(No Model.) 2 Sheets—Sheet 1.

C. P. COTTRELL.

WORKMAN'S CHECKING AND RECORDING APPARATUS.

No. 481,274. Patented Aug. 23, 1892.

Fig. 1.

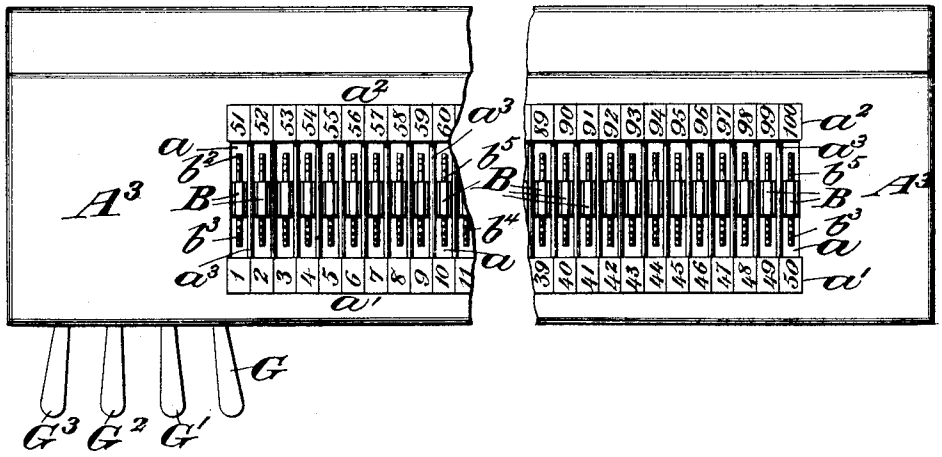
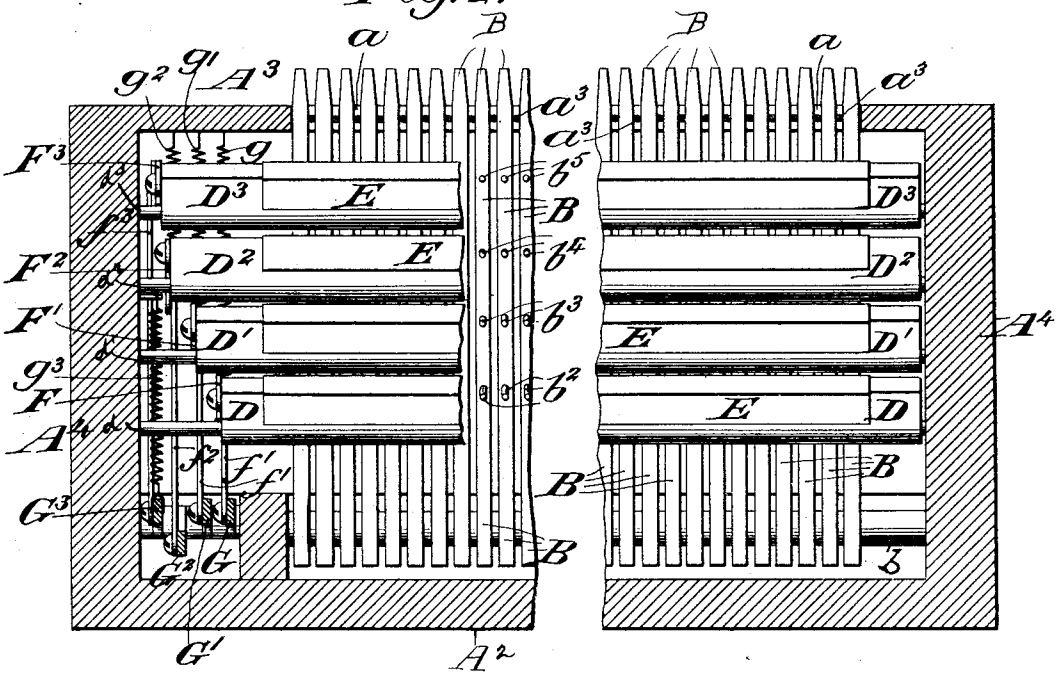


Fig. 2.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

C. P. COTTRELL.

WORKMAN'S CHECKING AND RECORDING APPARATUS.

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Fig. 3.

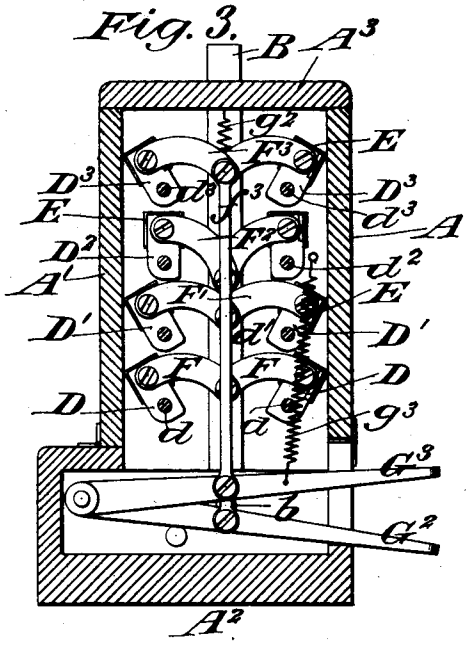


Fig. 4.

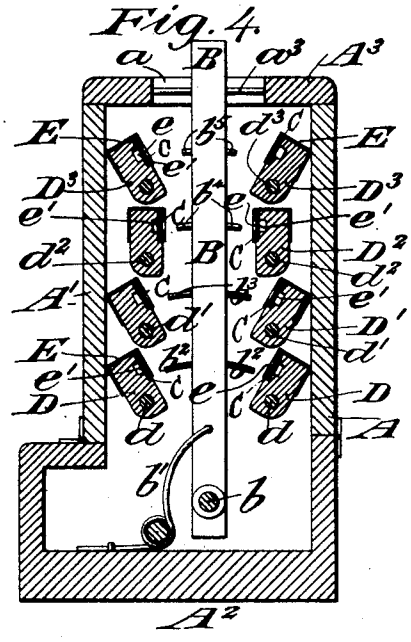


Fig. 5.

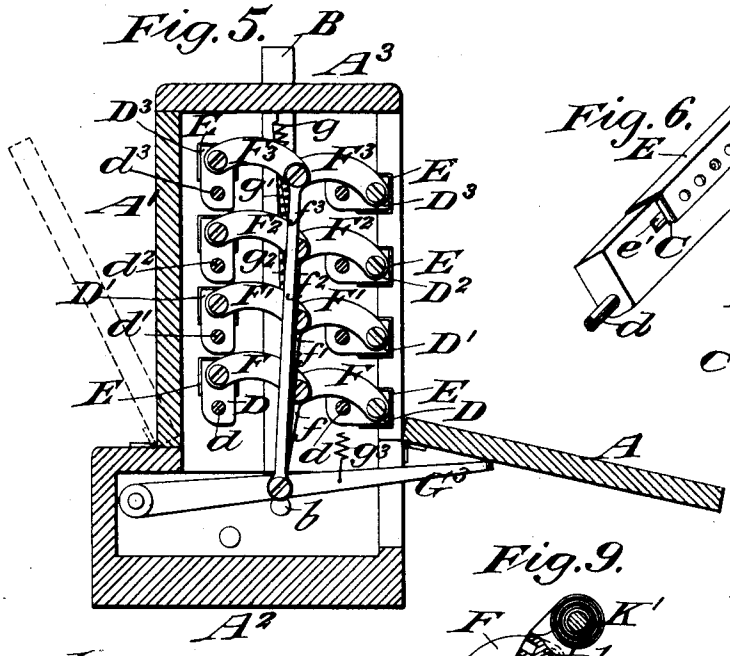


Fig. 6.

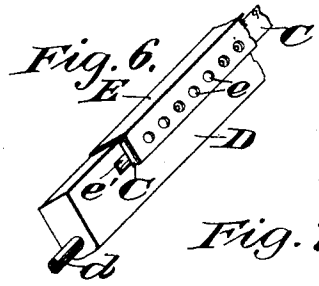


Fig. 7.

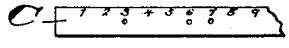


Fig. 8.

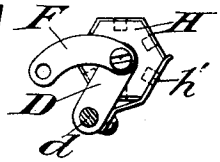
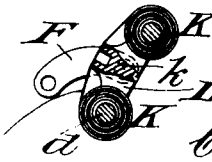


Fig. 9.



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UNITED STATES PATENT OFFICE.

CHARLES P. COTTRELL, OF STONINGTON, CONNECTICUT, ASSIGNOR TO C. B. COTTRELL & SONS, OF WESTERLY, RHODE ISLAND.

WORKMAN'S CHECKING AND RECORDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 481,274, dated August 23, 1892.

Application filed April 25, 1892. Serial No. 430,472. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. COTTRELL, of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Workmen's Checking and Recording Apparatus, of which the following is a specification.

My invention relates to an improvement in workmen's checking apparatus in which provision is made for conveniently recording the presence of a great number of workmen as they enter upon their duties at or before a prescribed time.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a top plan view. Fig. 2 is a view in side elevation, the casing being shown in section. Fig. 3 is an end view, the end of the casing being removed. Fig. 4 is a transverse vertical section. Fig. 5 is an end view showing the position of the parts when the side of the casing is open. Fig. 6 is a view in detail of a portion of one of the rocking supports, showing the record-strip clamped thereto. Fig. 7 is a view in detail of a portion of one of the record-strips after checking. Fig. 8 represents a form of record-receiving strip and support in which series of numbers indicating the workmen may be arranged successively upon a single sheet, and Fig. 9 represents a form of record-receiving strip and support in which a plurality of series of numbers denoting the workmen may be arranged upon a sheet so mounted as to be continuously drawn from a supply-roller onto a receiving-roller.

My invention contemplates a series of vibrating levers provided with devices for making an impression upon record-receiving strips having series of numbers arranged thereon and corresponding to the number by which the workman is known or denoted. Where the number of workmen is great I find it desirable to arrange a plurality of record-receiving strips one above another upon suitable supports upon opposite sides of the vibrating levers and to provide the vibrating levers with impression-making devices upon opposite sides, and to further provide means for bringing any two corresponding record-receiving strips located upon opposite sides of the vibrating levers into position to receive an impression, according as the vibrating lever is swung in one direction or the other, while the remainder of the record-receiving strips are allowed to remain out of position to receive the impression.

In the form in which I have chosen to represent my invention I provide an oblong casing of a general rectangular form, the sides A A′ of which are hinged to the base portion A^2, so that they may be swung open to expose the operative parts within the casing along one or both sides at pleasure. The top A^3 may be permanently secured to the end portions A^4, and along the central portion of the top A^3 there is provided an opening a, transversely across which the vibrating levers B may be moved to make the impressions. Along the opposite sides of the opening a I locate a series of numbers—in the present instance a series a' on the one side consecutively from "1" to "50," inclusive, and along the opposite side a series a^2 from "51" to "100," inclusive.

The operating-levers B are pivotally secured at their lower ends—as, for example, on a bar b, extending longitudinally along the base of the casing—and are each provided with a spring b' for the purpose of returning them to and retaining them in their normal positions centrally in the opening a. The several levers B—one for each of the two opposite numbers—may be separated by partitions a^3. In the present instance the partitions a^3 consist of wires extending between the opposite sides of the opening a and fixed in the opposite walls of the opening.

The levers B are provided on their opposite sides with impression-making devices b^2, b^3, b^4, and b^5, conveniently arranged in pairs and extending in opposite directions from the sides of the lever, those nearer the pivotal point of the lever being made longer than those more remote from said pivotal point to account for the lesser vibratory movement of the lever nearer to than farther away from its pivot. In the present instance I have shown four pairs of such impression-making devices; but

the number might be increased or diminished at pleasure to suit the capacity of the apparatus. The impression-making devices b^2 b^3, &c., are shown in the present instance as punches or as small pins for the purpose of puncturing the record-receiving strip, as will hereinafter appear. It is obvious, however, that they might be provided with type upon their ends, if found desirable, to print an impression instead of puncturing the strip.

In the form shown in Figs. 2 to 7, inclusive, the recording-receiving strips are represented, as shown particularly in Fig. 7, of a single strip of material C, (of paper, for example,) provided along their margin with a series of numbers. The supports for the strip C consist of bars D, D′, D^2, and D^3, arranged in pairs upon opposite sides of and spaced from the vibrating levers B, each of the bars D D′, &c., being pivoted, as at d, d', d^2, and d^3, so as to permit them to be rocked over toward and out away from the levers B. The clamps for holding the strips C in position on the bars D D′, &c., in position to be engaged by the pins or punches b^2 b^3, &c., consist in the present instance of spring-metal clips E, extending longitudinally along the bars D D′, &c., and provided on the side toward the pins or punches with a series of perforations e for permitting the pins or punches to pass through into engagement with the strips C. The faces of the bars D D′, &c., over which the strips C rest, may be recessed, as shown at e', Figs. 4 and 6, to permit the ends of the pins or punches to pass through the strips.

The clips E may be removed and adjusted at pleasure to remove or insert new strips C.

For the purpose of rocking any one of the pairs of bars D D′, &c., into and out of position to be engaged by the pins or punches on the bars B, I connect the members of the several pairs by toggle-levers F, F′, F^2, and F^3, and connect the adjacent ends of the members of the several toggle-levers with pedals or keys G, G′, G^2, and G^3 by connecting-rods f, f', f^2, and f^3. Springs g, g', g^2, and g^3, connected with the casings and with the pedals or with the toggle-levers, exert a tension in a direction to hold the pedals or keys G G′, &c., at all times lifted and the supports D D′, &c., thereby turned outwardly out of position to engage the punches on the vibrating levers B.

In Fig. 3 I have shown three sets of the supports turned outwardly out of position to engage the punches and one pair rocked inwardly in position to engage them.

In the arrangement which I have herein presented I have assumed that the record-receiving strips C, which are placed upon the supports D, are one of them to have the numbers from "1" to "50", inclusive, arranged along its margin the same distance apart as the levers B or punhes thereon are located and the other to have the numbers from "51" to "100," inclusive, arranged thereon in the same manner. The one having the numbers from "1" to "50," inclusive, is to be locked on the rocking support on that side on which the series of numbers a' is marked on the casing and the other upon the opposite side. The numbers on strips to be secured upon the rocking supports D′ are intended to be on the one from "101" to "150," inclusive, and on the other from "151" to "200," inclusive. Those on the rocking supports D^2 are in the same manner intended to be from "201" to 250, inclusive, and from "251" to "300," inclusive, and those on the rocking supports D^3 from "301" to "350," inclusive, and from "351" to "400," inclusive.

In operation the party who is to operate the apparatus and check the entrance of the workmen up to the latest limit of time at which they may enter and still be "on time" may place himself on the side of the instrument on which the pedals or keys G G′ are located and with his left hand may manipulate the pedals or keys and with his right hand operate the vibrating levers. If the workman announces his number as one of the numbers between "1" and "100," inclusive—as, for example, "94"—the operator will depress the key G, thereby throwing the rocking supports D and the strip C carried thereby into position to receive the impression, and while holding the said key depressed will rock the lever B opposite the number "94" over toward "94," and thereby form a check-mark, in the present instance a perforation in the strip opposite the number "94" on the strip. If the workman's number was between "1" and "50," inclusive, the operator would draw the vibrating lever G over toward him to check that number, instead of pushing it away from him. If the workman announces his number as between "100" and "200," the operator would depress the key G′, in order to bring the strips on the support D′ in the position to be impressed. In the same manner, if the number of the workman was between "200" and "300" or between "300" and "400," the operator would depress either the key G^2 or the key G^3, and thereby bring the rocking supports D^2 or D^3 into position to be impressed. When the time has expired within which the workman may enter on time, the strips on the several rocking supports may be removed and the absence of a check-mark opposite a number will indicate that such person did not report on time.

The few workmen who come late may have their time taken in any ordinary or convenient way.

Instead of arranging the numbers upon independent strips, as above described, they may be arranged in a series similar to the series upon the strips C and spaced apart upon a continuous sheet, which may be wrapped around a roller either cylindrical or polygonal in form, the latter form being shown in Fig. 8, and said rollers H may take the place of the supports D D′, &c., and be arranged in a similar manner, while at the same time they are permitted to turn upon

their axes independently of their rocking movement. If, for example, the sheet contains six series of numbers, it will answer for the six working days of the week, and in such case the roller may be made hexagonal and be moved each day to present one of its flat sides and a new series of numbers in position to be checked. The several rollers may be advanced one step each day by hand or otherwise, and I have provided a spring *h'* to hold the rollers in their adjustment. Any suitable clamping devices may be employed to hold the sheet on the roller.

In the form shown in Fig. 9 I have located a supply and receiving roller, denoted, respectively, by K and K', within a rocking support—such, for example, as D D', &c.—and have provided a bed-plate *k*, over which the continuous sheet C, containing series of numbers, may be drawn to present a new series each day.

It is obvious that the number of rocking supports may be increased or diminished to suit the requirements of any particular manufacturing establishment.

In my present construction of the apparatus I have so located the opposite sides A A' of the casing that when they are closed they will form stops to limit the outward throw of the rocking supports, and when thrown open, as in Fig. 5, they will permit the rocking supports to drop into position to enable the record-receiving strips to be readily adjusted or removed.

What I claim is—

1. The combination, with strips or sheets provided with series of characters corresponding to a number of workmen and means for presenting any one of the series at pleasure in a predetermined position, of a series of checking devices corresponding to a series of the characters and under the control of the operator to check one or more of the characters at pleasure, substantially as set forth.

2. The combination, with a plurality of movable supports for sustaining record-receiving strips and means for operating said movable supports, of a series of vibrating levers, each provided with a plurality of impression-making devices and free to move to bring the impression-making devices into engagement with one or another of the record-receiving strips upon the movable supports, substantially as set forth.

3. The combination, with movable supports for sustaining record-receiving strips or sheets and means for operating them, of a series of vibrating levers located between the said supports and provided with record-making devices, said levers being free to swing in opposite directions into engagement with the impression-receiving strips carried by the supports, substantially as set forth.

4. The combination, with movable supports for the impression-receiving material arranged in series and means for operating them, of a series of vibrating levers arranged between two series of supports and provided with impression-making devices, said levers having free swinging movements back and forth into positions to engage the impression-receiving material upon the supports, substantially as set forth.

5. The combination, with swinging supports connected in pairs, means for simultaneously swinging the members of a pair, and means for securing record-receiving sheets or strips to the supports, of vibrating levers provided with impression-making devices and located between the members of the pairs of supports, the said members being free to move toward the opposite members of the pairs, substantially as set forth.

6. In combination, a plurality of series of rocking supports, toggle-lever connections for uniting them in pairs, keys or pedals connected with the toggle-levers for operating the supports in pairs, retracting-springs in connection with the supports, means for securing the material to receive the impression to the supports, record-making devices located between the series of supports, and means for operating the record-making devices, substantially as set forth.

7. In combination, rollers for supporting record-receiving material, means for swinging the rollers bodily toward and away from each other, means for rotating the rollers about their own axes, and vibrating levers carrying impression-making devices and located between the rollers for impressing the material carried by them, substantially as set forth.

8. In combination, supply-rollers for supporting record-receiving material, rollers for receiving the material from the supply-rollers, a rest intermediate of the supply and receiving rollers, over which the material may be drawn, a rocking support, in which one of the supply-rollers and one of the receiving-rollers are mounted and to which the rest is secured, a series of vibrating levers carrying impression-making devices, and means for bringing the rocking supports into position to present the material to be impressed to the action of the impression-making devices, substantially as set forth.

9. The combination, with a pair of supports adapted to hold record-receiving material upon them, of a series of vibrating levers supported to rock back and forth between said supports toward one or the other at pleasure, substantially as set forth.

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