

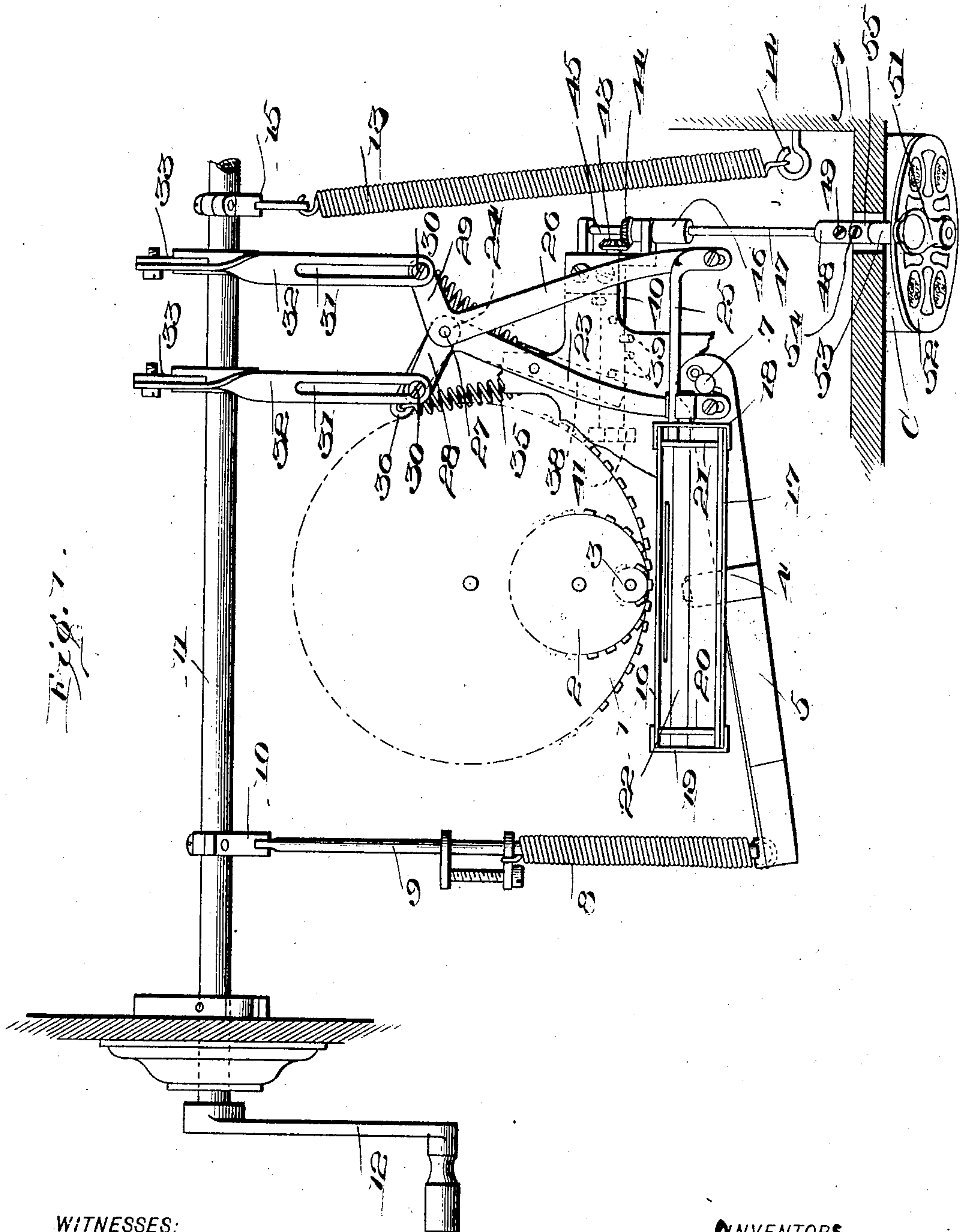
J. & A. DEY.
TIME RECORDER.

APPLICATION FILED JULY 28, 1903.

908,973.

Patented Jan. 5, 1909.

2 SHEETS—SHEET 1.



WITNESSES:

Allan Moore
H. M. Seamans

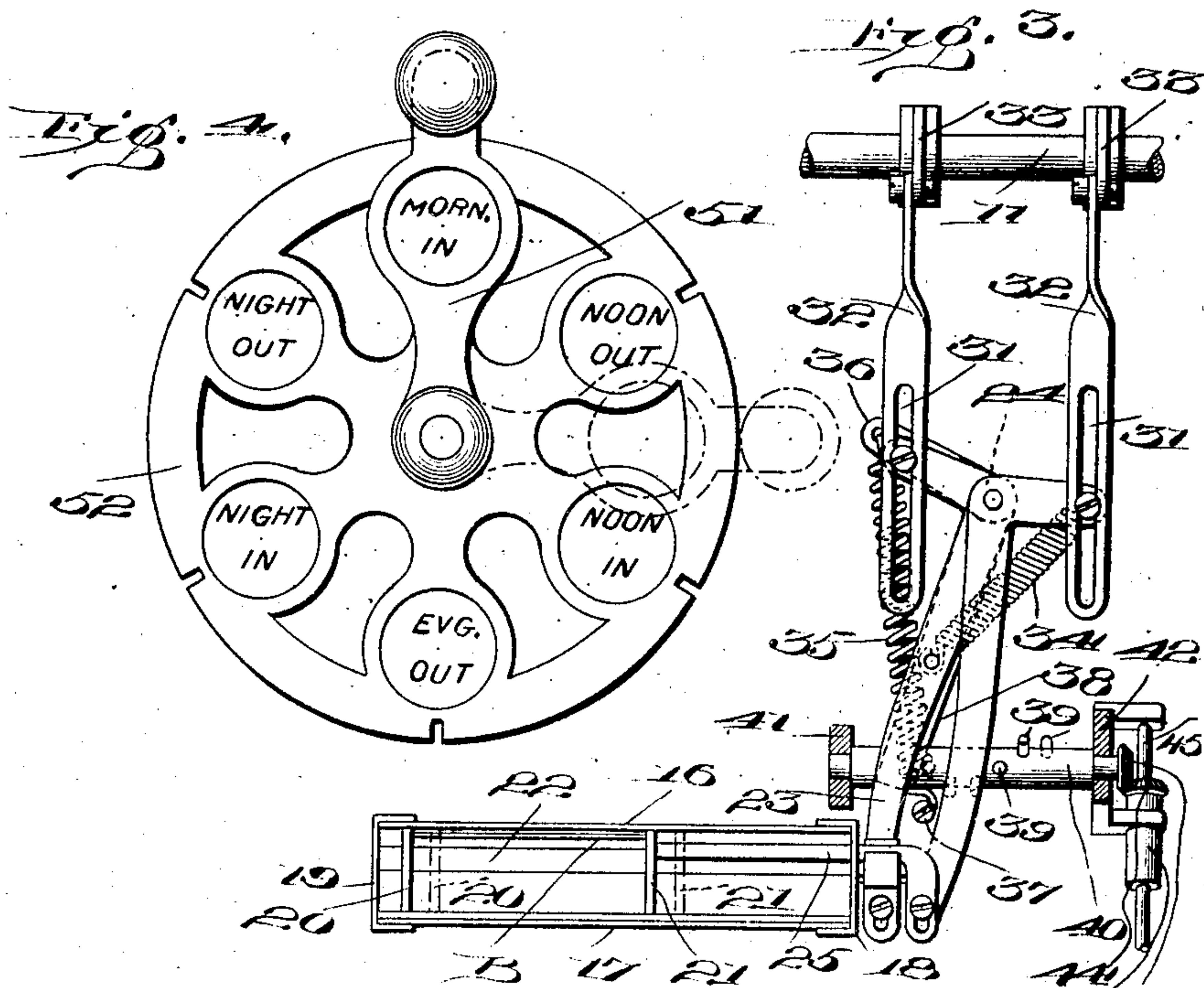
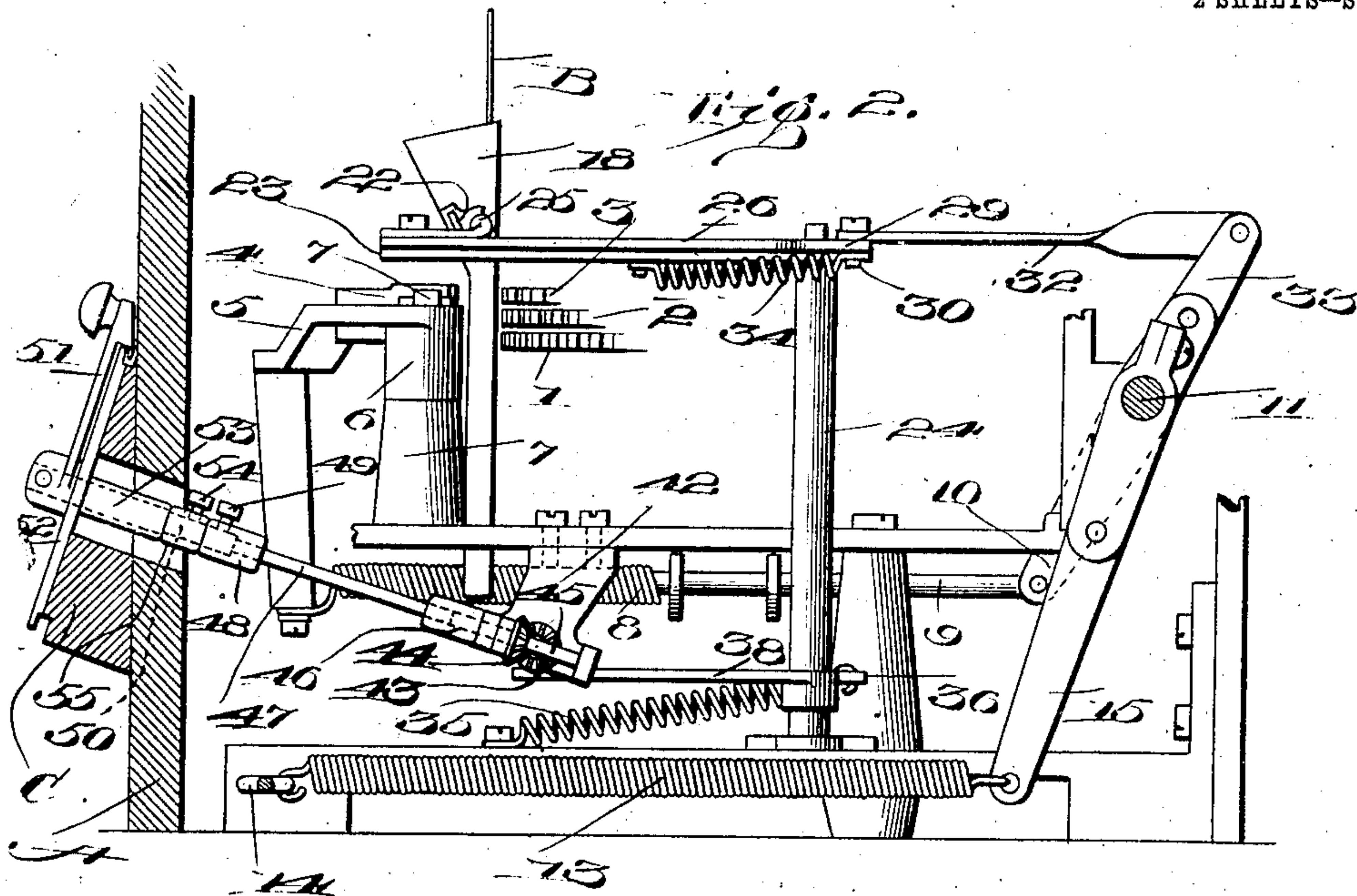
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ATTORNEYS

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UNITED STATES PATENT OFFICE.

JOHN DEY, OF SYRACUSE, NEW YORK, AND ALEXANDER DEY, OF GLASGOW, SCOTLAND,
ASSIGNORS TO DEY TIME REGISTER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TIME-RECORDER.

No. 908,973.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed July 28, 1903. Serial No. 167,287.

To all whom it may concern:

Be it known that we, JOHN DEY, residing at Syracuse, in the county of Onondaga and State of New York, and ALEXANDER DEY, residing in the city of Glasgow, county of Lanark, Scotland, have invented certain new and useful Improvements in Time-Recorders, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to time recorders, and its object is to provide an improved means for controlling the position of the record surface with relation to the printing mechanism.

While the invention is capable of use in a variety of relations, it is, as illustrated in the accompanying drawings, especially adapted for use in connection with a recorder adapted for use with record cards and provided with means for shifting the position of the card with relation to the printing point.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be hereinafter described and the novel features thereof pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in top plan with parts of the casing in section, showing the present invention as applied to a time recorder. Fig. 2 is a view of the same parts, partly in end elevation and partly in section. Fig. 3 is a detail in top plan, showing certain of the parts in a position different from that in which they are shown in Fig. 1. Fig. 4 is a face view on an enlarged scale of the dial and operating crank shown in Figs. 1 and 2.

Similar reference characters refer to similar parts throughout the several views.

The printing mechanism of the recorder is indicated diagrammatically by the printing wheels 1, 2 and 3, the platen 4 being carried in suitable relation to the printing wheels by a lever 5, one end of which carries a sleeve 6 pivotally mounted upon a vertical stud 7, while the other end is connected, through the interposition of spring 8, rod 9 and clamp 10, with the main actuating shaft 11. This shaft is rotated by means of a handle 12 and is normally held in position and returned to position after being rocked by means of spring 13 extending between a

suitable abutment 14 on the casing A and a clamp 15 on the shaft.

The record card, indicated at B, upon which it is desired to take an impression of an employee's time of entering, leaving, etc., is inserted into the card guide or slot formed by the side walls 16, 17, and the end walls 18, 19, into which it passes to any suitable depth into position to have an impression placed thereon upon actuation of the platen. In order that the position of any given impression upon the card may correspond to the time of taking such impression; or, in the case of a card transversely ruled to provide subdivisions for different days of the week and different periods of the day, in order that the impression taken at any given period may appear in the proper subdivision, there are provided means whereby the card, after it is inserted in the card guide, may be moved transversely thereof to bring different areas of the card to the printing point. There may also be provided means for limiting the depth of insertion of the card into the guide, but it is not necessary to show such means in order to understand the regulating device forming the subject of the present invention, which is here shown in connection with the means for moving the card transversely of the printing point, although its use is not necessarily limited thereto. Within the card slot or guide there are provided plungers or gripping devices 20, 21, which may, if desired, themselves constitute the end walls of the card guide and which are adapted to be moved to grip the card between them and to carry the card to the desired position with relation to the printing point.

The plunger 20 is carried at the end of an arm or slide 22, which is connected to the end of the long arm 23 of a bell crank lever, which is connected to and turns with a vertical stud or rock shaft 24 suitably journaled in the framework. The plunger 21 is carried by an arm 25 connected to the end of the long arm 26 of a bell crank lever pivotally mounted upon a stud 27 on the upper end of the rock shaft 24. In order to distinguish between these two bell crank levers they may be called, one the pivoted bell crank lever, and the other the fixed bell crank lever, inasmuch as one has a pivotal movement with relation to the stud or shaft 24, while

the other is fixed with relation to said stud or shaft although it moves therewith. The short arms 28, 29, of the two bell crank levers carry pins 30 which pass loosely through longitudinal slots 31, 31, in the ends of links 32, 32, pivotally connected to clamps 33 carried by the main rock shaft 11. The length of these links 32 is such that when the main rock shaft is in its normal position under control of the spring 13, the pins 30 will contact with the outer ends of the links 32 and the bell crank levers with the plungers which move therewith will be held in the position shown in Fig. 1. A spring 34 is connected to the short arm 29 of the pivoted bell crank lever and to the long arm 23 of the fixed bell crank lever, thereby tending to swing the pivoted bell crank lever toward the other when released by the movement of the link 32, and accordingly carrying the plunger 21 toward the plunger 20. A spring 35 is connected to an arm 36 projecting from the lower end of the rock shaft 24 and to a suitable abutment, as at 37. It will thus be seen that when the levers are released by rocking the shaft 11, thereby throwing the links 32 to the position shown in Fig. 3, the pivoted bell crank lever will be rocked by the spring 34 toward the fixed bell crank lever, thereby carrying the plunger 21 toward the plunger 20 until the ends of the two arms 26 and 23 come together or the movement of the plunger is checked in some other way. The distance between the two plungers will then correspond to the width of the card which is to be used with the machine, and will be such that the card will be firmly held between the two plungers to such a degree that it can be moved transversely therewith, but not to a degree sufficient to prevent the carrying of the card toward the printing wheel by the platen. This provides a means for gripping the card inserted in the guide, and the means for determining the distance to which the card thus gripped is moved transversely of the card guide will now be apparent. Under the influence of the spring 35 the shaft 24 will be rocked when the links 32 are released, thereby carrying both the bell crank levers to the right. This movement is limited and defined by an arm 38 connected to the rock shaft 24 and moving therewith, the end of which arm is positioned to engage a series of pins 39 arbitrarily arranged upon a banking roller 40, such that as the banking roller is rotated the pins will be successively brought into position to engage the end of the arm 38. Thus the rotation of the banking roller will determine the limit of the movement of the plungers and the card across the printing point. Under some circumstances, it may be preferred, on the ground of simplicity, cheapness and certainty, to have the rotation of this banking roller controlled manually, and we accordingly provide, as herein

shown, a means whereby the rotation of the banking roller, and accordingly the point to which the card will be carried by the plungers 20 and 21 upon the actuation of the machine, may be determined by means of a crank arm traveling over a suitable indicating dial, and adapted for manual operation by the attendant.

The banking roller 40 is suitably journaled, as at 41, 42, and one end thereof is extended beyond the journal and carries a bevel gear 43, which meshes with the bevel gear 44 on a short shaft 45 suitably journaled. The shaft 45 connects with a sleeve 46 on the end of a shaft 47, preferably of flexible material for convenience in use, and a sleeve 48 at the other end of this flexible shaft provides a means of connection, through the set screw 49, with the shaft 50 shown in dotted lines in Fig. 2. To this shaft 50 is pinned a crank or indicating arm 51 adapted to travel over the face of the dial 52. A bearing for the short shaft 50 may be provided, as shown, in a tube 53 projecting from the inner face of the dial. A second set screw 54 passes through a short sleeve 55 and into the shaft 50, a set screw of this character being desirable in order that a section of the casing A may be removed to get at the interior mechanism, or for other purposes. When this is done it must be possible to disconnect the outer from the inner shaft. The double set screw connection is desirable in order that, upon assembling, the relative position of the two shafts 47 and 50 may be readily determined, so that the position of the banking roller may correspond to the position of the crank arm 51 with relation to the dial, which is marked, as shown, "Morn. in", "Noon out", "Noon in", etc. The lower end of the dial 52 is preferably tilted outward for convenience of observation, as by the insertion of a wedge-shaped block C.

The operation of the machine will be in general apparent from the description already given, but may be briefly traced. The crank arm 51 is set to register with the proper period of the day, as for the first period in the position as shown in Fig. 4. This will rotate the banking roller through the described connection and bring it to such position that the first of the series of pins 39 will be interposed in the path of movement of the arm 38, this being the position shown in Figs. 1 and 3. As the workman enters the factory or other place where the recorder is used, he inserts his card in the card guide and turns the handle 12. The bell crank levers are then released and the plunger 21 is moved sidewise to grip the card between itself and the corresponding plunger 20 under the action of the spring 34. This being the first period of the day and it being desired to print at the extreme side of the card, no further movement

of the plungers is necessary and the normal movement under the influence of the spring 35 is restrained by contact of arm 38 with the first pin of the series. When the machine is set for later periods of the day, both the bell crank levers will be moved under the influence of the springs 34 and 35, and the plungers with the card will be shifted in the guide transversely of the printing point until the arm 38 comes in contact with one of the pins 39. Such a position of the plungers is shown in dotted lines in Fig. 3, corresponding to the "Noon out" position of the crank arm and of the banking roller.

It does not appear necessary to distinguish the relative timing of the movement of the pivoted bell crank lever and of the fixed bell crank lever when both are free to move under the action of the springs 34 and 35. Under some circumstances, it might be desirable that the pivoted bell crank lever should be given its full extent of movement before the pair were moved in the opposite direction by the spring 35. However, whether the movement of the plungers is successive, simultaneous, or both, will depend upon the arrangement and tension of the actuating members, and may be varied as desired.

Having described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a time recorder adapted for use with record cards, in combination, a printing mechanism, positioning means in connection therewith to engage a card and shift the position thereof with relation to the printing mechanism, means disposed in the path of movement of said positioning means to be engaged by the latter for limiting such shifting movement, and means under the control of the attendant for regulating said limiting means such that the extent of movement of the card with relation to the printing mechanism may be determined thereby.

2. In a time recorder adapted for use with record cards, a printing mechanism and a positioning device in connection therewith to be moved to grip a card and hold it in position with relation to the printing point, and a manually operated means disposed in the path of movement of said positioning means to be engaged by the latter for controlling the extent of said movement.

3. In a time recorder adapted for use with record cards, in combination, a printing mechanism, a positioning device adapted to control the position of a card with reference to said printing mechanism, a banking roller carrying a series of arbitrarily arranged pins, an arm connected to the positioning device, said arm being arranged to contact with and be held successively by

said pins, a moving arm controlling the positioning of said banking roller, and a dial over which said arm travels.

4. In a time recorder adapted for use with record cards, in combination, a printing mechanism, a positioning device to control the position of a card with reference to said printing mechanism, means for actuating said positioning device, means for regulating the actuation thereof, said means comprising a banking roller carrying a series of arbitrarily arranged pins and an arm connected to the positioning device to contact with and be held successively by said pins, a flexible shaft geared to said banking roller, a crank for turning said shaft, and an indicating dial over the face of which said crank moves.

5. In a time recorder adapted to use with record cards, in combination, a printing mechanism, means for positioning a record card relative to the printing mechanism, a banking roller arranged to be engaged by said positioning means whereby the extent of movement of the latter is determined, an indicating dial, an operating element arranged to traverse said dial, a shaft detachably connected to said element, and means to transmit motion from said shaft to the banking roller.

6. In a device of the class described, means to grip a card at its opposite edges, means for actuating said means, and means positioned to be engaged by said gripping means for defining the limits of movement thereof as so actuated, said defining means being manually controlled.

7. In a device of the class described, in combination, a card positioning device having an arm to move therewith, a banking roller having a series of arbitrarily arranged pins to be interposed successively in the path of said arm by rotation of said roller, a shaft connected to rotate said roller, an arm for rotating said shaft and a dial over the face of which said arm travels, said dial being provided with indications denoting the positions of the arm which correspond to desired positions of the roller.

8. In a time recorder adapted for use with record cards, in combination, a stop, a spring-pressed lever adapted to hold a card against said stop, printing mechanism, a spring tending to move said stop with relation thereto, and manual controlling means adapted to limit the movement of said stop.

9. In a time recorder adapted for use with record cards, in combination, a stop, a spring-pressed lever adapted to hold a card against said stop, printing mechanism, a spring tending to move said stop with relation thereto, a lever adapted simultaneously to actuate said printing mechanism, and controlling means adapted to limit the movement of said stop.

10. In a time recorder adapted for use

with record cards, in combination, printing
mechanism, a movable member adapted to
be engaged by the edge of a record card and
to determine the position of the same with
5 relation to said printing mechanism, man-
ually-controlled means arranged to be en-
gaged by said member to determine the posi-
tion of the latter, and spring-pressed means
adapted to force said card against said mem-
10 ber.

11. In a time recorder, adapted for use
with record cards, in combination, printing
mechanism, means to grip a card at its oppo-
site edges and justify the same with relation

to the printing mechanism and bring a deter- 15
mined portion of the surface of the card op-
posite the printing point, means to actuate
said gripping means, and manually con-
trolled and adjustable means, arranged to be
engaged by said gripping means, whereby 20
the justifying of the latter is determined.

In testimony whereof we affix our signa-
tures, in the presence of two witnesses.

JOHN DEY.

ALEXANDER DEY.

Witnesses:

CARRIE M. JUNE,
C. E. McDONALD.