

(No Model.)

2 Sheets—Sheet 1.

F. N. JOHNSTON & C. E. EGAN.
WORKMAN'S TIME RECORDER.

No. 471,733.

Patented Mar. 29, 1892.

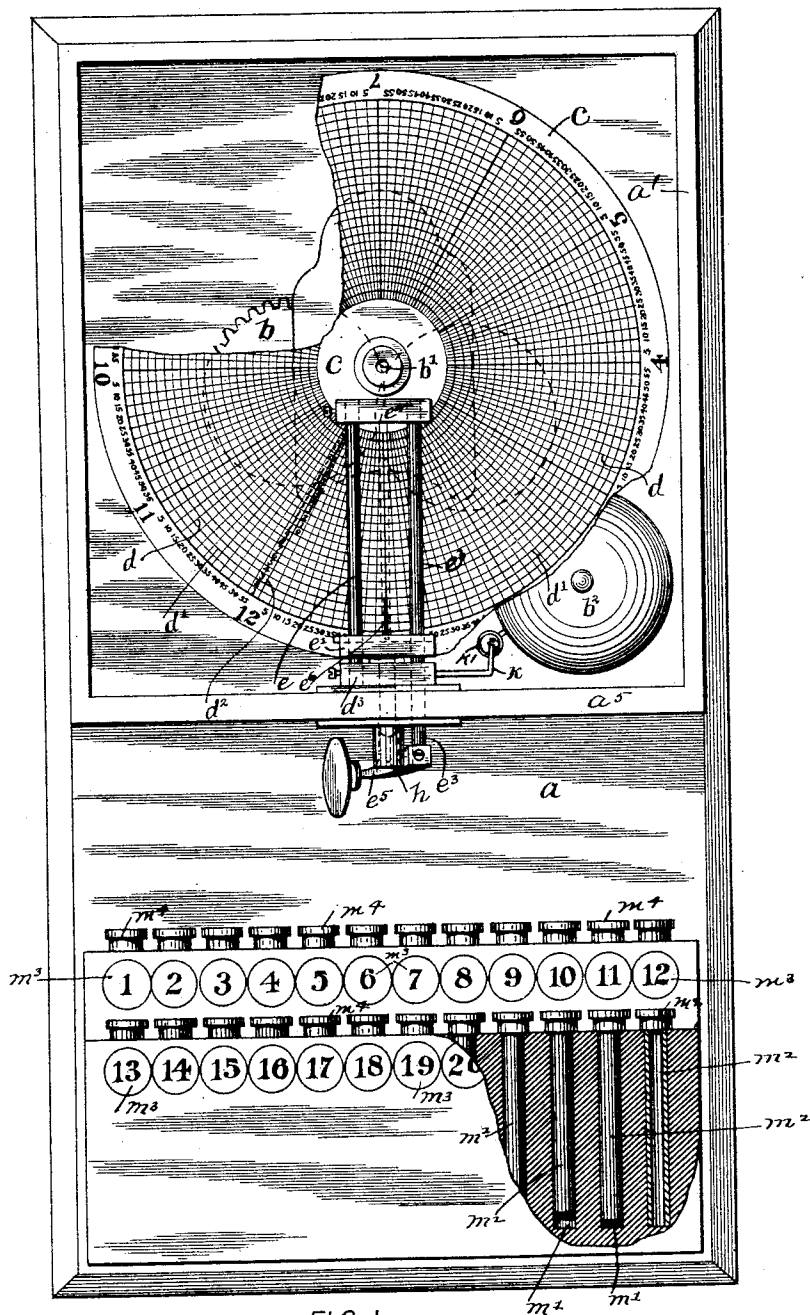


FIG. 1

WITNESSES:

Colman and Avery.

Barton Griffith

INVENTORS:

Charles E. Egan

Frank N. Johnston

BY
Staley & Shepherd

ATTORNEYS

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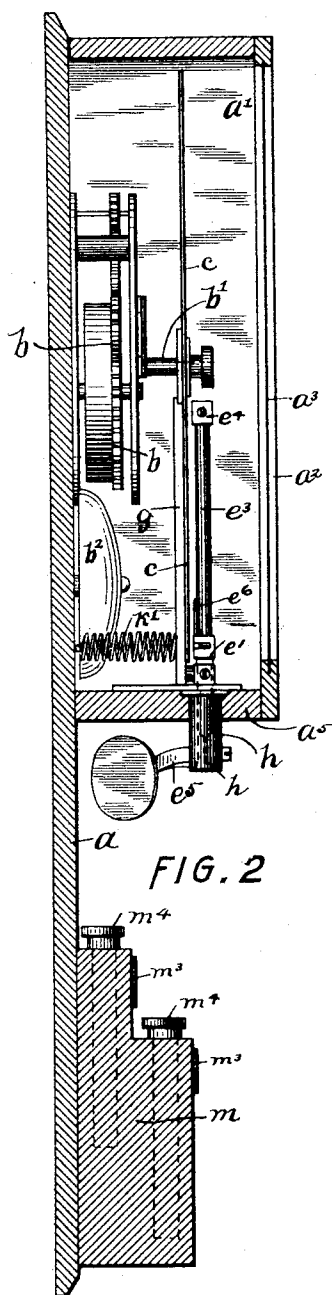


FIG. 2

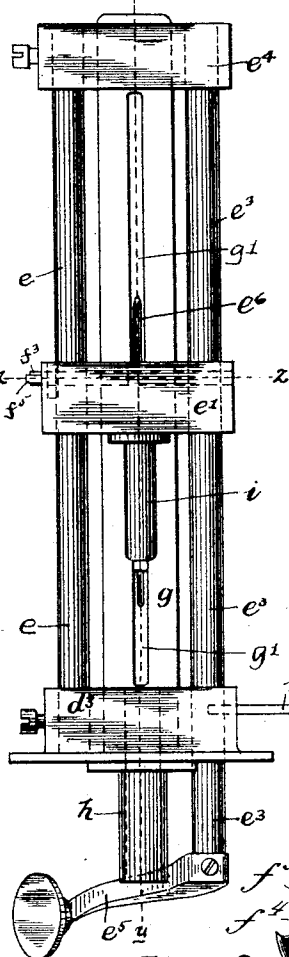


FIG. 3

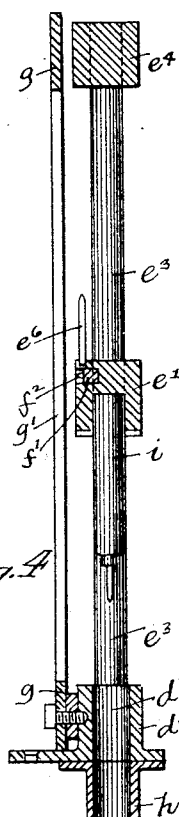


Fig. 4

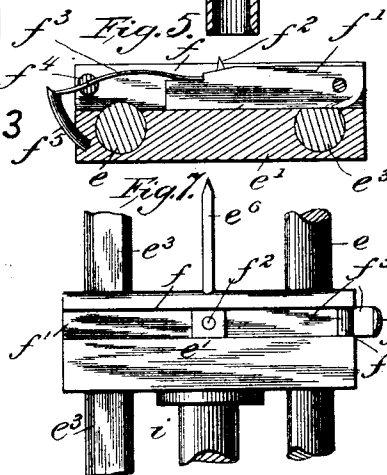


Fig. 5

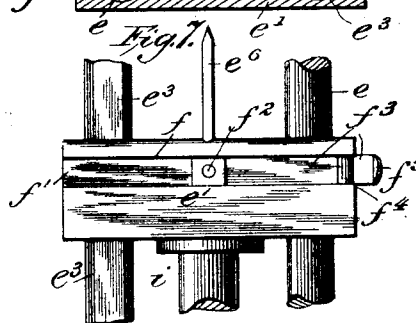


Fig. 6

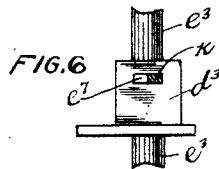


FIG. 7

WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK N. JOHNSTON AND CHARLES E. EGAN, OF COLUMBUS, OHIO, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO FRANK N. JOHNSTON, H. D. BENNETT, AND JOHN R. GOBEY, OF SAME PLACE.

WORKMAN'S TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 471,733, dated March 29, 1892.

Application filed December 18, 1890. Serial No. 375,150. (No model.)

To all whom it may concern:

Be it known that we, FRANK N. JOHNSTON and CHARLES E. EGAN, citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Workmen's Time-Recording Apparatus, of which the following is a specification.

Our invention relates to devices for recording the working time of employes; and the objects of our invention are to provide a device of this class and embody therein superior means for producing a permanent and accurate record of the time at which each workman began and stopped work; to so construct said device as to cause an alarm to be sounded, and to construct said device without complication and in such form as to admit by its operation of a reliable permanent record being easily attained at a low expense. These objects we accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a face view of our improved recording device, showing a portion of the dial broken away and a portion of the key rack or support, shown in section for the sake of clearness. Fig. 2 is a central vertical section of the device shown in Fig. 1. Fig. 3 is an elevation in detail of the record mechanism, showing the position of the punch-holding block when elevated by a key. Fig. 4 is a central vertical section on line *y y* of Fig. 3. Fig. 5 is an enlarged transverse section on line *z z* of Fig. 3. Fig. 6 is an end view in detail of the lower rod-supporting block of the recording mechanism, hereinafter indicated by the reference-letter *d*³; and Fig. 7 is an enlarged view in elevation of the rear face or side of the sliding or recording block.

Similar letters refer to similar parts throughout the several views.

a represents the frame-plate of our device, which is preferably oblong in form, and may be attached in a vertical position to a wall or otherwise supported. Upon the front face and upper half of this frame-plate *a* is formed a suitable outwardly-projecting case *a'*, the front door-frame *a*² of which is preferably filled with a glass plate *a*³. Secured against

the outer face of the frame-plate within the case *a'* is an ordinary clock mechanism *b*, of which *b'* represents the projecting hand-post or its equivalent. Supported from said frame-plate face, beneath said clock mechanism and to one side thereof, is an alarm-bell *b*², the latter being of that well-known class wherein the tapper is operated by a wound clock-spring, and which are known as "continuous-ringing" mechanical bells. Supported centrally upon the hand-post *b'* is a paper dial or disk *c* about the outer edge and upon the face of which are printed at equidistant points figures representing the hours from one to twelve, and between said hour-figures are printed and properly spaced smaller figures, which indicated divisions of the hour. Extending from the disk center of each of said hour and hour-division indicating figures are radial lines *d*, which are intersected at equidistant points by circular lines *d'*, which gradually increase in circumference from the disk center toward the outer edge of the circle. Printed in the squares or spaces formed by the intersection of said circular and radial lines and extending in one or more rows from the inner to the outer circular lines are consecutive numbers, as indicated at *d*², each of said numbers identifying one of the circular spaces formed between two of the circular lines *d'*, and each of said spaces representing, for the purpose hereinafter shown, the recording-space of one workman or employé.

Secured to the outer side of the case-floor *a*⁵ in the direction of the length thereof is an oblong block *d*³, said block having a flanged base, as shown. From the block *d*³, near one end thereof, extends upwardly a fixed vertical rod *e*, which, passing loosely through an oblong recording-block *e'*, extends upward to a point in front of and near the center of the disk *c*.

*e*³ represents a vertical rod, which passes loosely through the remaining ends of the blocks *d*³ and *e'* and has its upper end pivoted in one end of the cross-block *e*⁴, the remaining end of which has rigidly connected therewith the rod *e*. The lower end portion of the pivoted rod *e*³ projects, as shown, through the case-floor *a*⁵ and has rigidly secured thereto

a suitable outwardly-projecting finger-piece e^5 . The inner side of the rod e^3 is flattened, as shown in Fig. 5.

The sliding block e' , which normally rests upon the block d^3 , has formed in its inner side a longitudinal open slot or channel f of such depth as to bring its inner side flush with the flattened surface of the rod e^3 , as shown in Fig. 5 of the drawings. Pivoted within the channel f at one end thereof and on the outer side of the rod e^3 is the rear of a punching-arm f' , which extends, as end shown, within said open slot and past the center of the length thereof, and is provided at about the center of the length of the block e' with a rearwardly-projecting punching-tooth f^2 . This punching-arm f' is normally pressed against the inner side of the channel f and against the flattened face of the rod e^3 by a spring-strip f^3 , which has its outer end rigidly supported by a suitable block-pin f^4 and arm f^5 , which projects from the end of the block e' . Said spring has its inner end portion bearing against the face of the arm f' . Projecting upwardly from the upper side of the block e' is a short vertical pin or pointer e^6 .

Secured to the under side of the central portion of the block d^3 is the upper flanged head of a short downwardly-extending tubular arm h . This tubular body extends and projects through a suitable aperture in the case-floor a^5 , its hole or interior forming a continuation of a central vertical hole d^1 of the block d^3 . Extending vertically upward from the base-flange of the block d^3 , immediately in rear of the disk c , is a disk bearing-plate g , which is provided with a central vertical slot g' .

Fixed centrally to the under side of the sliding block e' is a downwardly-extending pin i . The pin i normally extends within a tubular arm h , as shown in dotted lines in Fig. 1 of the drawings. Projecting outwardly from the rod e^3 and through a slotted opening e^7 in the end of the block d^3 is an arm k , the outer end of which is connected by a coiled spring k' with the bell-hammer-operating mechanism of the bell b^2 .

m represents a key-holding rack, which consists of a stepped block having parallel rows of vertical pin-holes m' , in which normally rests the tubular stems of keys or pins m^2 , said pins being of varying lengths. Each of these pins is designated by a different number, as shown at m^3 , said numbers being printed or otherwise affixed to the face of said rack opposite each key-socket. This key-rack, although shown in the form of a projecting block on the lower portion of the frame-plate face a , may, however, be located at any other convenient point in a room.

The operation of our improved recording device is as follows: Each of the workmen at a factory or other establishment is known by one of the disk-numbers m^3 . For illustration we will suppose that No. 3 arrives at his working place and desires to record his time of arrival. He draws key No. 3 from its socket 3 of

the rack end and inserts the hollow stem of said key upward through the tubular arm h and about the pin i until its upper end bears against the flanged head of said pin i . He then presses upward upon the key until its progress is stopped by the contact of the enlarged head m^4 of the key with the lower end of the tubular arm h . It will thus be seen that the sliding block e' will be elevated thereby and that the degree of elevation of said sliding block will be regulated by the length of said key. The relative lengths of the key-stems m^2 and the location of the circular correspondingly-numbered spaces of the disk c are such as to admit of the recording-block e' being forced upward in the manner described by any one of said keys until the punching-tooth f^2 of the punching-arm f' is immediately opposite and in front of one of said numbered spaces, said space bearing the same number as the key used. It will thus be seen that the No. 3 key, having been inserted by workman No. 3, as hereinbefore stated, will have elevated the block e' until the punching-tooth f^2 is opposite the circular disk-space 3. This having been accomplished, the workman employs his free hand to press inward on the finger-piece e^5 of the rod e^3 . The partial rotation thus imparted to said rod e^3 will result, through the pressure imparted to the punching-arm f' by the contact therewith of the rounded surface of the rod e^3 , in the pressing or punching of the tooth f^2 through the paper disk c in the space 3. The arm f' , when the finger-piece e^5 is released, will be returned to its normal position by pressure thereon of the spring-strip f^3 . It will be observed that as the punching-tooth penetrates the paper it will be received by the slot g' of the plate g , the latter limiting the inward movement of the disk. The turning of the rod e^3 will also result in the drawing forward of the spring K' , which, through its connection with the bell-operating mechanism, will result in the ringing of said bell while said pressure continues, assuming that the spring bell-ringing mechanism has been previously wound. From the operation above described it will be seen that as each workman registers a perforation of the paper disk c will take place in the circle corresponding with said workman's number. The disk c is rotated by the hour-hand post of the clock mechanism at such speed as to cause the pointer e^6 to be at all times in vertical alignment with the radial line, which leads to the number indicating the hour of the day or fraction thereof. It will thus be seen that the recording perforation will be produced on or adjoining a line d , which leads to the hour of the day or the fraction thereof. It will also be seen that the times at which all the workmen of a factory or other establishment begin work may be separately recorded upon the disk and that a similar record may be produced as the workmen leave their working places. One of the disks c may thus be utilized for one day's record, the perforations

therein being of such permanent character as to admit of the computation of each workman's time being readily made when desired. The ringing of the alarm-bell b^2 as each registration is produced will serve to call attention to the record made, and thus lessen the liability of false registration.

Having now fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a workman's time-recorder, the combination of a clock mechanism, a paper dial or disk c rotated thereby, a fixed rod e and a pivoted rod e^3 , supported in front of said disk or dial, a block e' , adapted to slide vertically on said rod, a punching-arm f' and punching-tooth f^2 on said arm, the rod e^3 having a flattened inner side which bears against said arm f' , the latter being adapted to be forced inwardly until said tooth perforates the disk c by the contact of said arm and the rounded portion of the rod e^3 , which is produced by rotating the latter, substantially as described.

2. In a workman's time-recorder, the combination of a clock mechanism, a paper dial or disk rotated thereby, said disk having printed radial lines thereon and figures representing the hours and fractions thereof, consecutively-numbered circular spaces on said disk, parallel rods e^3 , supported in front of said disk, a sliding block e' on said rods, a punching-arm pivoted in said block and having a punching-tooth, and a tubular arm h , leading from

the under side of said sliding block when the latter is at rest, of a series of numbered keys graduated in length, said keys being adapted to be inserted through said tubular arm to elevate said sliding block until the punching-tooth of the arm f' is opposite a circular space in the disk c the number of which corresponds with the number of the key used, and means for pressing the tooth of said arm f' through said paper disk in said numbered space, substantially as described.

3. In a workman's time-recorder, the combination of a clock mechanism, a paper dial or disk rotated thereby, fixed and pivoted rods e^3 , the latter having a flattened face in front of said disk, a sliding block d^3 on said rods, a punching-arm pivoted in said block and having a punching-tooth f^2 , a bell and spring-operated ringing mechanism connected with the rod e^3 , the punching-arm adapted to be forced inward until its tooth penetrates the disk, and the bell-ringing mechanism adapted to be set in motion by the partial rotation of the rod e^3 , substantially as described.

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