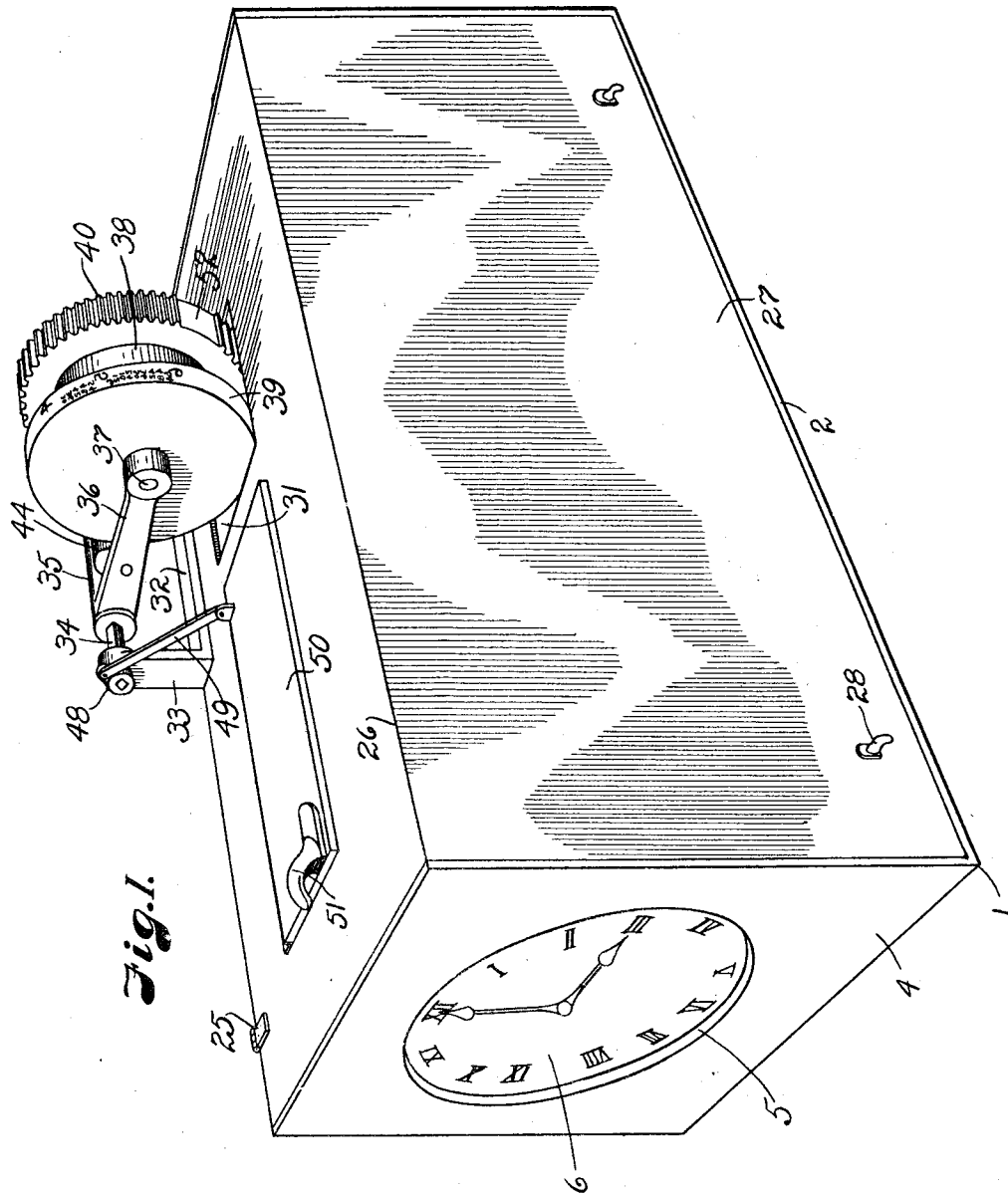


1,055,798.

3 SHEETS--SHEET 1.



WITNESSES:

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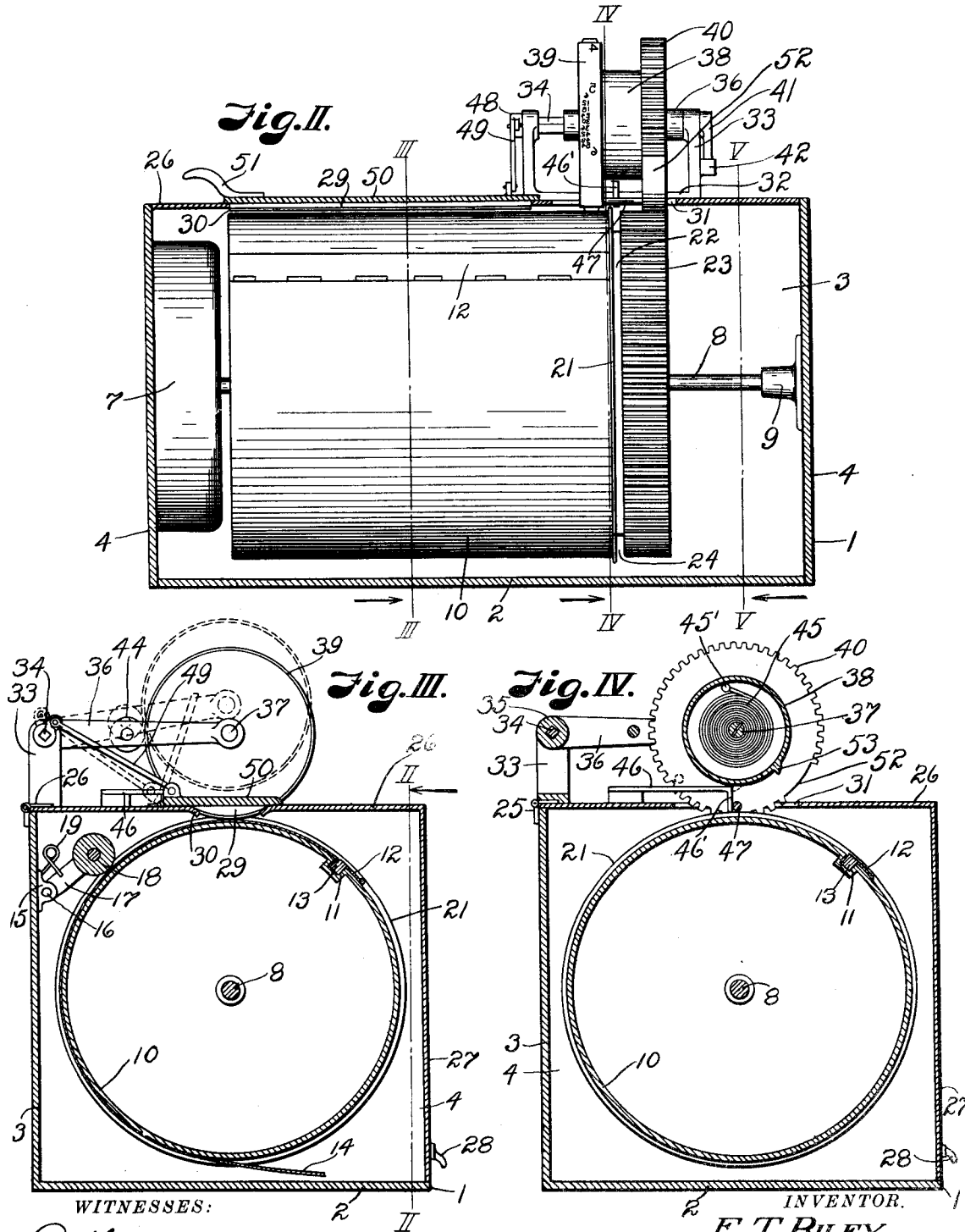
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TIME RECORDER.
APPLICATION FILED MAY 15, 1911.

1,055,798.

Patented Mar. 11, 1913.

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3 SHEETS—SHEET 3.

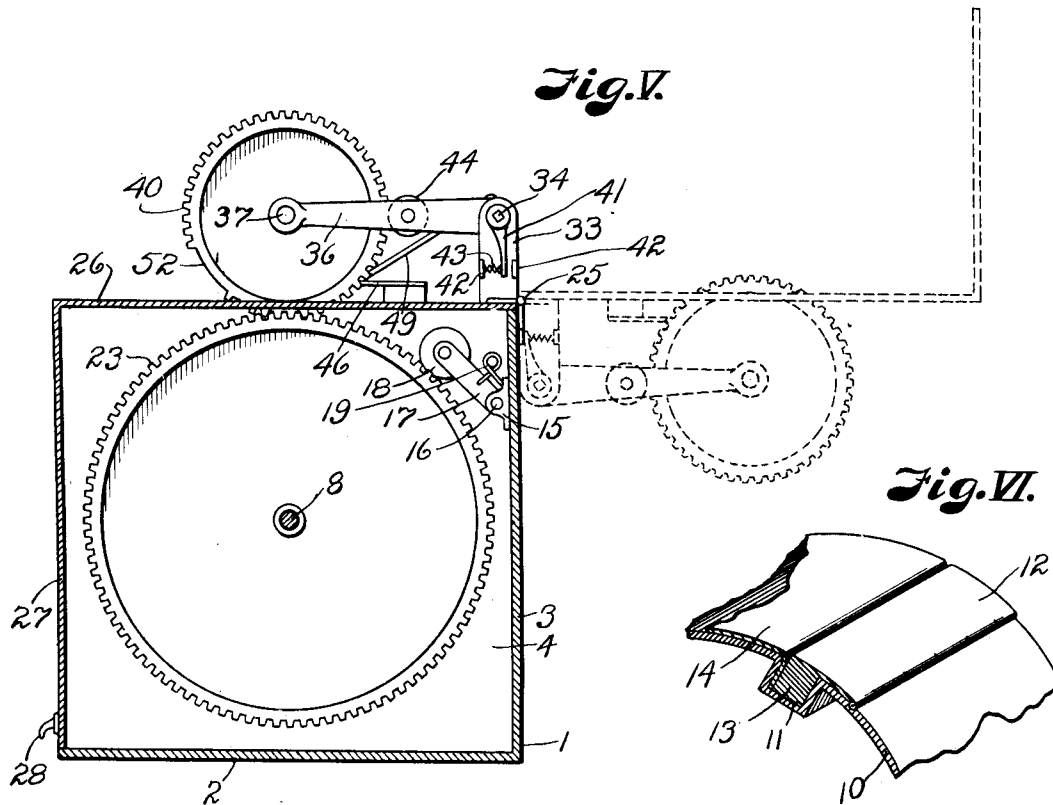


Fig.VII.

14

JOB NO.	UP	P
#36740		6
		12
		18
		24
		30
		36
		42
		48
		54
		6
		12
		18
		24
		30
#36741		6
		12
		18
		24
		30
		36
		42
		48
		54
		6
		12
		18
		24
		30
		36
		42
		48
		54
		6
		12

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UNITED STATES PATENT OFFICE.

FRANK T. RILEY, OF KANSAS CITY, MISSOURI.

TIME-RECORDER.

1,055,798.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed May 15, 1911. Serial No. 627,125.

To all whom it may concern:

Be it known that I, FRANK T. RILEY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Time-Recorders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a recorder and more particularly to a device for use in printing offices, machine shops and the like, where it is desirable to secure a record of the exact time expended on every piece of work that is done.

It is the principal object of my invention to provide a clock actuated device comprising means for carrying a ticket and means for exposing the ticket at a point fixed relative to the clock, so that check marks may be made on the ticket at intervals of time, showing the time of starting and stopping work on a job.

It is a further object of my invention to provide the apparatus with a printing mechanism including a time wheel which prints continuously on the ticket, and is adapted for automatic return to a starting point when each entry is made.

In accomplishing these and the other objects which will be mentioned in the description of my invention, I have provided the improved details of structure which will presently be fully described and are illustrated in the accompanying drawings, wherein:—

Figure I is a perspective view of a time recorder constructed according to my invention. Fig. II is a longitudinal section of same, on the line II—II, Fig. III. Fig. III is a cross section on the line III—III, Fig. II. Fig. IV is a similar view on the line IV—IV, Fig. II. Fig. V is a similar view on the line V—V, Fig. II, the dotted lines showing the lid and printing mechanism turned back to expose the clock and

ticket drum. Fig. VI is a detail perspective view of the keeper for retaining the job ticket on the drum. Fig. VII is a view of a form of job ticket which may be used with the recorder, the figures on the body of the ticket representing the job numbers which are placed on the ticket by the operator, and the figures in the columns at the edge of the ticket being printed thereon by the printing mechanism and representing the time spent on the job indicated by the number at the head of the column. The heavy lines on the ticket indicate hour periods, and preferably have hour numerals marked thereon, as shown.

Referring more in detail to the parts:— 1 designates a case which is preferably rectangular and comprises a bottom 2, back 3 and ends 4, the front and top being exposed. In one end of case 1 is an opening 5 for exposing the face 6 of a clock mechanism 7, which is permanently fixed to the case by any suitable means and has a main shaft 8 extended through the interior of the casing and journaled in a bearing 9 on the opposite end thereof. Fixed on the shaft 8 is a drum 10, which is of such diameter as to practically fill the interior of the case and has an extended circumferential face. Extending longitudinally throughout the length of the drum 10 is a down set channel 11, and hinged to the periphery of the drum, adjacent to said channel, is a plate 12, having a block 13 adapted to fit snugly within the channel and hold the end of a ticket 14 therein (Fig. III).

Attached to the inside of the back member 3, of the case, near the top, are bearing members 15 in which a shaft 16 is revolutely mounted. Fixed to shaft 16 are arms 17 which extend toward the drum and carry a roller 18 which is adapted for engaging the ticket on said drum and holding same against the periphery thereof, said roller being pressed toward the drum by a spring 19 which is adapted to bear against one of the bearings 15 and on one of said arms.

On the inner end of drum 10 is a flange 21, which extends from the periphery of the drum and forms a stop against which the edge of the job ticket may be placed, to

secure a correct alinement of the printing. On the end of the drum is a collar 22 which is of less diameter than the drum, and fixed to the clock shaft, and also preferably connected with the collar, is a wide gear wheel 23, which is of substantially the same diameter as the drum, but spaced therefrom by the collar 22 to form an annular groove 24.

Hinged to the upper edge of the back member of the clock case, by members 25, is a lid 26, having a front member 27 adapted to close against the front of the case, so as to entirely inclose the clock and the drum parts. I preferably provide the front member 27 with handles 28, by which the lid may be lifted and replaced.

29 designates a slot in lid 26, which is located over the central part of the drum, so that access may be had therethrough to the ticket 14, the material at the front and back edges of the slot being turned down to form lips 30 for protecting the ticket and drum. In lid 26, adjacent to slot 29 and exposing the gear 23 and a part of the drum, is an opening 31. Mounted on lid 26, back of the opening 31 is a bracket 32 having upturned arms 33, in which a shaft 34 is journaled. The central part of shaft 34 is squared and carries the hub 35 of a yoke 36, so that said hub may slide longitudinally, but is turned with the shaft. The arms of yoke 36 project forwardly, and fixed in said arms, over the center of opening 31, is a shaft 37. Revolvably mounted on shaft 37 is a sleeve 38, to the forward end of which is fixed a type disk 39, and to the rear end of which is fixed a gear wheel 40. On the periphery of type disk 39 are raised numerals, preferably running from one to six and spaced at equal distances apart around the periphery of the disk. Also mounted on the periphery of said disk and spaced laterally from the numerals, just mentioned, are other numerals representing six minute periods for each hour, that is, between the hour numerals one and two, and likewise between the other hour numerals, the spaces are divided into ten periods and these periods numbered 6-12-18, etc., up to 54. The gear wheel 40 is adapted to mesh with the wide gear on the clock shaft, so that the parts will be driven with the clock and the characters on the type disk be printed on the ticket, which is attached to the drum.

In order to retain the type disk in printing relation to the drum, and the gear 40 in mesh with the clock shaft gear, I attach a lever 41 to the shaft 34 outside of one of the arms 33, which lever depends between lugs 42 on said arm and is yieldingly pressed outwardly by a spring 43, which is carried on one of said lugs, so that the type disk is held yieldingly against the ticket, when the parts are in operation.

Journaled in the arms of yoke 36, immediately

back of the type disk, and having rolling contact therewith, is an inking roller 44, which is engaged by the type on the periphery of the disk so that ink is supplied to the carriers to enable them to print on the ticket.

In order to secure an accurate record of the time spent on a job, the machine should stop charging time against that job when the workman has stopped working on it. As the printing mechanism records the actual time spent on a job, instead of the time when work starts and the work is discontinued, I provide the machine with means for returning the type wheel to a starting point when each entry is made on the ticket, so that when a workman finishes one job and starts another, the printing mechanism is returned to a starting point when the entry of the new job number is made. This reversing mechanism comprises a spring 45 which is located within the sleeve 38 and is fixed at its inner end to the shaft 37 and at its outer end to a pin 45' that is carried by the gear and type wheels and extends through the sleeve 38, so that when the gear wheel is revolved by the gear on the clock shaft, the spring will be tensioned. Mounted on the top of the case lid is a spring arm 46, having a downturned stop member 46' which is projected into the annular groove 24 between the clock drum and gear 23, and is adapted for engagement by a pin 47, carried by and extending between the type and gear wheels 39-40. Pin 47 is arranged near the peripheries of the wheels and opposite the zero mark on the type wheel 39, so that when the printing mechanism is freed from its driving connection with the drum, such mechanism will be revolved backwardly by the spring 45 until the pin engages its stop.

To release the gearing from the drum, I provide the shaft 34 with a crank member 48, which is fixed thereto and is connected by a link 49 with a cover plate 50 that is hinged to the case lid at the edge of the slot 29, and is adapted for covering said slot when the printing mechanism is in operative relation to the clock shaft. Plate 50 is provided with a handle member 51, by which it may be lifted when the workman desires to record a job number on the ticket carried by the inclosed drum.

As the workman makes a record when he stops work on a job, to go to another job or at the end of a working period, the printing mechanism is usually returned to starting point at the end of periods not exceeding six hours. In order, however, to relieve the clock mechanism from an undue strain at night, or other times when the clock is operating but no records are being made, I have arranged to break the driving connection between the clock shaft and printing mechanism gear when the printing mechanism has

been operating continuously for six hours. To accomplish this result, I make the gear wheel 40 slightly more than half the diameter of the clock gear 23 and provide a blank space 52 adjacent to the zero position, so that when the gear 40 has revolved until the blank space is over the clock shaft gear, the printing mechanism gear will be out of mesh and idle. In order to hold the printing mechanism gear against return travel under tension of the spring 45, I provide the collar 38 with a peripheral boss 53, having a curved face adapted to pass over the spring stop 46 and a holding face adapted for engagement with the outer end of same, as illustrated in dotted lines in Fig. IV. It is apparent that when the parts are in this position, the printing mechanism will be out of mesh with the clock shaft gear and that such mechanism will be held against backward movement until released by the lifting of lid 50, or of the case lid.

In order that a record may be kept of productive time, that is time actually spent in productive work on a particular job, such as the setting of type or press work in printing offices, and also a separate record of unproductive work, such as repairing or cleaning machinery, or the like, I provide the job tickets with separate columns for each class of work and adapt the printing mechanism for adjustment on its shaft, so that the printing disk may be moved over either of said columns, the adjustment being made without releasing the printing mechanism from its operative connection with the clock shaft.

The case lid may, if desired, be provided with a suitable lock (not shown), so that only the proprietor or foreman of the shop may have access to the interior thereof.

In using the device, it is preferable to provide same with a blank job ticket at the beginning of each working day, so that a workman may record the number of the job upon which he starts in the morning and a record may in that way be kept of his time throughout the day. The tickets may be printed with the hour characters marked thereon, and the drum arranged so that the first line of the ticket is exposed beneath the cover slot at the hour when a shop is supposed to start the day's work. In this way the device may answer the purpose of a checking in clock, as the ticket will show the time when an entry is made.

In order to expose the ticket so that the number of the job may be marked thereon, the workman must first lift the cover plate 50 to expose the part of the ticket located below the slot in the case lid. When this plate is lifted, the printing mechanism is raised out of contact with the drum and gear, so that the driving connection is broken and the spring 45 turns the mechanism back to the zero point. When the number of the

job is recorded, the plate is released and falls back to cover the slot, the printing mechanism being simultaneously lowered, so that the disk is in printing relation to the part of the ticket on the end of the drum, and the gear 40 brought into mesh with the gear on the clock shaft. The printing mechanism is then revolved with the clock and an exact record of the time spent on that job is started.

As illustrative of the use of the machine, presume a workman to have done productive work on a particular job for one hour and twelve minutes, and then taken thirty minutes to repair a machine, or do other work not productive for that job, the record should read as illustrated on the ticket shown in Fig. VII; the printing mechanism having been moved laterally on its shaft at the end of the one hour and twelve minute period to record the non-productive time. If at the end of the thirty minute period the workman had started a new job, it would be necessary for him to lift the cover plate 50 to record the new job member, so that the printing mechanism would be thrown out of its driving connection with the clock and moved back to the zero point by the spring 45, so that the time would begin with new six minute periods and the job ticket show, by the heavy rulings, the time, that a job was started and the time it was finished, and also, by the printed record, the actual number of hours and minutes that was spent on the job.

At times when the recorder would not be used, such as at night or on holidays, the printing mechanism would continue to be revolved by the clock shaft after it had completed a full revolution and continue to wind its spring, until the binder would become too great for the clock spring to carry, if it were not for the releasing mechanism described. With this mechanism, as the printing disk nears the completion of its revolution, the boss 53 on the drum 38 will pass over the spring stop 46 and the plain space of the gear wheel be brought over the gear on the clock shaft, so that the driving connection between the gears is broken. The spring 45 then holds the boss 53 against the stop until the printing mechanism has been lifted by lifting the cover plate, or the lid of the case, when the mechanism is returned to zero, as before described, and the recorder again placed in condition for use.

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

1. In a time recorder, the combination with a clock mechanism, of a drum actuated by said mechanism for carrying a ticket; a case covering said drum, a printing roller mounted on said case and provided with a restricted opening for providing access to a

ticket carried by said means, and means disposed on said ticket carrying drum for actuating said roller.

2. In a time recorder, the combination with a clock mechanism, having an extended shaft and casing, a drum mounted on said shaft within said casing, said casing being provided with a restricted opening for providing access to the drum, a printing roller arranged on said casing adjacent the opening, and means on said drum for actuating the printing roller.

3. In a time recorder, the combination with a clock mechanism, having a drum adapted for carrying a ticket, a casing, a printing roller mounted on said casing, and a gear carried by said drum for actuating said printing roller.

4. In a time recorder, the combination with a clock mechanism having an extended shaft adapted for actuation by said mechanism, of a ticket drum mounted on said shaft and actuated thereby, a slotted cover for said drum, and a roller mounted on said cover and adapted for actuation by said drum and for pressing a ticket against the drum.

5. In a time recorder, the combination with a clock mechanism having an extended shaft, of a drum disposed on said shaft and adapted for actuation by said mechanism, said drum having a longitudinal channel in its periphery, a plate hinged to the outer face of said drum adjacent to said channel, and a block mounted on said plate and adapted for projection into said drum.

6. A time recorder comprising a time controlled motor, a printing mechanism adapted for operative connection with said motor, means for relieving said mechanism from such operative connection, and means for returning the printing mechanism to a zero point upon the breaking of its operative connection.

7. In a time recorder, a clock mechanism having an extended shaft, a drum fixed on and adapted for revolution with said shaft, means for attaching a ticket to said drum, means on said shaft for driving a printing mechanism, and a printing mechanism comprising a disk adapted for revolution in proximity to the drum and means for connection with the driving device on said shaft, said printing mechanism being adapted for automatic return to a zero position upon the breaking of its driving connection.

8. A time recorder comprising a clock mechanism having an extended shaft, a drum, a driving gear fixed on said shaft, and means for attaching a ticket to said drum, a printing mechanism revolubly mounted above the drum having means adapted for operative connection with said gear, and means for tensioning said printing mechanism toward a zero position.

9. A time recorder comprising a suitable case, a clock mechanism located in said case and having an extended shaft, a drum fixed on said shaft, a gear on said shaft, said case being slotted to expose a part of said drum, a printing mechanism operatively connected with said shaft and adapted for revolution in proximity to said drum, means for returning said printing mechanism to a zero position upon its disconnection with said clock shaft, a plate covering the slot in said case, and means connecting the plate and printing mechanism, whereby the latter is disconnected with said shaft upon the lifting of said plate, for the purpose set forth.

10. A time recorder comprising a clock mechanism having an extended shaft, a printing mechanism operatively connected with said shaft, said mechanism being hinged to swing out of its operative connection, a spring for returning said printing mechanism to a zero position, and means for turning said printing mechanism on its hinge.

11. A time recorder comprising a suitable case having a slot in its upper face, a time controlled motor located within said case and having a drum adapted for revolution below said slot, a bracket mounted on said case, a yoke pivotally mounted in said bracket, a shaft carried by said yoke, a printing mechanism comprising a drum and a type disk, the latter being adapted for revolution in close proximity to said drum, a spring fixed on said shaft and on said drum and adapted for tensioning said printing mechanism in one direction, means for driving said printing mechanism from said motor, against the tension of said spring, a hinged plate adapted for covering the case slot, and a link connecting said plate with said yoke, for the purpose set forth.

12. A time recorder comprising a case having openings in its upper face, a time controlled motor located within said case and having a suitable shaft, a drum fixed on said shaft and adapted for revolution below said openings, a type disk mounted on said casing and adapted for printing through one of said openings, a gear wheel on the motor shaft, a gear wheel connected with said type disk and adapted to mesh with said motor gear, said disk gear having a plain portion on its periphery, a stop on said case, a boss on said disk adapted for engagement with said stop, a spring attached to said fixed shaft and to said disk for returning the printing mechanism to a zero position after its actuation through said gears, means on said bracket shaft for retaining the printing mechanism in operation position, a crank on said bracket shaft, a plate covering one of the openings in said case, and a link connecting said plate with said crank, for the purpose set forth.

13. A time recorder comprising a time
controlled motor, a drum adapted for ac-
tuation by said motor, means for attaching
a ticket to said drum, a roller adapted for
5 pressing said ticket on the periphery of
said drum, a printing mechanism adapted
for actuation from said motor and com-
prising a type disk adapted for printing on
said ticket, means for yieldingly tensioning
10 said printing mechanism toward a zero po-

sition, and means for lifting said printing
mechanism out of its driving connection
with said motor, for the purpose set forth.

In testimony whereof I affix my signature
in presence of two witnesses.

FRANK T. RILEY.

Witnesses:

MYRTLE M. JACKSON,
ARTHUR W. CAPS.