

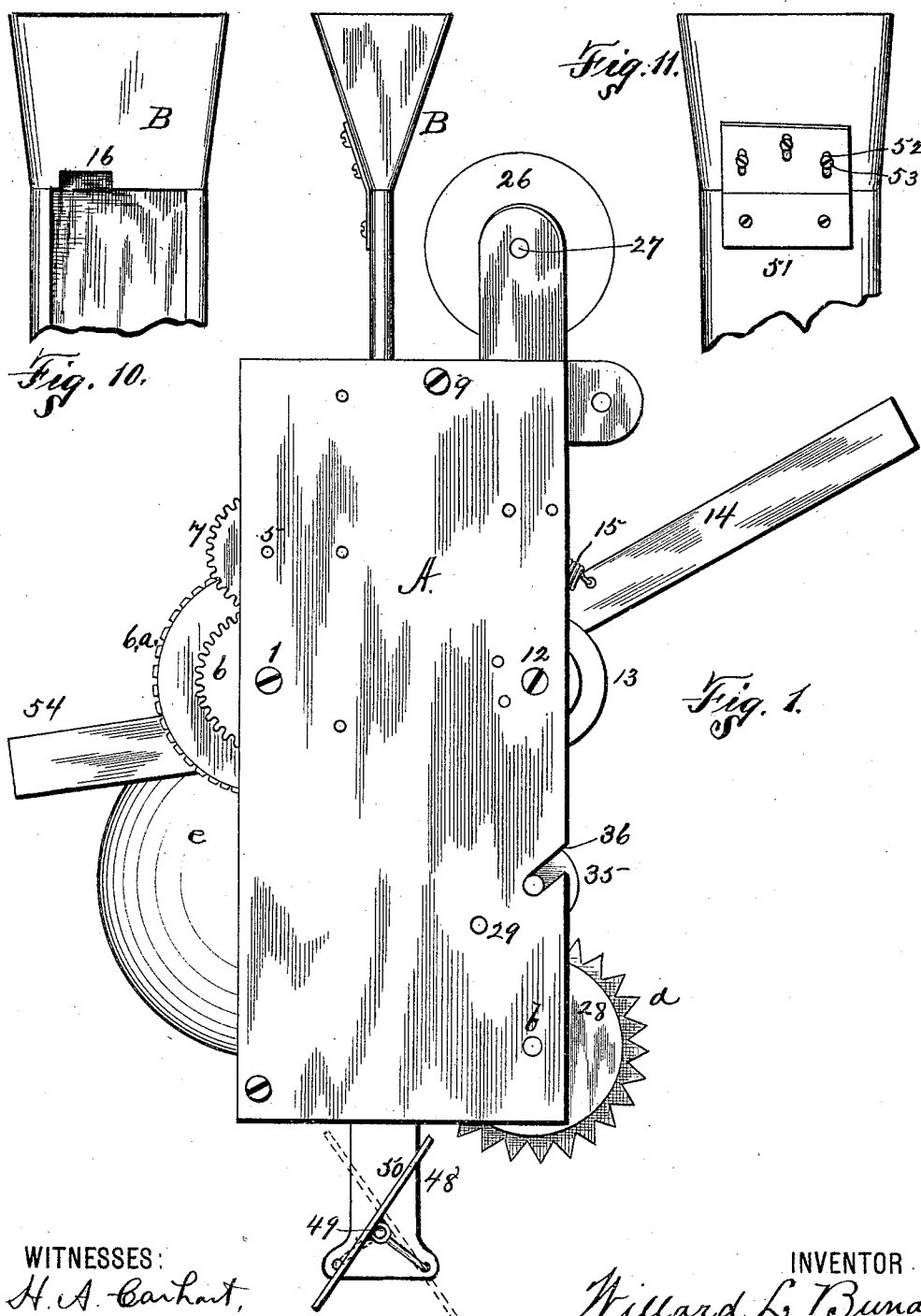
(No Model.)

3 Sheets—Sheet 1.

W. L. BUNDY.
WORKMAN'S TIME RECORDER.

No. 486,028.

Patented Nov. 8, 1892.



WITNESSES:
H. A. Carhart,
G. B. Kenner.

INVENTOR.
Willard L. Bundy
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Smith & Denison
ATTORNEYS

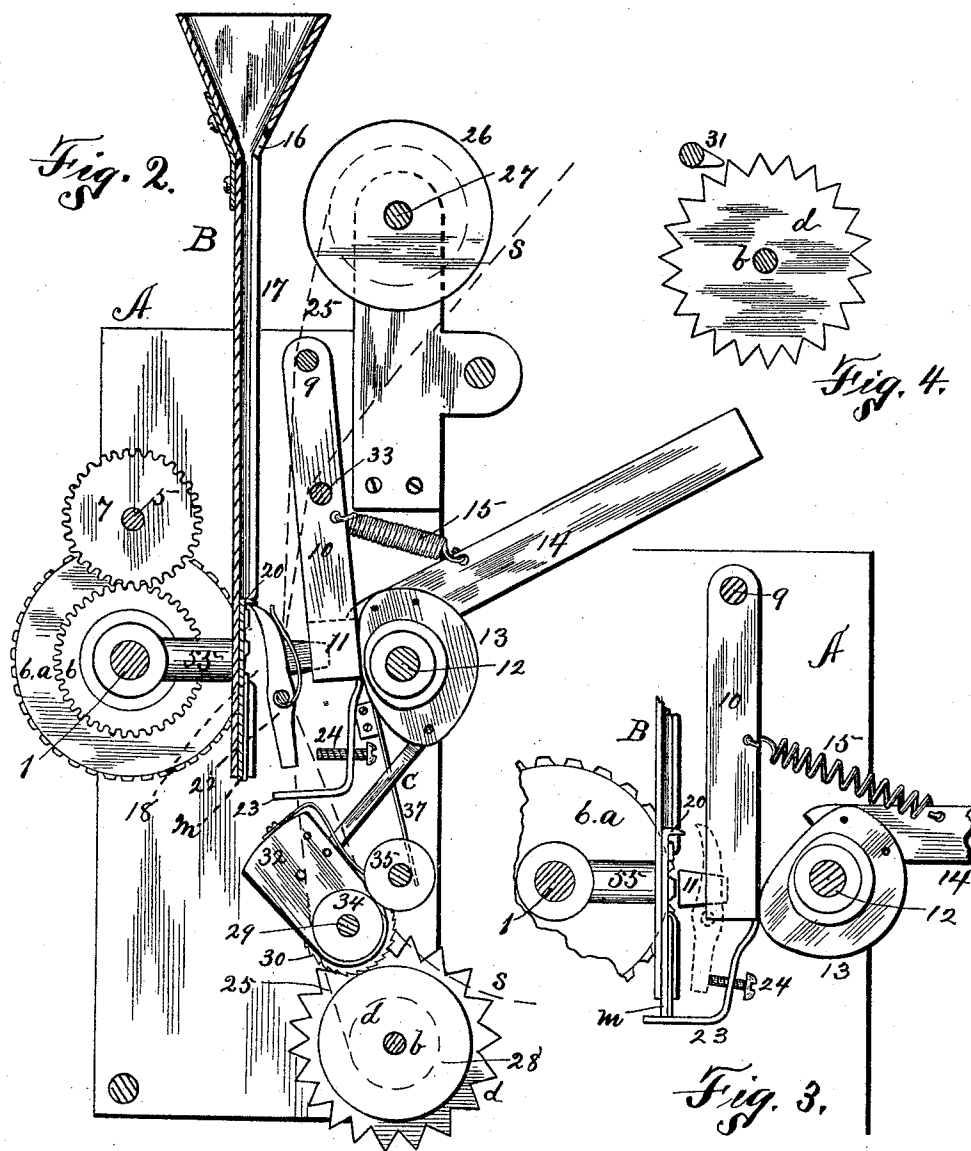
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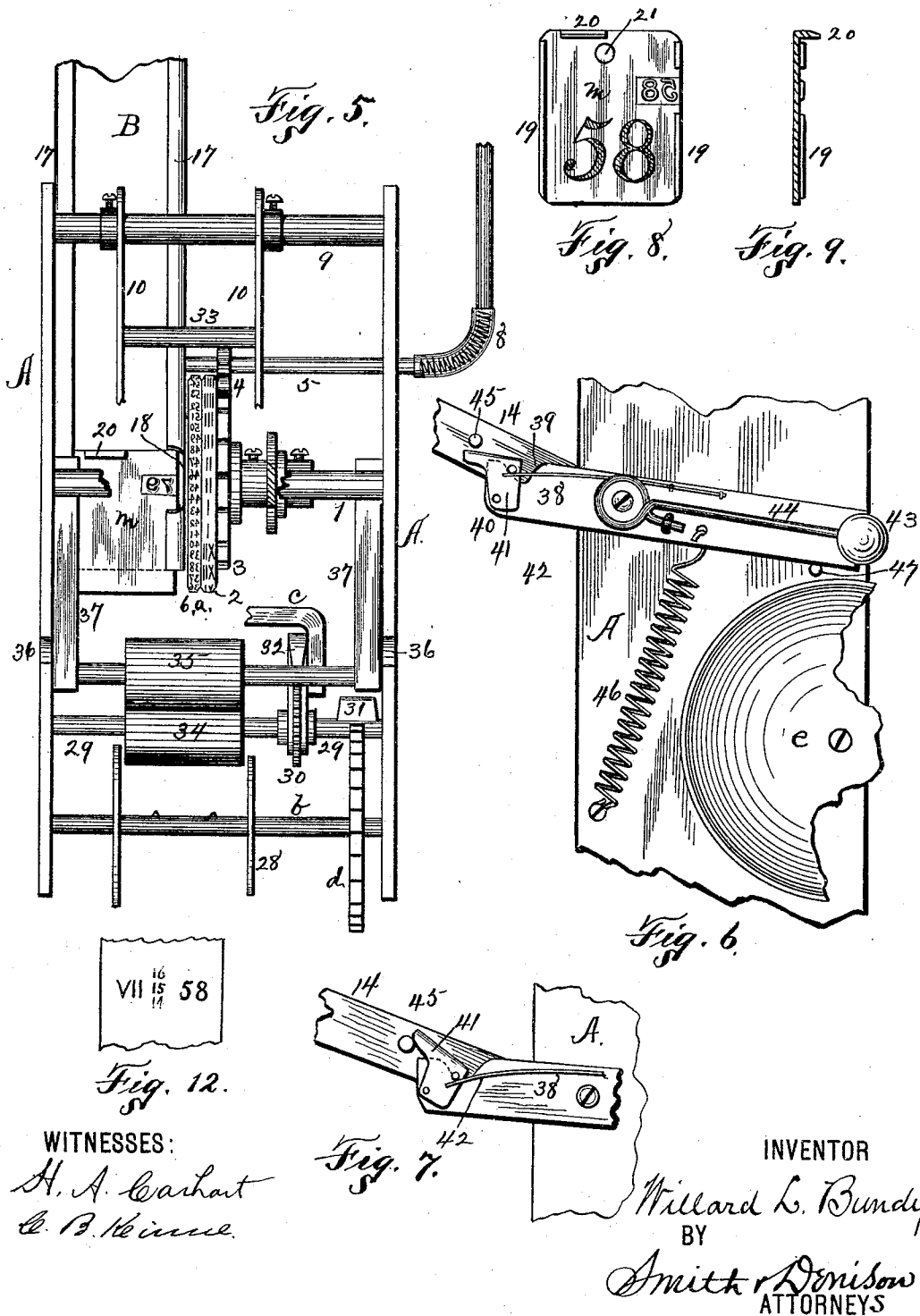
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UNITED STATES PATENT OFFICE.

WILLARD L. BUNDY, OF BINGHAMTON, NEW YORK, ASSIGNOR TO THE
BUNDY MANUFACTURING COMPANY.

WORKMAN'S TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 486,028, dated November 8, 1892.

Application filed September 10, 1891. Serial No. 405,270. (No model.)

To all whom it may concern:

Be it known that I, WILLARD L. BUNDY, of Binghamton, in the county of Broome, in the State of New York, have invented new and useful Improvements in Time-Recorders, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to machines known as "workmen's time-recorders," by which each workman personally records upon a strip of paper the time when he enters or leaves a factory, or both, by means of hour and minute wheels connected to and actuated by and synchronous with a clock-movement.

My object is to produce a time-keeper in which the time-recording wheels are synchronous with the clock-movement at the printing-line, in which sheet-metal checks are used, embossed or provided with the numbers in relief, by which the workmen are respectively known, which checks are deposited in a chute, in which they are retained when the number is at the printing-line while the impression mechanism is being operated and the impression made, the imprint being made upon a paper strip through the medium of an inked ribbon, and when made indicating the number of the workman and the hour and minute when the recording imprint was made by him, and in which the impression is made by a swinging platen actuated by a cam, which in turn is actuated by a hand-lever connected to it, which lever is operated by the workman after he has dropped his check into the chute, and after each impression the check is released and dropped from the lower end of the chute into a receptacle, and which can be operated much quicker and faster than a key-operated mechanism, in which the workman must insert the key, turn it, turn it back, and then withdraw it.

My invention consists in the several novel features of construction hereinafter described, and which are specifically set forth in the claims hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the recording mechanism. Fig. 2 is a vertical longi-

tudinal section showing the check held in the chute ready for the impression to be made. Fig. 3 is a sectional detail of the check in the printing position and the impression block or anvil thrown in against the type. Fig. 4 is a detail of the star-wheel and the ribbon-spool shaft and the dog on said shaft, which intermittently engages with the star-wheel to rotate the spool. Fig. 5 is a side elevation, omitting part of the impression mechanism and showing the check in position, with its number upon the printing-line. Fig. 6 is a rear elevation of part of the rear of the apparatus, detailing the alarm mechanism ready to be operated by the hand-lever. Fig. 7 is a detached detail of the alarm-trip and showing it in the tilting position it assumes while the hand-lever is being returned to its normal position after an alarm has been given or impression has been made. Fig. 8 is a plan view of the working face of the check. Fig. 9 is a vertical longitudinal section of the check. Figs. 10, 11, and 12 are details of parts.

A is the main frame, comprising a front and back plate, legs by which it is supported, and stay-rods holding the plates in proper relation to each other.

Upon a shaft 1, secured in the frame-plates, I loosely mount the hour-wheel 2, provided with twelve figures on its periphery and having a twelve-toothed gear 3 on one side, which meshes with a single-toothed pinion 4, secured upon a shaft 5, journaled in the plates. Upon the shaft 1 I also mount a sixty-toothed loose gear 6, which is secured to the side of minute-wheel 6^a, provided with figures from "1" to "60" upon its periphery, and a sixty-toothed gear 7, secured upon the shaft 5, meshes with the gear 6. The flexible shaft 8, secured to the shaft 5 and connected to a clock-movement, (not shown,) rotates this shaft, and the hour and minute wheels are synchronous with the clock.

Upon bar 9, across the top of the frame, I hang the swing-frame 10, in the lower end of which I mount the impression-platen 11, the face of which is opposite the printing-line of the apparatus. Upon a bar 12, across the frame, I loosely mount the cam 13 in frictional contact with the platen 11, and 14 is a

hand-lever secured to the cam. A spring or springs 15 connect the hand-lever to the frame 10.

B is the check-chute, mounted in the frame, 5 provided with a notch 16 in the bottom of one side of the funnel-top and having side inwardly-projecting flanges 17 below the funnel, and one of said flanges is cut away, as at 18, Fig. 5.

10 The check *m* consists of a piece of sheet metal having side stiffening-ribs 19, one being cut away, as shown, Fig. 8, figures secured in relief or embossed upon its face, which represent the number of the workman, and having 15 an outwardly-projecting lug 20 on its upper edge and a hole 21, by which the check is suspended from a peg or nail upon a check-board. This lug operates as a check-guide, so that the numbered face is always inserted 20 in proper position into the chute-funnel, when this lug will pass through the notch 16; but when otherwise inserted the check will not drop out of the funnel. As the check falls through the chute, held therein by the side 25 flanges 17, it is caught by the point of the spring-dog 22, engaging with the flange 20, and suspended thereby in the chute, with the figures thereon, substantially on or a little above the printing-line.

30 Upon the platen-frame I secure a sheet-metal angular arm 23, in which a trip 24, adjustable or rigid, is mounted, with its projecting end in such position that when the platen-frame is swung by the cam it will engage 35 with the pawl and throw its point out of engagement with the check. At the same time this is being done the end of the arm 23 will swing over to and under the lower end of the chute, and the check will then rest upon or 40 drop onto this arm, and while so resting thereon the number of the check will be directly in the printing-line and the platen will bear or press the paper strip (dotted line S) and the ribbon (dotted line 25) against the figures 45 upon the time-wheels and check and make an impression of all of them across the paper strip, thus recording thereon the hour and minute and the number of the workman, as indicated by the number of the check. Then 50 when the lever is released it will be drawn up back to its normal position and the platen-frame will be swung back to its normal position by the spring or springs connecting them.

My paper-feed mechanism is constructed 55 and operated as follows, (see Figs. 2 and 5:) The upper or supply spool 26 is secured upon the shaft 27 upon the top of the frame, and thence the ribbon passes down, guided by the bar 9, which carries the platen-frame, past the 60 printing-point down to the lower spool 28, which is loose upon the shaft *b*, which carries the star-wheel *d*. Upon the shaft 29 the feed-gear 30 is secured, and 31 is the feed-dog secured to and projecting from said shaft and 65 adapted to engage with said star-wheel intermittently—that is to say, once with each full revolution of said shaft. A connecting-rod *c*

is pivotally connected at one end to the cam 13 and at the other in like manner to the pawl and pawl-carrier 32, which is loosely 70 mounted upon and carried by the shaft 29, so that whenever the hand-lever is depressed the rotation of the cam pushes the pawl down a fixed distance upon the gear 30, and then 75 when the cam rotates back it pulls upon the pawl-carrier, and this rotates the shaft 29 and eventually brings the dog 31 into engagement with one tooth of the star-wheel, turns it the distance of one tooth, and this rotates the 80 spool in like degree and winds onto this spool the proportionate amount of the ribbon off from the upper spool.

My paper-feed is as follows, (see Figs. 2 and 5:) A continuous strip of paper leads from 85 an upper reel (not shown) down over the cross-bar 33 in the swing-frame, past the printing-point, behind the ribbon, and between the feed-rollers 34 and 35, and thence to any place desired. The feed-roller 34 is secured upon 90 the shaft 29 and is rotated by the pawl-and-gear device upon the same shaft, which is actuated, as aforesaid, as a part of the paper-feed. The roller 35 is secured upon a shaft 95 journaled removable in the notches 36 in the edge of the frame-plates and held in yieldingly frictional contact with the roller 34 or the paper upon the latter roller by springs 37, bearing upon the shaft.

My alarm mechanism is as follows, (see 100 Figs. 6 and 7:) A hammer-carrier 38 is pivoted upon the rear of frame-plate, the outer end of which is notched, substantially as shown at 39, creating a head 40, and upon this head 105 the tilting pawl 41 is pivoted, 42 being the spring operating to hold this pawl in its normal position, Fig. 6, and 43 being the hammer mounted upon the coiled spring 44, and *e* is the bell mounted upon the back plate. A bar 45, secured to the hand-lever, engages with 110 pawl 40, and when this lever is depressed the outer end of the carrier 38 is depressed and the hammer raised away from the bell and a 115 tension created upon the spring 46, and when the bar eventually slips off over the end of the pawl this spring throws the inner end of the carrier down onto the stop 47 and the concussion springs the hammer against the bell, thus sounding a single blow every time the 120 lever is depressed. Then when the lever returns to its normal position the bar 45 engages with the under side of the point of the pawl and tilts the pawl backward until the bar passes from under it, when the spring 42 125 throws the pawl back into its normal position.

At the bottom of Fig. 1 I show an arm 48, 130 from which projects a stud 49, upon which a metallic plate 50 is pivoted, which when tilted one way deflects the checks to one receptacle and when tilted the other way deflects them 135 to another.

In Fig. 11 I show the funnel adjustable vertically upon the chute by means of the plate 51, provided with slots 52, through which the 140 screws 53 pass, which secure the funnel to the

plate, so that by this vertical adjustment I can vary the width of the opening created by the notch 16 to enable it to pass checks provided with top flanges of varying widths.

5 In Fig. 2 I show a brace 55 behind the chute to support it against the pressure of the cam 13 while an impression is being made.

In Fig. 12 I show a section of the paper strip as imprinted, showing that at seven o'clock
10 and fifteen minutes workman No. 58 registered himself.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a type-bearing
15 check provided with a lug on one face, of a check-chute adapted to receive said lug in one of its walls and conduct the check to the printing position with proper presentation of the type.

20 2. The combination, with the check-chute open on one side and the check inserted therein, of the pivotal pawl engaging with said check and stopping it in the chute, and the impression-cam provided with an arm adapted
25 to engage with the pawl and release the check when said cam is rotated.

3. The combination, with the check-chute grooved longitudinally and open on one side

and the check inserted therein, having a flange upon its back entering said groove, of the
30 pivoted pawl engaging with said flange through said opening in the chute and stopping the check in its transit through said chute.

4. The combination, with the check-chute and the check inserted therein, of the pawl
35 stopping it in the chute and the arm catching and temporarily detaining the check when released from the pawl.

5. The combination, with the check and check-chute and the pawl catching the check
40 in the chute, of the hour and minute wheels, the swinging platen, and the impression-cam.

6. The combination, with the check and check-chute and the pawl catching the check
45 in the chute, of the time-wheels, the swinging platen, the impression-cam, and the arms upon the cam catching the check released from the pawl by the engagement of the arm with the pawl.

In witness whereof I have hereunto set my
50 hand this 8th day of September, 1891.

WILLARD L. BUNDY.

In presence of—

HOWARD P. DENISON,
C. W. SMITH.