No. 886,456. PATENTED MAY 5, 1908.

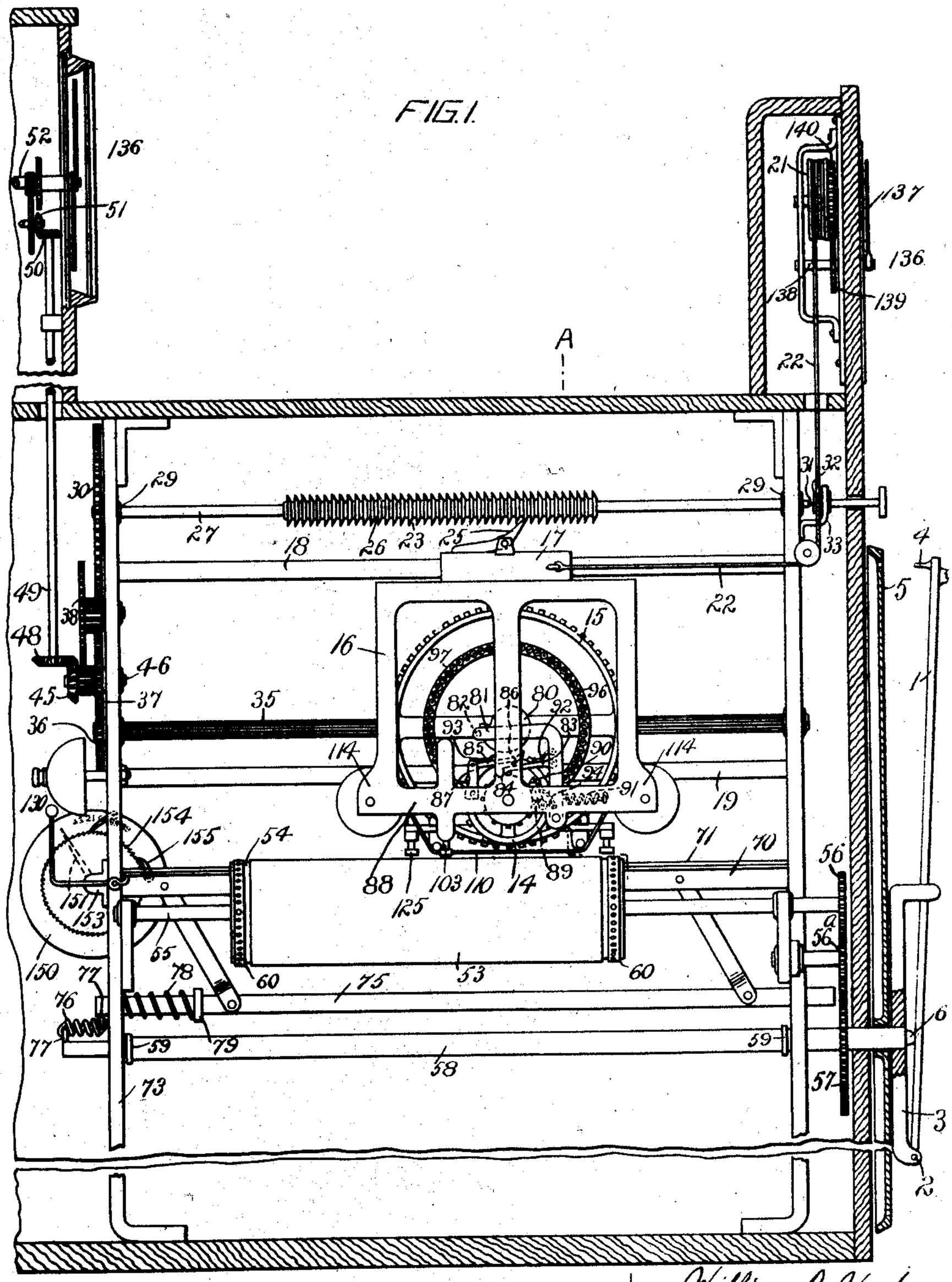
W. A. WOOD.

WORKMAN'S TIME RECORDER.

APPLICATION FILED FEB. 3, 1903.

4 SHEETS—SHEET 1.

FIG. 1.



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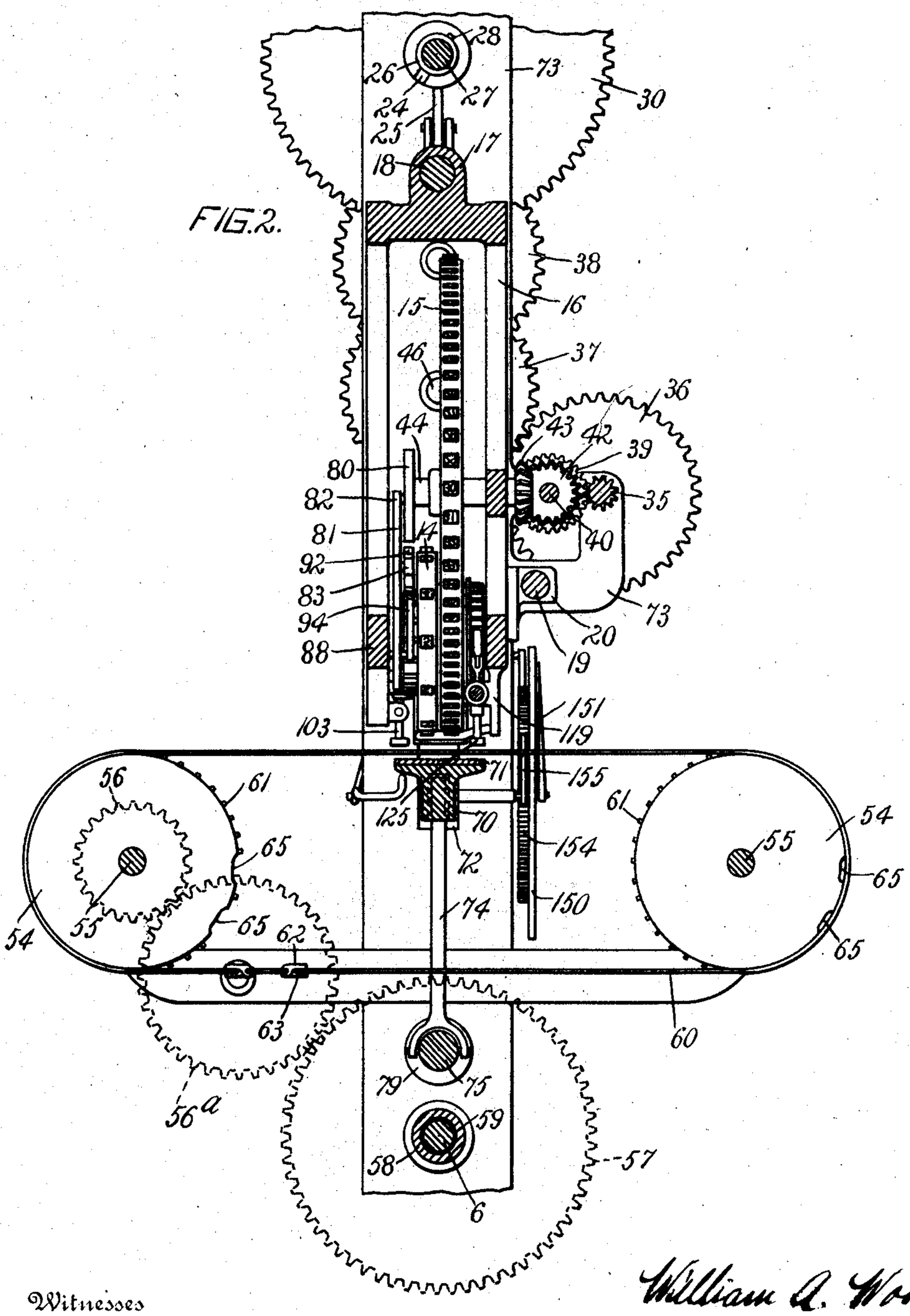
4 SHEETS—SHEET 2.

FIG. 2.



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4 SHEETS—SHEET 3.

FIG. 3.

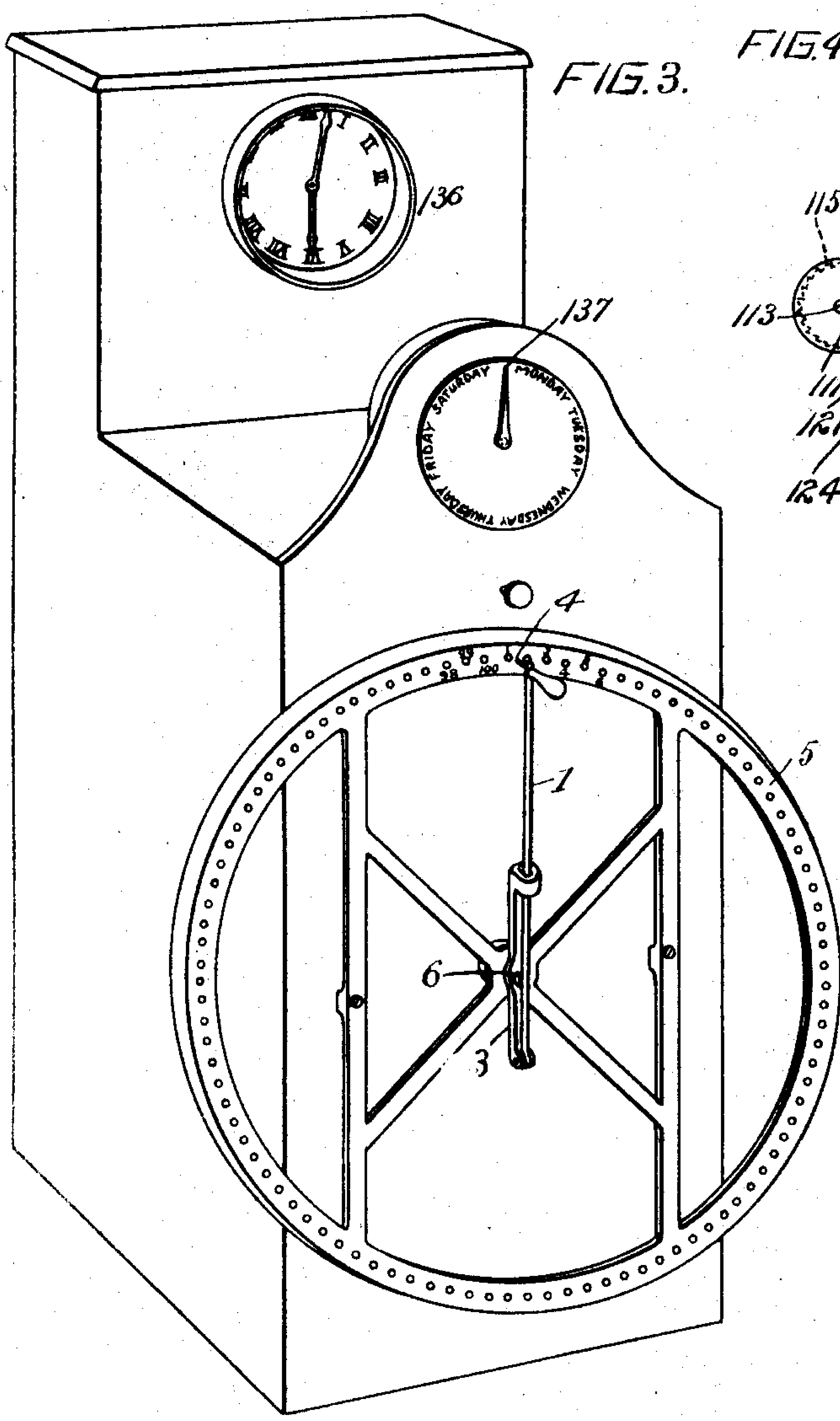


FIG. 4.

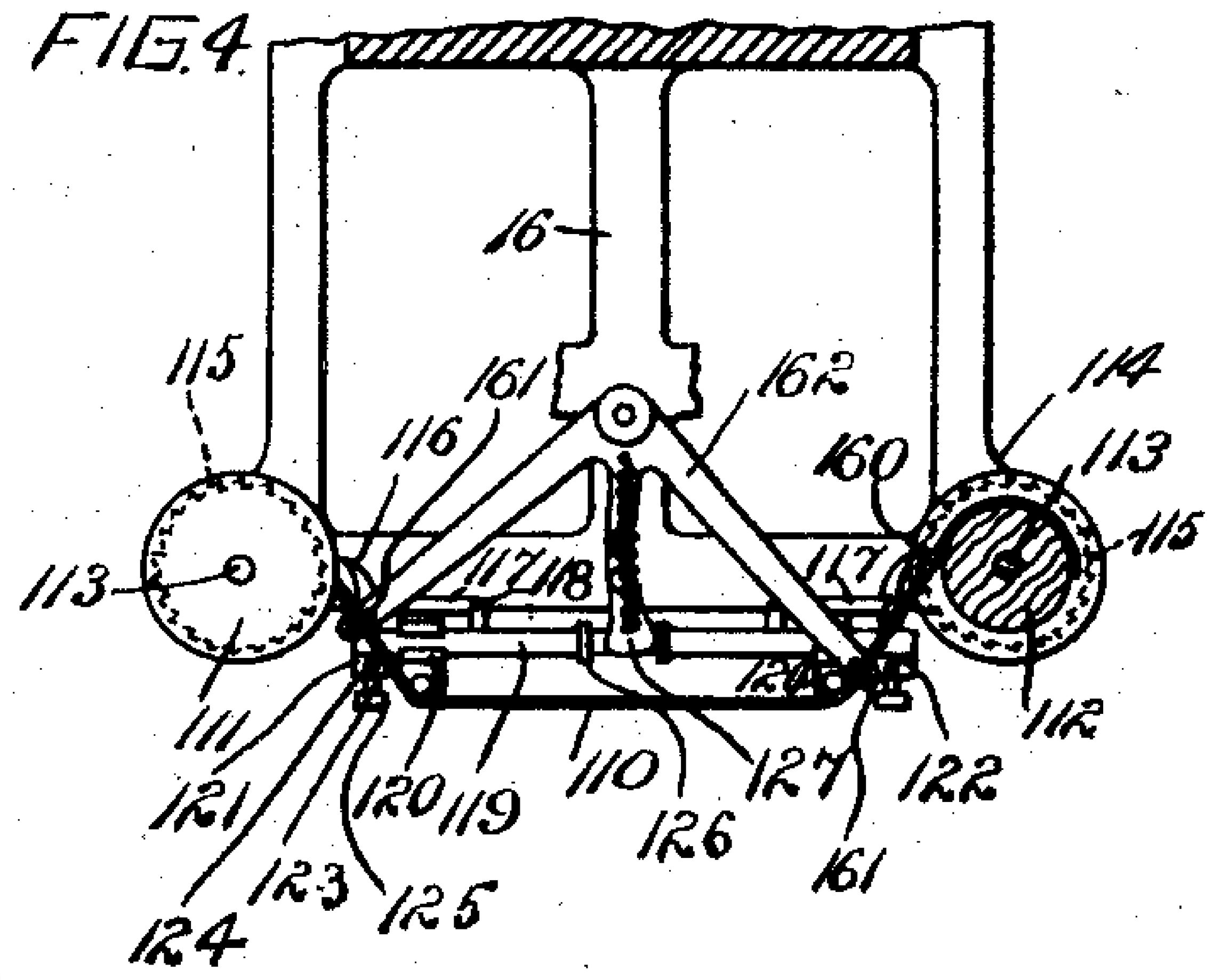


FIG. 5.

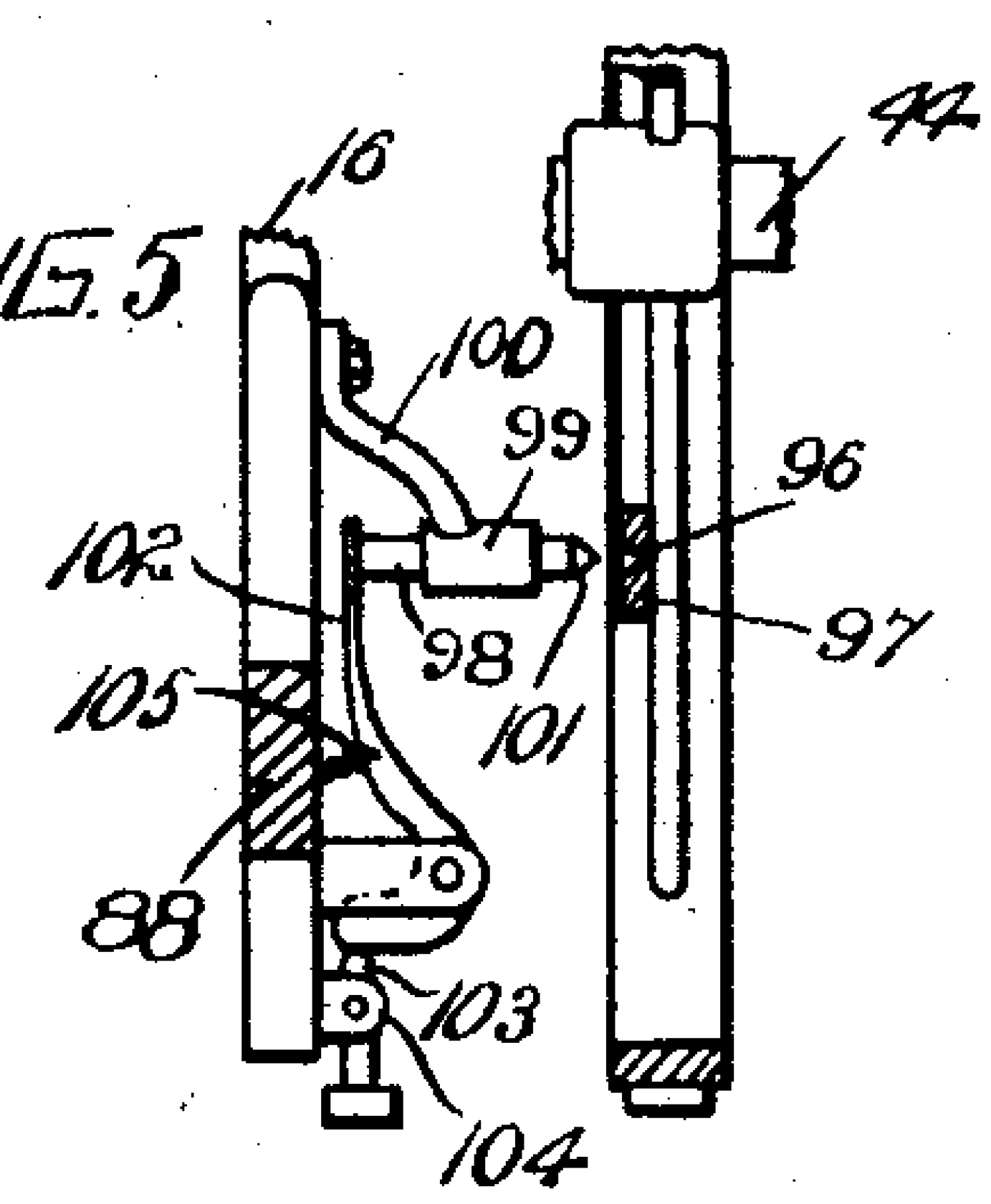


FIG. 6.

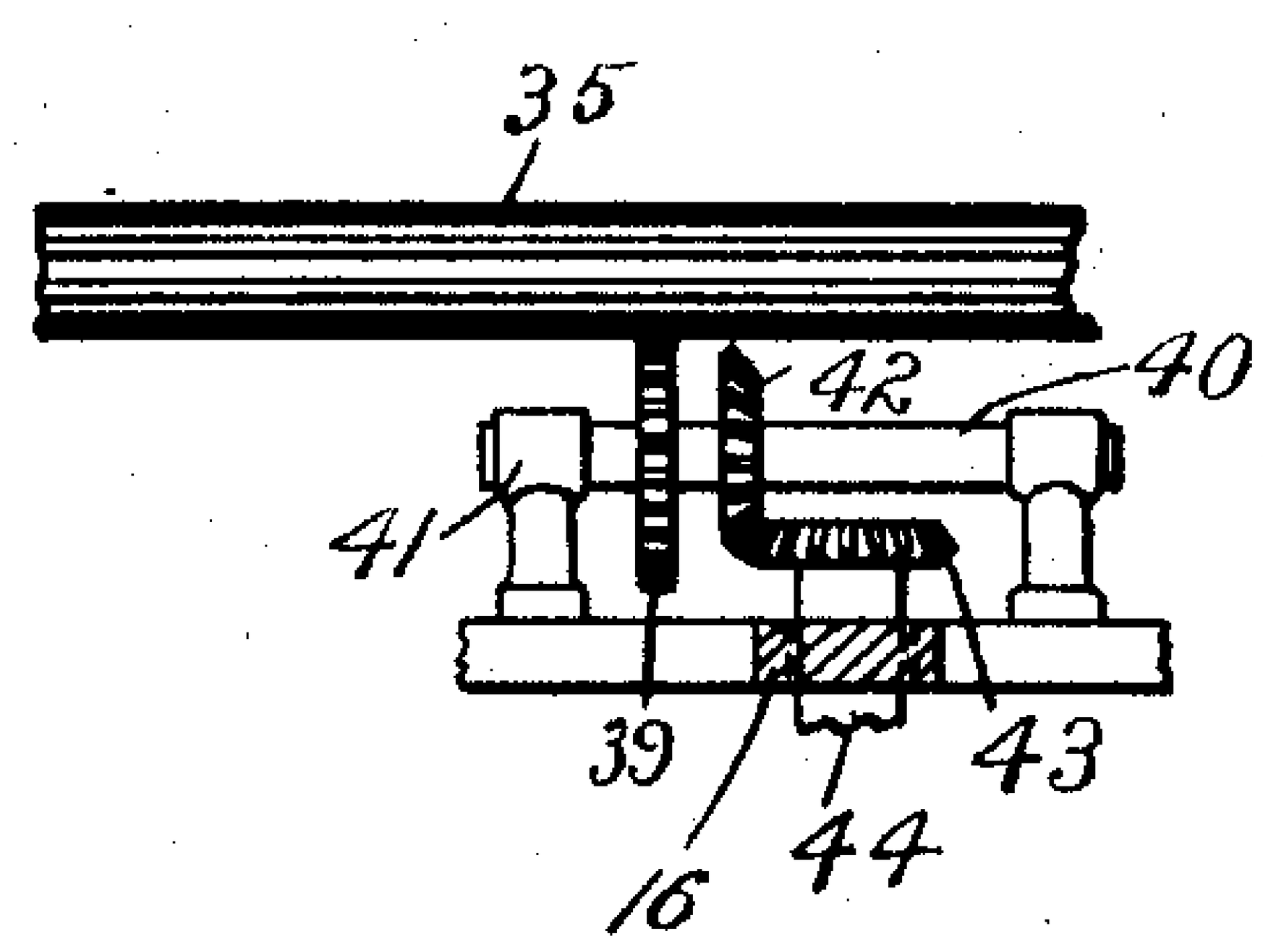
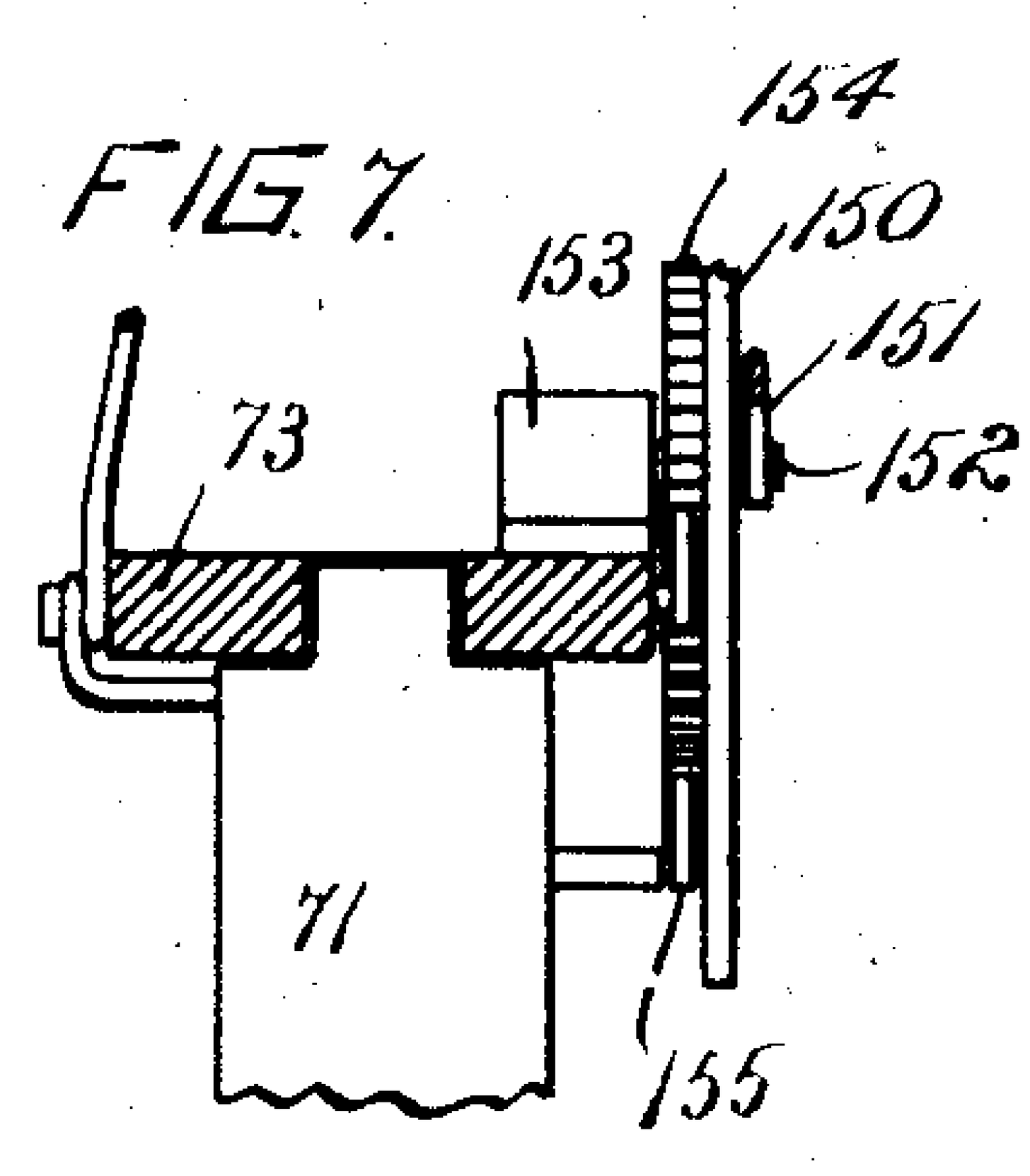


FIG. 7.



Witnesses

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WORKMAN'S TIME RECORDER.

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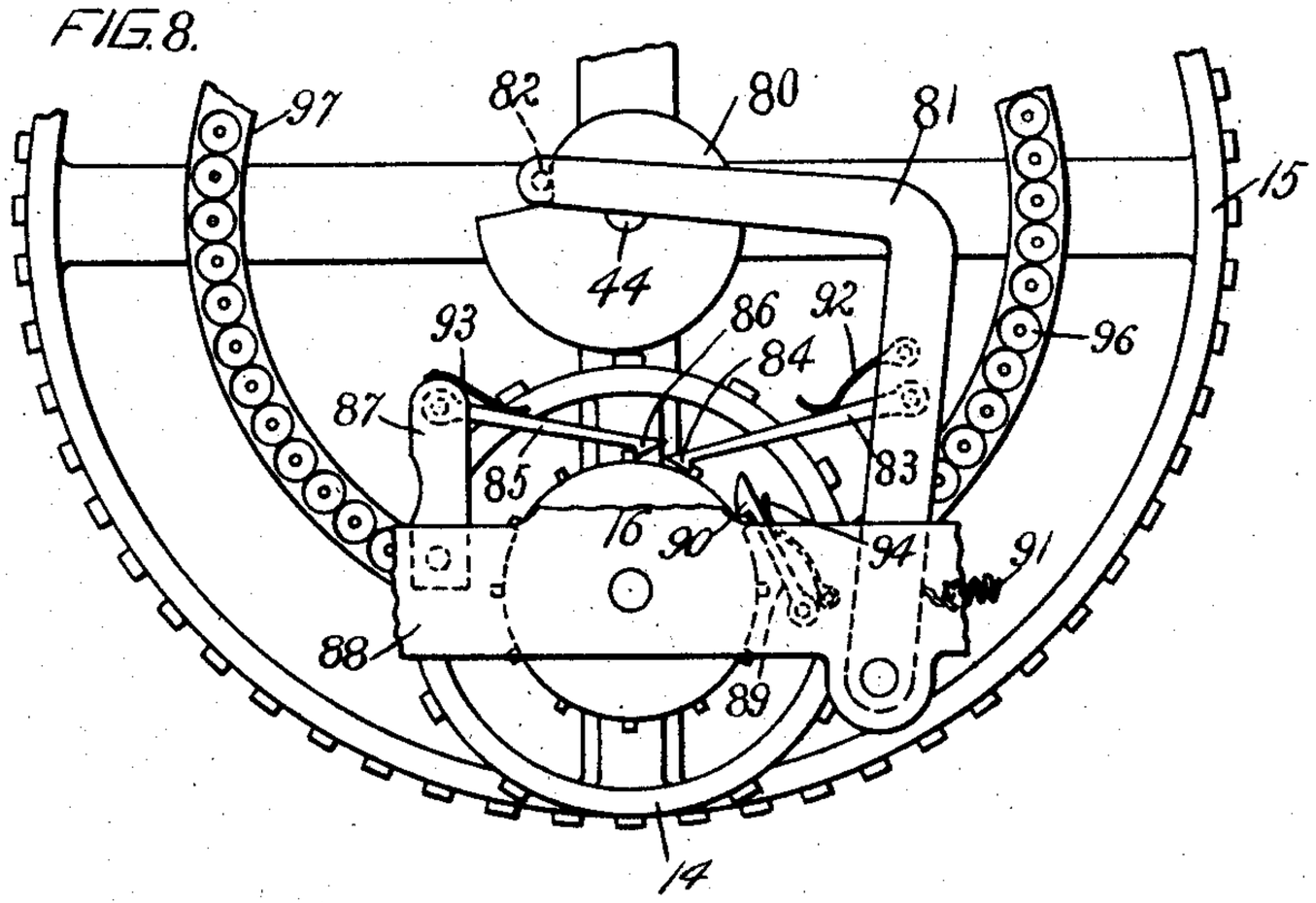
4 SHEETS—SHEET 4.

FIG. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM ARCHIBALD WOOD, OF MONTREAL, QUEBEC, CANADA.

WORKMAN'S TIME-RECORDER.

No. 886,456. Specification of Letters Patent. Patented May 5, 1908.

Application filed February 3, 1903. Serial No. 141,766.

To all whom it may concern:

Be it known that I, WILLIAM ARCHIBALD WOOD, of the city of Montreal, district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Workmen's Time-Recorders; and I do hereby declare that the following is a clear and exact description of the same.

The object of my invention is to provide a less complicated and less costly machine than has been known heretofore, and one that will require no attention during the week and at the same time utilize a narrower time sheet (with a consequent reduction in the size of the machine), and register the number of workmen which have recorded their time.

The invention may be said briefly to consist in providing an improved automatic shift for the type-wheel supporting carriage whereby the carriage will be automatically shifted by the clock movement at predetermined times and whereby the printing means will be prevented from changing its position during any predetermined day of rest in a weekly cycle where the week commences between Monday and Saturday and will be in position to be actuated by the workman and record his time in the column upon the time sheet, next to that which has received his record the night before, means whereby this automatic shift will be set simultaneously with the clock movement and type wheels; adapting the carriage to work constantly in the same plane; providing time-sheet carrying and operating means whereby the sheet, when carried upon a pair of rolls may be rotated with the workman's lever and allow the latter to describe a complete circle or more in either direction; improved platen raising means; an improved operative connection between the minute and hour wheels and for preventing the movement of the hour-wheel past the point desired when being set by turning the clock hands; a special arrangement of the indicator dial, whereby chance of punching twice over the same portion of the sheet is obviated; providing an operative connection between the platen and the ink ribbon spools; simplified means for changing the direction of feed; and means for counting the workmen who have registered. For full comprehension, however, of my invention reference must be had to the accompanying drawings wherein

Figure 1 is a side elevation of a time recorder constructed according to my invention with the casing in transverse section; Fig. 2 is a detail transverse sectional view taken on line A, B, Fig. 1 enlarged; Fig. 3 is a detail perspective view, in reduced scale, of the time recorder; Fig. 4 is a detail view illustrating the ribbon shifting gear; Fig. 5 a detail view of a portion of the hour wheel and illustrating particularly the means for adjusting same automatically upon each record made by a workman; Fig. 6 is a detail view of a portion of the means for operating the time wheels, and Fig. 7 is a sectional view of the frame and illustrating particularly the means whereby the number of times the recorder is operated, is recorded. Fig. 8 illustrates the means for causing the hour wheel to be operated by the arbor of the minute wheel.

The workman's lever 1 is, as formerly pivoted at its lower end as at 2 to the lower end of an arm 3 rigidly secured midway of its length to a sleeve to be presently described and between which and the working parts there is an operative connection, the lever having the usual pin 4 to enter a hole in the dial 5 thereby guiding the inward movement of said lever, which during said inward movement presses a spindle 6 and causes it to slide through the said sleeve as formerly. I make this spindle 6 of sufficient length however, to extend completely through the machine for reasons to be hereinafter shown.

The type-wheels 14 and 15 are mounted in a rectangular frame 16 supported by a sleeve 17 slidable upon a rod 18 and carrying the frame 16 which is guided by a guiding rod 19 encircled by an eye 20 upon said frame. This frame and sleeve constitute the carriage which is maintained constantly in the same plane by said rods 18 and 19. The carriage is shifted or fed automatically by a spring roller 21 to which the carriage is connected by a cord 22, which causes it to bear constantly upon a series of rotating annular stops in the form of disks, each having a notch 24, said disks being arranged in such relative positions as to cause almost the complete periphery of the disk or a portion thereof to pass a detent spring pawl 25 upon the carriage before the latter is released. These disks are beveled as at 23 and formed with collars 26 and they are fitted upon a shaft 27 to which they are rigidly secured after having been adjusted to their correct relative positions by pins 28 or otherwise, while the rod is rotatably supported in bearings 29 upon

the frame and has a pinion 30 upon one end, and its other end tapered as at 31 and bearing upon a disk 32 supported in a bracket 33 secured to the frame. This construction enables the rod 27 and with it the annular stop to be shifted and move the type wheels back to print in the previous column, as, for instance, is required when a workman leaves when other workmen are due to return.

In order to provide an effective operative connection between the clock-movement and the type-wheels, in whatever position the carriage may be located, I mount a corrugated rod constituting an elongated gear 35, in bearings in the frame 73 and having upon one end a pinion 36 which is driven by a driving pinion 37 also imparting rotation to the pinion 30 through an intermediate or idle gear 38. This elongated gear intermeshes with a pinion 39 rigidly upon an arbor 40 rotatably carried in bearings 41 upon the carriage frame 16, a bevel gear 42 also rigidly upon said arbor intermeshing with a second bevel gear 43 rigidly upon the shaft 44 upon which the minute wheel 15 is rigidly mounted.

The detent shaft 27 and elongated gear are driven in unison by a bevel gear 45 rigidly upon the shaft 46 carrying driving pinion 37, and a bevel gear 48 upon the lower end of a rod 49 the upper end whereof carries a bevel gear 50 intermeshing with and being rotated by a bevel gear 51 rotated upon the minute-wheel shaft 52 of the clock movement.

The minute type-wheel is as just shown rotated by the clock work and it is geared to turn once every hour, as usual, and the hour wheel is operatively connected to the minute wheel to rotate once every twelve or twenty-four hours according to the requirements. According to the arrangement illustrated the hour wheel is rotated once every twelve hours.

In order to render the setting of the clock accurate I mount a cam wheel 80 upon shaft 44 and fulcrum a bell crank lever 81 to the inside of the carriage frame 16 and furnish its upper free end with a pin 82 adapted to be borne upon by the cam. A straight lever arm 83 is fulcrumed to this bell crank-lever and has its outer end tapered and formed with a hook 84 to engage the teeth of the hour wheel and rotate the latter, and a second lever-arm 85 having one end tapered and formed with a hook 86, to limit the movement of the hour wheel, is fulcrumed at its opposite end to the upper end of a standard 87 rigidly upon a cross-piece 88 of the carriage frame, while a third lever arm 89, fulcrumed at one end to said cross-piece, has its other end tapered and hooked as at 90 to prevent retrograde movement of the hour wheel. This arrangement causes the hour wheel to come into alinement upon each movement thereof. A retractile helical spring 91 yieldingly maintains the pin 82 upon the bell crank lever in contact with the periphery of the cam, and bow springs 92 93, and 94 cause the respective pawls 83, 85, and 89 to bear yieldingly upon the toothed periphery 95 of the said hour wheel.

The minute wheel is automatically adjusted into alinement with the hour wheel and the printing line by means of a series of tapered holes 96 in a ring 97 carried rigidly upon and concentric to the minute wheel, and a dowel pin 98 carried in a sleeve 99 secured by a bracket 100 to the carriage frame 16. One end of this dowel pin is tapered as at 101 and the other end is borne upon by one arm 102 of a bell-crank lever the other arm whereof projects across the upper end of a pin 103 carried in a small bracket arm 104, a spring 105 yieldingly maintaining said bell-crank-lever in such position. The pin 103 is located above the platen and in position to be engaged thereby upon the upward movement thereof.

I prefer to carry the time sheet 53 upon a pair of rolls 54 mounted rigidly upon shafts 55 bearing in the frame 73 and one of which has a gear 56 rigidly thereon and intermeshing with an idler 56ª which in turn intermeshes with a gear 57 rigidly upon a rotatable sleeve 58 supported in bearings in the said frame and held against longitudinal movement therein by a pair of collars 59 rigidly thereon, this sleeve is, together with other means, operatively connected to the workman's lever and will be further alluded to in connection with the description of said lever. A pair of chains or perforated bands 60 are looped over these rollers one at each end thereof and said rollers each have a series of teeth or pins 61 at their ends which engage the perforations in said bands, while the time sheet, 53, has its ends held between the jaws 62 and 63 of a pair of spring clips, carried by the bands 60 one (62) of the jaws of each clip being on the inside and the other (63) on the outside, while the periphery of the rolls 54 are notched as at 65 to accommodate said inner jaws 62.

My improved platen is located as formerly between the rolls 54 and consists of a flat topped bar 70 having a strip of rubber 71, or other flexible material thereon. This platen is vertically reciprocated and is guided in its movement by having its ends projecting into vertical slots 72 in the frame 73, the reciprocal movement being imparted by a pair of links 74 pivotally connected at their upper ends thereto and at their lower ends to a slide rod 75 supported in holes in said frame. This rod is reciprocated by the sliding spindle 6 through an intermediate yielding connection consisting of a retractile helical spring 76 connected at its ends to hooks 77 upon the adjacent ends of said spindle and the rod 75, and an expansile helical spring 78 encircling said rod 75 and bearing between a collar 79

thereon and the frame. The position of the platen is directly below the carriage and in the vertical plane of the type wheels and it extends longitudinally of the movement of the carriage. It will be observed that the platen while being moved to and from the type wheels is maintained constantly in a horizontal position thus insuring a uniformity in the printing action at whatever point along the platen the type-wheels may be.

The ink ribbon 110 is carried upon a pair of ribbon spools 111, 112 rotatably carried upon stub spindles 113 mounted upon wings 114 on the carriage frame 16. A pair of ratchet wheels 115 are secured rigidly to the ends of said spools and are engaged alternately, as the direction of feed of the ribbon is reversed, by a pair of pawls 116 pivoted to the end of a pair of links 117 pivoted at their other ends, as at 118 to a slidable bar 119 supported upon a pair of depending bracket arms 120. A pair of sleeves 121 slotted as at 122 are formed in one with the ends of said bar 119, and act as guides for a pair of lifting pins 123 held against completely dropping therefrom by retaining pins 124 upon said pins 123 and projecting into said slots 122. The lower ends of these lifting pins 123 have heads 125 thereon which are impinged upon by the platen as it rises. The direction of feed of the ribbon is reversed mainly by the usual means which I illustrate in Fig. 4 but do not describe in detail. The novel features in this reversing means consist of a pair of stops 126 rigidly upon said slide bar and a straight lever 127 operated by the usual bell crank lever.

An announcer indicated at 130 is actuated by the platen as it rises thus announcing each registration. The time piece 135, and indicator 136 are as usual and need not be described in detail. The indicator however is located immediately above the workman's dial and its index finger 137 is mounted upon an arbor 138 which is connected by a pair of intermeshing pinions 139 and 140 mounted respectively upon said arbor 138 and upon the arbor upon which the spring drum 21 before mentioned is mounted.

The number of workmen recording their time is recorded on a counting dial 150 the index finger 151 whereof is mounted upon a spindle 152 bearing in bracket 153 on the frame and having a ratchet wheel 154 thereon which is intermittently rotated by a pawl 155 upon the platen.

Operation: The operation of my improved workman's time recorder is as follows:—The clock work actuates the parts of my recorder through gear wheel 51 upon arbor 52 which is driven by the minute wheel, this gear wheel 51 intermeshing with gear wheel 50 upon spindle 49 from which rotative movement is imparted to driving gear 37 through the medium of gears 48, and 45 and arbor 46. This driving gear 37 rotates the spindle 27 and elongated gear 35, simultaneously, through gears 30, 36 and 38, thus operating the machine. The workman swings the lever 1 around in either direction to the hole of his particular number on the dial 5, and upon pressing pin 4 into the hole the lever will force the spindle 6 inwards thereby raising the platen and with it the time sheet, and causing the time to be printed upon the latter opposite the workman's number. Simultaneously the platen bears upon the heads 125 of the pawl operating pins of the ink ribbon feeding gear, the bell is also rung, and if the feed of the ribbon happens to bring the end of it near the printing line a transverse bead 160 upon said ribbon will trip upon the pins 161 of the reversing angular lever 162 and reverse the feed by causing lever 127 to shift the slide bar 119 and move one operating gear at one end of the bar out of engagement with the ratchet wheel 116 of its winding drum, and the other operating gear into engagement with its ratchet wheel. Each rise of the platen turns the index finger of the workmen counting device a unit thus enabling the number of workmen entered to be ascertained at a glance.

The number of men in the works should correspond to the number registered on the counting dial.

What I claim is as follows:—

1. In a time recorder the combination with time recording means, and a support for a record receiving sheet, of means for automatically intermittently changing the relative position of said recording means and said support to divide each day into intervals, such last mentioned means being adapted to, at predetermined times, skip a day.

2. In a time recorder the combination with time recording means, and a support for a record receiving sheet, of means for automatically intermittently changing the position of said recording means and said support with varying and adjustable periods of intermission.

3. In a time recorder the combination with a clock movement, a carrier, time printing wheels carried by said carrier, a support beneath said printing wheels for a time sheet, means for causing said time wheels and support to bear upon one another with the time sheet between them, means for automatically intermittently shifting said carrier across said sheet with varying and adjustable periods of intermission, for the purpose set forth.

4. In a workman's time recorder the combination with a clock work, of a support for a record receiving strip, means for feeding such strips across the surface of the said support, means for recording upon the device the daily incomings and outgoings of a workman

and rotary means operatively connecting the clock work to the recording means, and means whereby predetermined days are automatically skipped during the continuous operation of the machine.

5. In a time recorder the combination with a clock movement, a carrier, time printing devices carried by said carrier, a support for a time sheet, and means for yieldingly drawing said carrier across said support for the time sheet, of a shaft rotated by said clock movement, a series of detent disks mounted upon and rotatable with said shaft, a dog upon said carrier bearing upon said detent disks, said detent disks having their peripheries interrupted at different angular positions respectively to allow the passage of the dog and carrier, substantially as described.

6. In a time recorder the combination with a clock movement, a carrier, time printing devices carried by said carrier, a support for a time sheet, and means for yieldingly drawing said carrier across said support for the time sheet, of a shaft rotated by said clock movement, a series of detent disks mounted adjustably upon and rotatable with said shaft, a dog upon said carrier bearing upon said detent disks, said detent disks having their peripheries interrupted at different angular positions respectively to allow the passage of the dog and carrier, substantially as described.

7. In a time recorder the combination with a clock movement, a carrier, time printing devices carried by said carrier, a support for a time sheet, and means for yieldingly drawing said carrier across said support for the time sheet, of a shaft rotated by said clock movement, means whereby said shaft is reciprocated, a series of detent disks mounted upon and rotatable with said shaft, a dog upon said carrier bearing upon said detent disks, said detent disks having their peripheries interrupted at different angular positions respectively to allow the passage of the dog and carrier, substantially as described.

8. In a time recorder the combination with a clock movement, a carrier, time printing devices carried by said carrier, a support for a time sheet, and means for yieldingly drawing said carrier across said support for the time sheet, of a shaft rotated by said clock movement, means whereby said shaft is reciprocated, a series of detent disks mounted adjustably upon and rotatable with said shaft, a dog upon said carrier bearing upon said shaft, a dog upon said carrier bearing upon said detent disks, said detent disks having their peripheries at different angular positions respectively to allow the passage of the dog and carrier, substantially as described.

9. In a time recorder the combination with a clock movement, a carrier, time printing devices carried by said carrier, a support for a time sheet, and means for yieldingly drawing said carrier across said support for the time sheet, of a shaft rotated by said clock movement, a series of groups of detent disks mounted upon and rotatable with said shaft with spaces between said groups, a dog upon said carrier bearing upon said detent disks, said detent disks having their peripheries interrupted at different angular positions respectively to allow the passage of the dog and carrier, substantially as described.

10. In a time recorder the combination with a clock movement, a carrier, time printing devices carried by said carrier, a support for a time sheet, and means for yieldingly drawing said carrier across said support for the time sheet, of a shaft rotated by said clock movement, means whereby said shaft is reciprocated, a series of groups of detent disks mounted upon and rotatable with said shaft with spaces between said groups, a dog upon said carrier bearing upon said detent disks, said detent disks having their peripheries interrupted at different angular positions respectively to allow the passage of the dog and carrier, substantially as described.

11. In a time recorder the combination with a clock movement, a carrier, time printing devices carried by said carrier, a support for a time sheet, and means for yieldingly drawing said carrier across said support for the time sheet, of a shaft rotated by said clock movement, a series of groups of detent disks mounted adjustably upon and rotatable with said shaft with spaces between said groups, a dog upon said carrier bearing upon said detent disks, said detent disks having their peripheries interrupted at different angular positions respectively to allow the passage of the dog and carrier, substantially as described.

12. In a time recorder the combination with a clock movement, a carrier, time printing devices carried by said carrier, a support for a time sheet, and means for yieldingly drawing said carrier across said support for the time sheet, of a shaft rotated by said clock movement, means whereby said shaft is reciprocated, a series of groups of detent disks mounted adjustably and rotatable with said shaft with spaces between said groups, a dog upon said carrier bearing upon said detent disks, said detent disks having their peripheries interrupted at different angular positions respectively to allow the passage of the dog and carrier, substantially as described.

13. In a time recorder the combination with a clock movement, a support for a record receiving sheet, a carriage with type-wheels mounted thereon and means for automatically intermittently changing the position of said carriage and said support with

varying and adjustable periods of intermission, of an elongated gear extending parallel to the path of movement of said carriage, said carriage traveling longitudinally of said elongated gear, a train of gears operatively connecting said clock movement to said elongated gear, and a train of gears upon the carriage one of said last mentioned gears intermeshing with and sliding along said elongated gear thereby operatively connecting said elongated gear to said type-wheels substantially as described and for the purpose set forth.

14. In a time recorder the combination with a workman's lever, time recording means, means operatively connecting the lever to the said time recording means, a clock movement, a support for a time sheet, and means controlled by said clock movement for intermittently shifting said time recording means across the support for the time sheet, of means whereby said shifting means is set simultaneously with the setting of the clock movement in order to cause the predetermined time of action of said shifting means to constantly correspond to, and said action take place at that time when it is indicated by the time recorder.

15. In a time recorder the combination with the frame thereof, a horizontally movable carriage for the time recording means, and a support for a time sheet, of means for intermittently shifting said carriage, consisting of a horizontal rod supported by said frame and extending transversely to the said support for the time sheet, a sleeve connected to said carriage and slidable upon said rod, means tending to move said carriage towards one end of said rod, and means detaining said carriage away from said end of said rod and intermittently releasing same, substantially as described.

16. In a time recorder the combination with the frame thereof, a horizontally movable carriage for the time recording means, and a support for a time sheet, of means for intermittently shifting said carriage, consisting of a horizontal rod supported by the frame and extending transversely to the said support for the time sheet; a sleeve connected to said carriage and slidable upon said rod; means tending to move said carriage towards one end of said rod; means detaining said carriage away from said end of said rod and intermittently releasing same, and a second rod parallel to said first mentioned rod, and secured transversely to said frame and maintaining said carriage constantly in the same plane substantially as described.

17. In the time recorder the combination with the frame thereof, time printing means, and a workman's oscillatory lever, of a support for a time sheet consisting of a pair of rolls located one on each side of and below said time printing means, a flexible length looped around and operatively connected to said pair of rolls, means for securing a time sheet to said flexible length, a gear mounted upon one of said rolls, a train of gears rotatively connecting said workman's lever to said gear mounted upon the roll, and a platen beneath the upper portion of said flexible length to receive the impact of the impression during printing.

18. In a time recorder the combination with time printing devices, means for shifting said printing devices, and a workman's lever, of a platen extending parallel to and from end to end of the path of said printing devices, means preventing longitudinal movement of said platen and means operatively connected to said workman's lever for moving said platen transversely into contact with and away from said printing devices, substantially as described and for the purpose set forth.

19. In a time recorder the combination with the frame thereof having vertical slots in its opposite sides time printing devices, means for shifting said printing devices, and a workman's lever, of a platen extending parallel to and from end to end of the path of said printing devices, and having its end guided in said slots in the frame, means preventing longitudinal movement of said platen in said slots, and means operatively connected to said workman's lever for moving said platen transversely in said slots and into contact with and away from said printing devices, for the purpose set forth.

20. In a time recorder the combination with a reciprocatory platen and a bell supported adjacent to said platen of a lever fulcrumed adjacent to said platen and having one end in the form of a knocker and in position to strike said bell, and its other end intersecting the path of said platen, substantially as described and for the purpose set forth.

21. In a time recorder the combination with a reciprocatory platen, and a dial supported adjacent to said platen with an index finger, and an arbor supporting said index finger at one end and having its other end supported adjacent to said platen, of a ratchet wheel mounted upon said arbor, a pawl mounted upon said platen and pivotally connected thereto in position to engage the teeth of said ratchet wheel, substantially as described and for the purpose set forth.

22. In a time recorder the combination with the frame thereof, a workman's lever rotatably mounted upon said frame, a carriage, means for supporting said carriage, a shaft mounted in said frame, means tending to move said carriage towards one end of said shaft, and a rotative connection between said workman's lever and said shaft, of a series of groups of annular detents mounted upon said shaft with spaces between said de-

tents and wider spaces between said groups, said annular detents consisting of beveled rings each having a notch in its perimeter and arranged upon said shaft with their notches in different angular positions, and a spring pawl upon said carriage and engaging said detent, substantially as described and for the purpose set forth.

23. In a time recorder the combination with hour and minute type wheels mounted upon suitably supported shafts, of a snail cam mounted upon the shaft of the minute wheel, an angular lever fulcrumed adjacent to the hour wheel at one end and having a lateral projection at its other end in engagement with said cam, a spring maintaining said angular lever yieldingly in the position with its projection in contact with the periphery of said cam, a disk mounted rigidly upon the shaft of the hour wheel and having a series of circumferential projections arranged a short distance apart, a spring pawl pivoted to said angular lever near the lower end thereof and having its outer end beveled and in the form of a hook and resting upon the periphery of said disk, a second pawl fulcrumed to said angular lever a short distance from the pivoted end of said angular lever and having its free end beveled and in the form of a hook and bearing upon the periphery of said disk, a suitably supported third spring pawl fulcrumed at one end adjacent to the side of the periphery of said disk opposite to the side adjacent to which the first mentioned pawl is fulcrumed, and having its free end extending over and bearing upon the end of said second mentioned spring pawl and having the end thereof beveled and hooked with greater height along its beveled side and from the point of its hook to its end than between the point of the hook and the end of said second pawl, substantially as described and for the purpose set forth.

24. In a time recorder the combination with a minute wheel having a series of tapered sockets therein, of a suitably supported slidable pin in line with a point passed by said series of sockets, and a bell-crank-lever fulcrumed to a stationary part of the machine and having one end extending adjacent to the outer end of said pin, a spring yieldingly retaining said end of the lever away from said pin, a vertically movable pin having its upper end in engagement with the other arm of said bell-crank-lever, and an operative connection between the workman's lever and said last mentioned pin whereby said pin will be raised upon each depression of the workman's lever, substantially as described and for the purpose set forth.

25. In a workman's time recorder the combination with the case thereof having its rear portion raised above its front portion, of a workman's dial and an indicator dial both located upon the front of said front portion and a clock dial located upon the front of said raised rear portion in order to allow the pendulum a clear swing thus obviating any danger of the pendulum coming into contact with the other working parts of the recorder, substantially as described and for the purpose set forth.

26. In a workman's time recorder the combination with the case thereof having its rear portion raised above its front portion, of a workman's dial and an indicator dial both located upon the front of said front portion and one above and in line with the other and a clock dial located upon the front of said raised rear portion in order to allow the pendulum a clear swing thus obviating any danger of the pendulum coming into contact with the other working parts of the recorder, substantially as described and for the purpose set forth.

27. In a time recorder the combination with a time sheet carrier constituting a pair of rolls and a pair of flexible lengths encircling said rolls and located a distance apart, of means for connecting a time sheet to the said pair of flexible lengths to move therewith.

28. In a time recorder the combination with a time sheet carrier consisting of a pair of rolls and a pair of bands encircling said rolls and located a distance apart, of clipping means carried by said bands for connecting a time sheet thereto, said clipping means extending from one to the other of said bands.

29. In a time recorder the combination with a time sheet carrier consisting of a pair of rolls and a pair of chains encircling said rolls and located a distance apart, of a pair of clips carried by said chains for connecting a time sheet thereto, said clips extending from one to the other of said chains.

30. In a time recorder the combination with a time sheet carrier consisting of a pair of rolls and a pair of chains encircling said rolls and located a distance apart, of clipping means carried by said chains for connecting a time sheet thereto, said clipping means extending from one to the other of said chains.

31. In a workman's time-recorder, the combination with a movable member and means tending to move said member, of means for regulating such motion, such means comprising a rotating shaft along the path of travel of said member, and a series of disks mounted thereon, such disks being adapted to normally engage said member to prevent its movement, and being provided with notches permitting its movement.

32. In a workman's time-recorder, the combination of a platen, a time-printing device, means tending to move said printing device across said platen, a rotating shaft

along the path of travel of said device and a series of disks adjustably positioned thereon, such disks being adapted to normally engage said printing device and prevent its movement, and being provided with notches permitting the movement of said printing device.

In testimony whereof, I have affixed my signature, in presence of two witnesses.

WILLIAM ARCHIBALD WOOD.

Witnesses:
WILLIAM P. MCFEAT,
FRED. J. SEARS.