

H. BATES.

TIME CONTROLLED WORKMAN'S CHECK RECEIVING RECORDER.

APPLICATION FILED JUNE 12, 1911.

1,027,797.

Patented May 28, 1912.

6 SHEETS—SHEET 2.

Fig. 2.

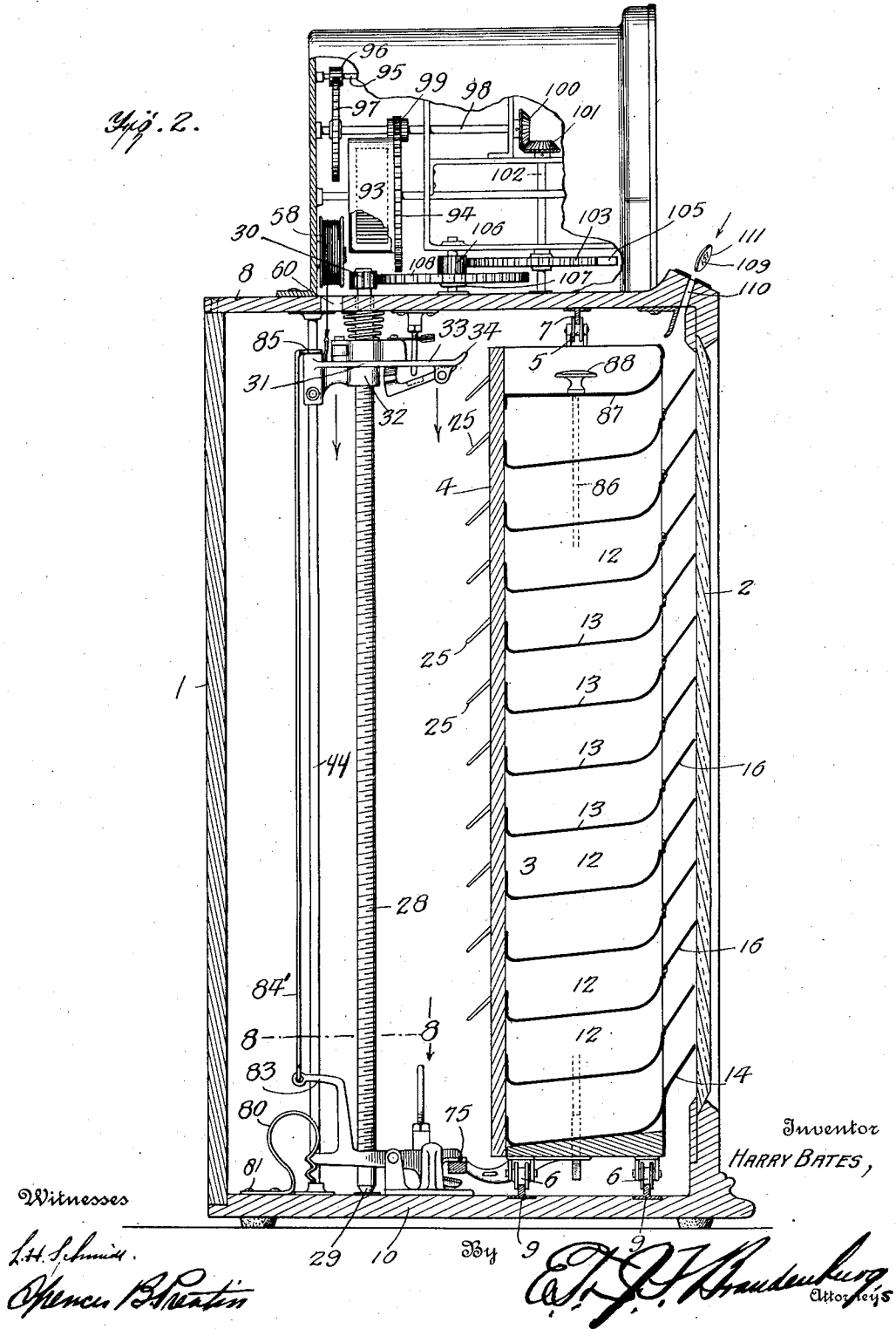
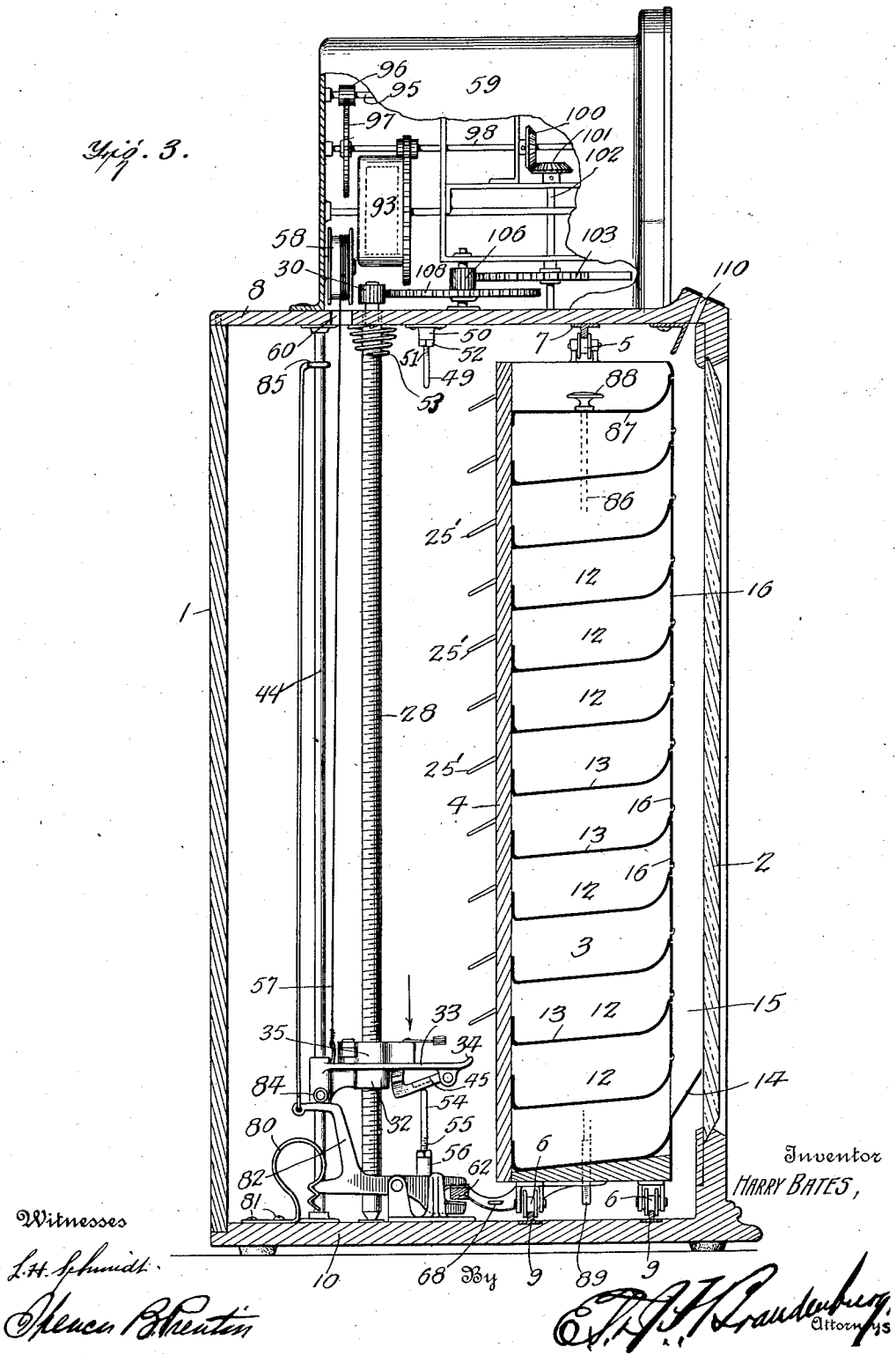


Fig. 3.

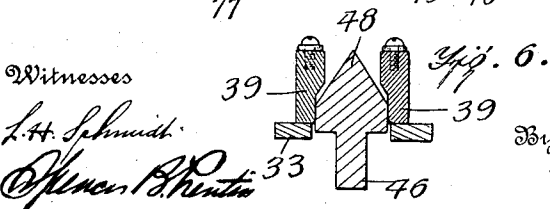
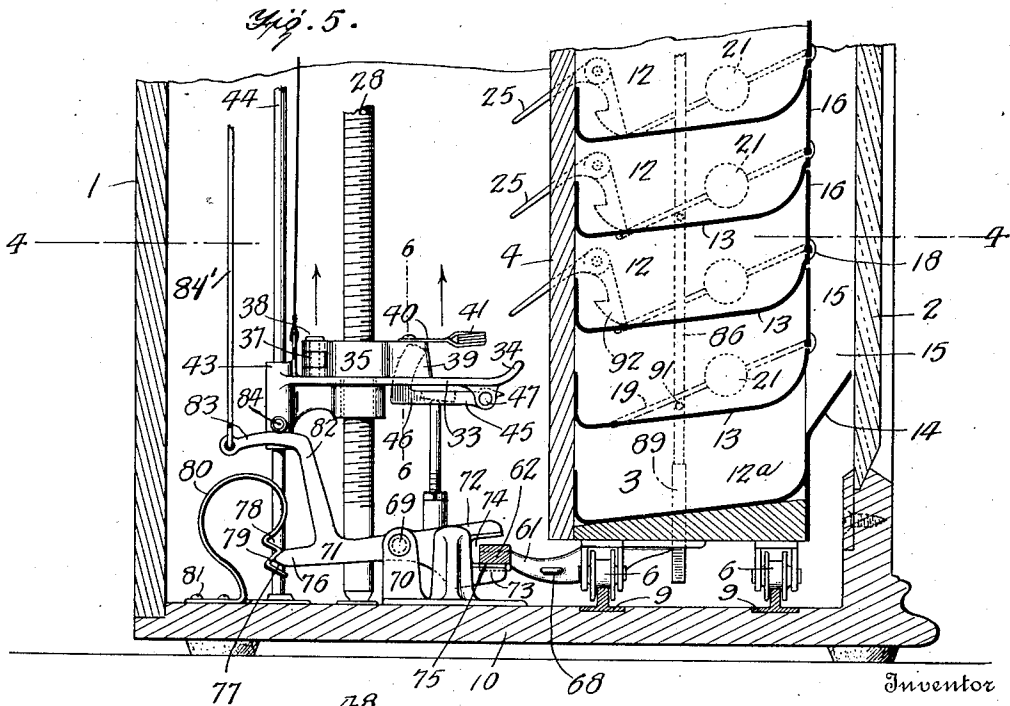
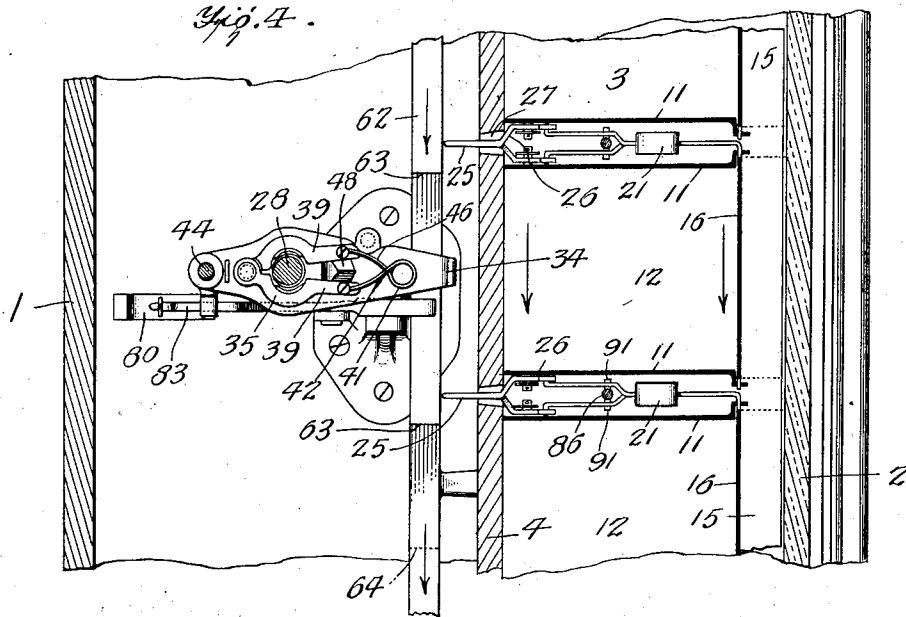


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6 SHEETS—SHEET 4.



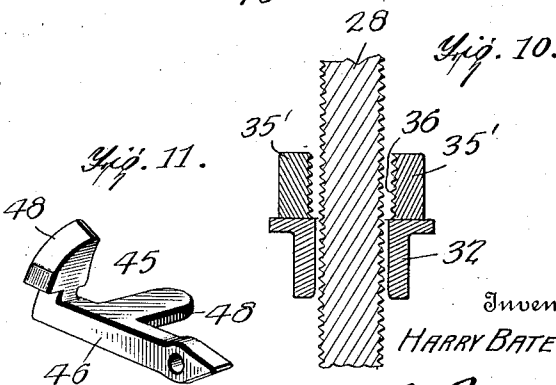
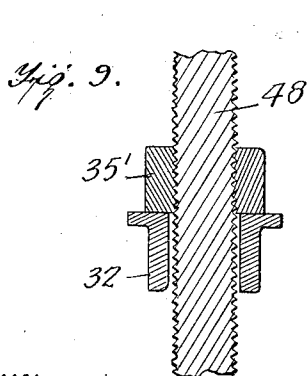
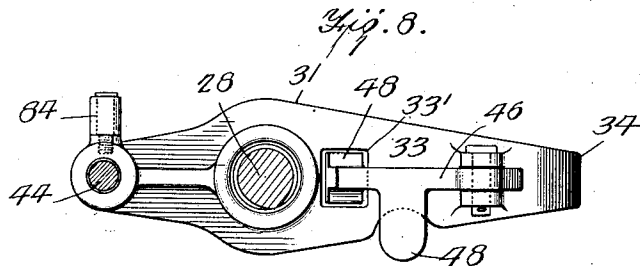
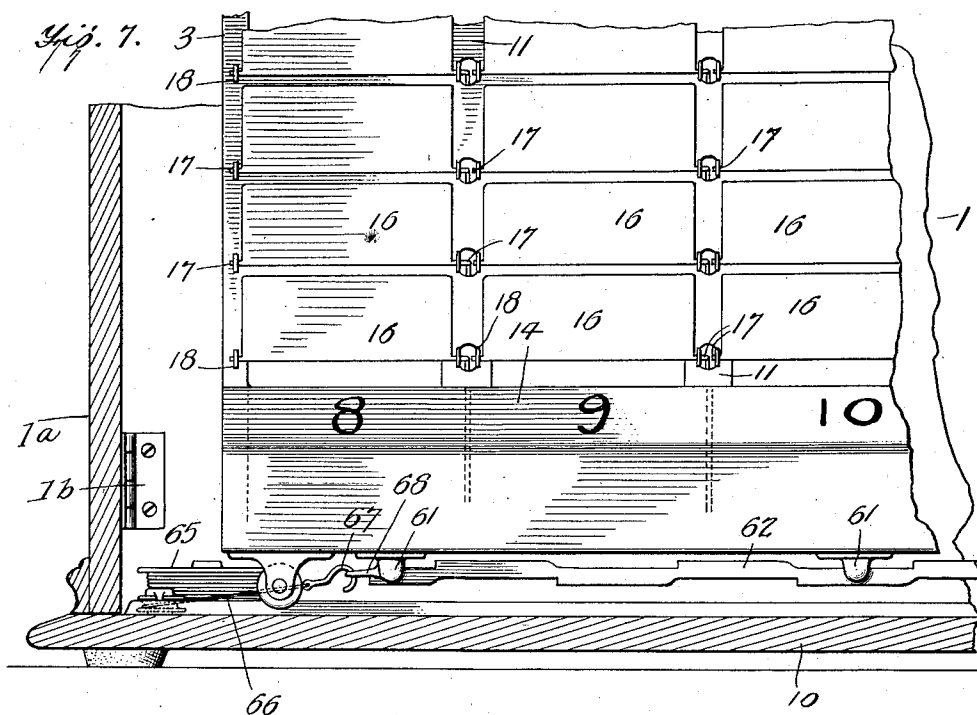
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Attorneys

TIME CONTROLLED WORKMAN'S CHECK RECEIVING RECORDER.

Patented May 28, 1912.

6 SHEETS—SHEET 5.



Witnesses

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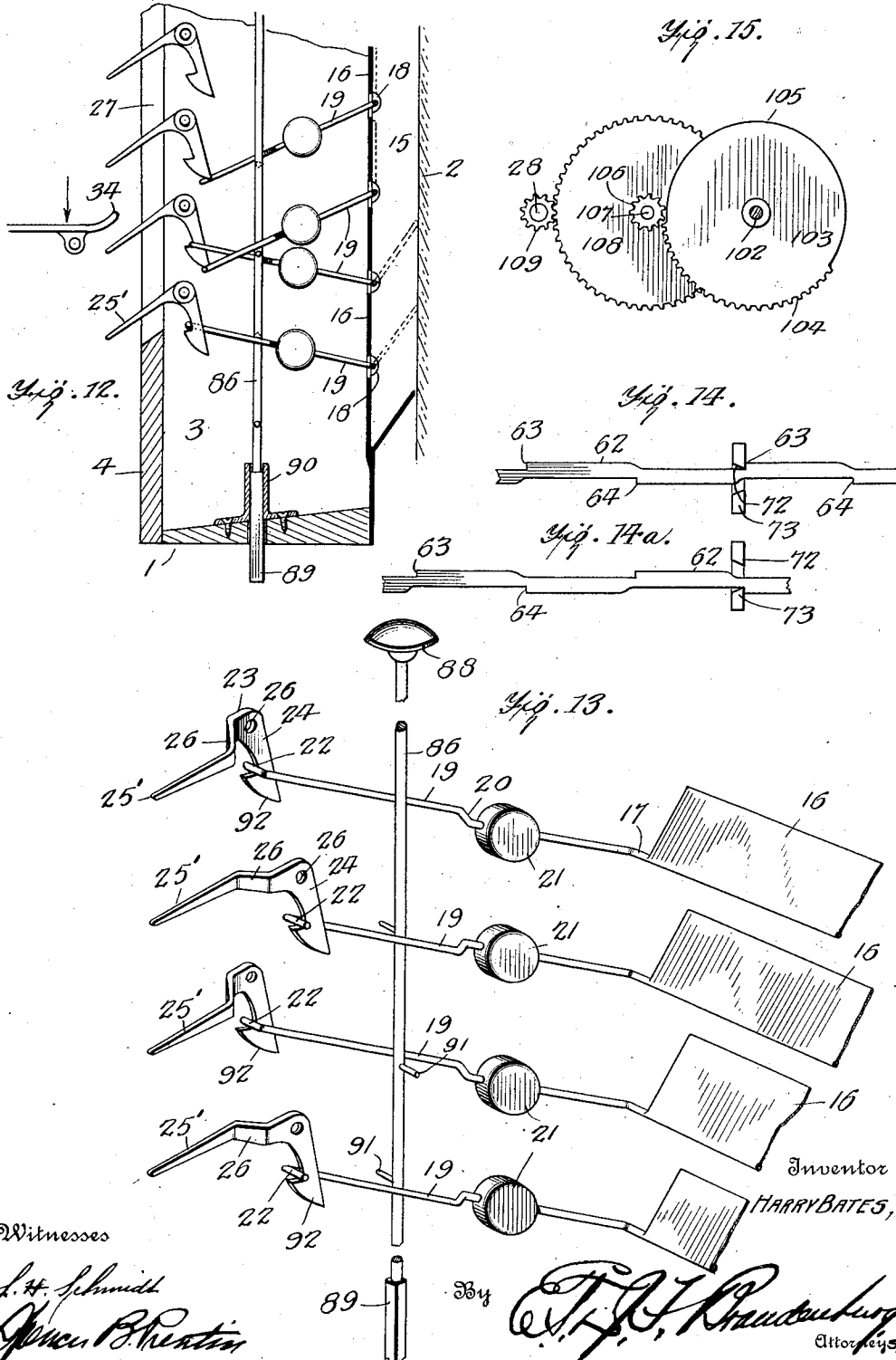
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6 SHEETS—SHEET 6.



UNITED STATES PATENT OFFICE.

HARRY BATES, OF NEW YORK, N. Y.

TIME-CONTROLLED WORKMAN'S-CHECK-RECEIVING RECORDER.

1,027,797.

Specification of Letters Patent.

Patented May 28, 1912.

Application filed June 12, 1911. Serial No. 632,622.

To all whom it may concern:

Be it known that I, HARRY BATES, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Time-Controlled Workmen's-Check-Receiving Recorders, of which the following is a specification.

This invention relates to that general class of machines, devices, and mechanisms intended to systematize the transaction of business, to the end that a material monetary saving may be effected, and has particular reference to a time-controlled, workmen's check-receiving machine, that is, a machine adapted to register the times of arrival of employees in a factory, or the like. Each workman or factory employee, in a factory using my machine, deposits, upon arrival in the morning, a check in the check-receiving slot of the machine, and the time of his arrival is automatically recorded for future reference; the factory-owner or manager being thus enabled to keep a check upon the times of arrival of the different employees, and to keep account of the time lost by tardy arrivals in the morning.

The important objects of the invention are, *inter alia*: 1. To provide a workmen's time-recorder which shall be positive and reliable in operation and thoroughly efficient for the purposes intended. 2. To provide a workmen's time-recorder which is susceptible of manufacture and sale at a cost far below those workmen's time-recorders now on the market. 3. To provide a workmen's time-recorder which will dispense with the elaborate and costly printing-mechanisms commonly used in such machines now on the market, and which will, at the same time, attain the same ends and produce the same practical results as characterize the more expensive and elaborate machines. 4. To provide a workmen's time-recorder which is exceedingly compact in its organization, employing simple agencies and means for accomplishing the functions of the apparatus; which is comparatively and relatively light in weight; which may be transported easily from place to place; and which will not occupy a large space in a factory, where every inch of room is valuable.

With these objects in view, and others appearing as the specification proceeds and the nature of the invention more fully appears, the invention, in its broad and comprehen-

sive aspect, contemplates the provision of an exterior casing for the working parts of the mechanism, and a traveling carriage having a plurality of columns or vertically-disposed sets of pockets for the reception of the workmen's time-checks, access to these receptacles or pockets being initially through a single, common slot or check-aperture in the exterior casing, through which check-slot the workmen deposit their time-checks upon arrival at the factory each morning; time-controlled means being furnished automatically to control the proper disposition and distribution of such checks received through such common check-slot, according to the differing times of arrival of the respective employees.

More specifically, the invention comprehends the provision of a plurality of columns of pockets for the reception of the time-checks, each column or distinct set of pockets being designed and intended to cover, say, one hour of a working day, and the number of pockets in each set, column, or series being regulated according to the desired number of divisions of an hour, said columns of pockets being disposed in a traveling carriage; and of time-controlled mechanism for automatically effecting proper and predetermined step-by-step movement of the carriage, to bring successive columns of pockets underneath a common time-check entry-slot or aperture in an exterior casing surrounding said carriage, at the beginning of successive hours of the day.

The invention also contemplates the provision of closable entrance-gates or shutters for said pockets, the time-controlled mechanism, above mentioned, being organized automatically and successively to close said gates of each series or columns of pockets, at predetermined, regular intervals or divisions of each hour of the day.

The invention also contemplates the provision of simple, efficient, and quickly operated means for manually opening all of said gates, in a column, simultaneously, at the end of the day.

The invention also contemplates the provision of simple means for rendering inactive said gate-closing means at certain periods of the day, said means being automatically operating.

In the accompanying drawing, I have delineated one form of a number of forms

of embodiment of my invention, capable of carrying out the underlying principles thereof, and in these drawings: Figure I is a front elevation of my apparatus; Fig. II is a substantially central, transverse section through the organized apparatus, showing the gates or shutters of the check-pockets open, and the movable tripper mechanism (controlled by the time-mechanism) for said gates in the position which it occupies before any of said gates have been tripped; Fig. III is a similar view, showing the gates closed, and said tripper mechanism in the position which it occupies after having closed all of said gates and about to be returned to its initial position; Fig. IV is a fragmentary horizontal section, along the line 4—4, Fig. V; Fig. V is a fragmentary transverse section, similar to Fig. III, showing the disposition of the parts when the tripping-mechanism has moved slightly farther downward than in the position thereof shown in Fig. III; Fig. VI is a detail transverse sectional view, on the line 6—6, Fig. V; Fig. VII is a fragmentary view, in front elevation, the front glass plate of the exterior casing being removed to display the interior mechanism; Fig. VIII is a detail horizontal sectional view, on the line 8—8, Fig. II, looking upward; Fig. IX is a fragmentary central vertical sectional detail view of the screw or worm-rod, forming part of my invention, and of certain parts of the tripping-mechanism carried thereby, showing said certain parts in one position; Fig. X is a like view, showing said certain parts in another position; Fig. XI is a detached detail view of the pivoted releasing-member shown in Fig. VIII; Fig. XII is a fragmentary detail view, partly in section, showing, essentially, the gate-trippable means and the gate-tripping means, illustrating the positions of such mechanisms when certain of the trippable means have been tripped to close said gates, and certain other of such trippable means still remain untripped; Fig. XIII is a detached perspective view, partly in section, showing the gates, their trippable means, and the means for manually returning said gates to normal open position after all of them have been closed; Fig. XIV is a detached fragmentary detail view of certain parts of the carriage-moving mechanism, showing one position of such parts before movement thereof; Fig. XIV^A is a like view, showing another position of such parts, after movement thereof; and Fig. XV is a detached, detail view, in top plan, of certain of the time-controlling mechanism.

Referring, now, in detail to the drawings: 1 designates an exterior casing or housing, which may be of varying shapes and dimensions, according to the special requirements of the particular factory utilizing the

device. In this instance, the casing is shown oblong in shape, and is disposed so that, in use, the distance horizontally from end to end will be greater than the distance vertically from the top 8 to the bottom 10. Preferably, the front wall 2 of the casing is of transparent material, such as glass, as shown.

Disposed adjacent to, but somewhat removed from, the front wall 2 of the casing is a traveling carriage 3, which is desirably half the length of, nearly the same height as, and of greatly less depth or width than, the casing 2 (as shown clearly, for instance, in Figs. I, II and III). The rear wall 4 may be removable to provide access to check-receiving pockets (about to be described), for the purpose of removing the checks therefrom. Said carriage 3 may, and preferably does, carry upper wheels 5 and lower wheels 6, running, respectively, on an overhead track 7 carried by the under surface of the top wall 8 of the casing 2, and on lower tracks 9 carried by the inner surface of the bottom or base 10 of the casing 2; whereby free and easy movement of the carriage, with a minimum of friction and effort, may be insured. Said carriage 3 is divided, vertically, into a plurality of vertical series of chambers, by vertical, spaced partitions 11. Each of said vertical chambers, so formed, is divided into a plurality of check-receiving pockets 12 by spaced, substantially-horizontal partitions 13, whereby a plurality of vertical series or sets or columns of said pockets 12 are furnished. Each of these vertical columns of pockets receives checks deposited throughout a division or part of a day, say one hour, and there may be provided as many of these vertical columns of pockets 12 as there are hours of the day to be covered in the operation of the device, as required by the exigencies of the particular factory using the device of my invention. In this instance, I have (in dotted lines in Fig. I) shown, as an example and for illustrative purposes, only, nine of these vertical columns of pockets, covering nine hours of the day, say from eight a. m. to four p. m. Said pockets 12 are normally open at the front thereof, excepting the bottom or lowermost pocket 12^a in each vertical column which latter pocket may be and preferably is permanently open, an inclined shelf or deflector 14 forming part of, or rigidly attached to, said lowermost pocket, and bridging the space 15 between the front wall 2 and said pocket, subserving the dual function of guiding checks, descending through said space 15, into said lowermost pocket 12^a and of preventing checks falling into that part of the space 15 which is below the shelf 14.

The open front ends of the remainder of said pockets (or those identified by the ref-

erence-numeral 12) may be closable by any suitable means, of which, of course, there may be a number. In this instance, I have shown such closing means as consisting of
 5 shutters or gates 16, normally disposed, as shown in Fig. II, in an inclined position, bridging the space 15 between the front wall 2 and said pockets 12. Said shutters may be variously constructed, so as to permit closing thereof; but I have found that shown
 10 in the drawings and which is now about to be described to be desirable, simple, and efficacious. The preferred construction, therefore, is to provide said shutters 16, at their bases, with lateral pins 17, received in
 15 eyes 18 carried by the end walls of the carriage 3 and by the front ends of the vertical partitions 11, whereby said shutters or gates have a hinged or pivotal movement.
 20 My invention comprehends releasable means, normally held inactive, for swinging said shutters or gates 16 to closed position; and, while these means may take a variety of forms, I have found that shown in the
 25 drawings and now about to be described to be a convenient, simple, and efficacious mechanism. The means, therefore, which I prefer consist of weighted levers 19, each one thereof being attached, at one end, to, or
 30 formed integral with, one of the pins 17 of the particular shutter 16 which is to be controlled by said lever, as clearly shown in Fig. XIII, and each lever being normally held
 35 (by trippable holding-means hereinafter described) in a slightly upward-inclined position, as viewed from the end thereof which is secured to the pin 17. Each lever 19 is bent, medially of its length, as shown at 20, and in this connection it may be noted that
 40 each lever 19 is medially bent reversely to the medial bend of the lever next below, as shown in Fig. XIII, so that, as each lever is released and falls, there may be no danger of its contacting with or engaging the lever
 45 directly below it.

Each lever 19 carries, preferably in the vicinity of the medial bend 20 thereof, a weight 21, whereby, upon releasal of said lever 19 from engagement with its holding-
 50 means (now about to be described), it will rock said lever downward, and thus swing the shutter, controlled by said lever, to closed position.

The free end of each lever 19 is bent to
 55 form a pintle 22, the pintle of each successive lever extending in a reverse direction to that of the preceding lever (as clearly shown in Fig. XIII, so that, when one of the levers falls, there will always be a clearance be-
 60 tween the levers in their movements.

The invention comprehends, also, trippable means for yieldingly holding said levers 19 in their normal inclined or tilted position; and such means may take various
 65 forms, but that shown in the drawings and

now to be described is given as an example of a simple and practical means. Said exemplified means, therefore, comprise pivoted, trippable, shutter-lever releasably-
 70 holding members 23, each of which is constructed with a depending, slightly inclined finger or dog 24, having a hook 92 at its lower end, in which hook the pintle 22 of the appropriate lever 19 is normally retained, and whereby premature downward
 75 movement of said lever is prevented and said lever normally maintained in an inclined or tilted position. Each of said members 23 is also provided with a slightly downward-inclined arm 25', extending from the upper
 80 end of the finger 24 and being bent near its upper end, as shown at 26, the arm 25' of each successive member 23 being reversely bent, as shown in Fig. XIII, so that in the
 85 movements of said members 23 there will always be a clearance therebetween, avoiding interference one with the other. Each member 23 is pivoted at the upper end thereof, as at 26, to one of the vertical partitions 11 (see more particularly Fig. IV),
 90 the arms 25' working in a vertical slot 27 in the rear wall of the carriage 3.

The invention additionally comprehends means for automatically and successively tripping said trippable lever-holding members 23, and also comprehends means for automatically returning said tripping means to normal position after complete travel thereof; and, while various mechanisms may be used to these ends, I have shown and now
 100 describe, as examples, my preferred means: Within the casing 1, in rear of the first column of pockets 12 (that column shown in dotted lines in Fig. I under which the number "8" appears), before any movement of
 105 the traveling-carriage 3 has taken place, is a vertically-disposed, rotatable screw, or worm-rod 28, beveled and pointed at its lower end, 29, to form a thrust-bearing whereby said screw may be turned with a
 110 minimum of friction and with a maximum of ease. The upper end of said screw 28 projects through the top wall 8 of the casing 1, and carries a small pinion 30 (for a purpose hereinafter appearing). Traveling
 115 upon said screw 28 is tripping mechanism, comprising a tripping member designated, generally, by the reference-numeral 31, and made up of a hub 32 encircling the screw and having a smooth, threadless bore (as
 120 shown), and carrying, on top thereof, and desirably integral therewith, a horizontal arm 33, terminating at its free end, or that end in proximity to the free ends of the
 125 arms 25' of the trippable lever-holding members 23, with an upturned toe 34, adapted, in the movement of said arm 33 down said screw 28, to engage said free ends of, and thus to depress, the successive arms
 130 25', thereby swinging the trippable lever-

holding members 23 on their pivots and lifting the fingers 24 and releasing the hooks 22 from engagement with the levers 19, and permitting the same to drop (by reason of their weights), which closes the shutters 16, successively. Carried on top of said arm 33 is a peculiarly formed, split nut 35, *i. e.*, a nut formed in two sections 35', 35'; said nut having a threaded bore 36 engaging said screw or worm-rod 28, and said sections 35', 35' being hinged at their rear ends, as shown at 37, on a hinge-pin 38, carried by the arm 33. The other ends of said sections 35', 35' are formed as jaws 39, 39 (see more particularly Figs. IV and V), normally retained in closed position by a spring 40, formed of resilient wire wound intermediate its length to form a coil 41, the wire being crossed, as at 42, and the two terminals thereof secured to the respective free ends of said jaws 39, 39, as shown clearly in Fig. IV. Desirably integral with said tripping-member 31, and disposed at the rear end thereof, or at that end opposite to the end carrying the toe 34, is a sleeve 43, encircling and reciprocable on a vertical shaft 44 disposed within the casing 1, to the rear of the screw 28. Carried by the forward portion of said arm 33, and disposed therebeneath, is a pivoted nut-releasing member, designated generally by 45 in Fig. XI, and comprising a horizontally-disposed arm 46 pivoted at one end thereof, as at 47, to said arm 33, in the region of the toe 34, and carrying at its other end an upward-projecting, wedge-shaped head 48, adapted, upon actuation of said arm 46 (in the manner about to appear) to be driven through an aperture 33' in the arm 33 and in between said jaws 39, 39, to separate and open the same, as shown in Fig. IV, and thus release the nut 35 from engagement with the screw or worm-rod 28, in order to permit the nut and tripping-member 31 to return to normal position at the head of the screw 28 after complete travel downward upon said screw, *i. e.*, after all of the shutters 16 in one of the columns of shutters have been successively closed. Said nut-releasing member 45 is also provided, intermediate of the length of the arm 46, with a finger 48, adapted, upon return of said tripping-member 31 to normal position after complete downward travel thereof upon the screw 28, to contact with the lower free end of the depending pin 49, forcing the arm 46 downward on its pivot and thus removing the wedge-shaped head 48 from between the jaws 39, 39. The pin 49 is carried by and is in threaded engagement with a casting or standard 50 secured to the interior surface of the upper wall 8 of the casing 1; the upper portion of said pin 49 being threaded, as at 51, and carrying a nut 52.

A coiled spring 53 may be provided, se-

cured at one end thereof to the interior surface of the top wall 8 of the casing 1 and encircling the upper end of said screw 28; the nut-member 35, in the upward travel thereof along the screw 28, contacting with said spring 53 and compressing the same, the spring thus serving to cushion the shock of the returning tripping-mechanism.

Upon completion of the downward travel of the tripping-mechanism, along the screw 28, the arm 46 contacts with the upper or free end of a stem or pin 54, which forces the wedge-shaped head 48 between the jaws 39, 39, to release the nut 35 from engagement with the screw 28. The pin 54 is or may be threaded toward its lower end, as at 55, and screwed into a standard or casting 56 carried by the base 10 of the casing 1.

A flexible connection 57 is secured at one end to the arm 33, the upper portion of said flexible member being wound upon a spring-drum 58, whereby, as soon as the nut-member 31 is released (at the time and by the mechanism hereinbefore described) from engagement with the screw 28, the spring drum 58 revolves rapidly to wind up the flexible connection 57 thereon and, consequently, to draw upward the tripping-mechanism along said screw 28. The spring drum 58 is preferably disposed in a clock-casing 59, containing the time-controlling mechanism hereinafter to be described. The flexible connection 57 extends through an aperture 60 in the top wall 8 of the casing 1.

After the shutters 16 of one vertical column of check-receiving pockets 12 have all been successively closed, means must be provided for automatically shifting said traveling-carriage 3 along its tracks to bring another vertical column of pockets 12 into the path of movement of the end 34 of the tripper 33, and this movement must be accomplished practically synchronously or simultaneously with the return of the tripping-mechanism (hereinbefore described) to normal position after having traveled down the worm-rod 28 and having closed all the shutters 16 of such column. My invention, therefore, comprehends the provision of such carriage-shifting mechanism.

Many different mechanisms for so shifting the carriage may be employed, and, as an example, I have shown one form, which I prefer, in the drawings, and now proceed to describe it in detail: The base of the carriage 3 carries rearward-projecting, substantially horizontal supporting-arms 61, of which there may be any desired number, carrying at their ends a bar 62 provided with a series of upper notches 63 and with a series of lower notches 64, one of said lower notches 64 being disposed intermediate each two of the upper notches 63, as shown in Figs. VII, XIV and XIV^A. A spring-drum 65 is secured within the casing 1,

toward one end thereof, as shown in Figs. I and VII, and a flexible member 66 is wound around said drum, the end of said member being secured to a hook 67, engaging an eye 5 68 carried by one of the arms 61, the tendency of the spring-drum being to wind up the flexible member 66 thereon and thus pull the carriage along its tracks. It is to be explained that the distance between one 10 upper notch 63 and the next succeeding upper notch is exactly the length of one of the check-receiving pockets 12.

Escapement means are provided for permitting an intermittent, or step-by-step, 15 movement of the carriage 3, and the preferred means are the following: Fulcrumed intermediate its length, at 69, on a standard 70 secured to the base 10 of the casing 1 is a rock-shaft 71, having a rigid upper jaw 72 and a complementary, rigid, lower jaw 73, said jaws being permanently spaced apart, as shown, so as to form therebetween a 20 mouth 74. Both jaws are also desirably beveled along one longitudinal edge thereof, as shown at 75. In said mouth 74 is received the bar 62, the rock-shaft 71 being disposed at right-angles to said bar 62. The rock-shaft 71 is also provided with a rear 25 toe 76 desirably doubly-beveled or V-shaped at its end, as shown at 77. Said beveled end engages one or the other of two adjoining V-shaped bends 78, 79 in the terminal or free end of a bow-shaped spring 80 the other 30 terminal thereof being secured, as at 81, to the base 10 of the casing 1. The normal position of the pointed end 77 of the toe 76 is in engagement with the upper bend 78 of the spring 80, as shown in Figs. II and III. The rock-shaft 71 is also provided with an 40 upward-extending arm 82, provided with a substantially horizontal, bent upper portion 83 arranged in the path of travel of a pin 84 carried by the sleeve 43. The free end of the bent portion 83 is secured to the 45 lower end of a connection 84', such as a wire, the other or upper end of said connection being secured to a ring or collar 85 encircling and loose on the shaft 44.

In the operation of effecting shifting of 50 the carriage 3, to bring another, next succeeding column of check-receiving pockets 12 into position so that the pintles 25 of the trippable shutter-rod holding and releasing 55 members 23 may be brought into the path of travel of the tripper 33, the respective position of the parts when the tripping-mechanism has traveled sufficiently far down the screw 28 to close all the shutters 16 is shown in Fig. III. In the position of 60 the parts, as shown in said figure, the pin 84 has just reached the upper bent portion 84 of the arm 82 of the rock-shaft 71. At this instant, it bears with no pressure upon said bent portion 84. But, immediately after 65 touching said bent portion 84, the continued

downward movement of the tripping-mechanism along the screw 28 causes the pin 84 to bear forcibly upon the bent portion 84, thus rocking the shaft 71 on its fulcrum and forcing or rocking the pointed end 77 of the toe 70 76 from its normal engagement with the upper V-shaped bend 78 of the spring 80 into engagement with the lower V-shaped bend 77 of said spring, as shown in Fig. V. Simultaneously with such movements of the 75 parts, as just described, the stem 54, into contact with which the arm 46 of the pivoted nut-releasing member 45 has been brought by the downward movement of the tripping-mechanism along said screw 28, forces the 80 wedge-shaped head 48 between and thus separates the jaws 39, 39 of the nut 35, so as to permit upward movement of the tripping mechanism along said screw 28. Prior to movement of the rock-shaft 71, as just hereinabove described, the upper jaw 72 is in 85 engagement with one of the upper notches 63 of the bar 62, as shown in Figs. II, III and XIV; but, upon movement of the rock-shaft 71, as just hereinabove described, said upper 90 jaw 72 is lifted or rocked out of engagement with such notch 63 as shown in Figs. V and XIV^A, which releases said bar 62 and allows it to be pulled forward (with the carriage 3, to which it is attached) by the flexible member 95 66, under the impetus of the spring-drum 65, until the bar 62 and carriage 3 are stopped by the lower jaw 73 engaging in one of the lower notches 64 of the bar 62, as shown in Fig. XIV^A, it being clear, of course, 100 that, as the upper jaw 72 is rocked upward or lifted, as described, the lower jaw 73 is, likewise, simultaneously lifted or rocked upward. Movement of the bar 62, as just described, *i. e.*, the distance between an upper 105 notch 63 and the next succeeding lower notch 64, shifts the carriage 3 half the required distance to bring the succeeding column of check-receiving pockets 12 into proper position, the position of the different parts being, 110 now, as shown in Figs. V and XIV^A, this being also the position of the parts as the tripping mechanism is ready and free to inaugurate its upward travel along the screw 28. The spring-drum 58 now acts to wind up the 115 flexible connection 57 thereon, drawing the tripping mechanism very rapidly upward back to normal position at the top of the screw 28. Just prior to the time the tripping-mechanism assumes normal position at 120 the upper end of the screw 28, the upper end of the sleeve 43 strikes the ring 85, and forces the same upward on the shaft 44, thus pulling upward upon the connection 84, which rocks the shaft 71 upward on its fulcrum 69 and rocks the pointed end 77 of the 125 toe 76 of the rock-shaft 71 from its engagement with the lower V-shaped bend 77 of the spring 80 into engagement with the upper V-shaped bend 78, as shown in Figs. II and III. 130

This movement, just described, rocks the jaw 73 downward out of engagement with the lower notch 64, thus allowing the bar 62 (and with it the carriage 3) to be shifted along until the upper jaw 72 (which has, of course, been rocked downward simultaneously with the rocking downward, just described, of the under jaw 73) engages the next succeeding upper notch 63. This completes the other half of the complete movement of the carriage to bring the next succeeding column of check-receiving pockets 12 into proper position, so that their shutters may be closed by the tripping-mechanism described.

Means are or may be provided to return the shutters 16 and shutter-levers 19 to normal position, with the levers 19 in engagement with the trippable members 23, after the shutters have all been closed and the shutter-levers all released or tripped from their engagement with the holding and releasing trippable members 23; and various mechanisms may be used to this end. The preferred form is shown, as an example, in the drawings, and I will now proceed to describe it. Vertical rods 86 (see more particularly Figs. XII and XIII) are provided, one for each column of check-receiving pockets 12. Each rod 86 is disposed in proximity to a set or column of shutter-closing levers 19, in the rear of the weights 21 thereon, as shown in Figs. IV, V, XII and XIII. Each rod 86 projects through a top plate 87, and may be conveniently furnished thereabove with a handle 88, as shown in Figs. II and XIII, and may carry at its lower end a vertical guide-extension 89, desirably non-circular in cross section, as shown in Fig. XIII, working in an open-ended guide-tube 90 carried by the base of the carriage 3 (Fig. XII), and of the same cross-sectional shape as said guide-extension 89, whereby turning or twisting of the rod 86 is prevented. Each of the rods 19 carries spaced pins 91, each succeeding pin extending from the rod 19 in a direction directly opposite to that of the next preceding pin (as clearly shown in Fig. XIII), and the pins being disposed relative to the weighted shutter-closing levers 19 so that as each of said levers falls it will rest on one of said pins 91, as shown clearly in Fig. XII. Now, then, after all of said weighted shutter-levers 19 have been released and have fallen to close the shutters 16, and it is desired to return said parts to normal position, all that has to be done is to pull upward, by the handle 88, on the rod 86, which will simultaneously return all of the shutter-closing levers 19 in a column or set to normal position, and open all the shutters 16 in said column; the bent ends 22 of the levers 19 riding up the lower cam-surface 92 of the trippable members 23, until the hooks 25 are reached, when the members 23 swing

on their pivots to engage and hold said bent ends 22 in said hooks. It will thus be noticed that one and the same movement of the rod 86 effects return of all the levers 19 in a set or column to normal position, the trippable members 23 being, during such manual movement of the rod 86, automatically re-positioned in trippable position, in holding engagement with said levers 19; no separate or independent manual movement being necessary to re-set the trippable members 23.

The end wall 1^a of the casing 1 may be opened to provide access to the carriage 3, and, for this purpose, may be provided with hinges 1^b. When it is desired to remove the checks deposited in the check-receiving pockets 12, at the end of the day, and to re-set the carriage in its normal position at the other end of the casing 1, the end wall 1^a (constituting a door) is swung back on its hinges 1^a, the hook 67 removed from the eye 68, and the carriage removed bodily from the casing 1. After the checks have been removed from the pockets 12, the carriage 3 is again placed in the casing 1 and pushed forward to the end wall of the casing opposite the end wall 1^a.

Any suitable time-controlling clock-mechanism may be provided to effect the proper movements of the different parts, as hereinabove described. In this instance, I have shown in the drawings one form, which I prefer, and now proceed to describe it in detail. 93 represents a main spring barrel, of a clock-mechanism, carrying a circumferential gear 94 and disposed in the clock-casing 59. On one of the time-shafts 95 of said clock-mechanism is a small pinion 96 meshing with a large gear 97 fast on a horizontally-disposed shaft 98 carrying, intermediate its ends, a pinion 99 meshing with a gear 94 and, at its ends, a bevel gear 100, meshing with another bevel gear 101 fast on a vertically disposed shaft 102 carrying a wheel 103 having a cog-teeth portion 104 along a portion of its circumferential area, the remaining portion 105 of said wheel being plain or smooth or toothless, as shown clearly in Fig. XV. The cog-teeth portion 104 of said wheel, at the proper period upon revolution of said wheel 103, meshes with a small cog-wheel or pinion 106 fast on a vertical shaft 107, also carrying fast thereon a large cog-wheel 108 meshing with a small cog-wheel or pinion 30 fast on the upper end of the worm-shaft 28. By the relative proportions of the several cog-wheels, gear-wheels and pinions, shown and described, and by the relative pitch of the threads on the screw 28, the latter is continuously rotated at the proper degree of speed to cause the tripping-mechanism carried thereby to travel therealong at the proper speed to trip the trippable shutter-lever holding and re-

leasing members 23 (in this instance, every five minutes), thus causing the shutters 16 successively to close each five minutes during an hour. Of course, I have shown the device as embodying twelve coin-receiving pockets 12 in each column or set (the receptacles being closed successively every five minutes) merely as an example; for, if desired, sixty receptacles, in each column, may be provided, for each hour, each receptacle representing one minute of the hour, and in this case it would be necessary only to change the proportions of the respective cog-wheels, gears and pinions above described, and to adjust the pitch of the threads of the screw 28 to correspond, so that the receptacles may be closed successively each minute of the hour.

In the operation of my device, for practical use in a factory, for instance, (assuming the opening time to be eight o'clock in the morning), a workman arriving within the first five minutes after eight o'clock will deposit a check 109 in the check-slot 110 in the casing 1, where it will fall onto the first or top open shutter 16, whence it will be guided into the first or top coin-receiving pocket 12. Promptly upon the expiration of these five minutes, said top shutter will be closed by the mechanism hereinabove described; whereupon a workman arriving after 8:05 and before 8:10 and depositing a check in the slot, will be recorded tardy, since the check will fall into the second pocket 12 from the top. Of course, if the device be made with sixty pockets 12 in each column, covering sixty minutes of the hour (*i. e.*, each pocket covering one minute of the hour), said pockets will be closed at one-minute intervals, instead of at five-minute intervals. Each workman is provided, of course, with an individual check, bearing his respective identification number, such as 111. When closing-time comes, in this instance four o'clock in the afternoon, the terminus of the cog-teeth portion 104 of the wheel 103 will be reached and the toothless portion 105 of said wheel will be brought opposite the pinion 106, whereupon revolution of the pinion 106 and, consequently, of the screw or worm-red 28, will cease. The terminus of the toothless portion will not be reached, in the operation of the time-controlling or clock-mechanism, until eight o'clock in the morning, when the cog-teeth portion 105 of the wheel 103 will reengage the pinion 106 and the rotation of the screw 28 resumed. Preferably, I use an eight-day, Seth Thomas clock-movement.

While I have, hereinabove, described my invention as used to record the times of arrival of employees in the morning, it should be stated that the invention is not circumscribed to such use, as I am entitled to protection for my invention in respect to all

uses to which the same may be applied. As a matter of fact, in practice, my invention will be used, also, for instance, to record the times of departure of the employees for the luncheon-period and the times of their return after lunch, and of the times of their departure at night.

My invention may be put to many uses, and, as it is impossible and unnecessary to mention all the possible uses, I have mentioned a few, as examples, to demonstrate the utility and practicability of the invention.

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

1. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally-open gates controlling inlet of checks to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, to seal said receptacles against entrance thereinto of checks.

2. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally-open gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, including levers carried by said gates and controlling the movement thereof.

3. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, including levers carried by said gates and controlling the movement thereof.

4. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, including: levers carried by said gates and controlling movement thereof and normally in elevated position, and trippable means for yieldingly holding said levers in elevated position.

5. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, including weighted levers carried by said gates and controlling the movement thereof.

6. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, including: levers carried by said gates and controlling move-

ment thereof and normally in elevated position, and trippable means for yieldingly holding said levers in elevated position, said trippable means comprehending pivoted members, each formed with a hook in which one of said levers is yieldingly held in elevated position.

7. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, including: levers carried by said gates and controlling movement thereof and normally in elevated position; trippable means for yieldingly holding said levers in elevated position, said trippable means comprehending pivoted members, each formed with a hook in which one of said levers is yieldingly held in elevated position and with an arm; and tripping-means engageable with said arms to trip said trippable members to release said levers to permit them to fall.

8. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, including: levers carried by said gates and controlling movement thereof and normally in elevated position; trippable means for yieldingly holding said levers in elevated position, said trippable means comprehending pivoted members, each formed with a hook in which one of said levers is yieldingly held in elevated position and with an arm; and tripping-means engageable with said arms to trip said trippable members to release said levers to permit them to fall: and means for simultaneously raising all of said levers into reengagement with said trippable means.

9. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally open gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage.

10. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including levers carried by said gates and controlling the movement thereof.

11. In a workmen's check-receiving time-recorder, a traveling carriage containing a

plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including levers carried by said gates and controlling movement thereof and normally in elevated position, and trippable means for yieldingly holding said levers elevated.

12. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: levers carried by said gates and controlling movement thereof and normally in elevated position, and trippable means for yieldingly holding said levers elevated, said trippable means comprehending pivoted members, each formed with a hook in which one of said levers is yieldingly held in elevated position.

13. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: levers carried by said gates and controlling movement thereof and normally in elevated position; trippable means for yieldingly holding said levers elevated, said trippable means comprehending pivoted members, each formed with a hook in which one of said levers is yieldingly held in elevated position and with an arm; and tripping means engageable with said arms to trip said trippable members to release said levers to permit them to fall.

14. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism, governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: levers carried by said gates and controlling movement thereof and normally in elevated position; trippable means for yieldingly holding said levers elevated, said trippable means comprehending pivoted members, each formed with a hook in which one of said levers is yieldingly held in elevated position and with an arm; and tripping means engageable with said arms to trip said trippable members to release said levers to permit them to fall:

and means for simultaneously raising all of said levers in a series into reengagement with said trippable means.

15. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including levers carried by said gates and controlling movement thereof and normally in elevated position, trippable means for yieldingly holding said levers elevated, traveling tripping-means engageable with said trippable means to trip the same, and means for automatically returning said tripping means to normal position after complete travel thereof.

16. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including levers carried by said gates and controlling movement thereof and normally in elevated position, trippable means for yieldingly holding said levers elevated, traveling tripping-means engageable with said trippable means to trip the same, and means, including a spring, for automatically returning said tripping means to normal position after complete travel thereof.

17. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including levers carried by said gates and controlling movement thereof and normally in elevated position, trippable means for yieldingly holding said levers elevated, a rotating worm-rod, tripping means traveling on said worm-rod by the rotation thereof and engageable with said trippable means to trip the same, and means for discontinuing rotation of said worm-rod for a predetermined period of time.

18. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including levers carried by said gates and controlling movement thereof and

normally in elevated position, trippable means for yieldingly holding said levers elevated, a rotating worm-rod, tripping-means traveling on said worm-rod by the rotation thereof and engageable with said trippable means to trip the same, and means for discontinuing rotation of said worm-rod for a predetermined period of time, and comprehending a wheel provided throughout a portion of its circumferential area with gear-teeth, the remainder of the circumferential area being smooth and toothless.

19. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: escapement-means carried by said carriage, and cooperating escapement mechanism engaging said escapement means and including a pivoted rock-shaft.

20. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open, pivoted gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: escapement-means carried by said carriage and including a notched bar; and cooperating escapement mechanism engaging said notched bar.

21. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: escapement-means carried by said carriage and including a notched bar; and cooperating escapement mechanism, including a rock-shaft engaging said bar.

22. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: escapement-means carried by said carriage and including a notched bar; cooperating escapement mechanism, including a rock-shaft engaging said bar; and means for intermittently rocking said rock-shaft.

23. In a workmen's check-receiving time-

recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: escapement-means carried by said carriage and including a notched bar; coöperating escapement mechanism, including a rock-shaft engaging said bar; and spring means for yieldingly holding said rock-shaft against movement.

24. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pockets, normally-open gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: escapement-means carried by said carriage and including a notched bar; coöperating escapement mechanism, including a rock-shaft engaging said bar; spring means for yieldingly holding said rock-shaft against movement; and means for intermittently rocking said rock-shaft.

25. In a workmen's check-receiving time-recorder, a traveling carriage containing a plurality of series of check-receiving pock-

ets, normally-open gates controlling access to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, and effecting intermittent, step-by-step movement of said carriage, including: escapement-means carried by said carriage and including a notched bar; and coöperating escapement-mechanism, including a rock-shaft engaging said bar; and spring-means operatively associated with said carriage for effecting travel thereof, upon actuation of said escapement-means and coöperating escapement mechanism.

26. In a workmen's check-receiving time-recorder, a series of check-receiving pockets, normally-open gates to said pockets, and time-controlled mechanism governing the automatic closing of said gates, successively, including levers carried by said gates and releasably held in an inclined position, and means, operatively associated with said levers, for pulling said levers downward upon release thereof.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HARRY BATES.

Witnesses:

CHAS. E. SMITH,
A. M. SMITH.