(No Model.)

4 Sheets—Sheet 1.

A. L. JAYNES.

TIME RECORDER.

No. 428,103. Patented May 20, 1890.

FIG. 1.

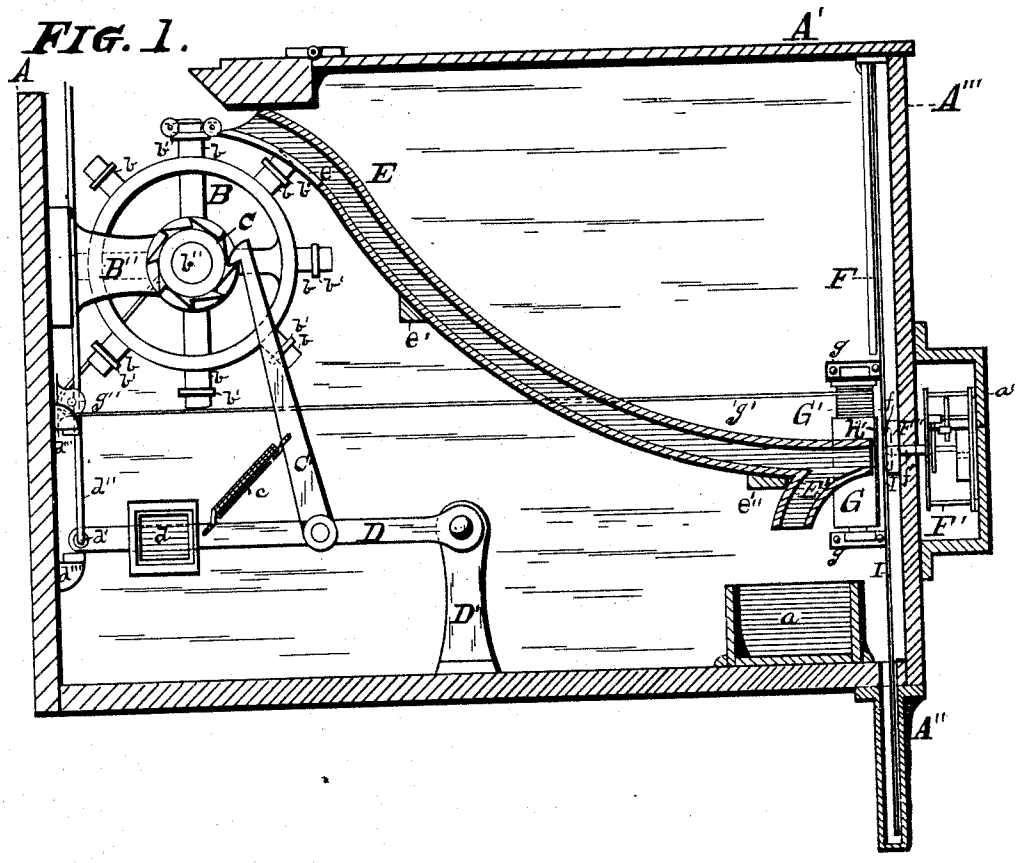


FIG. 2.

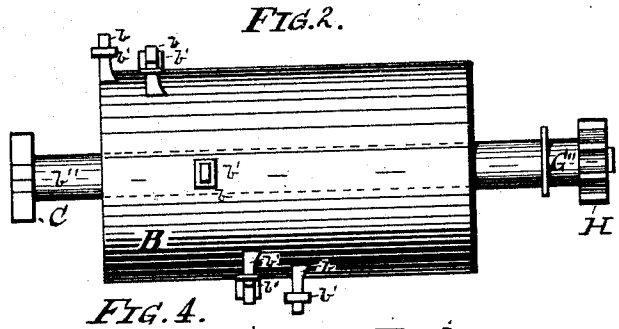


FIG. 3.

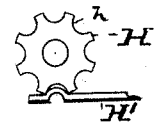
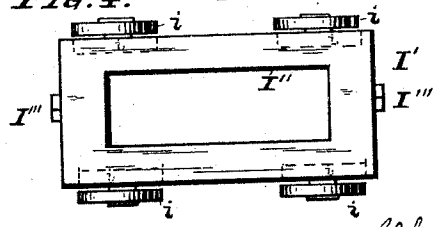


FIG. 4.



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(No Model.) 4 Sheets—Sheet 2.

A. L. JAYNES.

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FIG. 5.

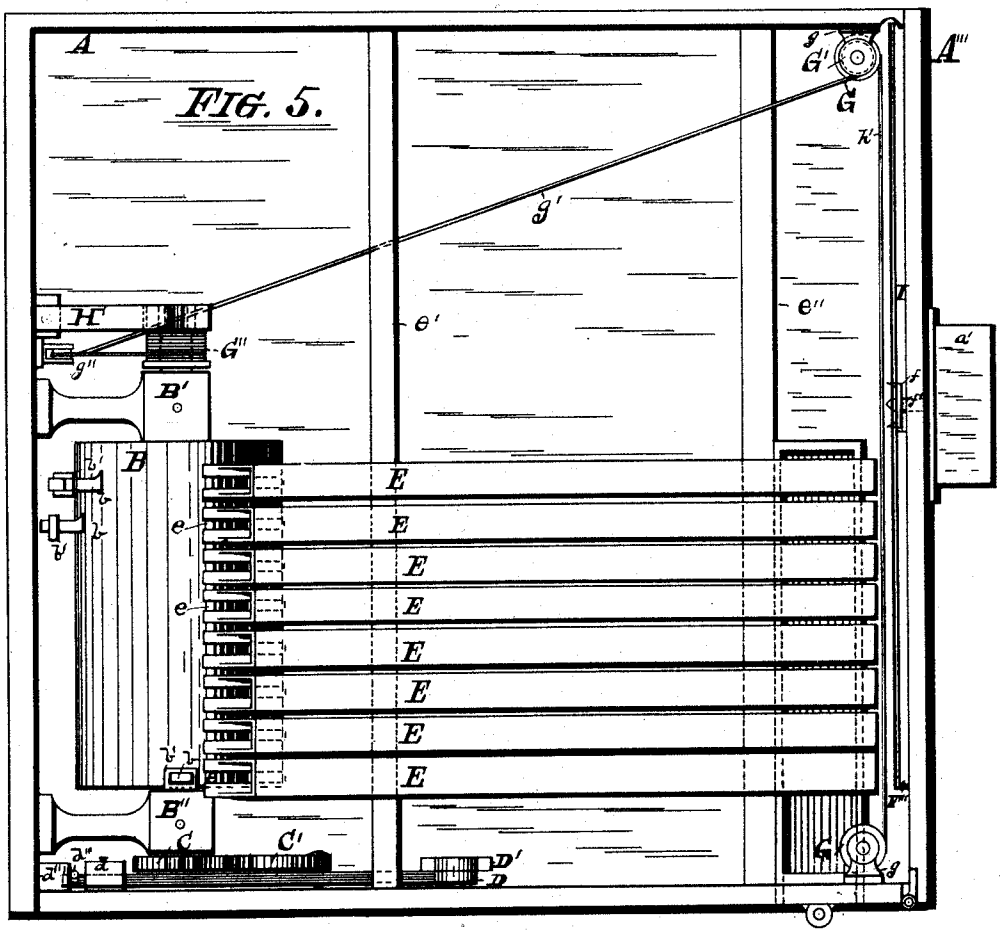
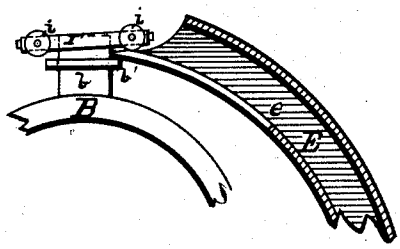


FIG 6.



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4 Sheets—Sheet 3.

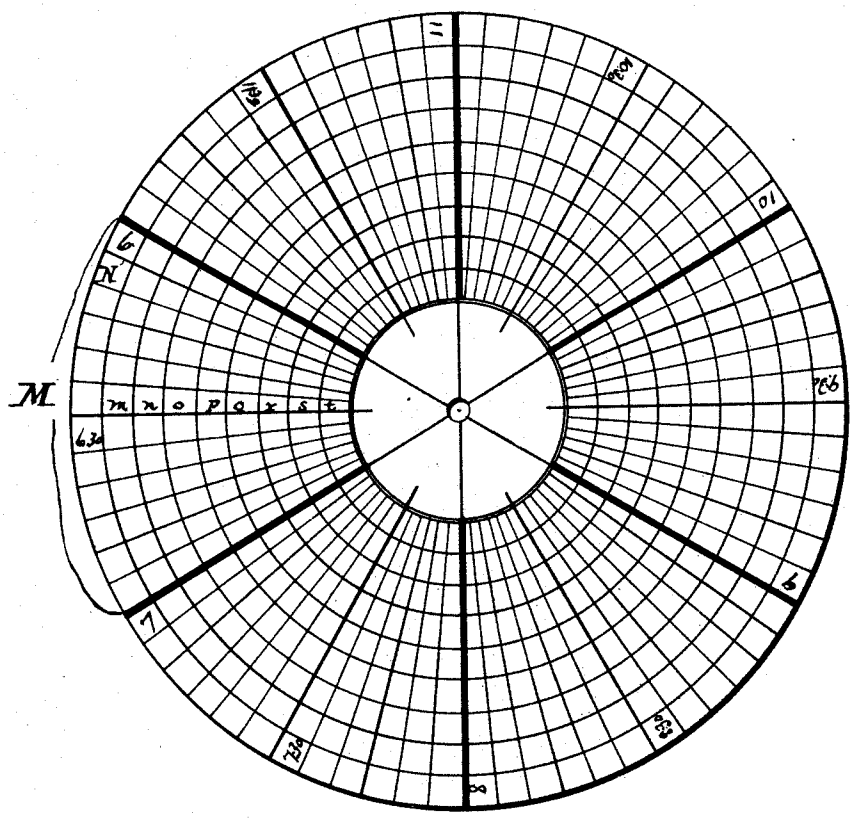
A. L. JAYNES.

TIME RECORDER.

No. 428,103.

Patented May 20, 1890.

FIG. 7.



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(No Model.) 4 Sheets—Sheet 4.

A. L. JAYNES.

TIME RECORDER.

No. 428,103. Patented May 20, 1890.

FIG. 8.

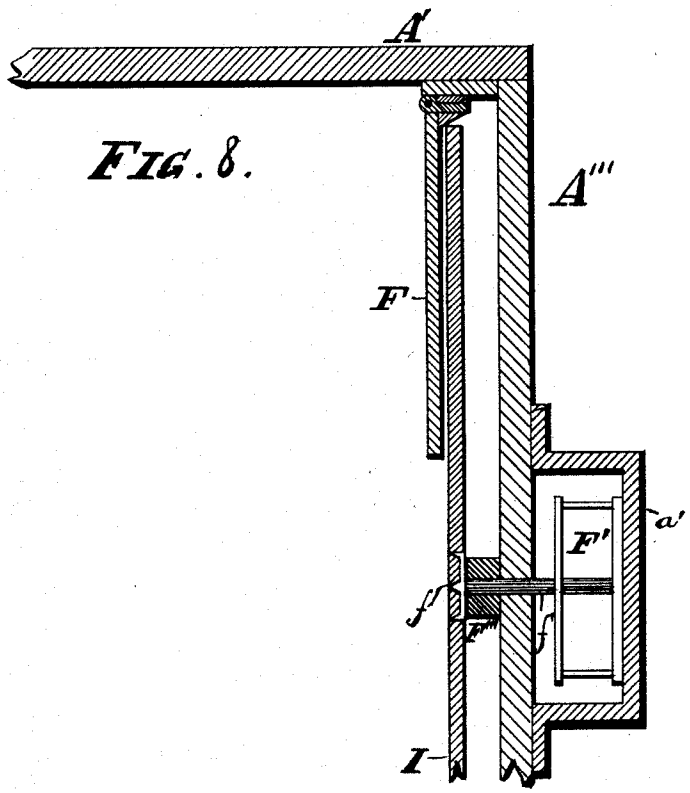
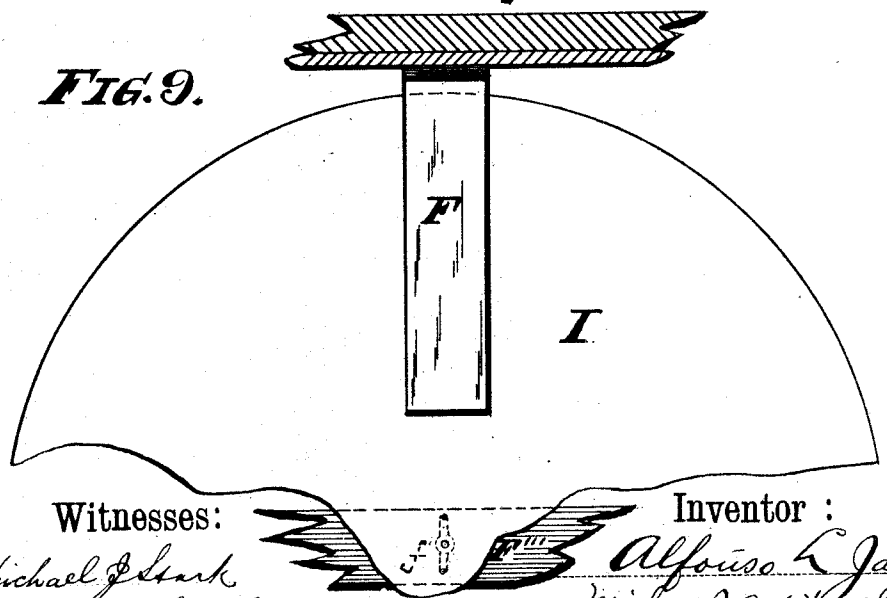


FIG. 9.



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UNITED STATES PATENT OFFICE.

ALFONSO L. JAYNES, OF BUFFALO, NEW YORK.

TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 428,103, dated May 20, 1890.

Application filed November 25, 1889. Serial No. 331,492. (No model.)

To all whom it may concern:

Be it known that I, ALFONSO L. JAYNES, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Time and Check Registers; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheets of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to automatic time and check recorders; and it consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings heretofore mentioned, Figure 1 is a side view of my device, portions being shown in section to illustrate the mechanism. Fig. 2 is a plan of a check-receiving cylinder used in connection with my device. Fig. 3 is a side view of a friction-roll and spring. Fig. 4 is a plan of a check. Fig. 5 is a plan of my device with the top and cover removed. Fig. 6 is a detail view of the check-entering channels on my device. Fig. 7 is a face view of the dial. Fig. 8 is a fragmental section of my device, illustrating the dial and the means for retaining and supporting the same. Fig. 9 is a face view of the dial and mechanism.

Like parts are designated by corresponding letters of reference in all the figures.

The object of this invention is the production of an automatic time and check recorder for manufactories and the like, which will receive the check of the workman when he enters the shop, and at the same time record on a dial or an equivalent thereof the time at which the said workman has entered the works, so that, should a controversy ensue regarding the time of entering, the dial, &c., will unmistakably indicate the correct time. To attain this result, I construct my device substantially as illustrated in the drawings, in which—

A is the case in which my device is contained; A′, the cover thereof, and A‴ a door at the rear, suitably hinged to remove a dial, to be mentioned.

A″ is a trough located in the bottom of the case to receive the lower portion of the dial I.

Within the case A, near the upper end thereof and opposite the door A‴, I locate a cylinder B, fastened to a shaft b'' and journaled in bearings B′ B″, secured to the side of the casing A. Upon the periphery of said cylinder are located eight (although more or less may be used) outwardly-projecting pins b, having shoulders b'. These pins are arranged spirally and at equidistance apart on the periphery of said cylinder. On one end of the shaft b'' is placed a ratchet-wheel C, having as many teeth as there are pins b on the cylinder, and being so placed on the shaft that the points of the teeth of said wheel will be opposite the pins on the cylinder, as shown in Fig. 1. Engaging with the said ratchet-wheel C is a pawl or dog C′, pivoted at its lower end to a horizontal lever D, which is similarly pivoted at one extremity to an upright standard D′ and resting with the other end on a stop d''', a similar stop d''' being located some distance above the lower one to prevent the lever D from being lifted too high. Upon the center of the lever D is placed a weight d to return the lever D and pawl C′ to their normal position, as hereinafter to be mentioned. From the end of the said lever D leads a string or wire d'', upward wherewith the said lever D may be raised and the hook of the pawl caused to engage the next succeeding tooth on the ratchet-wheel C. When this string is released the said weight brings the lever and pawl back to their former position after having turned the cylinder B sufficiently to bring the next succeeding pin b into a vertical position. With both ends fastened to the lever D and pawl C′ is a spring c, to assist the pawl C′ in engaging the teeth of the ratchet-wheel in an obvious manner. From the upper end, and opposite the pins b when in an upright position, lead downwardly-curved ducts E, having longitudinal slots e at the upper end, so that when the cylinder is revolved the upper end of the pins e may pass through the slots in their respective ducts, and that a carriage or check I′, when placed upon the end of said pin and the cylinder B revolved, will be passed into said duct, as illustrated in Figs. 5 and 6. The lower extremities of the ducts E extend to and in front of a

circular or similar paper or card-board dial I, having annular spaces *m*, *n*, *o*, *p*, *q*, *r*, *s*, and *t*, corresponding to the number of the ducts E above mentioned, and divisions M, having subdivisions N, each representing hours and fractions thereof, as illustrated in Fig. 7. This dial I is placed upon a spindle *f'* by means of prongs or pins *f*, (although other means may be employed,) said spindle being connected to any suitable clock mechanism F', to cause one revolution of said dial within the time for which the said dial is graduated, in a manner hereinafter to be referred to.

In front of the dial I is located a hinged strip F, to prevent the dial from deflecting, and at the back of the same is placed a radial horizontal strip F''', to form a "blanket," so called, for the dial when receiving an impression. When the dial is on its spindle its annular spaces are opposite their respective ducts E, so that a check entering the said ducts will print its number or other symbol into its respective space. Near the lower end of said ducts are placed downwardly-curved branches or openings E', through which the check, after it has struck the ink-ribbon in front of the dial, will drop into a receptacle *a* provided for it.

Between the dial and the ducts is placed an ink-ribbon *h'*, wound upon reels G, which are journaled in bearings *g*, Figs. 1 and 5. One of these reels G is provided with a drum G', upon which is wound a string *g'*, connecting with a further drum G'' on the shaft *b''* of the cylinder B. A sheave *g''* is arranged in the case A to lead the string to the drum. Upon said drum G'' is placed a stop-wheel H, having semicircular notches *h*, corresponding in number with that of the pins *b* on the cylinder B, a spring H' engaging said notches to prevent the cylinder from making more than one-eighth of a revolution at a time.

I' is the check having a longitudinal slot I'', corresponding in width to the width of the pins *b*, and being provided with wheels *i*, which are either let into the edges of the body of the check, as illustrated in dotted lines in Fig. 4, or project therefrom, if desired. Upon each end of this check are located, preferably, raised letters, characters, or numbers, denoting either the name, initials, or the number by which the workman is known in the works, and being arranged to print with either end upon the dial the number or character thereon when striking the ink-ribbon.

The operation of this device is as follows: The workman entering the shop takes from the usual check-board (not shown) his check and places it on the uppermost pin *b* and pulls the string *d''* until the lever D reaches the upper stop *d'''*, when the pawl C' engages the next succeeding tooth of the wheel C. The workman now releases the string, when the weight *d* will bring the lever and pawl to their former position and revolve the wheel for one-eighth of a revolution. This movement of the cylinder B forces the check I' over the mouth or opening of the duct-well into the interior thereof, after which it will gravitate downward and strike the ink-ribbon and imprint its number upon the dial I, and then drop through the branch E'' into the receptacle *a*, thereby recording the entrance of the workman into the shop and the exact time of entrance. This operation is repeated with every workman until eight have deposited their checks into the respective ducts, when the first pin will be up again. In the meantime the dial has moved a sufficient distance to cause the imprint of the ninth workman below or above that of the first, (depending upon the direction of revolution of the dial,) thereby enabling the apparatus being used for a large number of records within a short space of time. After all the workmen present have deposited their checks, or at any time thereafter, the dial is removed from the spindle by opening the door A''' and by replacing it with a new one. The imprints on the dial may now be entered into the time-keeper's time or pay book, and the dial filed away for future reference.

It will now be readily observed that this apparatus serves the twofold purpose of receiving the workmen's checks, and at the same time recording the exact time at which he entered the works.

The reason for providing the apparatus with a series of channels or ducts for the checks, to be used successively, instead of using a single one only and dropping all the checks into the same, is that in the case of a single duct the period of time elapsing between the depositions of the several checks will not be enough to allow the dial to revolve sufficiently so as to take the first impression out of the range of the next succeeding one, the consequence being that the imprints would cover one another, and thus blur the whole, while when a series of channels is used successively sufficient length of time will be given the dial to move the first series of impressions out of the way of the succeeding one.

For large factories employing many hundreds of hands I shall construct an apparatus with a longer cylinder and provide the same with a greater number of pins and a corresponding increase of the number of ducts and annular spaces on the dials without departing otherwise from the nature of my invention.

In the device heretofore described I use two dials per diem—one from six o'clock a. m. to twelve o'clock m. and the other from twelve o'clock m. to six o'clock p. m. Other forms of divisions may, however, be employed—as, for instance, from seven a. m. to twelve m. and from 12.30 p. m. to 6 p. m., making one revolution in twelve hours and arranging the clock mechanism accordingly—without departing from my invention.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

1. An automatic check and time recorder consisting, in combination with a check having type-characters, as described, of a case, a series of channels, a dial opposite the ends of said channels, mechanism for revolving said dial, and a discharge for said checks, whereby when said checks are deposited in said channels they will gravitate toward said dial and imprint thereon the character on said check, as described.

2. In automatic check and time recorders, the combination, with a check having symbols in type on both ends and mounted upon wheels, as described, of a case or frame, a series of channels having openings near their lower ends, supports for said channels, a dial with annular divisions opposite the said lower ends, a clock mechanism to revolve the said dial in a predetermined space of time, an ink-ribbon between said dial and the end of said ducts and provided with mechanism for moving it, and a receptacle for the checks below said channels, as set forth.

3. In automatic check and time recorders, the combination, with a check having type-symbols, as described, of a case or frame, a series of channels having openings on their lower ends, a dial, clock mechanism for revolving said dial, a moving ink-ribbon between said dial and the ends of said ducts, and a receptacle for said checks below said ducts, as and for the purpose set forth.

4. In automatic check and time recorders, the combination, with a check having type-symbols on both ends, of a frame or case, a series of channels having downwardly-curved openings on their lower ends, supports for said channels, mechanism for entering said checks into said ducts, a dial having annular spaces and radial divisions representing definite periods of time, a clock mechanism for revolving said dial, an ink-ribbon interposed between said dial and the end of the channels, mechanism for winding and unwinding said ribbon, and a receptacle for receiving the checks after having impressed the dial with their type-symbols, as set forth.

5. In automatic check and time recorders, the combination, with the checks having type-symbols, as described, and provided with central openings, of a frame or case, a series of channels, a cylinder having projections to receive said checks, a dial having revolving mechanism, and a receptacle for said checks after they have imprinted said dial, as set forth.

6. In automatic check and time recorders, the combination, with the checks having type-characters, as described, of a case or frame, a series of channels having openings on their lower extremities and slots on their upper ends, a cylinder having radial projections arranged spirally upon its periphery, means, substantially as described, for revolving said cylinder intermittently, a dial revolving in a predetermined period of time, and a receptacle for said checks, whereby said checks when passing to the receptacle will imprint their symbols upon said dial, as set forth.

7. The combination, with the case or frame, of a cylinder journaled in suitable bearings and provided with a series of radial projections arranged spirally around the circumference thereof, mechanism for revolving said cylinder, checks having apertures fitting said radial projections, and ducts for receiving said checks and conveying them to a receptacle, as set forth.

8. In time-recorders, a check having type-characters, as described, and mounted upon wheels, said check having a longitudinal aperture, whereby it may be projected into ducts, as and for the purpose set forth.

9. The combination, with the ink-ribbon h', of the reels G, drums G′ G″, bearings g, string g', and the sheave g'', and means for revolving said drum G″, as described.

10. The combination, with the channels having openings at their lower ends, of the ink-ribbon h', mechanism for winding and unwinding it, the dial, clock mechanism for revolving said dial, plate F‴, and hinged bar F, as described.

11. The combination, with the channels having openings E′, of the ink-ribbon h', moved by mechanism substantially as described, the dial I, removably fastened to the spindle f', the clock mechanism F′, the trough a'', the plate F‴, and the hinged plate F, as set forth.

12. In a time-recorder, a check having type characters and wheels, as described, in combination with inclined type-channels having outlets near their lower ends, a recording-surface opposite the lower end of said channels, and an ink-ribbon interposed between said channels and recording-surface, whereby checks deposited in the type-channels will gravitate toward and impress their type-symbols upon said recording-surface, and then drop through said outlet.

13. In a check and time recorder, the combination, with a dial having annular spaces and radial divisions, representing predetermined spaces of time, of type-channels arranged opposite the face of said dial, and checks provided with type-characters at both ends adapted to fit in said channels and to impress their type-symbols on said dial.

14. The combination, with the check having type-symbols, as described, of a series of channels to receive said check, a recording-surface opposite the end of said channels, an ink-ribbon interposed between said channels and recording-surface, means for discharging checks into successive channels, whereby but one check can be deposited into each channel until all such channels have each received a check, and an outlet for said checks near the end of said channels, as set forth.

15. The combination, with the checks having type symbols and wheels, as described, of

a cylinder provided with radial projections b, arranged spirally upon its periphery, shoulders b' upon said projections, means for intermittently revolving said cylinder, and a series of channels having slotted apertures arranged opposite said cylinder, whereby checks placed upon said projections will be discharged into said channels, as set forth.

16. The combination, with the dial, of the clock mechanism F', the shaft f', and prong f, the vertical plate F, hinged at its upper end in front of said dial, and the horizontal plate F''' behind the same, as set forth.

17. The combination, with the type-channels and checks having type-characters, of the cylinder mounted on a shaft, journaled in suitable bearings, and provided with radial projections arranged spirally around its periphery, a notched wheel at one end and a ratchet-wheel at the other of said shaft, a lever having a pawl engaging said ratchet-wheel, and stops for limiting the movement of said lever, whereby said cylinder is revolved intermittently, substantially as set forth.

18. The combination, with the type-channels and the checks having type-characters, as described, of the cylinder having the spirally-arranged radial projections b, the shoulders b' on said projections, the shaft b'', provided with a notched wheel and stop at one end and a ratchet-wheel at the other, the lever D, having the weight d, the pawl C', the string d'', and the spring c, as set forth.

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

ALFONSO L. JAYNES.

Attest:

WM. O. STARK,

B. B. HUNTER.