No. 704,916. Patented July 15, 1902.

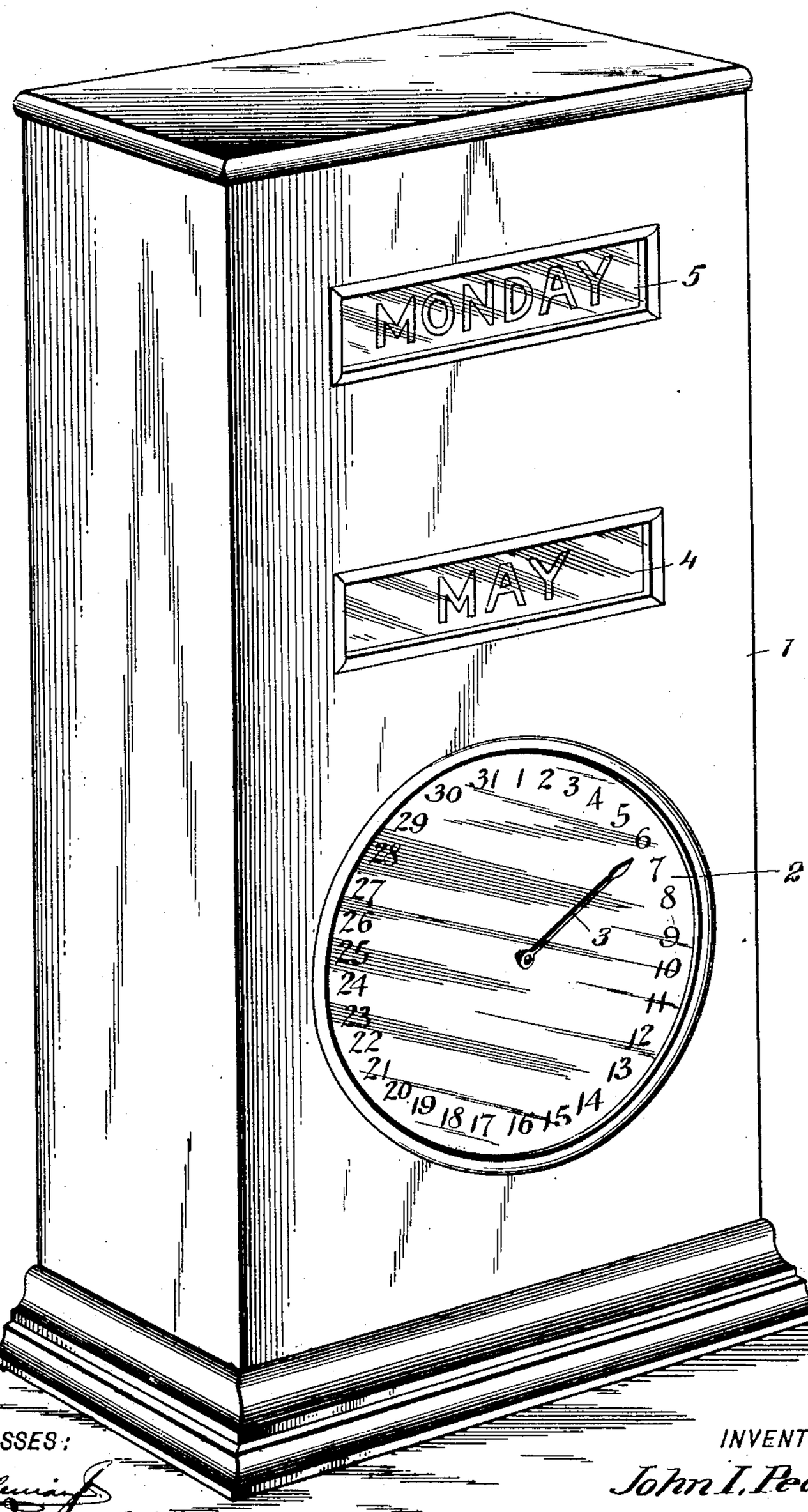
J. I. PEATFIELD.

CALENDAR CLOCK.

(Application filed May 3, 1901.)

(No Model.) 11 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

A. R. Applemann

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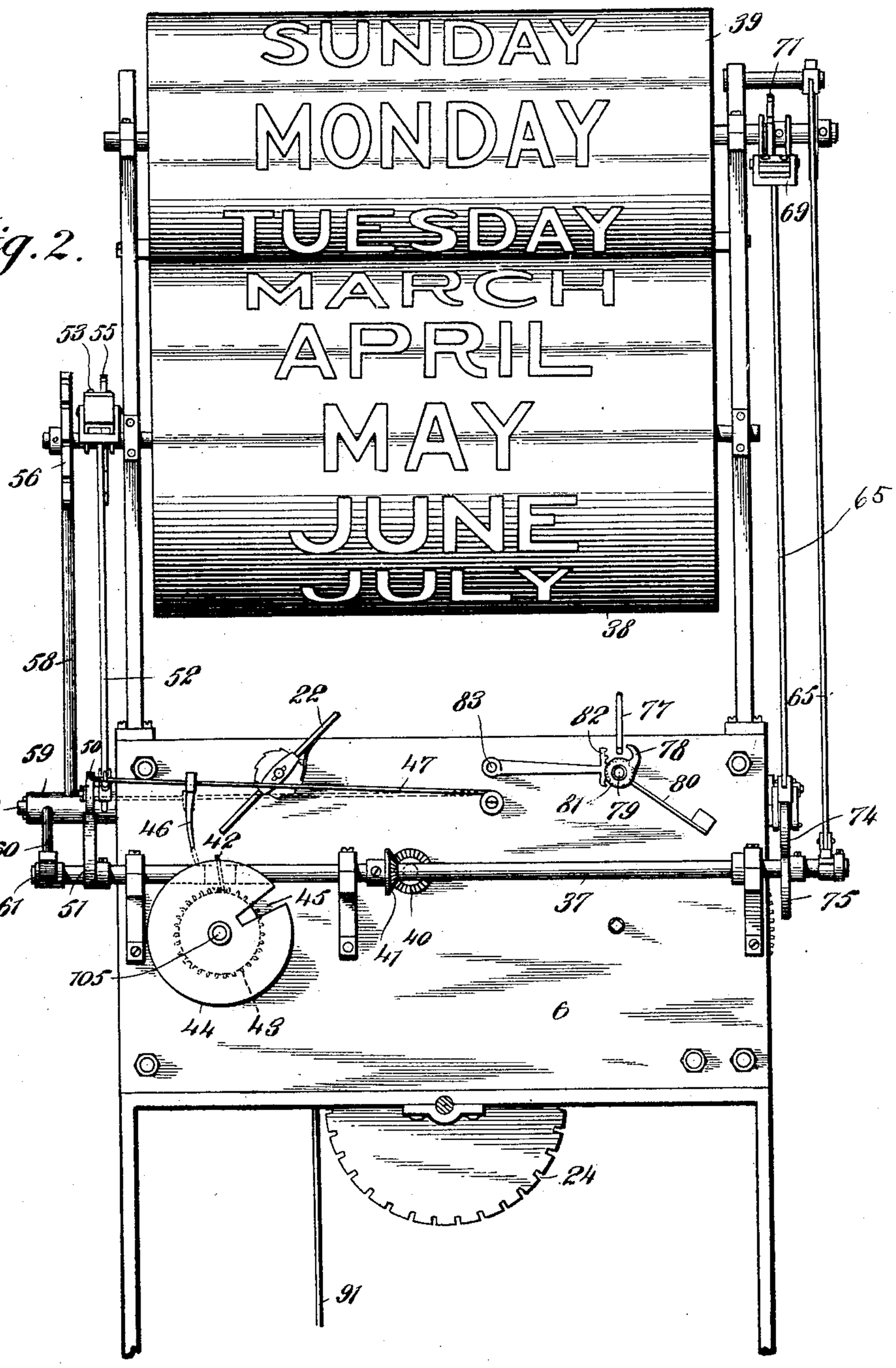
(No Model.) 11 Sheets—Sheet 2.

Fig. 2.



WITNESSES:

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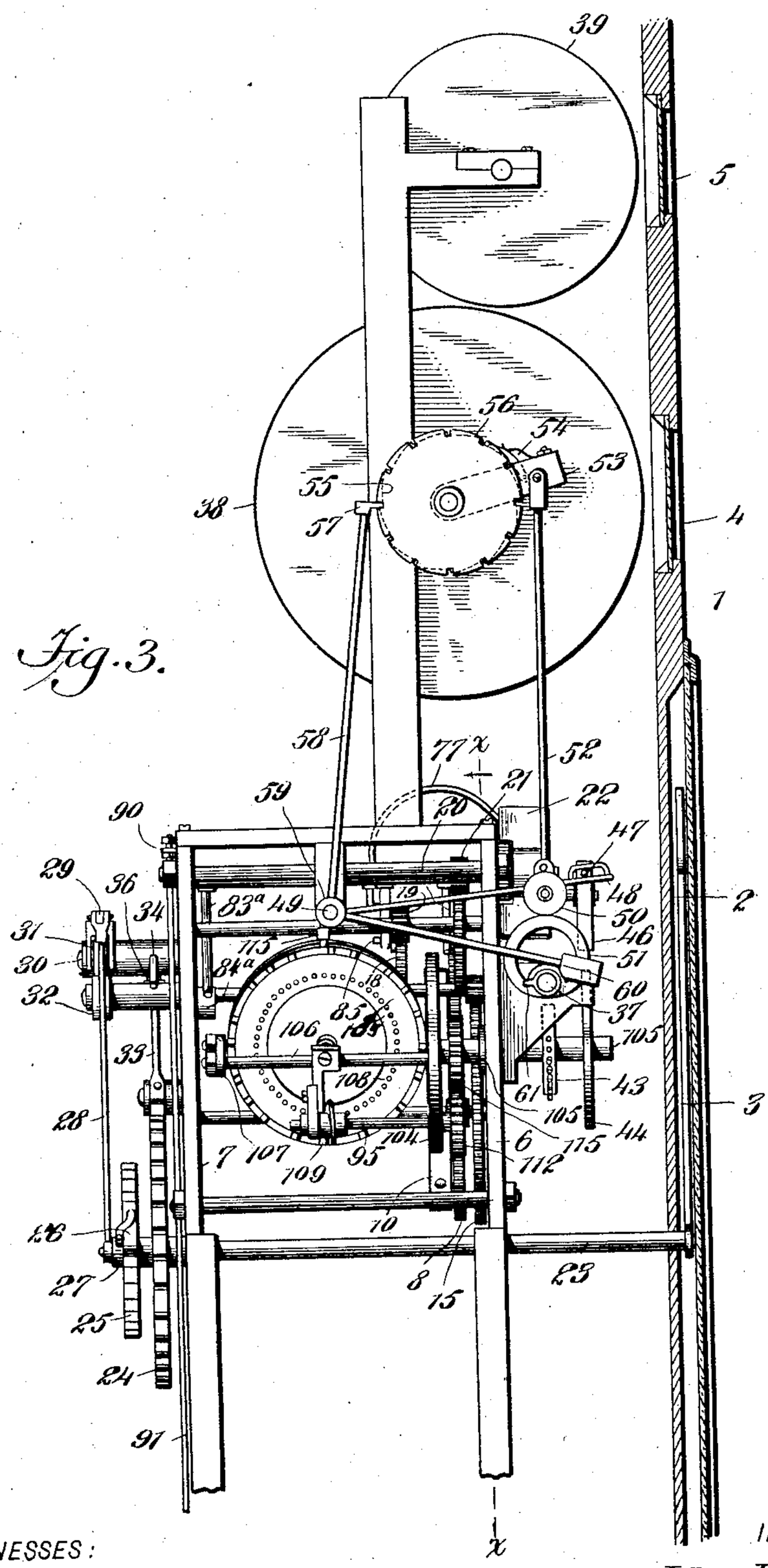
Fig. 3.



WITNESSES:

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(No Model.)

11 Sheets—Sheet 4.

Fig. 12.

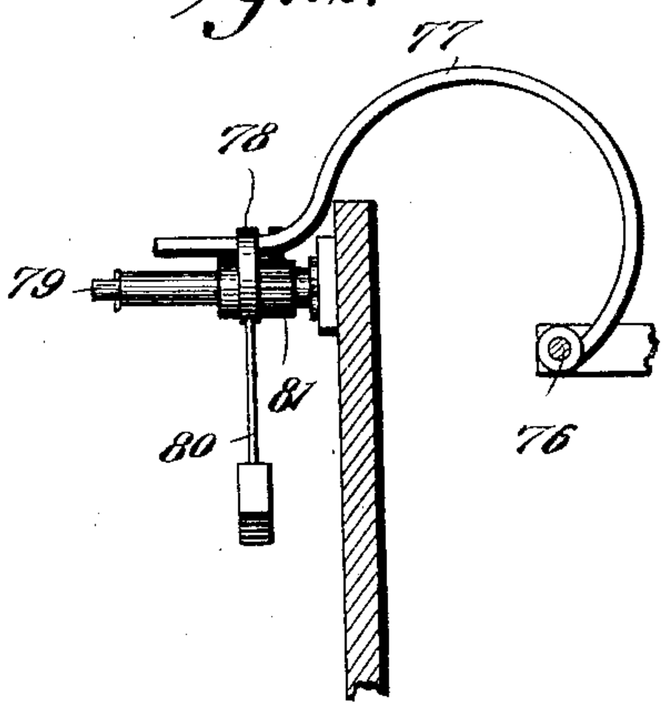
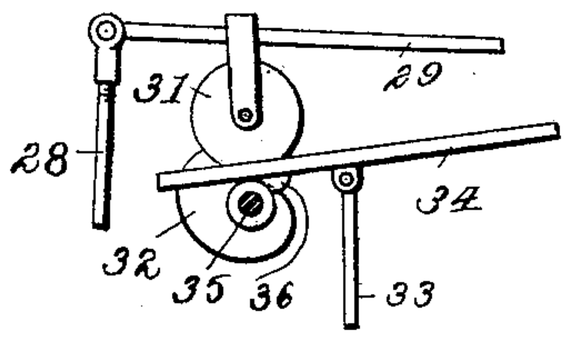


Fig. 6a.



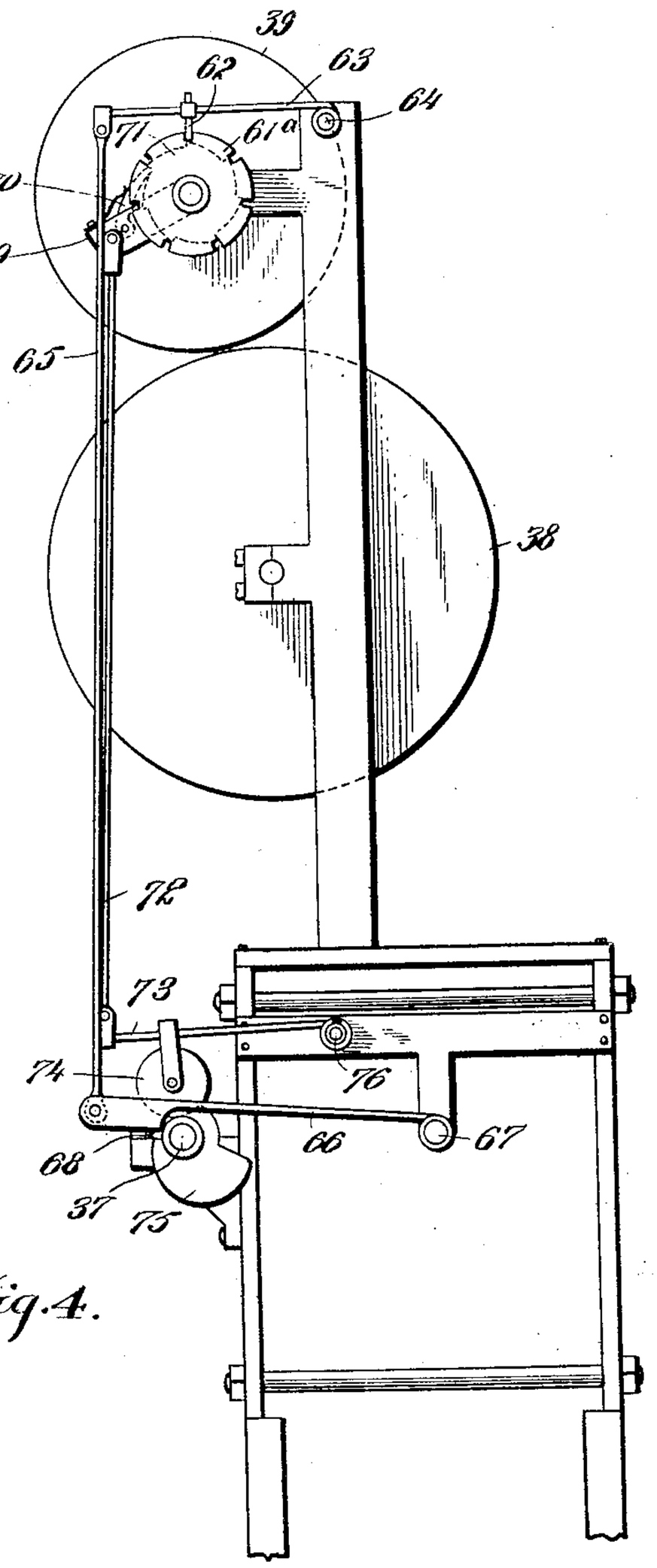


Fig. 4.

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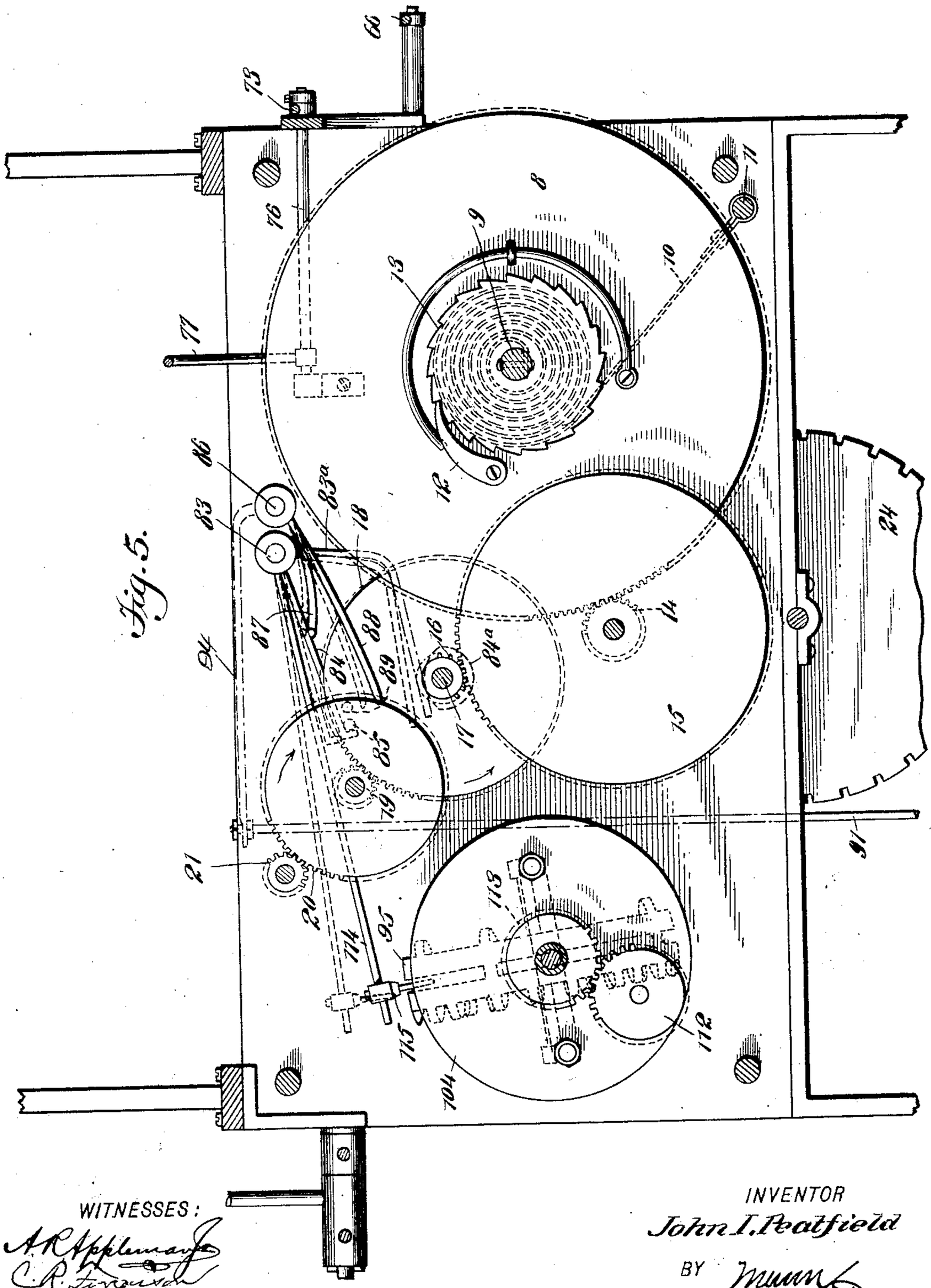
CALENDAR CLOCK.

(Application filed May 3, 1901.)

(No Model.) 11 Sheets—Sheet 5.

Fig. 5.



WITNESSES:

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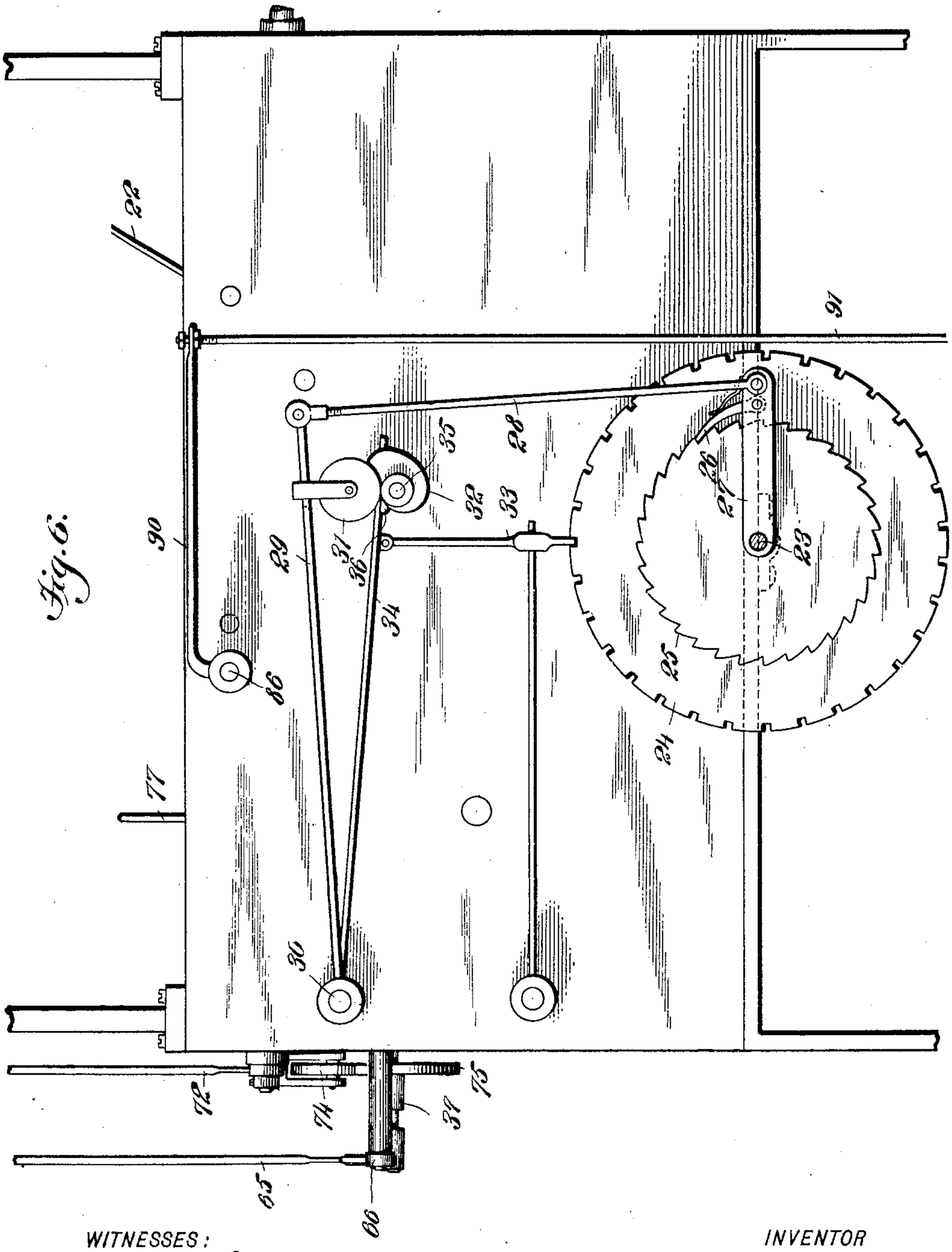
Fig. 6.



WITNESSES:

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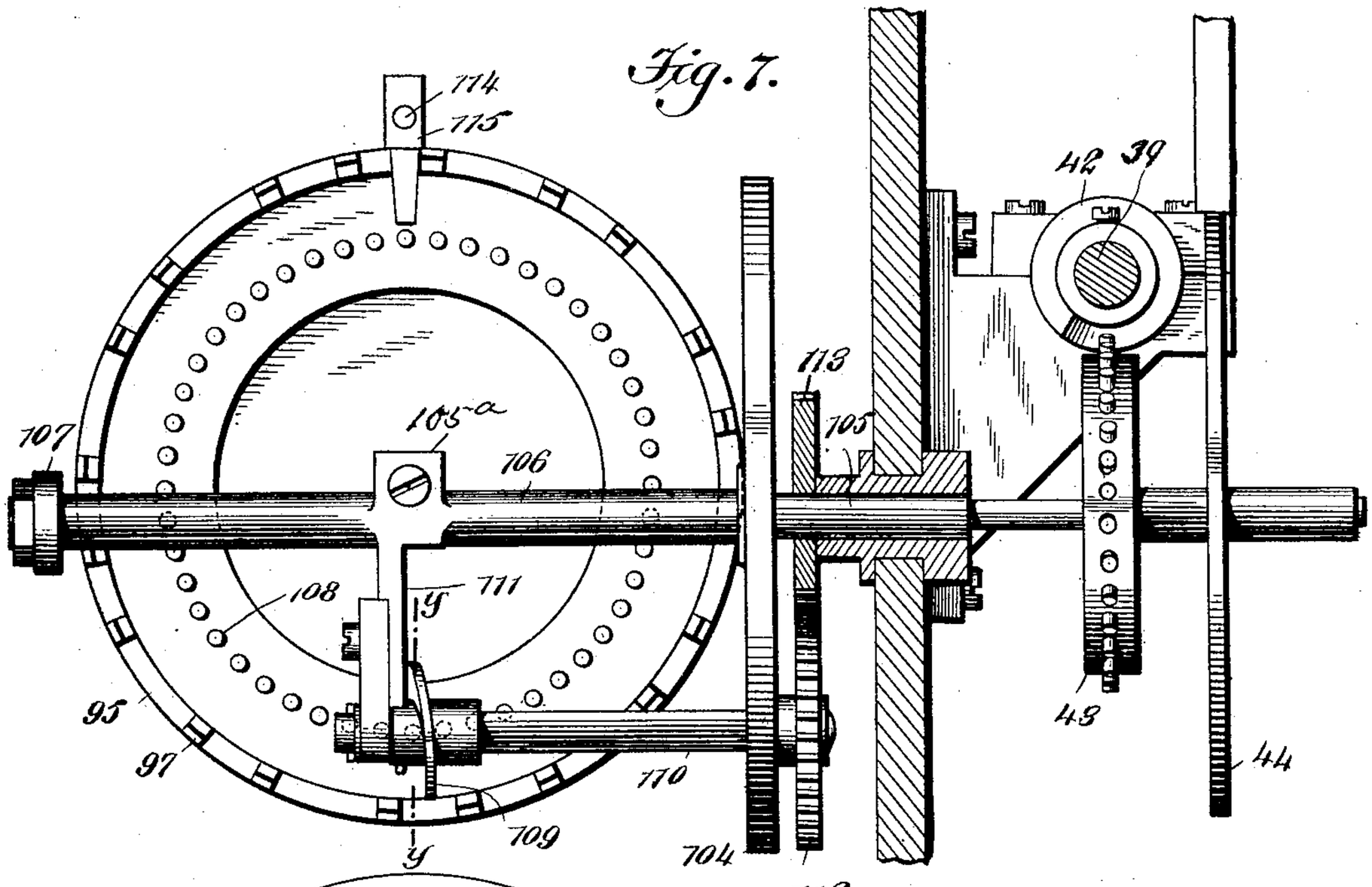
J. I. PEATFIELD.

CALENDAR CLOCK.

(Application filed May 3, 1901.)

(No Model.) 11 Sheets—Sheet 7.

Fig. 7.



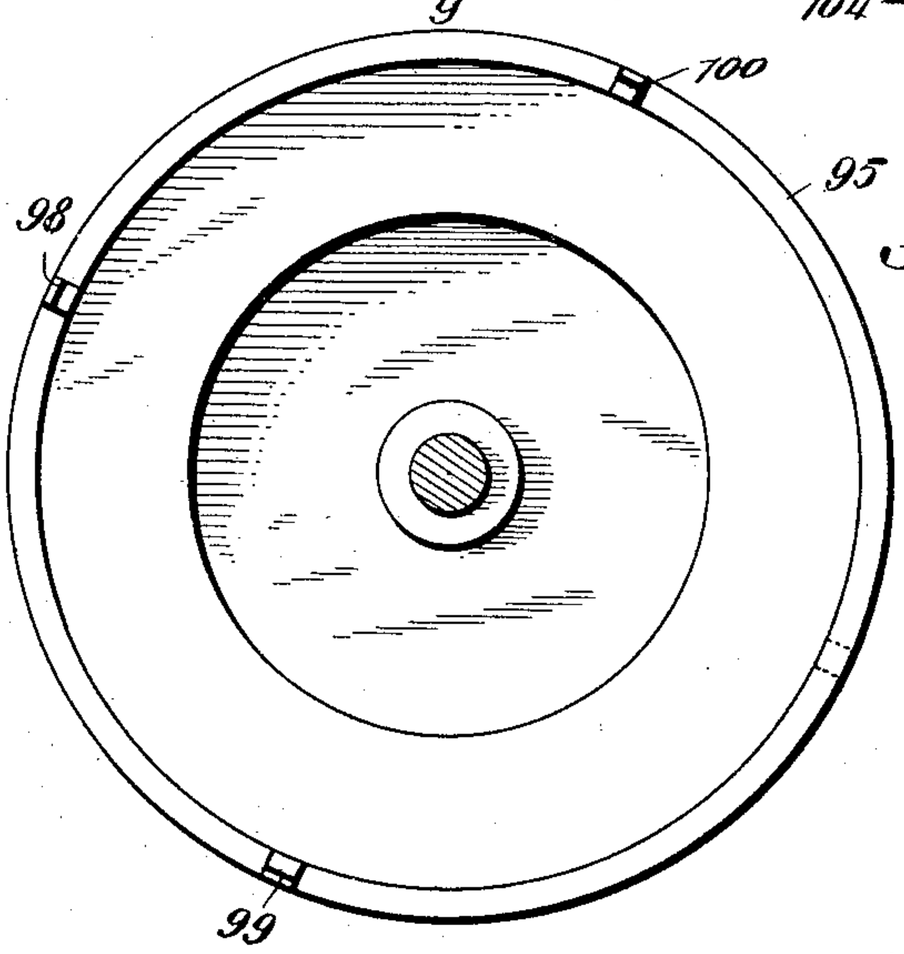
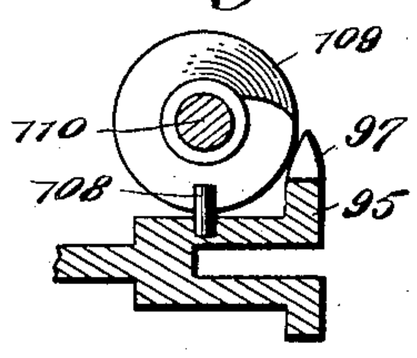


Fig. 8.

Fig. 10.



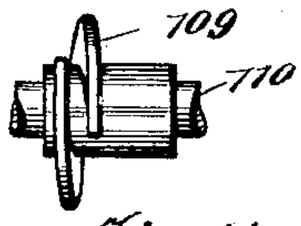
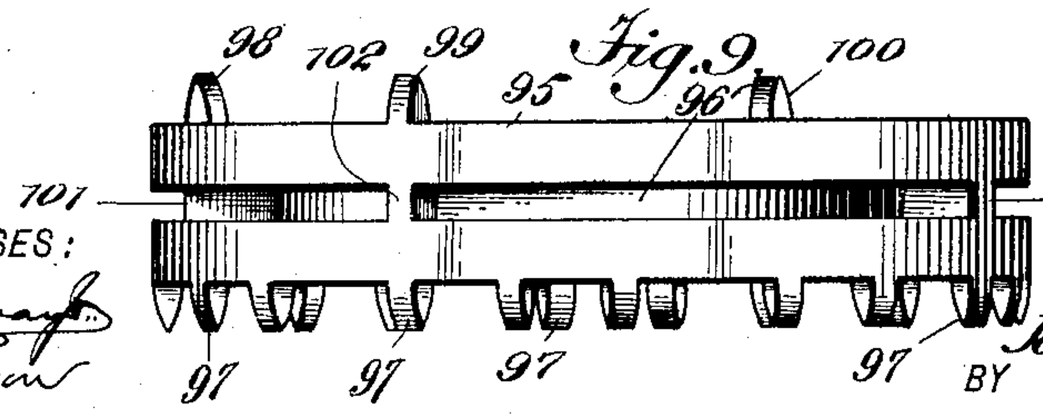


Fig. 11.

Fig. 9.



WITNESSES:

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CALENDAR CLOCK.

(Application filed May 3, 1901.)

(No Model.) 11 Sheets—Sheet 8.

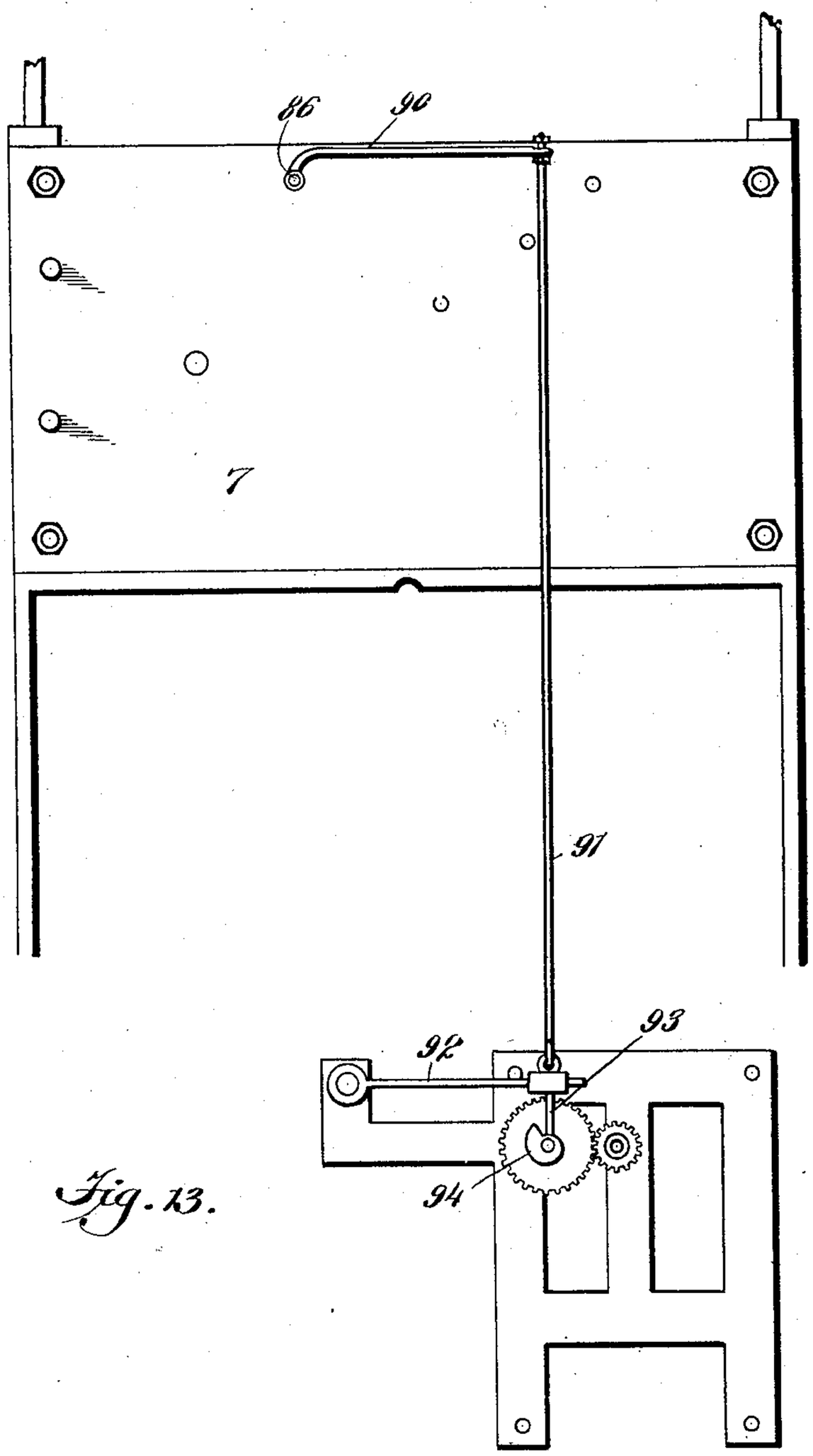

Fig. 13.

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CALENDAR CLOCK.

(Application filed May 3, 1901.)

(No Model.) 11 Sheets—Sheet 9.

Fig. 14.

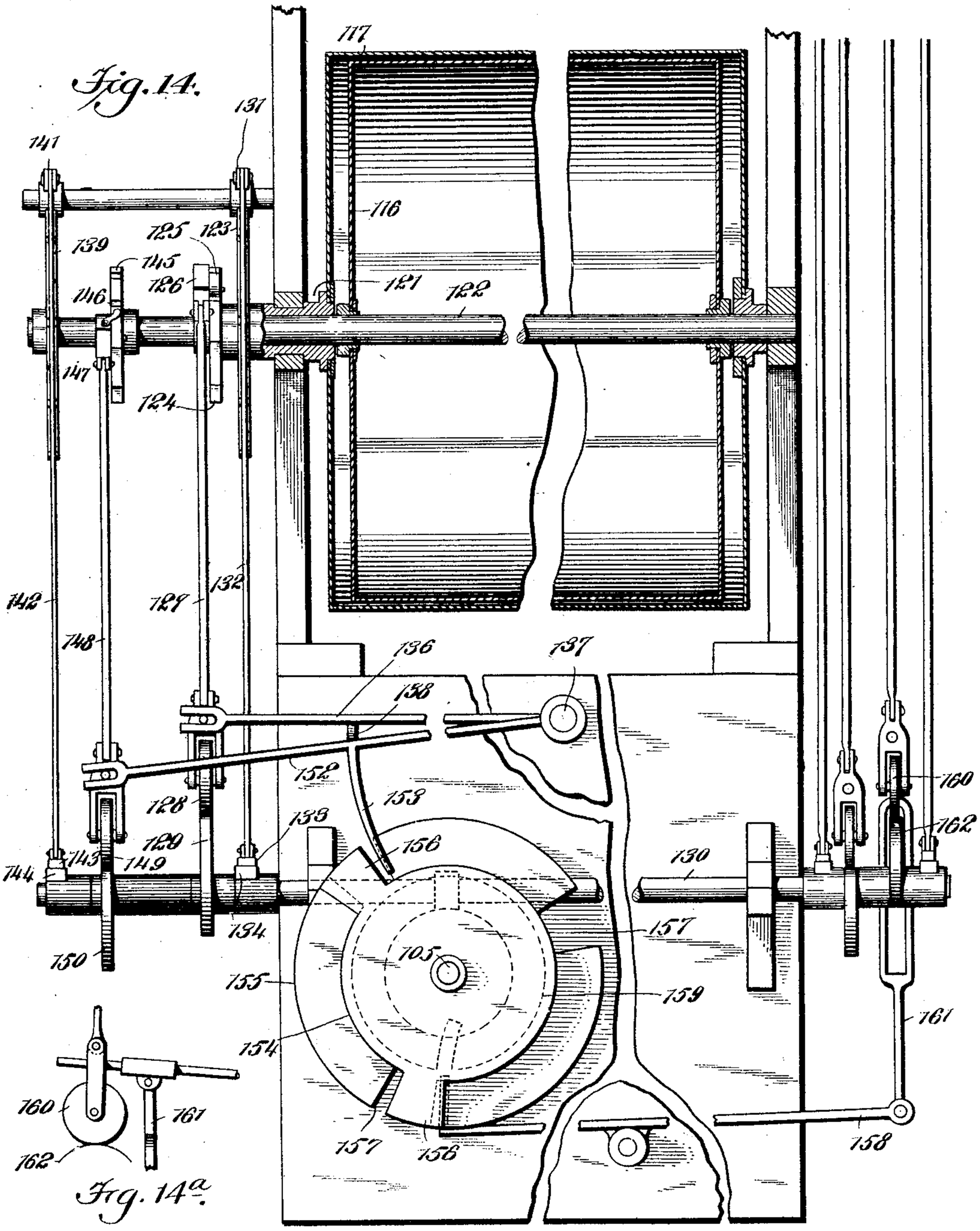

Fig. 14a.

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CALENDAR CLOCK.

(Application filed May 3, 1901.)

(No Model.) 11 Sheets—Sheet 10.

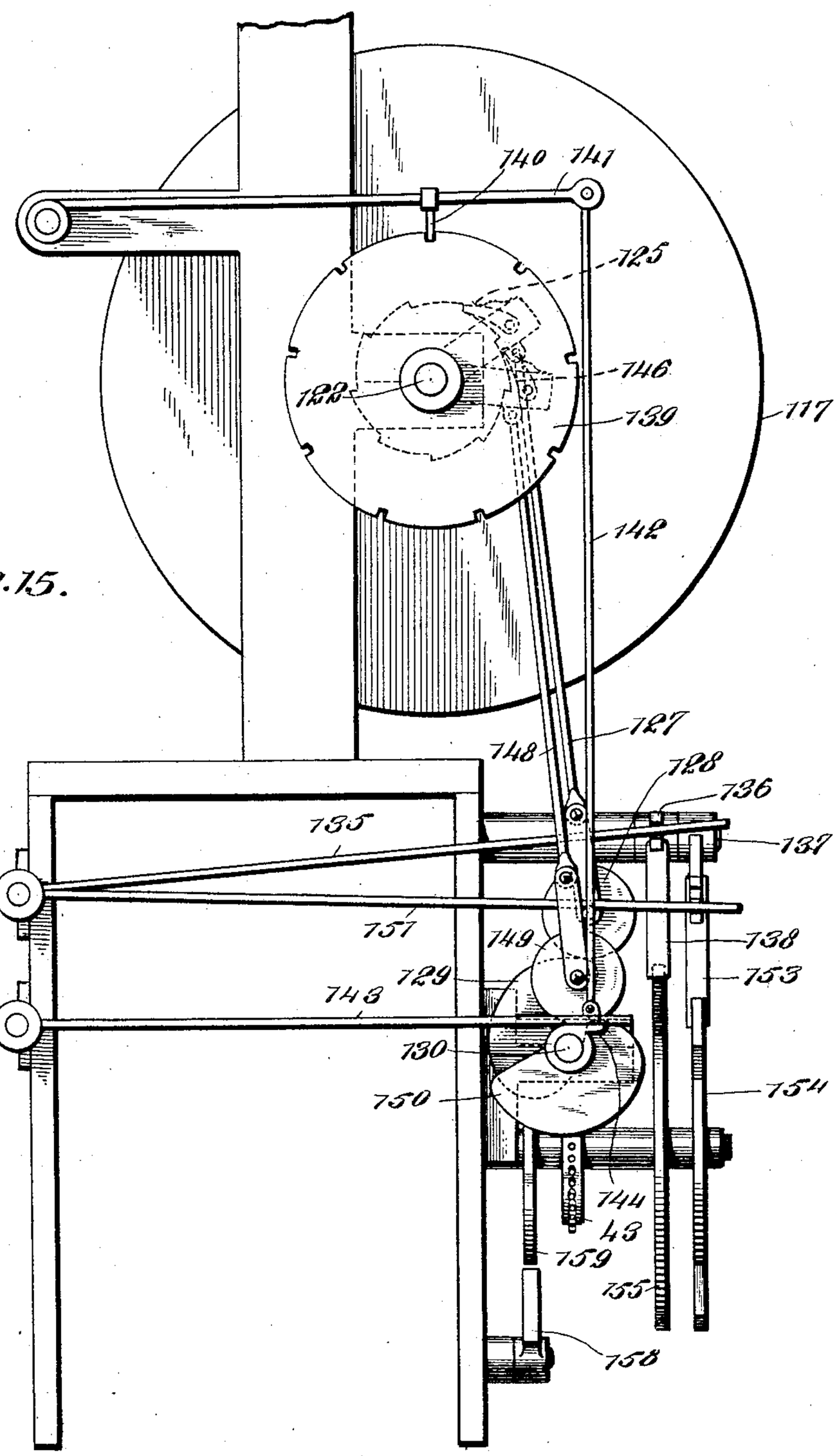

Fig. 15.

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No. 704,916. Patented July 15, 1902.

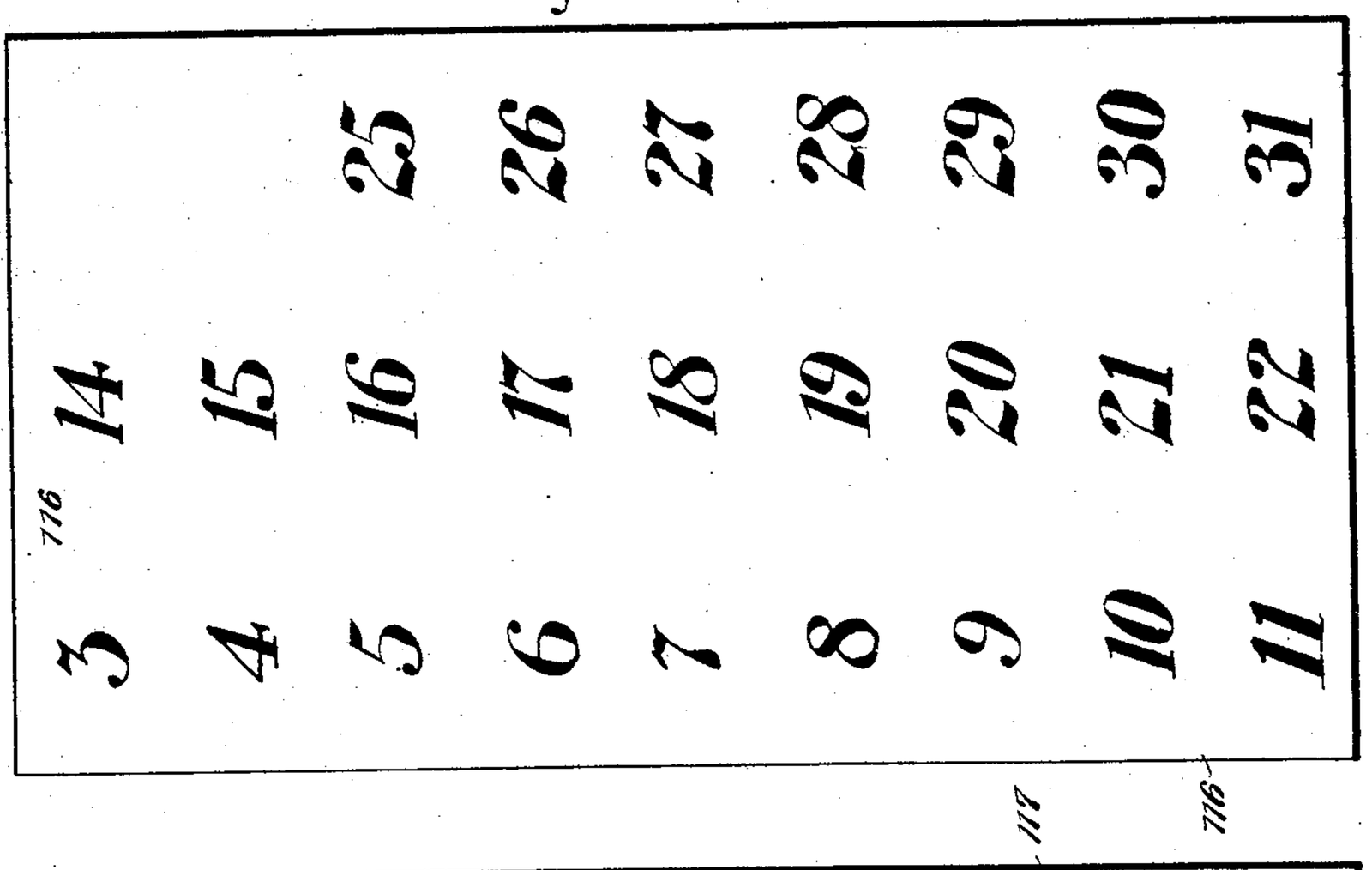
J. I. PEATFIELD.

CALENDAR CLOCK.

(Application filed May 3, 1901.)

(No Model.) 11 Sheets—Sheet 11.

Fig. 17.



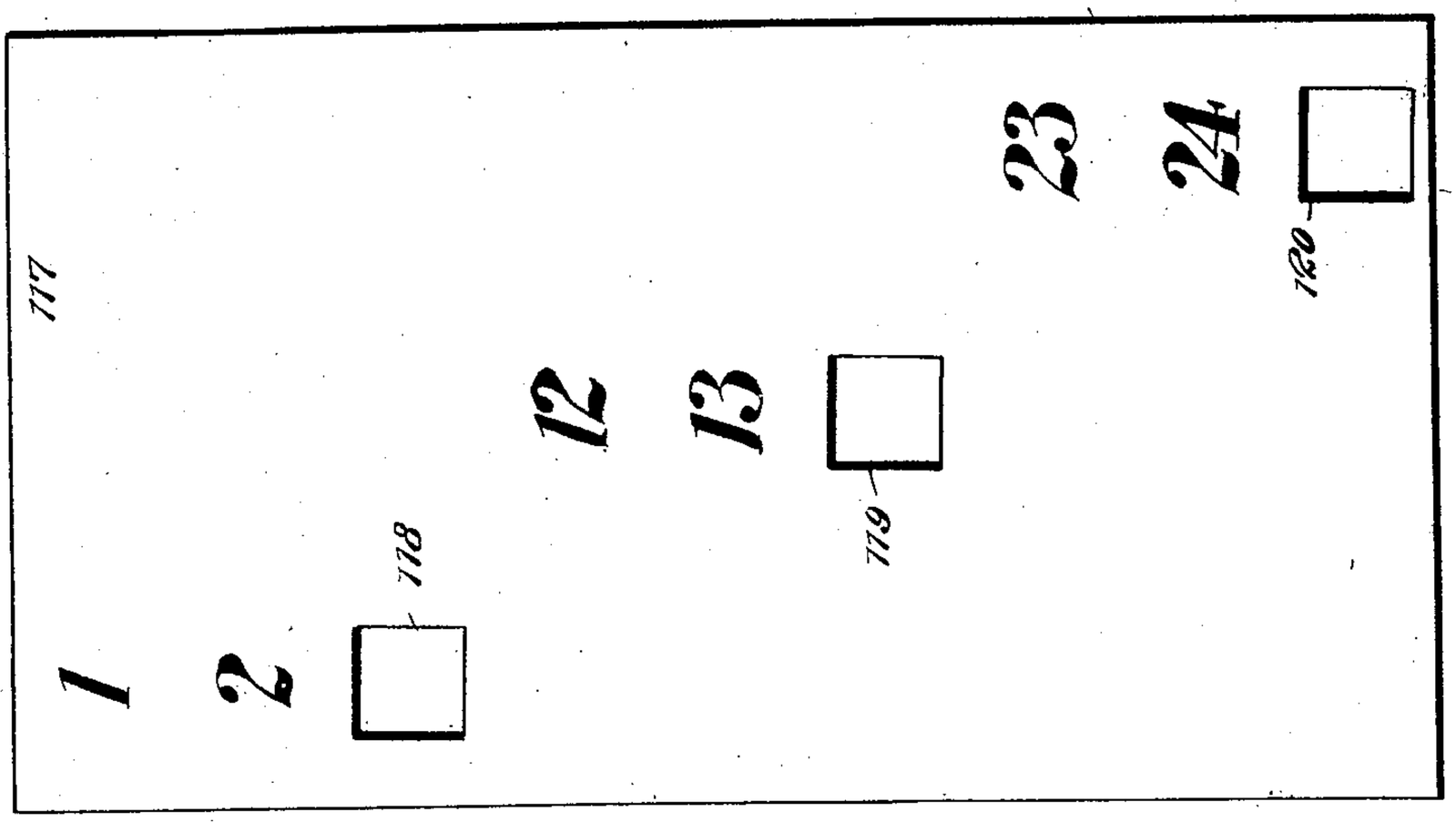


Fig. 16.

WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN I. PEATFIELD, OF ARLINGTON, MASSACHUSETTS.

CALENDAR-CLOCK.

SPECIFICATION forming part of Letters Patent No. 704,916, dated July 15, 1902.

Application filed May 3, 1901. Serial No. 58,605. (No model.)

To all whom it may concern:

Be it known that I, JOHN I. PEATFIELD, a citizen of the United States, and a resident of Arlington, in the county of Middlesex and State of Massachusetts, have invented a new and Improved Calendar, of which the following is a full, clear, and exact description.

This invention relates to improvements in automatic calendars; and the object is to provide a calendar that shall be practically perpetual, that will require no manual setting or regulating excepting in the winding of its motor at intervals of a year or more, and to so arrange it that it may be controlled by an ordinary clock mechanism for changing the date and day indicators every twenty-four hours, and, further, to provide a simple mechanism for making the changes from month to month and the dates from the short months to the first day of the next month.

I will describe a calendar embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a calendar embodying my invention. Fig. 2 is a front elevation with the casing removed. Fig. 3 is an end elevation and partial section of the calendar. Fig. 4 is an end elevation opposite that of Fig. 3. Fig. 5 is a sectional elevation on the line $x\ x$ of Fig. 3. Fig. 6 is a rear elevation showing means for operating the calendar hand and pointer. Fig. 6^a is a detail showing a tripping mechanism employed. Fig. 7 is an elevation, partly in section, showing a calendar-wheel and operating mechanism therefor. Fig. 8 is a face view of the calendar-wheel. Fig. 9 is a plan view thereof. Fig. 10 is a section on the line $y\ y$ of Fig. 7. Fig. 11 is an edge view of a worm employed. Fig. 12 is a detail view of a detent employed. Fig. 13 is an elevation showing connections with a clock mechanism. Fig. 14 is an elevation, partly in section, showing a modification. Fig. 14^a is a detail view of a cam mechanism employed in the construction illustrated in Fig. 14. Fig. 15 is an end elevation of the construction shown in Fig. 14, and Figs. 16 and 17 show in plan the date-calendars of this modification.

Referring to the drawings, 1 designates a casing of any suitable material, arranged on the front wall of which is a dial 2, and around this dial a hand or pointer 3 moves. The dial is provided with a row of figures indicating dates. Arranged in the front of the casing is a sight-opening 4, through which the month-indicator may be seen, and also a sight-opening 5, through which the day-of-the-week indicator may be seen.

Arranged within the casing is a frame comprising a front plate 6 and a back plate 7, and mounted to rotate between these plates is a driving mechanism consisting of a master-wheel 8, mounted on a shaft 9, and connecting with said shaft is one end of a spring 10, the other end of said spring being secured to a cross-bar 11. As the movement of the machine only takes place once in every twenty-four hours, it will not be necessary to wind the spring more than once a year. To permit the winding of the spring, the master-wheel 8 is loosely mounted on the shaft and has a pawl 12 for engaging with a ratchet-wheel 13, secured to the shaft. This master-wheel meshes with a pinion 14, on the shaft of which is a gear-wheel 15, meshing with a pinion 16 on a shaft 17, and on this shaft 17 is a gear-wheel 18, meshing with a pinion 19, on the shaft of which is a gear-wheel 20, which engages with a pinion 21 on the shaft of the governor or fan 22.

The hand or pointer 3 is mounted on a shaft 23, and on this shaft is fixed a stop-wheel 24, having a number of notches in its periphery equal to the number of days in the longest month—that is, thirty-one. Also connected to the shaft is a ratchet-wheel 25, engaged by a pawl 26, mounted on an arm 27, arranged to swing on the shaft 23. From the outer end of this arm 27 a draw-rod 28 extends upward and connects at its upper end with a bar 29, mounted to swing on a stud 30 and carrying a roller 31, which is engaged by a cam 32.

The holding-dog for the wheel 24 consists of a bar 33, adapted to engage its lower end in any one of the notches. This holding-bar is connected at its upper end to a rod 34, mounted to swing on the stud 30, and projected over the shaft 35 on which the cam 32

is mounted and adapted to engage with this bar 34 is a finger 36, which is connected to the shaft 35. By this arrangement when the driving mechanism is started, as will be hereinafter described, the finger 36 will swing the bar 34 upward, and consequently lift the holding-bar 33 out of a notch of the wheel 24. Then as the shaft 35 continues to rotate, the cam 32, engaging with the roller 31, will raise the parts 29 and 28, swinging the arm 27 upward, so that the pawl 26 will move the hand or pointer through one space, or from one figure or date to the next higher figure or date.

Extended across the front of the front plate 6 is a shaft 37, designed to operate the cylinders 38 and 39, having bearings in upward extensions of the frame. The cylinder 38 has marked upon it the months of the year, while marked upon the cylinder 39 are the days of the week, designed to be brought successively to view at the sight-openings. The shaft 37 is rotated by means of a bevel-pinion 40, connected to the end of the shaft 17 (indicated in dotted lines in Fig. 2) and meshing with a bevel-pinion 41 on said shaft 37. Arranged on the shaft 37 is a worm 42, which meshes with a worm-wheel 43, on the shaft of which is a holding-disk 44, provided at one side with an outwardly-opening notch 45. The worm 42 has a straight portion for about one-quarter of its circumference, so that while said straight portion is moving between teeth of the worm-wheel no motion will be imparted to said wheel, and consequently the disk 44 will be held stationary for a time sufficient to permit a finger 46 to drop into the notch 45. This finger 46 is mounted on a swinging rod 47, and the outer end of this swinging rod passes through a loop on a lifting-rod 48, pivoted on a stud 49. Carried by this lifting-rod 48 is a pulley 50, designed to be engaged by a cam 51 on the counter-shaft 37, and pivotally connected to this lifting-rod is an upright rod 52, pivotally connected at its upper end to an arm 53, which, as shown, is made in the form of a boxing and mounted to swing on the outwardly-extended shaft of the cylinder 38; and carried in this arm or boxing is a pawl 54 for engaging with a ratchet-wheel 55 on the shaft of the cylinder, and also mounted on said shaft is a stop wheel or disk 56, having notches in its periphery equal to the number of teeth of the ratchet-wheel. Adapted to engage in these notches is a dog 57, attached to the upper end of a rod 58, connected to a sleeve 59, adapted to rock on the stud 49, and extended outward from this sleeve 59 is a releasing-arm 60, adapted to be engaged by a finger 61 on the end of the counter-shaft 37. This lifting-arm 60 is provided at its free end with a weight, so as to insure the rocking of the dog 57 into engagement with the stop-wheel. However, a spring may be used for this purpose, if desired.

It is necessary that the dog 57 of the locking device shall move suddenly out of and into engagement with the wheel while the ratchet-wheel is idle, thus precluding any possibility of the cylinder moving out of position when shaken about, as at sea or in a railway-carriage. In order to secure this result, the disk 56 of the locking or holding device is made larger than the ratchet-wheel, thus causing the corresponding number of equal divisions on each to vary in distance in proportion. A similar mechanism for operating the upper cylinder 39 is arranged at the opposite end of the machine—that is, I provide for engaging in any one of the notches of the stop or locking disk 61^a on the extended shaft of the cylinder 39 a dog 62, mounted on an arm or rod 63, adapted to swing on a stud 64, and the forward end of this arm or rod 63 is connected to a lifting-rod 65, the lower end of which is connected to an arm 66, swinging on a stud 67 and adapted to be engaged by a finger 68 on the end of the counter-shaft 37. Mounted to swing on the extended shaft of the cylinder 39 is an arm or boxing 69, carrying a spring-pressed pawl 70, which engages with a ratchet-wheel 71, fixed to said shaft. From the arm or boxing 69 a rod 72 extends downward and connects at its lower end with a swinging bar or arm 73, carrying a roller 74, adapted to be engaged by a cam 75 on the counter-shaft 37. The arm 73 is connected to and moves with a rock-shaft 76, and on the inner end of this rock-shaft is an outwardly-extended retarding-finger 77, the outer end of which is adapted to engage with a hooked or cam-shaped finger 78, mounted to rock on a stud 79, and extended from the sleeve of this cam-finger is a weighted arm 80 for moving said cam-finger to its normal position, as indicated in Fig. 2. Also connected to the sleeve of the cam-finger is a pinion 81, with which a segmental rack 82 engages. This segmental rack is carried on the outer end of a rock-shaft 83, having bearings in the machine-frame. Extended from this rock-shaft 83 is a stop-rod 84, designed to engage with a pin 85 on the gear-wheel 18, and also extended from the shaft 83 is an arm 83^a, which engages with a lifting-cam 84^a on the shaft 17.

Extended from a rock-shaft 86 is a lifting-finger 87 for engaging with the stop device 84, and also extended from said rock-shaft 86 is a retarding-finger 88, designed to momentarily engage with a pin 89 on the gear-wheel 20. Attached to the outer end of this rock-shaft 86 is an arm 90, from which a lifting-rod 91 extends downward to a connection with a swinging arm 92, arranged on the time-mechanism frame, and this arm 92 carries a finger 93, which is engaged by a cam 94, which will operate every twenty-four hours to lift the rod 91 upward, consequently rocking the shaft 86, which through the medium of the finger 87 will lift the holding device 84 out of engagement with the pin 85, and at the same time the finger 88, carried by the rock-shaft 86, will move into the line of movement of the pin 89, as indicated in dotted lines in Fig.

5. This will momentarily hold the train of gearing until the hook end of the holding device 84 is entirely free from the pin 85, after which the parts will drop to their normal position, with the finger 88, as indicated in full lines, out of the line of movement of the pin 89.

The operation of the device as so far described is as follows: When the rock-shaft 86 is operated as just described, the mechanism will be started and the rotation of the shaft 37 through the medium of its cam 75 will rock the arm 69, so that the pawl 70 will rotate the cylinder 39 through one space of the ratchet-wheel with which the pawl engages. Before this movement, however, the pin 68 on the shaft 37 by engaging the arm 66 will raise the dog 62 out of engagement with the locking-wheel 61^a. It will immediately fall, however, and rest upon the periphery of said locking-wheel until another notch of the locking-wheel comes in line with the dog, when it will drop therein.

During the movement of the upper cylinder, or that having the days marked thereon, it is necessary that the month-carrying cylinder should remain at rest until the end of the month. Therefore the finger 46 is designed to rest upon the periphery of the wheel 44. When so resting on the periphery, it will prevent a downward movement of the rod 52 sufficient to cause the pawl 54 to engage with a new tooth of the ratchet-wheel 55. In other words, this pawl will slide back and forth on the periphery of the ratchet-wheel without imparting motion thereto until the disk 44 is rotated once around to bring the notch 45 into the line of movement of the finger 46, when said finger by dropping therein will permit a sufficient downward movement of the arm 53 to cause the pawl carried thereby to engage with a tooth of the ratchet-wheel 55, so that the cam 51 will rotate the cylinder through the space of one step.

It will be noted that the teeth of the worm-wheel 43 are so arranged or numbered that a complete rotation of the disk 44 takes place only once in thirty-one days.

Mounted to rotate in the frame is what I term a "four-year wheel" 95, having segmental channels 96 in its periphery, and projected outward from one side near the periphery of the wheel are lugs 97. There are twenty of these lugs on this side of the wheel, and on the opposite side there are three outwardly-extended lugs 98, 99, and 100. Extended across the slot in the periphery of the wheel, in line with the lug 98 and in line with the lug 97 on the opposite side of the wheel, is a bridge-block 101, and a similar bridge-block 102 is arranged in line with the lug 99 and the lug 97 on the opposite side of the wheel from it, and a bridge-block 103 is arranged in line with another of the lugs 97. The purpose of these lugs and bridge-blocks will appear hereinafter. This four-year wheel has a rotary motion around its axis and also a transverse rotary motion. It is mounted in a frame consisting of a disk 104, (see Fig. 7,) connected to the shaft 105, on which the worm-wheel 43 is mounted, and to arms 106, extended from the disk 104, is attached a cross-arm 107. This four-year wheel is designed to have a complete axial rotary motion once in four years, or forty-eight months. I therefore provide it on one of its surfaces with forty-eight pins or teeth 108, which are engaged by a worm 109, mounted on a shaft 110, having a bearing at one end in the disk 104 and at the outer end in an arm 111, extended from one of the rods 106. This worm 109 is straight for approximately one-tenth of its length. This is so that at certain times no movement will be imparted axially to the wheel 95, giving certain parts a sufficient time to move into and out of the slots 96. On the shaft 110 is a pinion 112, which engages with a stationary gear 113, this stationary gear being attached to the sleeve in which the shaft 105 has its bearing. Consequently as the frame, with the disk 104, moves around motion will be imparted to the shaft 110 through the medium of the gear connections, thus imparting the axial rotary motion around the axis 105^a, while the transverse motion is imparted by the shaft 105.

Extended from the rock-shaft 83 is a hammer-rod 114, carrying at its free end a hammer 115, which is adapted at certain times, as will be hereinafter mentioned, to engage with the four-year wheel. This four-year wheel is particularly designed for governing the movements of the date-indicating hand from thirty-day months to the first of the next month and also for causing the hand to jump a sufficient number of dates at the end of the three Februarys occurring in four years. The bridge-blocks arranged in the wheel represent the months of February as just closed. For instance, at the end of February having twenty-eight days the four-year wheel will have been axially rotated until the projection 98, the bridge-block 101, and the forward projection 97 come into the line of movement of the hammer 115—that is, at the end of the 28th day of February the clock mechanism before referred to will start the motor for the calendar and the hammer 115 in descending will first strike upon the lug or projection 98, then upon the wheel, the bridge-block, and the front projection, thus holding the stop device 84 out of engaging position with the pin 85, permitting the calendar motor or mechanism to operate a sufficient length of time to move the indicating-hand from February 28 to March 1. The leap-year February having twenty-nine days, it is of course not necessary for the machine to run so long, as above described. Therefore there is no lug or projection similar to 98 and 99 opposite the bridge-block 103. In moving the hand from the thirtieth of a month to the first of the next month it must of course jump over the "31" of the dial. Therefore when the hammer falls it will first strike upon the periphery of the four-year wheel and then upon its next down-

ward movement will strike a lug 97, so that the mechanism will continue to rotate until the indicating-hand reaches the figure "1." The four-year wheel also governs the action of the cylinder carrying the days of the week, inasmuch as when the hammer is held up by the wheel the pawl 70 is held up, or, in other words, is not permitted to fall far enough to engage or catch a tooth on the ratchet-wheel, so that the names of the days of the week are given in perfect succession regardless of the number of revolutions the machine is required to make in order to represent the corresponding date.

As has been before stated, the operation of the worm 109 is not continuous, but intermittent in its action. When the upper face of the wheel 95 passes under the hammer, the worm causes the wheel to remain at rest in its transverse direction just long enough for the wheel to pass under. I will here state that the wheel 95 is mounted eccentrically on its axis 105ª, so that the upper side just referred to has the lesser diameter.

The means for preventing the movement of the pawl sufficiently downward to engage with a tooth of the ratchet-wheel comprises the cam-finger 78. For instance, when the hammer drops into a slot or "comes home," as might be said, the cam-finger oscillates to its full extent and allows the bar or finger attached to the rock-shaft to drop home also; but if the hammer rests upon the rim of the four-year wheel the segment-gear 82 will travel in the same proportion, thus preventing the cam-finger from oscillating to its full extent, and so intercept the rock-bar and prevent it from falling home. This holds or prevents the pawl from moving sufficiently downward to engage with a new tooth of the ratchet-wheel.

In Figs. 14 and 15 instead of employing a hand or pointer movable over a dial for indicating the dates I employ two date-cylinders 116 and 117, the cylinder 116 being arranged within the cylinder 117. These are designed to rotate independently one of the other at certain times and at certain times to rotate together. The outer disk is provided with three openings spaced about equally around its circumference, and near each opening are two date-figures, while the inner cylinder has three rows of date-figures, which are designed to be disclosed through the openings 118, 119, and 120 of the outer cylinder. An illustration of the working of this device may be given as follows: To start correctly, in order to pass in succession over the thirty-one days of a month set the outer cylinder with its date "1" directly over the date "3" of the inner cylinder. I will here state that the sight-opening in the casing for this date-indicator is made of a sufficient length to extend entirely across the cylinders. Having set the date "1" over the date "3," the date "31" will show through the opening at the right-hand end, and the date-figure "1" of the outer cylinder will be below the line of said opening. The "31" now seen represents the last day of the previous month. Now by turning both cylinders together, as will be hereinafter described, the "31" disappears, and the "1" of the outer cylinder shows on the left end of the opening in the casing, representing the first day of the new month. The figures will appear at the opening in succession by turning the outer, inner, or both cylinders. To be more exact, I will state the order of turning the cylinders. To bring the date "1" to view, both cylinders are turned together. To bring the dates "2" and "3" to view, the outer cylinder is to be turned, which will bring the date "3" to view through the opening 118. Now the dates "4" to "11," inclusive, are brought to view by turning the inner cylinder. The date "12" is brought to view by turning both cylinders together, and "13" and "14" are brought to view by turning the outer cylinder alone, while the turning of the inner cylinder brings to view successively the date-figures "15" to "22," inclusive. Now as "23" is to be next brought to view both cylinders are to be turned together, and this is also the operation when the dates "24" and "25" are to be brought to view, and then the dates "26" to "31," inclusive, are brought to view by turning the inner cylinder.

The mechanism employed for rotating the cylinders is somewhat similar to the devices for rotating the date and month cylinders first described. The outer cylinder 117 has at one end a tubular trunnion 121, through which the shaft 122 for the inner cylinder passes. At the end opposite the trunnion 121 the outer cylinder is mounted to rotate on the shaft 122. Attached to the tubular trunnion 121 is a stop or locking wheel 123, provided with a series of notches similar to the stop or lock wheel first described, and also mounted on this trunnion is a ratchet-wheel 124, which is engaged by a pawl 125, carried by a rocking arm 126, from which a lifting-rod 127 extends downward and has at its lower end a roller 128 for engaging with a cam 129 on the shaft 130, which is similar to the counter-shaft first described and operated in the same manner.

Coacting with the stop or locking wheel 123 is a locking-dog, which is carried by a rock-arm 131, from which a rod 132 extends downward to a connection with a swinging arm 133, adapted to be engaged by a lug or finger 134 on the shaft 130, so as to raise the dog out of engagement with the stop or locking wheel. The rod 127 is held in its positions by means of a swinging rod 135, this construction being similar to that shown in Figs. 3 and 4. This swinging rod projects through an opening in the yoke or casting in which the roller 128 is pivoted, and engaging with this projected end of the rod is a detent-finger-carrying rod 136, which is pivoted on a stud 137 and has a finger 138, the purpose of which will be hereinafter described.

On the outer portion of the shaft 122 is a stop or locking wheel 139, similar to the wheel 123, and coacting therewith is a dog 140, mounted on a swinging arm 141, from which a rod 142 extends downward to a connection with a swinging arm 143, designed to be engaged with a finger 144 on the counter-shaft, and also attached to the shaft 122 is a ratchet-wheel 145, which is engaged by a pawl 146, carried on an arm 147, from which a rod 148 extends downward and carries at its lower end a roller 149, which engages with a cam 150 on the counter-shaft. A rocking rod or arm 151 passes through the casting or yoke for holding the roller 149, and engaging with its projected end is a detent-finger-carrying arm or lever 152, which is mounted on the stud 137 and has a detent-finger 153. Instead of the disk 44, as before described, I mount on the shaft 105 two disks 154 and 155. The disk 154 is provided with two projections 156, the space on the periphery of the wheel at one side of said projections being considerably longer than the space between the projections at the opposite side. The disk 155 is provided at equally-distant points with notches 157.

In the operation, assuming that the date "31" is now at the sight-opening in the casing and it is desired to move or bring the date "1" into view, as has been before described, the disk 155 will be in a position to permit the finger 138 to drop into one of the notches 157, thus permitting the pawl 125 to fall sufficiently to engage a tooth of the ratchet-wheel, so that on an upward movement imparted by the cam 129 the outer cylinder will be rotated, bringing the "1" into view. The notch 157 is sufficiently wide to again permit the finger 138 to fall into the notch when the change is to be made from "1" to "2," and this operation will be carried out as has been described.

Month and day cylinders are arranged somewhat similar to the cylinders 116 and 117 and are operated by similar devices, portions of these devices being shown at the right-hand side of Fig. 14, excepting in this case the parts are controlled from an arm or lever 158, having a finger for engaging in a notched disk 159 on the shaft 105. This arm or lever is connected to the part carrying the roller 160 by a rod 161, having a slot in which the cam 162 may pass.

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

1. In a calendar, devices for indicating date, day and month divisions of a year, means for causing the movements of said devices, and a device having an axial and transverse rotary motion for governing the date changes, substantially as specified.

2. In a calendar, a motor, a rotary part for indicating dates operated by said motor, a wheel having an axial rotary motion and a transverse rotary motion, the said wheel being operated from the motor in its transverse rotation, lugs or projections on the opposite sides of said wheel, the said wheel having segmental slots in its periphery, bridges in the periphery opposite sundry of the projections or lugs, and means operated by the transverse rotary motion of said wheel for causing its axial rotary motion, substantially as specified.

3. In a calendar, a rotary part for indicating dates, a counter-shaft at the front of the machine, a motor for the counter-shaft, a driving connection between said counter-shaft and the rotary part, a day-cylinder, a ratchet-wheel on the shaft of said cylinder, a pawl engaging with said ratchet, a rod extended downward from the pawl, a cam on the shaft for engaging with said rod, and a locking device for the cylinder and moved to its releasing position by said shaft, substantially as specified.

4. In a calendar, a rotary part for indicating dates, a shaft having driving connection with said rotary part, a motor for operating the shaft, a day-cylinder, a ratchet-wheel on the shaft of said cylinder, an arm mounted to swing on said shaft, a pawl carried by the arm for engaging with the ratchet-wheel, a rod extended downward from the arm, a cam on the shaft for engaging with said rod, a stop or locking-wheel on the shaft of the cylinder, having notches in its periphery, a locking-dog for engaging in the notches, and a projection on the shaft for moving said dog to its releasing position, substantially as specified.

5. In a calendar, a rotary part for indicating dates, a motor for operating said rotary part, a day-cylinder, a ratchet-wheel on the shaft of said cylinder, an arm mounted to swing on the shaft, a pawl carried by said arm for engaging the ratchet-wheel, means operated by the motor for causing the movements of said arm and pawl, a stop or locking disk on the shaft of the cylinder and having notches, the said disk being of larger diameter than the ratchet-wheel, and a stop or locking device for engaging in the notches of said disk and operated in one direction by the motor, substantially as specified.

6. In a calendar, a rotary part for indicating dates, a motor for imparting motion to said part, a day-cylinder, a month-cylinder, means operated by the motor for causing movements of the cylinders, means for preventing movement of the month-cylinder during certain movements of the day-cylinder and a part having a transverse and axial rotation for controlling the motor, substantially as specified.

7. In a calendar, a rotary part for indicating dates, a counter-shaft, a motor for operating said counter-shaft, a wheel having a transverse and an axial rotary motion for controlling the motor, a driving connection between said counter-shaft and said rotary part, a day-cylinder, a month-cylinder, a cam carried by the shaft for operating the day-cylinder, a

cam carried by the shaft for operating the month-cylinder, and means operated by the shaft for preventing a movement of the month-cylinder during certain movements of the day-cylinder, substantially as specified.

8. In a calendar, a motor, a counter-shaft operated by said motor, a day-cylinder, means operated by the counter-shaft for imparting a step-by-step rotary motion to said cylinder, a month-cylinder, a ratchet-wheel on the shaft of said month-cylinder, a swinging arm on said shaft, a pawl carried by the arm for engaging with the ratchet-wheel, a rod extended downward from the arm, a cam on the shaft for engaging with said rod, a disk having an outwardly-opening notch, a gear connection between the shaft and said disk, a swinging arm or rod having connection with the rod extended from the arm, and a finger on said arm or rod for engaging on the periphery of the disk and adapted to drop into the notch thereof, substantially as specified.

9. In a calendar, a motor, a rotary part operated by the motor for indicating dates, rotary parts for indicating days and months and operated by the motor, a four-year wheel having an axial rotary motion and a transverse rotary motion, means for imparting said motions, a swinging rod, a hammer on the end of said rod for engaging with the four-year wheel, and means operated by an upward movement of said swinging rod for releasing the motor, substantially as specified.

10. In a calendar, a motor, a dial, a hand or pointer movable over said dial, a shaft on which the hand or pointer is mounted, a ratchet-wheel on said shaft, an arm mounted to swing on the shaft, a pawl carried by the arm for engaging with the ratchet-wheel, a draw-rod extended from the arm, a cam operated by the motor for moving said draw-rod upward, a stop-wheel on the shaft and having notches in its periphery, and a holding-bar for engaging in said notches, the said holding-bar being moved to its releasing position by a movement of the motor, substantially as specified.

11. In a calendar, a rotary part for indicating dates, a motor for causing movements of said rotary part, a frame to which rotary motion is imparted from the motor, a four-year wheel mounted to rotate axially in said frame, a fixed rack or gear, a worm-shaft, a pinion on said worm-shaft engaging with said fixed rack or gear, a worm on the shaft, said worm having a straight or inoperative portion, and teeth on the four-year wheel for engaging with said worm, substantially as specified.

12. In a calendar, a rotary part for indicating dates, a motor for imparting motion thereto, and a four-year wheel for governing the motions of said rotary part, the said four-year wheel having an axial rotary motion and a transverse rotary motion, the said wheel having segmental slots or channels in its periphery, bridge-blocks in the periphery of the wheel, a series of lugs extended outward from one face of the wheel at its periphery, and three lugs extended from the opposite face of the four-year wheel near its periphery, substantially as specified.

13. In a calendar, a train of driving-wheels, a spring for operating said wheels, a rock-shaft, a stop-arm extended from said rock-shaft, a pin on one of the train-wheels for engaging with said stop-rod, another rock-shaft, two arms or rods extended from said other rock-shaft, one adapted to engage with the stop arm or rod, and the other being adapted to be moved into line of movement of a pin on another of the driving train-wheels, means having connection with a clock mechanism for moving the last-named rock-shaft, a date-indicator operated by the train of gearing, a hammer carried by the first-named rock-shaft, and a four-year wheel adapted to be engaged by the hammer, the said four-year wheel having an axial rotary motion and a transverse rotary motion, substantially as specified.

14. In a calendar, a motor, a day-cylinder, a counter-shaft operated by the motor, means actuated by the counter-shaft for imparting motion to the cylinder, a rock-shaft having connection with said means, a curved arm extended from said rock-shaft, a curved cam or finger adapted to be engaged by said arm, a pinion on the shaft of said cam, a segmental rack engaging with said pinion, and means for operating said segmental rack, substantially as specified.

15. In a calendar, a rotary part for indicating dates, a motor, a counter-shaft having driving connection with said motor, a shaft for moving the rotary part and operated from the motor, a worm-wheel shaft, a worm-wheel on said shaft, a worm on the first-named shaft for engaging with the worm-wheel, a frame carried by said worm-wheel shaft, a four-year wheel mounted to rotate in said frame, a fixed gear, a shaft having bearings in said frame, a pinion on the shaft and engaging with the fixed gear, a worm on said shaft, forty-eight teeth extended from one face of the wheel for engaging with said worm, and devices carried by the wheel for controlling the movements of said rotary part, substantially as specified.

16. In a calendar, a motor, a wheel having a transverse and axial motion for governing the motor, a counter-shaft operated by said motor, a day-cylinder arranged above the motor, a month-cylinder arranged above the motor, means operated from one end of the counter-shaft for imparting motion to the day-cylinder, means operated from the opposite end of said shaft for moving the month-cylinder, and means operated by the shaft for preventing movements of the month-cylinder until the change is made from one month to another, substantially as specified.

17. In a calendar, a motor, a date-indicating device operated by said motor, a four-year wheel having axial and transverse movements

for controlling movements of said date-indicating device, a hammer for engaging with said wheel, a rock-shaft by which the hammer is carried, an arm extended from said rock-shaft, and a cam operated by the motor for causing vertical movements of said arm, substantially as specified.

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

JOHN I. PEATFIELD.

Witnesses:

WILLIAM H. H. TUTTLE,

GEORGE A. LAW.