

No. 617,557.

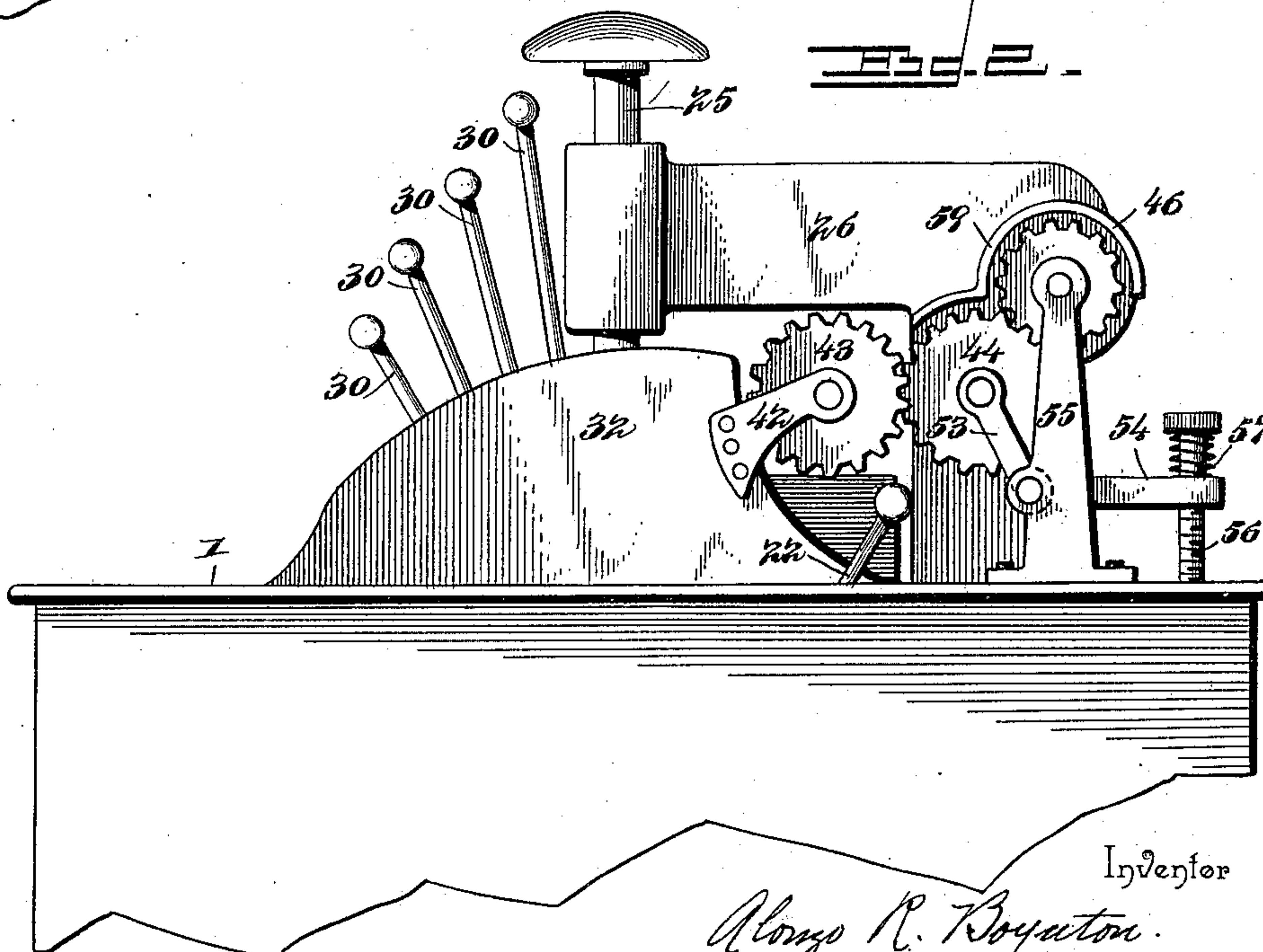
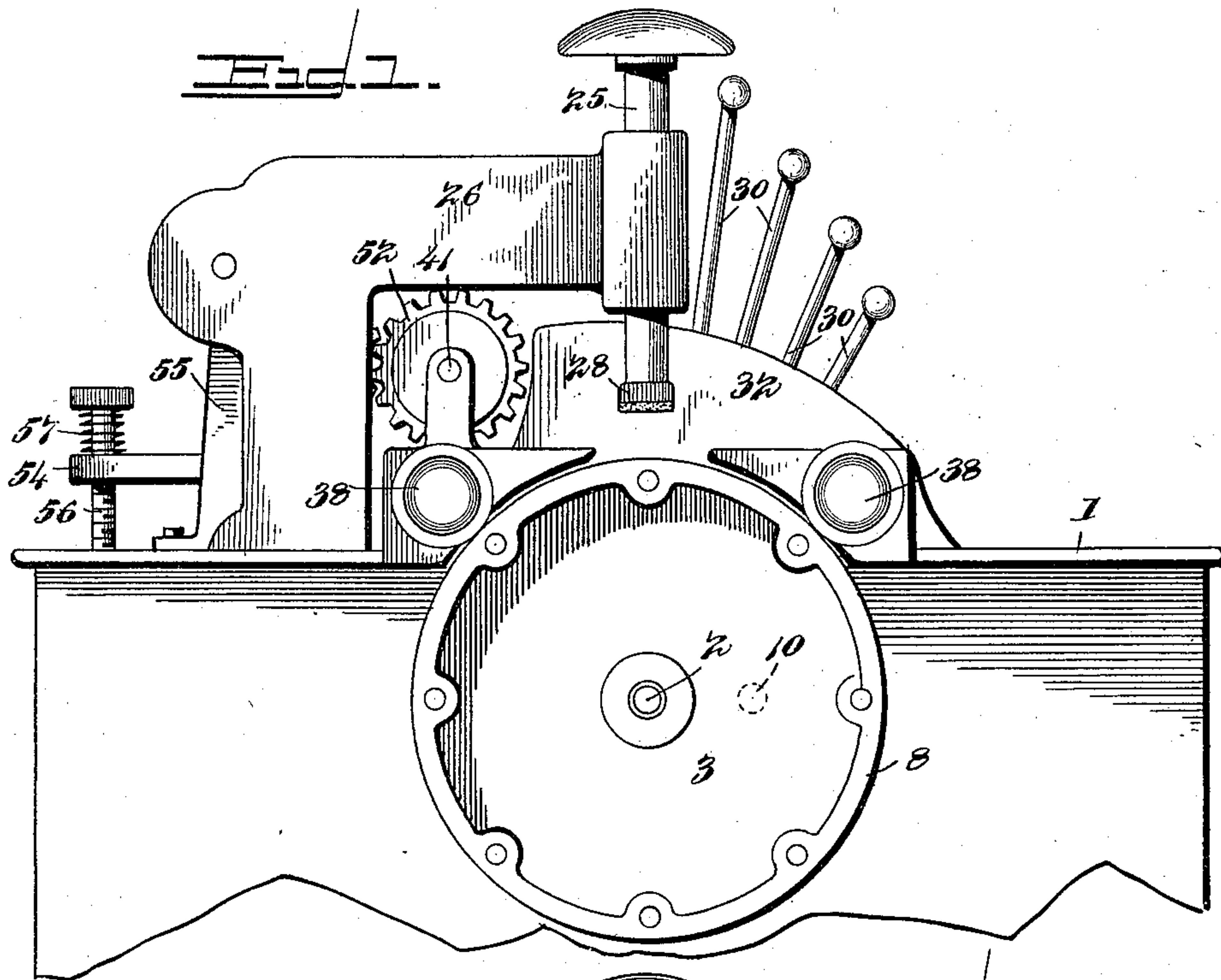
Patented Jan. 10, 1899.

A. R. BOYNTON.
SALARY RECORDER.

(Application filed Aug. 18, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
Nicholas W. Goodell
Geoff. W. Hillyer

By *his* Attorneys,

Inventor
Alonzo R. Boynton.
Walter H. Kuyon.

No. 617,557.

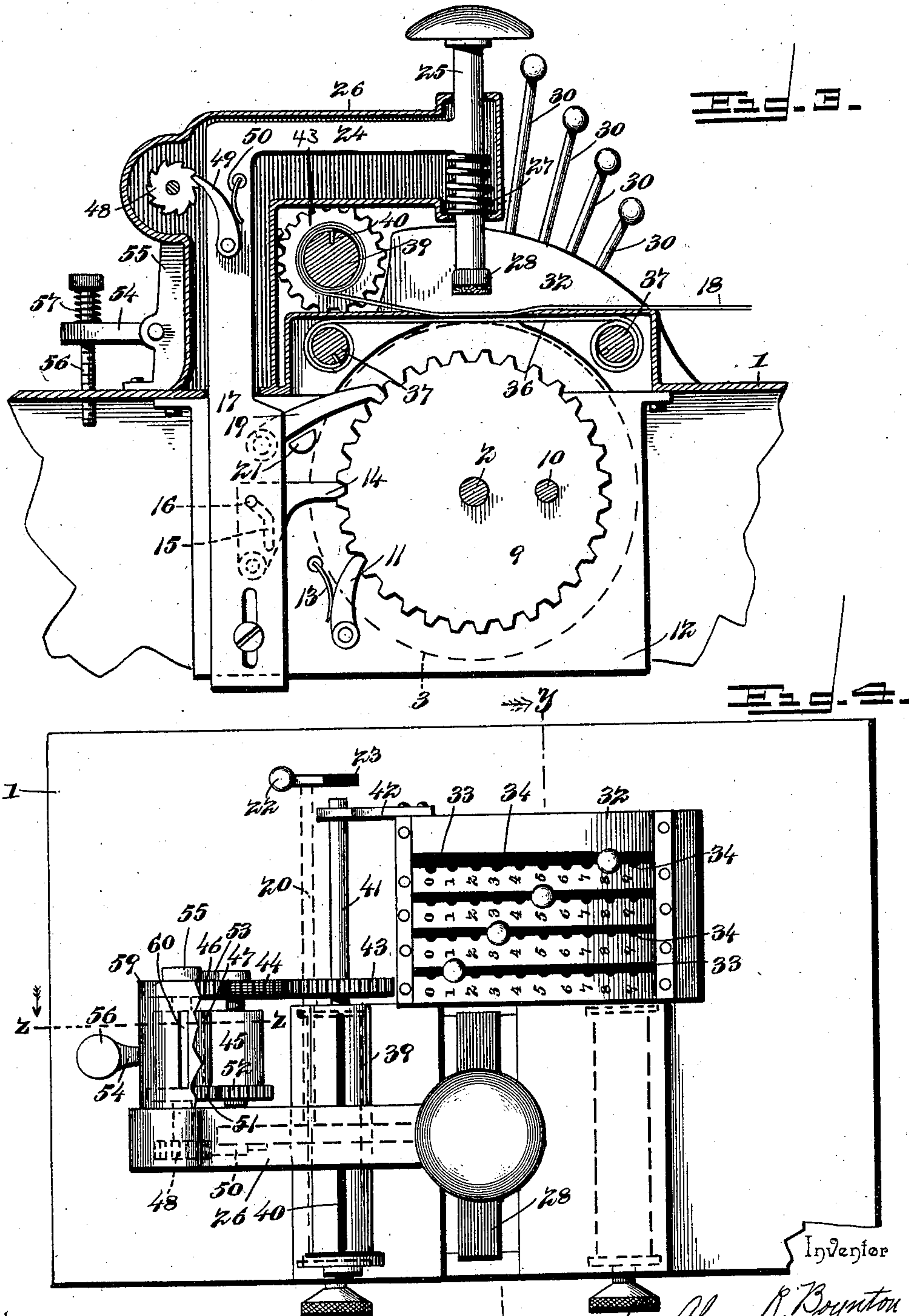
Patented Jan. 10, 1899.

A. R. BOYNTON.
SALARY RECORDER.

(Application filed Aug. 18, 1897.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses
Nicholas M. Goodell
Edw. H. Hillyer

By *W. H. S.* Attorneys.

Inventor
Alonso R. Boynton
Witter & Kuyper

No. 617,557.

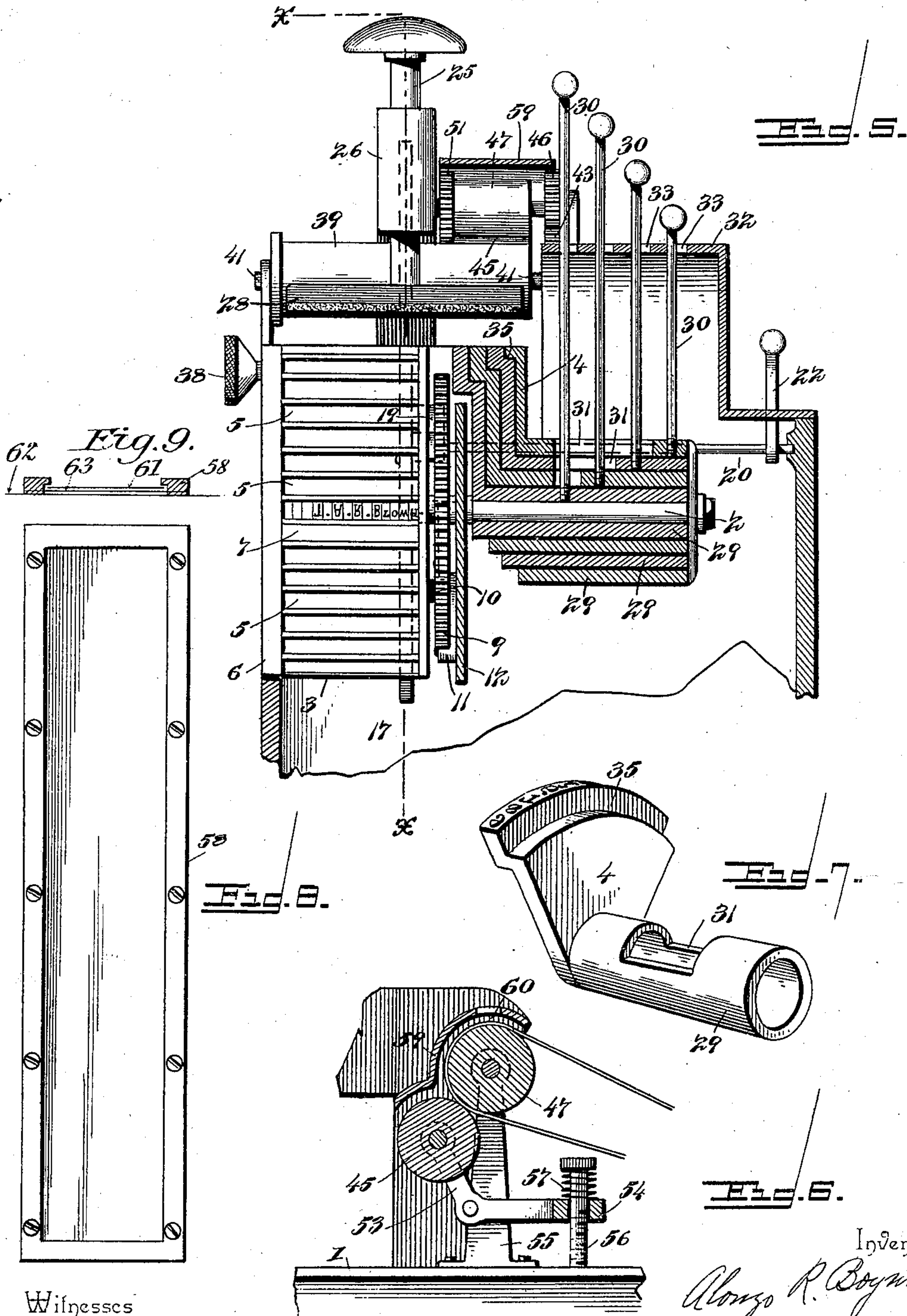
Patented Jan. 10, 1899.

A. R. BOYNTON.
SALARY RECORDER.

(Application filed Aug. 18, 1897.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses
Nicholas M. Goodlett
George W. Kelly

By *his* Attorneys.

Inventor
Alonso R. Boynton
Witter & Kenyon.

UNITED STATES PATENT OFFICE.

ALONZO R. BOYNTON, OF AUBURN, NEW YORK, ASSIGNOR TO THE BUNDY MANUFACTURING COMPANY, OF NEW YORK.

SALARY-RECORDER.

SPECIFICATION forming part of Letters Patent No. 617,557, dated January 10, 1899.

Application filed August 18, 1897. Serial No. 648,611. (No model.)

To all whom it may concern:

Be it known that I, ALONZO R. BOYNTON, a citizen of the United States, residing at Auburn, in the county of Cayuga and State of New York, have invented a new and useful Salary-Recorder, of which the following is a specification.

This invention aims to provide mechanical means for facilitating the keeping of accounts in manufacturing establishments or corporations and other parties or concerns having a large pay-roll and numbers of employees to pay wages to for time or piece work.

The invention relates most particularly to such systems as designate the employees by number as well as by name, so as to guard against mistake, and is for the purpose of making a complete pay-roll and stamping envelopes in which the pay is inclosed with the number, name, price, time, and amount and for similar purposes.

The mechanism shown and described contains a type-wheel adapted to bear type representing, for instance, the names of the employees and corresponding identifying numbers opposite the names or other data; actuating mechanism for moving the type-wheel to bring such data into position for printing; means for throwing the type-wheel out of gear, so that a name can be printed as frequently as necessary; a feeding mechanism for advancing a strip, pay-roll, or time-card over the type-wheel; a plunger for actuating the feeding mechanism and the type-wheel and forcing the strip, pay-roll, or time-card upon the type-wheel; digit-bearing pieces under the control of the operator to be moved to bring the required amount or other data in position to be printed opposite the name, price, and number; indicating mechanism for properly and accurately locating the digit-bearing pieces, and an independent feed mechanism for moving a strip upon which has been printed a key to the pay-roll corresponding to the order of the names and numbers and prices on the type-wheel, so that the pay-roll or envelop to receive the pay or wages may be properly completed, addressed, or labeled and known to the operator before stamping.

For a full understanding of the merits and

advantages of the invention reference is to be had to accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention in its preferred form an adaptation thereof is shown in the accompanying drawings, in which—

Figures 1 and 2 are elevations from opposite sides of a mechanism especially designed for attaining the objects of this invention. Fig. 3 is a longitudinal section on the line xx of Fig. 5, looking in the direction of the arrow. Fig. 4 is a top plan view. Fig. 5 is a transverse section about on the line $Y Y$ of Fig. 4, looking to the left, as indicated by the arrow. Fig. 6 is a sectional detail on the line $Z Z$ of Fig. 4, looking in the direction of the arrow. Fig. 7 is a detail view of a type-segment and its hub. Fig. 8 is a plan view of the frame bearing the carbon-strip. Fig. 9 shows a cross-section of said frame, showing the key-strip and pay-roll in position.

Corresponding and like parts are referred to in the following description and indicated in the several views of the accompanying drawings by the same reference characters.

The operating parts are suitably incased to protect them from interference, injury, and dirt, and the top of the casing is indicated by the numeral 1. A shaft 2 supports a type-wheel 3 and a series of digit-bearing pieces, (here shown as type-segments 4,) the printing-surfaces of the type-segments and type-wheel being in the same plane, so as to imprint the matter in position upon a strip or time-card moved thereover. The type-wheel, which will be of a size according to the number of names to be carried thereby, has a series of transverse grooves or seats 5, which receive the names of the employees appearing on the pay-roll. A marginal portion 6 is provided at one end of the type-wheel and bears numerals ranging consecutively and located opposite the respective names to show the operator what number and name are to be printed next under the stamp. The type

are held in the grooves or seats 5 in any convenient way and are clamped between collars secured to the ends of the type-wheel, the outer collar 8 being removable, so as to admit of any of the names being removed and substituted by others. A toothed wheel 9 is secured upon the shaft 2, intermediate of the type-wheel and the type-segments, and a pin 10 forms positive connection between the toothed wheel and type-wheel to cause these parts to move in unison. A pawl 11 is pivoted to a plate 12 and engages with the teeth of the wheel 9 to prevent the latter and the type-wheel from turning backward, and this pawl is held in engagement with the toothed wheel by a spring 13. A check-pawl 14 likewise has pivotal connection with the plate 12 and is adapted to engage with the teeth of the toothed wheel 9 to prevent the latter and the type-wheel from moving forward too rapidly when the type-wheel is actuated to bring a new name into position for printing. A slot 15 is formed in the check-pawl 14 for a pin 16, carried by an arm 17, to travel in, and the lower portion of this slot 15 is vertical and the upper portion inclines away from the toothed wheel 9, so that when the arm 17 is depressed the pin 16, riding in the inclined portion of the slot 15, withdraws the check-pawl from engagement with the toothed wheel 9, the vertical portion of the slot providing for the proper descent of the arm 17 to admit of the plunger bringing the pay-roll strip or time-card 18 forcibly into engagement with the type-surface. This strip 18 will hereinafter for sake of brevity be spoken of as the "pay-roll." The actuating-pawl 19 has pivotal connection with the arm 17 and is adapted to ride over the teeth of the part 9 when depressing the arm 17 and to engage positively with the succeeding teeth, so as to advance or turn the type-wheel upon the upward movement or stroke of the arm 17. It sometimes happens that a name is required to be printed a number of times in succession, and in order to prevent the type-wheel being turned upon operating the plunger means have been devised for throwing the pawl 19 out of action, and these means consist of a shaft 20, having a cam portion 21 opposite the pawl 19, and an arm 22, projecting through a slot 23 in the top 1. Upon operating the arm 22 the shaft 20 is turned in its bearings and the cam 21 moved so as to elevate the free end of the pawl 19 and hold it out of the path of the toothed wheel 9. Hence the arm 17 may reciprocate any number of times without imparting movement to the type-wheel, whereby any name may be printed as often as desired. The upper end of the arm 17 is bent or extends at right angles, as shown at 24, and makes connection with the plunger 25, operating through the head of a hollow arm 26, within which the upper portion of the arm 17 and the horizontal part 24 operate. A spring 27 surrounds the plunger 25 and is confined between the part 24 and the

lower portion of the head of the arm 26 and serves to automatically return the plunger and arm 17 to a normal position when released after being depressed. The lower end of the plunger is provided with a head 28, faced with rubber, felt, or other material, to avoid injury to the type, and this head 28 is sufficiently long to extend over the type-wheel and type-segments, so as to bring the pay-roll 18 into forcible contact therewith when printing.

The digit-bearing pieces are preferably made in the form of type-segments 4, as shown; but they may be made of any form and have any form or direction of motion, provided they bear digits and are capable of being moved so as to bring the digits properly upon the printing-line. The type-segments 4 bear numbers ranging from "0" to "9," whereby any desired amount may be printed opposite the required name. Each type-segment has preferably a hub portion or sleeve 29, and the latter are preferably graduated, so as to admit of their nesting or the one fitting within the other, the innermost hub or sleeve being mounted directly upon the shaft 2 and the others being mounted the one upon the other, so as to have independent rotation. In the form shown in the drawings an arm 30 is connected with each hub or sleeve, and the arm attached to the innermost hub extends through a slot or opening 31 in each of the other hubs, the slots or openings 31 being of sufficient circumferential extent to admit of the type-segments being moved so as to bring either "0" or "9" in position for printing. A housing or curved plate 32 is located above the inner end of the shaft 2 and the concentric hubs 29 and is formed with a series of parallel slots 33 for the several arms 30 to operate through, and numerals, ranging from "0" to "9," are located to one side of the slots and extend parallel therewith and, in conjunction with the arms 30, properly position the type-segments when adjusting the latter to print any required number opposite a name. The numerals bordering upon the slots correspond with the numbers on the type-segments, so that when an arm 30 is moved and brought opposite a number it is known that the same number is in position to be printed upon lowering the plunger. To hold the type-segments in an adjusted position, the arms 30 are arranged so as to spring toward a side or edge of the respective slots, and said edge is formed with a series of notches 34 opposite the numerals to receive the respective arms and hold them in position against accidental displacement. The outer edge portion of each type-segment is offset, as indicated at 35, and these offset portions match and fit snugly together, whereby the type-segments mutually brace one another.

It is not essential, however, to my invention that concentric hubs be used. The connecting mechanism between the operating-arms and the digit-bearing pieces may be of

any form as long as it transmits motion from the operating-arms to the digit-bearing pieces, so as to suitably move the latter.

The ink-ribbon 36 is secured at its ends to rollers 37, extending parallel and upon opposite sides of the plunger and the opening in the top 1, through which the plunger operates. Buttons 38 are attached to the outer journals of the rollers 37 and serve as means to be grasped when it is required to shift the ribbon, so as to bring a new portion into position for printing. The ink-ribbon 36 is not fed automatically, although this could be effected, if desired, but is moved by hand through the medium of the buttons 38.

A roller 39 is located nearly above the inner roller 37 and has a groove or slit 40 in one side to receive an end portion of the pay-roll 18. The shaft 41 of the roller 39 is extended and obtains a bearing in a bracket 42, and a gear-wheel 43 is secured thereto and meshes with a corresponding gear-wheel 44 on an end of a journal of a roller 45, and this gear-wheel 44 in turn meshes with a gear-wheel 46, secured to a journal of a roller 47, parallel with the roller 45. A ratchet-wheel 48 is secured to the opposite journal of the roller 47 and is operated from the arm 17 by means of a pawl 49, pivoted to the said arm and held in engagement with the teeth of the ratchet-wheel 48 by a spring 50. The companion rollers 45 and 47 touch and are intended to feed a key to the pay-roll or a strip or fillet 61, upon which has previously been imprinted the number, name, and price per hour or piece of employee or workman or other data. This strip or fillet 61 will for sake of brevity be hereinafter designated as "key" 61. These companion feed-rollers 45 and 47 are positively rotated by means of intermeshing gear-wheels 51 and 52, secured to the journals thereof. The roller 45 is movable and is mounted in the fork-arms 53 of a lever 54, which is fulcrumed intermediate of its ends to a standard 55, rising from the top 1. The outer end of the lever 54 is vertically apertured, and a set-screw 56 passes therethrough and makes screw-thread connection with the top 1 or casing, and a spring 57, mounted upon the upper portion of the set-screw and confined between the head thereof and the lever 54, transmits pressure to the said lever, so as to yieldingly hold the roller 45 against the roller 47. When my improved machine is in operation, an upward movement of the arm 17 will, through the medium of the pawl 49 and ratchet-wheel 48, turn the roller 47, and by reason of the intermeshing gearing the rollers 45 and 39 will be moved a proper distance to effect the required feed of the pay-roll 18 or the key upon which the sums total have been imprinted.

In operation the end of the pay-roll 18 is fitted into the slot 40 of the roller 39 and the type-wheel is turned so as to bring the first name or any required name in position for printing, and the type-segments are moved so

as to bring the proper amount either in money value or time, or both, opposite the name selected. A downward movement of the plunger 25 brings the pay-roll into forcible contact with the type in position for printing, and the required name, number, price, time, and amount are printed thereon. Upon removing the pressure from the plunger 25 the latter will rise by reason of the spring 27 and upon ascending will move the roller 39 and wind a portion of the pay-roll 18 thereon and bring a new part thereof in position to receive the next impression. If the type-wheel is to be moved each time the plunger is actuated, the pawl 19 is not thrown out of the path of the toothed wheel 9; but if a name is to be repeated the arm 22 is moved so as to turn the shaft 20 and throw the pawl 19 away from the toothed wheel 9 by means of the cam 21. The required number of hours and amount to be printed opposite a name are brought into position by manipulating the arms 30 in the manner set forth.

In the use of my improved machine I preferably employ as a key or guide a paper strip which has previously been prepared with the names to be entered upon the pay-roll and with the total weekly or monthly pay due to each or with simply the total amounts of weekly or monthly pay due to the employees. In either case it is necessary that such names and amounts or such amounts shall be arranged in the same order in which the names of the employees appear upon the type-wheel. This key, which is numbered 61 in Fig. 6 of the drawings, is passed between the feed-rollers 45 and 47 and is moved or fed forward each time the plunger is operated, in the manner above set forth. A shield 59 incloses feed-rollers 45 and 47. In it is a slot 60, through which one line upon the key is visible. The matter printed upon the key serves simply as a guide for the operator in selecting or arranging the type-segments in order to print the correct amount opposite each name upon the pay-roll 62 or upon the envelopes as they are addressed. Slot 60 is arranged so as to expose only one line of keys 61, so as to avoid confusion, which might arise if more than one line were exposed at the same time. The operator in making the pay-roll prints the amounts in the order they are exposed in the slot 60, and as these amounts are arranged upon the key 61 in the same order that the names are arranged upon the type-wheel 3 the proper amounts will appear on the pay-roll opposite each name. This key may be prepared in any way; but I have shown a hollow frame 58, in which the key can be laid and prepared when it is desired to have the amounts marked upon the pay-roll at the same time. To do this, the key 61, which is preferably a narrow strip of paper tape, similar to that used in telegraph-machines, is laid in the frame 58, is provided with a carbon-sheet 63 and frame, as shown in Fig. 9, and that key and carbon-strip are

laid over that part of the pay-roll on which the total amounts of weekly and monthly pay are to be printed, as in Fig. 9. In this way as the key is prepared the amounts, arranged in the same order, will be transferred to the pay-roll. When the pay-roll is later on passed through my improved machine, it will not be necessary in that case to move the operating-arms 30, as the total amounts are already imprinted upon the pay-roll in the proper order. In that case all that will be needed will be to depress the plunger a sufficient number of times, which will cause the names and the other data to be printed upon the pay-roll opposite the correct amounts. Where the key is used without previously imprinting the total amounts which appear upon the key also upon the pay-roll, it will be necessary to move the operating-arms 30 to set the proper type-segments in position to print the various amounts. The frame 58 is not a part of my improved recording-machine, but is simply shown to illustrate one method by which the total amounts upon the pay-roll can be imprinted.

The number of type-segments and operating-arms will depend upon the capacity of my recording-machine and may be varied at will.

The names, figures, &c., to be printed are applied to the type-wheel, which accommodates one hundred or more, and can be taken out and substituted by others, as required. The printing is effected by depressing the plunger, and as the latter rises a new name comes into position to be printed upon again depressing the plunger, except when it is required to repeat the first name, when the type-wheel feed mechanism is thrown out of gear. The operator has before him a key to the pay-roll giving the name, number, and price per hour, day, or piece, and being furnished with the time-card, slips, or time-books he can easily compute the total amount, which is brought into position for printing by means of the arms 30, and the amount, name, &c., are printed at one operation by pressing down upon the plunger. The rapidity with which this can be done depends on the dexterity of the operator, requiring only the same aptness as on a type-writer or perforating stamps for checks and drafts. Obviously no error need ever occur with this system. The form of the type-wheel having been set in type and verified is not liable to error, as is the case in checking with a pen from week to week, and before the hours and amounts are stamped on the pay-roll they appear in figures at the right of the machine and if wrong can be corrected before stamping. The ability to see an error and correct it before made on a pay-roll is in itself of no small importance and is possible by this machine. In addition to making a correct and complete pay-roll in a short time the pay-envelop can be stamped at the same time by the use of manifold paper, thus saving labor and time in afterward preparing

them and lessening the possibility of errors. By this manifold process when the book-keeper verifies the pay-roll he knows the envelopes are exactly the same, and they require no further verification.

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

1. The combination in a recorder of a series of digit-bearing pieces concentrically mounted and adapted to have independent movement, the outer hub portions having openings extending circumferentially and operating-arms connected with the respective hub portions and operating in the said openings, substantially as set forth.

2. The combination in a recorder of a series of digit-bearing pieces concentrically mounted and adapted to have independent movement, the outer hub portions having openings extending circumferentially and operating-arms connected with the respective hub portions and operating in the said openings, a digit-scale opposite each arm and connections between said arms and pieces, whereby when any arm is moved opposite to any digit in the digit-scale, its digit-bearing piece will be moved to bring the same digit upon the printing-line, substantially as set forth.

3. The combination in a recorder, of a type-wheel provided with peripheral receptacles for type, digit-bearing pieces, a pawl and ratchet operated by a plunger for rotating the type-wheel, and an operating-arm attached to each digit-bearing piece for suitably rotating it, substantially as set forth.

4. The combination in a recorder, of a type-wheel provided with peripheral receptacles for type, digit-bearing pieces, a pawl and ratchet operated by a plunger for rotating the type-wheel, means for holding said pawl at will out of operative position, and an operating-arm attached to each digit-bearing piece for suitably rotating it, substantially as set forth.

5. In a recorder, the combination of a type-wheel, a toothed wheel concentric and in connection with the type-wheel, a plunger having an arm, an actuating-pawl carried by the plunger-arm for moving the type-wheel by engagement with the said toothed wheel, a check-pawl pivotally secured to the frame-work of the machine and adapted when thrown forward to engage with the toothed wheel and prevent the type-wheel moving too far forward, a slot in said check-pawl, a pin attached to the plunger and adapted to work in the slot, all so arranged that when the plunger moves downward the pin, acting in the slot, will force the check-pawl out of engagement with the toothed wheel, and when the plunger rises it will force the pawl into engagement with said wheel to prevent over-feeding.

6. The combination in a recorder of a type-wheel provided with peripheral receptacles for type, means for suitably rotating said wheel, digit-bearing pieces, operating-arms

and connections between said arms and pieces whereby when any arm is moved its digit-bearing piece will be correspondingly moved, substantially as set forth.

5 7. In a recorder, the combination of a type-wheel and a series of digit-bearing segments concentrically mounted with respect to one another and the type-wheel, and means for suitably rotating said type-wheel and segments, substantially as set forth.

10 8. The combination in a recorder of a type-wheel, a series of type-bearing segments concentrically mounted with respect to one another and the type-wheel and adapted to be moved independently, a plunger and a mechanism, automatically actuated by means of the plunger, for moving the type-wheel, substantially as set forth.

15 9. In combination, a type-wheel, a roller for feeding the pay-roll, a pair of rollers for feeding a key, bearing the number, name and price, intermeshing gearing between the several feed-rollers, a ratchet-wheel having con-

nection with one of the said pair of feed-rollers, a plunger, and a pawl carried by the plunger for engaging with the ratchet-wheel to move the several feed-rollers, substantially as and for the purpose set forth. 25

10. In combination, a type-wheel, a feed-roller for advancing a pay-roll, a pair of feed-rollers geared together and with the first-mentioned feed-roller for feeding forward said key, a lever bearing one of the pair of feed-rollers, a set-screw and spring for holding the pair of feed-rollers together with greater or less force, a plunger, and means for actuating the feed-rollers from the plunger, substantially as set forth. 30 35

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 40

ALONZO R. BOYNTON.

Witnesses:

JAMES H. ANDREWS,
A. WARD FORD.