring 20, and the cam-wheel 18 is made with notches around its periphery, corresponding in number with the inclines on the wheel 15, so that during the time one of the inclines is moving the character-wheel h the roller of the latch p will be in one notch of the cam 18 and the latch p will hold the slide l , so that the push-button cannot be operated during the time that the character-wheel is being turned, and during the period of rest to the character-wheel the cam 18 disconnects the latch p from the slide l , al-

lowing the recording apparatus to be brought into operation. The clock-work in the box or case D, that drives the shaft 12, can be of any desired character, and the face thereof can be seen at the side or top of the case, and if an ordinary calendar-clock is used the date will also be denoted.

I claim as my invention—

1. The combination, with the case having an opening and a table behind the opening, of rolls for supplying and guiding a web of paper, a wind-up roll, a push-button which extends outside the case, a lever, pawl, and ratchet-wheel receiving motion from the push-button and gearing therewith connected for moving the wind-up roller, a range of character-wheels, and connection for a clock mechanism for rotating such character-wheels, a lever for supporting the character-wheels, and a cam on the inner portion of the push-button for moving the lever and type-wheels and impressing the characters on the same, substantially as specified.

2. The combination, with the containing-case having an opening therein and the supporting table and rollers for supplying, guiding, and winding up the paper, of a push-button and slide, a ratchet-wheel and pawl and the gearing moved thereby, and a frictional connection between the gearing and the winding-up roller, and a letter or character wheel, and a lever carrying the letter-wheel, and a connection from the same to the push-button for

impressing the character on the paper, substantially as set forth.

3. The combination, with the containing-case and the roll *c* for supplying a web of paper, of the guide-rolls *c'* *c*² and winding-up roll *c*³, the gearing connecting the rolls *c*² *c*³, the ratchet-wheel for giving motion to the gearing, a friction device between the roll *c*³ and the gearing, a push-button, lever, and pawl for acting upon the gearing to move the paper, the type or character wheels, a lever for supporting and moving the same, and a cam acted upon by a slide for giving motion to the lever and character-wheels, substantially as set forth.

4. The combination, with the containing-case having an opening in the same and a table behind the opening, of a roll for supplying the web of paper, the guide-rolls *c'* *c*², the wind-up roll and mechanism for actuating the same, substantially as specified, a ribbon containing coloring-matter adjacent to the web of paper near one edge, type or character wheels and a connection for moving the same by clock-work, and a lever and cam for supporting the character-wheels and a push-button and cam for impressing the character-wheels, substantially as set forth.

Signed by me this 21st day of October, 1889.
JOHN C. KOCH.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.