W. T. GELTZ.

WORKMAN'S TIME RECORDER.

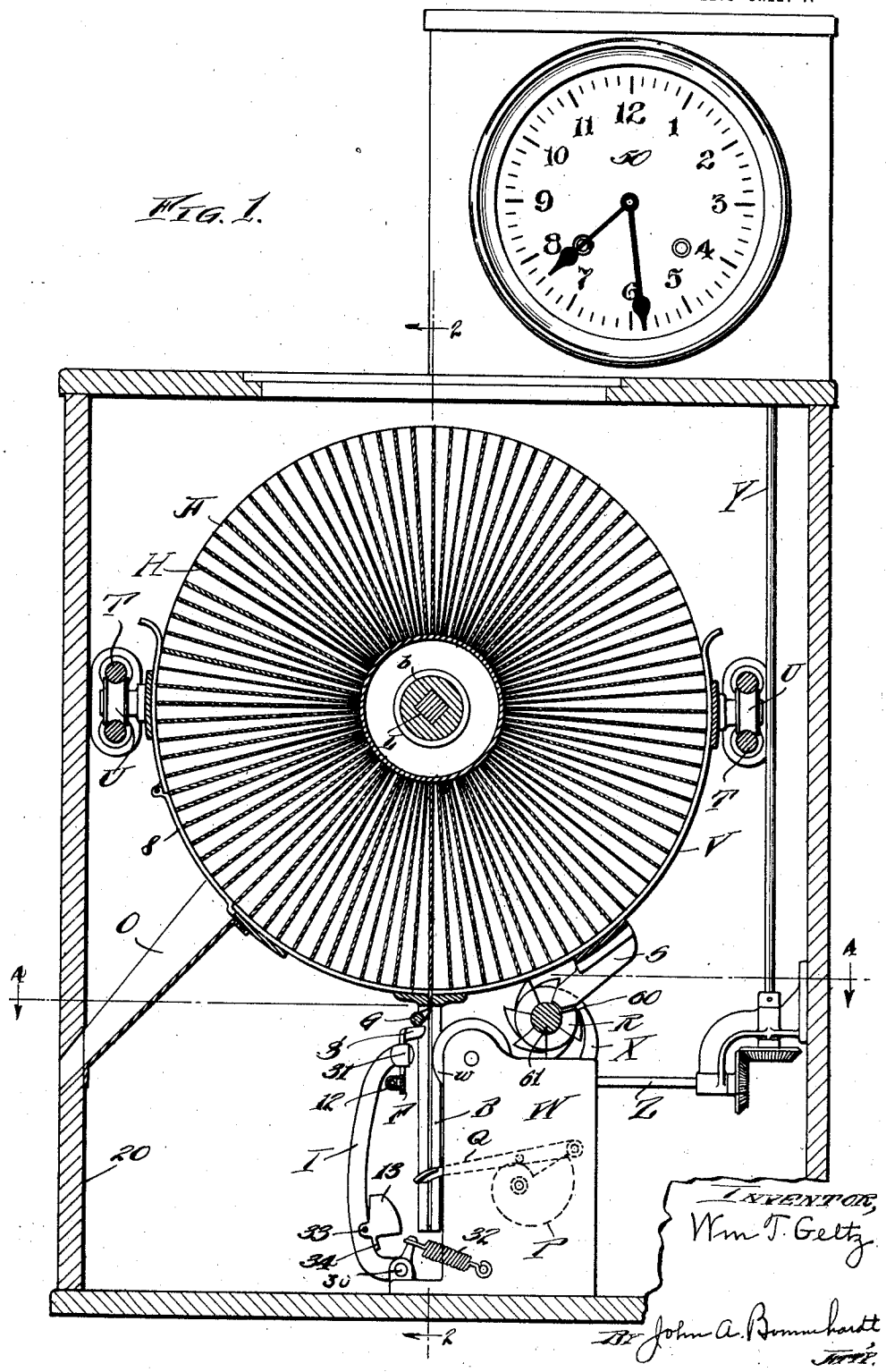
APPLICATION FILED APR. 17, 1920.

1,389,641.

Patented Sept. 6, 1921.

4 SHEETS—SHEET 1.

FIG. 1.



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4 SHEETS—SHEET 2.

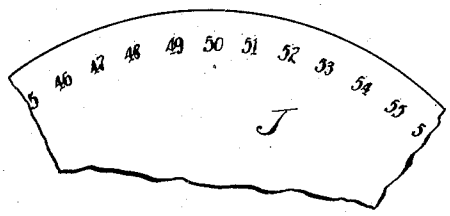
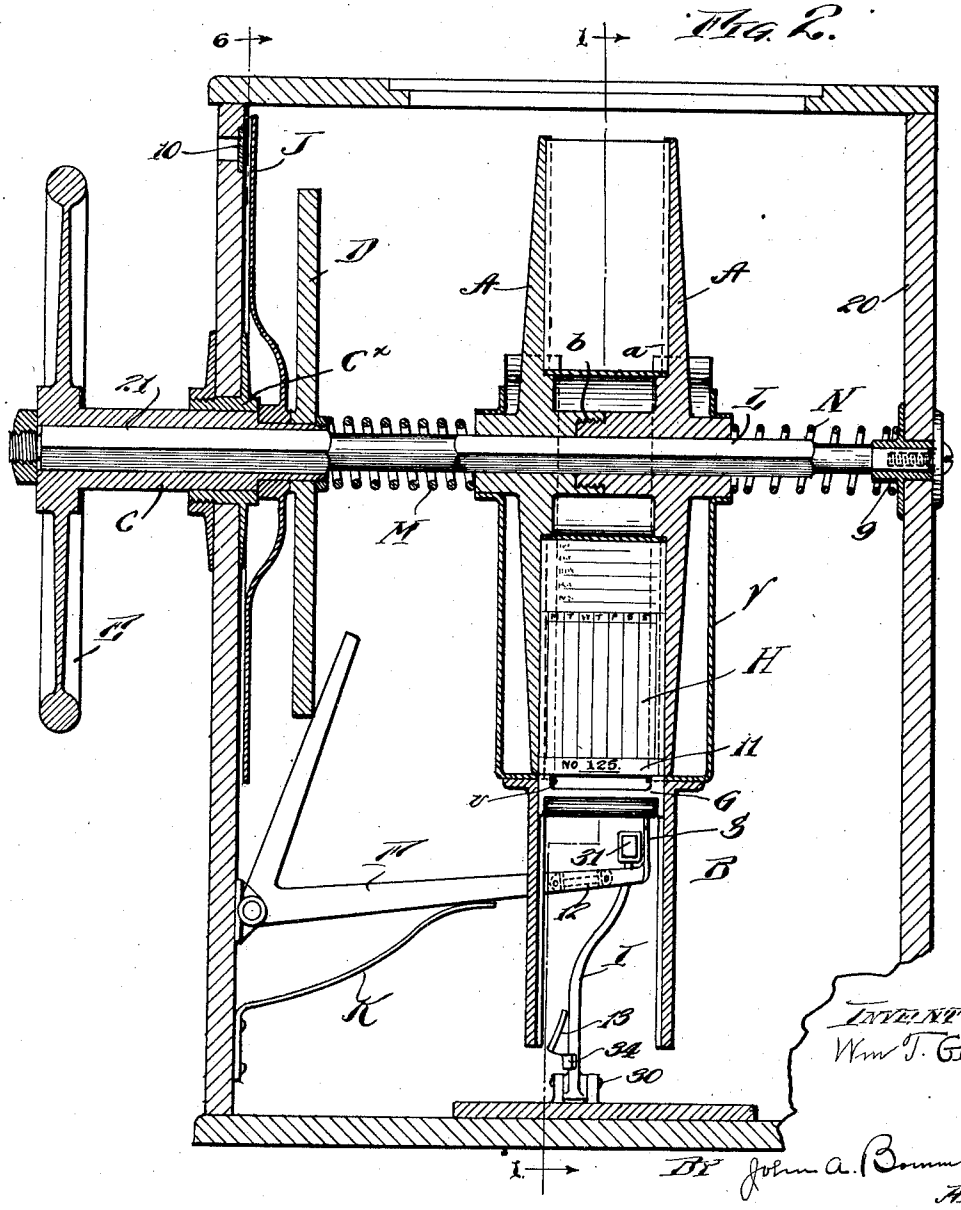


Fig. 6.

Fig. 2.



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Wm T. Geltz

BY John A. Bommhardt
ATTY.

W. T. GELTZ.

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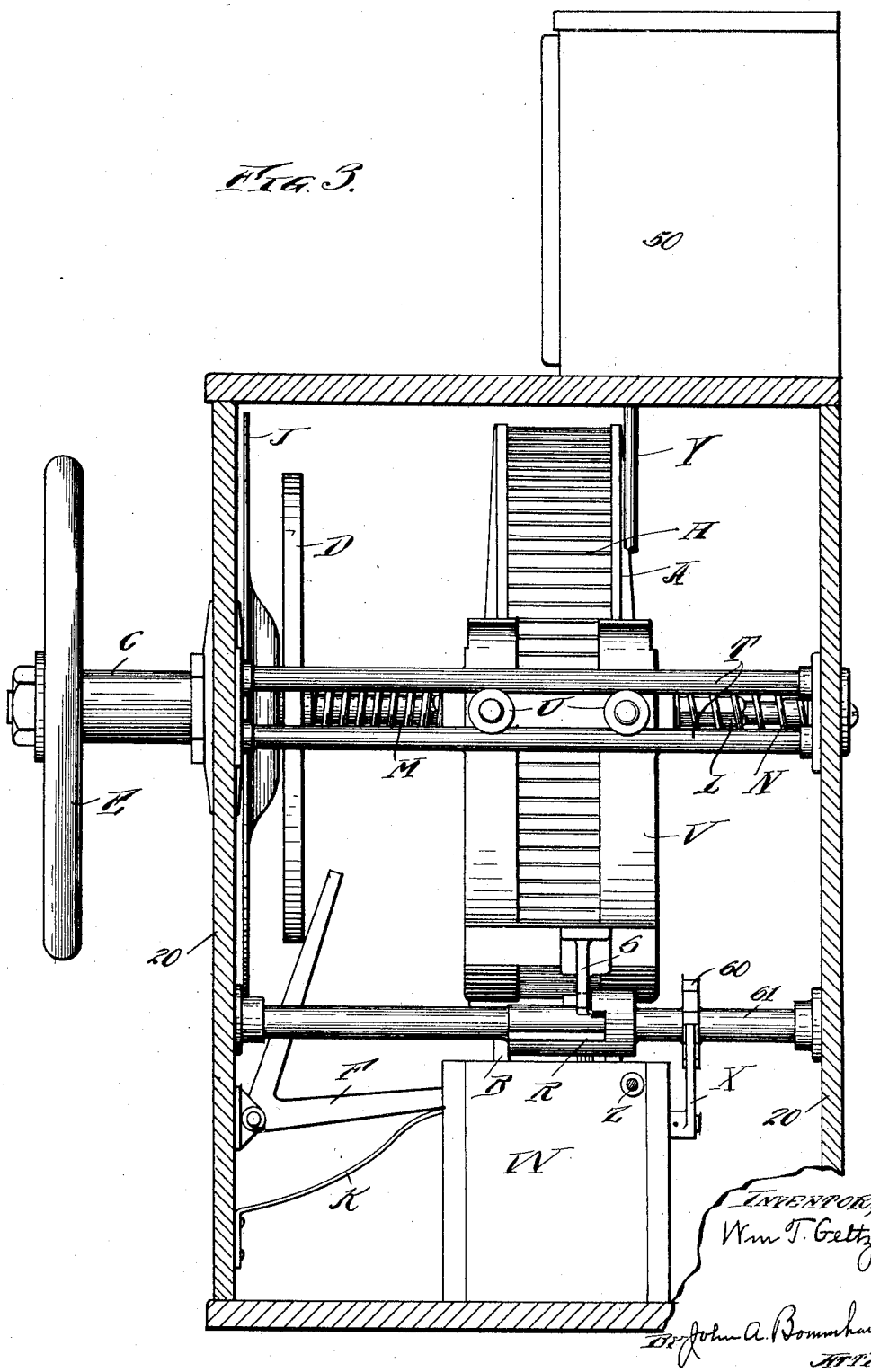
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4 SHEETS—SHEET 3.

FIG. 3.



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4 SHEETS—SHEET 4.

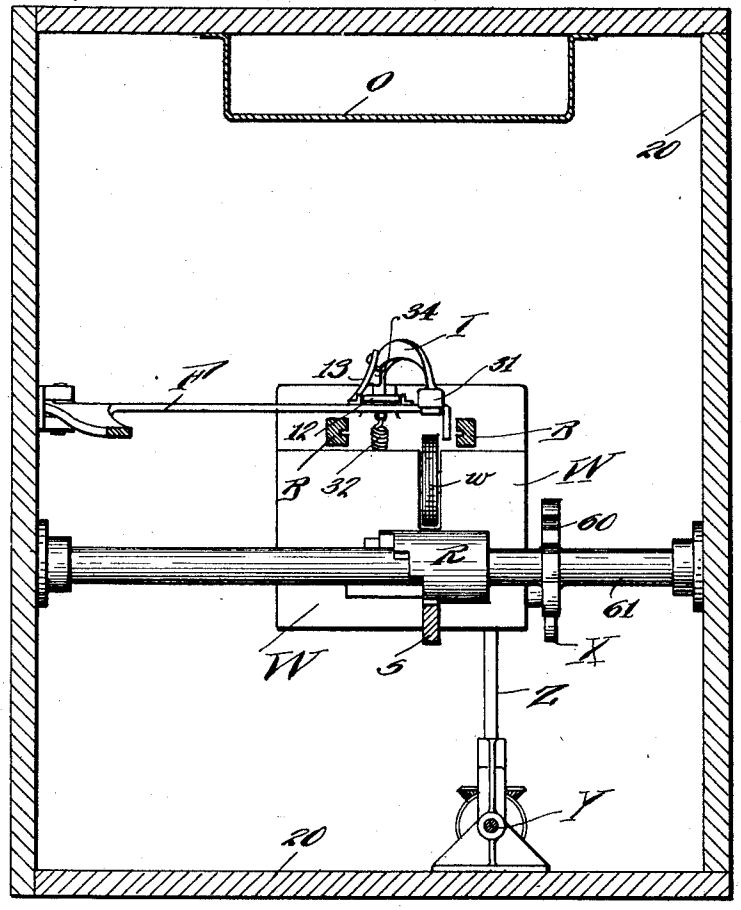


FIG. 4.

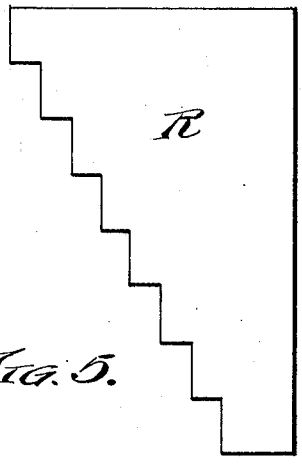


FIG. 5.

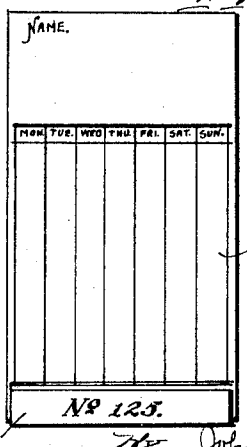


FIG. 7

H

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WORKMAN'S TIME-RECORDER.

1,389,641. Specification of Letters Patent. Patented Sept. 6, 1921.

Application filed April 17, 1920. Serial No. 374,589.

To all whom it may concern:

Be it known that I, WILLIAM T. GELTZ, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Workmen's Time-Recorders, of which the following is a specification.

This invention relates to workmen's time recorders of that type in which marks are printed on cards which are normally contained in a card magazine or holder instead of being carried by the workmen, the holder or magazine in the present instance comprising a rotary drum with a plurality of radial compartments in each of which a card is held. The drum may be turned by the workman to select his card and position same to receive time impressions from a suitable printing mechanism, the card being dropped or discharged from the holder for this purpose and afterward returned thereto. Provision is therefore made for turning the drum to register the desired card with the printing mechanism, as well as for shifting the drum axially to register the proper column on the card with the printing mechanism. These columns correspond ordinarily, to the days of the week, and mechanism is also provided for controlling the location of the "in" and "out" marks, according to the number of records to be made each day.

Machines of this type, in which the cards are held in a magazine or holder, have the advantage that the cards can not become lost, nor will they become soiled in consequence of handling by the workman or the carrying of same in his pocket. Furthermore the cards remain in the possession of the employer.

The machine is provided with certain novel features and constructions as will more fully appear from the following description and accompanying drawings.

In the drawings, Figure 1 is a vertical cross section of the machine on the line 1—1 of Fig. 2. Fig. 2 is a vertical section on the line 2—2 of Fig. 1. Fig. 3 is a side elevation with the casing in section. Fig. 4 is a horizontal section on the line 4—4 of Fig. 1. Fig. 5 is a projection of a stepped stop wheel which controls the position of the card with respect to the columns thereon. Fig. 6 is a detail of the indicating disk. Fig. 7 is a perspective of one of the cards.

The card used in the machine is shown at H in Figs. 2 and 7, with columns for the days of the week printed thereon, and spaces at the top for the name of the workman. At the bottom it is preferably provided with a clip 11, which serves as a weight and also protects the lower edge of the card, and may have the number of the workman appearing thereon.

A set of these cards corresponding to the workmen is placed in a magazine or holder comprising a pair of spaced disks A, having radial grooves *a* on the inside, the hubs of the disks being screwed together as indicated at *b*, and being slidably and nonrotatably mounted on the squared part of a shaft L the rear end of which is mounted in a bearing 9 in the back wall of the casing 20. This magazine is normally pressed forwardly, or to the left in Fig. 2, by spring N coiled around the shaft. The front end of the shaft L is squared as shown at 21 and extends through the hub C to an external wheel E by means of which the shaft may be turned. The hub C is rotatable in a bearing C—*x* in the front wall of the casing, and within the casing carries the indicating disk J containing numbers corresponding to the compartments in the magazine, which numbers are visible through the window 10. Also, the hub C carries a disk D which turns therewith; and the hub and the parts carried thereby are normally pressed forwardly, or to the left in Fig. 2, by a spring M coiled around the shaft L, and the spring M also permits the hub to be pushed in to full extent after the magazine has been pushed in until stopped as hereinafter described.

The lower half of the magazine is inclosed by a semi-circular housing V which acts to support the cards as the magazine turns, and this housing has a slot *v* through which the cards may drop when brought to a selected position. The housing V is supported by rollers U at opposite sides, which travel on tracks T extending lengthwise in the casing. The housing V also supports a pair of

grooved guides B depending therefrom in front of the printing mechanism indicated as a whole at W. The slot *v* leads to the space between the guides B, and said guides also support a weighted bar or plate G which normally projects into the slot and prevents the drop of cards except when the bar is lowered.

The bar G is normally supported in raised position by a finger *g* at the end of one arm of a bent lever F the other arm of which projects to contact with the disk wheel D, in consequence of the pressure of a spring K. The bar G may slide across the finger *g* as the magazine is shifted axially.

The lever F also operates a hammer I which is pivoted at 30 to the bottom of the casing and has a head 31 arranged to strike the card against the time marking wheel *w* forming a part of the mechanism W. The hammer is advanced by a spring 32 connected thereto. It is retracted by a projection 12 mounted on the lever F which on the descent of the lever contacts with a cam trigger 13 pivoted at 33 to the hammer I and having an offset lug 34. When the part 12 strikes the cam 13 it swings the hammer outwardly against the tension of the spring 32, and after the part 12 passes the cam said spring snaps the hammer back, causing the head thereof to strike the card. When the lever F lifts or returns, the cam 13 swings on its pivot 33 to permit the lever to pass, and then drops back again for the next operation, with the lug bearing against the hammer.

The mechanism W is of known construction, and is operated from a clock 50 by means of shafts Y and Z and suitable gearing, and needs no detailed description, except to state that it turns the time printing wheel *w* and also operates a pawl X which turns a ratchet 60 on a shaft 61 which carries a stepped stop R which has steps corresponding to the days of the week and is shown projected in Fig. 5. This stop R is mounted on a shaft 61 in position to stop a finger S fixed to the casing V when said casing is pushed back as shown in Fig. 3, the result being to position the card with its proper column in register with the hammer I, according to the day of the week.

The casing V has a door 8 which may be opened to permit all the cards to be emptied from the magazine through the chute B, at the end of the week or other pay period.

The time mechanism W also includes a cam P which acts to raise and lower a pivoted stop arm Q which extends across between the guides B, and acts to stop the drop of the card at a position corresponding to the time of the day, so as to indicate "in" and "out" times on said card. Normally the cam P will make one revolution each day and the stop R will turn one step each day.

In operation, the cards being located in the grooves or compartments of the magazine, the workman will turn the wheel E and consequently the magazine until his number appears on the disk J at the window 10. This registers his card with the slot *v*. Then the wheel E is pushed in. The first action is to shift the magazine backwardly on its shaft L until the finger S strikes the step in the stop R corresponding to the day of the week. At the same time the wheel D turns the lever F and the plate G drops and with it the selected card H which follows through the slot *v* and descends between the guides B. As the wheel is pushed in farther it compresses the spring M and the lever F continues to turn until the piece 12 strikes the cam 13 and retracts the hammer, and the card descends until it is stopped, together with the plate G, by contact with the arm Q, on which it rests during the printing operation which is effected by the hammer I when the piece 12 runs off of the cam 13. The wheel E is then released and the springs M and N return the parts to original position, together with the spring K which lifts the lever F to original position, and as the plate G rises in consequence of the movement of said lever it returns the card to the magazine, and the apparatus is ready for the next operation.

I claim:

1. In a time recorder, the combination of a printing mechanism, a magazine for cards, movable to register the respective cards with said mechanism, and means to permit the selected card to advance to said mechanism, and to return the same to said magazine.

2. In a time recorder, the combination of a printing mechanism, a rotary card magazine having a compartment for each card, adapted to be registered with said mechanism, means to permit a card in a selected compartment to advance to said mechanism, and to return said card to said compartment.

3. In a time recorder, the combination of a printing mechanism, a card magazine having radial compartments for cards, means to rotate said magazine to register any compartment with said mechanism, and means permitting a card to drop from said compartment to printing position with respect to said mechanism and to return said card to said compartment.

4. In a time recorder, the combination of a printing mechanism, a shaft, a card magazine rotatable with and slidable axially on said shaft, said magazine having a radial compartment for each card, means to rotate the shaft and slide the magazine laterally to register a selected compartment with said mechanism, and means to permit a card to drop from said compartment to said mecha-

nism and to return said card to said compartment.

5. In a time recorder, the combination of a printing mechanism, a shaft, a card magazine rotatable with and slidable axially on said shaft, said magazine having a radial compartment for each card, means to rotate the shaft and slide the magazine laterally to register a selected compartment with said mechanism, and means automatically actuated by said means to permit a card to drop from said compartment to said mechanism and to return said card to said compartment.

6. In a time recorder, the combination of a printing mechanism, a horizontal shaft above said mechanism, a card magazine rotable with and slidable axially on said shaft and having a radial compartment for each card, and means to permit the card in a selected compartment to drop therefrom to said printing mechanism and to return the card to said compartment after printing.

7. In a time recorder, the combination of a printing mechanism, a horizontal shaft above said mechanism, a card magazine on the shaft, having a radial compartment for each card, a housing extending about the lower part of the magazine and having a slot through which a card may drop, and guides below said slot, and means to permit a card to drop from a selected compartment through said slot and to return the card to said compartment, after printing.

8. In a time recorder, the combination with a printing mechanism, of a card holder having a plurality of compartments for cards, and movable to register any one of said compartments with the printing mechanism, and means to effect the advance of the card in the selected compartment to printing position and to return the card to said compartment.

9. In a time recorder, the combination with a printing mechanism, of a card holder having a plurality of compartments for cards, and movable to register any one of said compartments with the printing mechanism, and means to effect the advance of the card in the selected compartment to printing position and to return the card to said compartment, said means being automatically operated by the movement of the card holder.

10. In a time recorder, the combination with a printing mechanism, of a card holder having a plurality of compartments for cards, and movable to register any one of said compartments with the printing mechanism, and means to effect the advance of the card in the selected compartment to printing position, and to return the card to said compartment, said means including a lever actuated by the movement of the card holder.

11. In a time recorder, the combination with a printing mechanism, of a card holder located above said mechanism and having a plurality of compartments for individual cards, a housing in which said holder is movable, having a slot in the bottom thereof through which a card may drop from a selected compartment to printing position adjacent said mechanism, guides for said card, under said slot, a plate movable up and down in said guides and normally closing the slot, and a lever supporting said plate and movable to raise and lower the same.

12. In a time recorder, the combination of a semi-circular housing having a slot in the bottom, a drum rotatable in said housing and having a plurality of radial card compartments any one of which may be registered with said slot by turning the drum, means to permit the drop of a card from a selected compartment through said slot and to return the same to the compartment, and a time printing mechanism operable on a card when in dropped position.

13. In a time recorder, the combination of a semi-circular housing having a slot in the bottom, a drum rotatable in said housing and having a plurality of radial card compartments any one of which may be registered with said slot by turning the drum, means to permit the drop of a card from a selected compartment, through said slot and to return the same to the compartment, and a time printing mechanism operable on a card when in dropped position, the housing and drum being also shiftable axially to vary the lateral position of the card with respect to the printing mechanism.

14. In a time recorder, the combination of a semi-circular housing having a slot in the bottom, a drum rotatable in said housing and having a plurality of radial card compartments any one of which may be registered with said slot by turning the drum means to permit the drop of a card from a selected compartment through said slot and to return the same to the compartment, and a time printing mechanism operable on a card when in dropped position and a time-controlled stop located in the path of the card and movable to vary the extent of drop of the card.

15. In a time recorder, the combination of a semi-circular housing having a slot in the bottom, a drum rotatable in said housing and having a plurality of radial card compartments any one of which may be registered with said slot by turning the drum, means to permit the drop of a card from a selected compartment through said slot and to return the same to the compartment, and a time printing mechanism operable on a card when in dropped position, the housing and drum being also shiftable to vary the lateral position of the card with respect to

the printing mechanism, and time-controlled means to vary the extent of said lateral shift according to time periods.

16. In a time recorder, the combination of a printing mechanism, a card holder having a compartment for each card, said holder being movable in one direction to register a selected compartment with said mechanism, and in another direction to vary its lateral position with respect to said mechanism and means to permit advance of the card from said compartments to printing position with respect to said mechanism and to return the card to said compartment after printing.

17. In a time recorder, the combination of a printing mechanism, a card holder having a compartment for each card, said holder being movable in one direction to register a selected compartment with said mechanism, and in another direction to vary its lateral position with respect to said mechanism and means to permit advance of the card from said compartments to printing position with respect to said mechanism and to return the card to said compartment after printing, said means being actuated automatically with the lateral movement of the holder.

18. In a time recorder, the combination of a printing mechanism, including a hammer, a shaft extending across and above said mechanism, a card magazine having radial compartments, rotatable with and slidable along said shaft, an operating wheel slidable along said shaft, a circular disk connected to said wheel and co-axial with the shaft, a spring between the disk and the magazine a lever one arm of which rests in contact with said disk and the other arm of which has an operating connection to the lever, and means actuated by the lever to permit a card to drop from a selected compartment of said magazine to position beside the hammer and to return said card to said compartment.

19. In a time recorder, the combination with a printing mechanism, of a housing having a slot in the bottom thereof and guides depending below said slot, a magazine in the housing, having compartments for individual cards, said magazine being movable to register any one of said compartments with said slot, a bar movable up and down in the guides and normally closing said slot, and means to raise or lower said bar, whereby a card may drop through the slot to printing position beside said mechanism when the bar is lowered, and be returned to its compartment when the bar is raised.

20. In a time recorder, the combination with a printing mechanism, of a housing having a slot in the bottom thereof and guides depending below said slot, a magazine in the housing having compartments for individual cards, said magazine being movable to register any one of said compartments with said slot, a bar movable up and down in the guides and normally closing said slot, and means to raise or lower said bar, whereby a card may drop through the slot to printing position beside said mechanism when the bar is lowered and be returned to its compartment when the bar is raised, said means including a lever having a finger on which the bar rests and across which it is slidable for lateral movement of the housing.

21. In a time recorder, the combination with a printing mechanism, of a housing having a slot in the bottom thereof and guides depending below said slot, a magazine in the housing, having compartments for individual cards, said magazine being movable to register any one of said compartments with said slot, a bar movable up and down in the guides and normally closing said slot, and means to raise or lower said bar, whereby a card may drop through the slot to printing position beside said mechanism when the bar is lowered and be returned to its compartment when the bar is raised, said means including a lever having a finger on which the bar rests and across which it is slidable for lateral movement of the housing, and the printing mechanism including a hammer having an operating cam located in the path of movement of the lever.

22. In a time recorder, the combination with a printing mechanism, of a housing having a slot in the bottom thereof and guides depending below said slot, a magazine in the housing, having compartments for individual cards, said magazine being movable to register any one of said compartments with said slot, a bar movable up and down in the guides and normally closing said slot, and means to raise or lower said bar, whereby a card may drop through the slot to printing position beside said mechanism when the bar is lowered and be returned to its compartment when the bar is raised said means including a lever having a finger on which the bar rests and across which it is slidable for lateral movement of the housing, and the printing mechanism including a hammer having an operating cam located in the path of movement of the lever, said cam being pivoted to the hammer to operatively engage the lever when it swings down to permit said lever to pass when it swings up.

23. In a time recorder, the combination with a printing mechanism, of a shaft extending across above said mechanism, a circular magazine mounted on said shaft and having radial compartments for cards, a hand wheel mounted on the shaft, to rotate the same, an indicating wheel mounted on

the shaft and having marks corresponding to the compartments in the magazine, and means to permit a card to drop from any one of said compartments to printing position with respect to the printing mechanism, and to return said card to said magazine after the printing operation.

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

WILLIAM T. GELTZ.

Witnesses:
JOHN A. BOMMHARDT,
G. W. ROSENBERG.