

July 29, 1924.

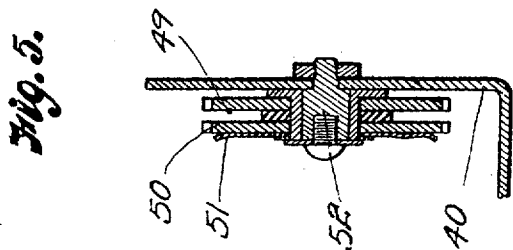
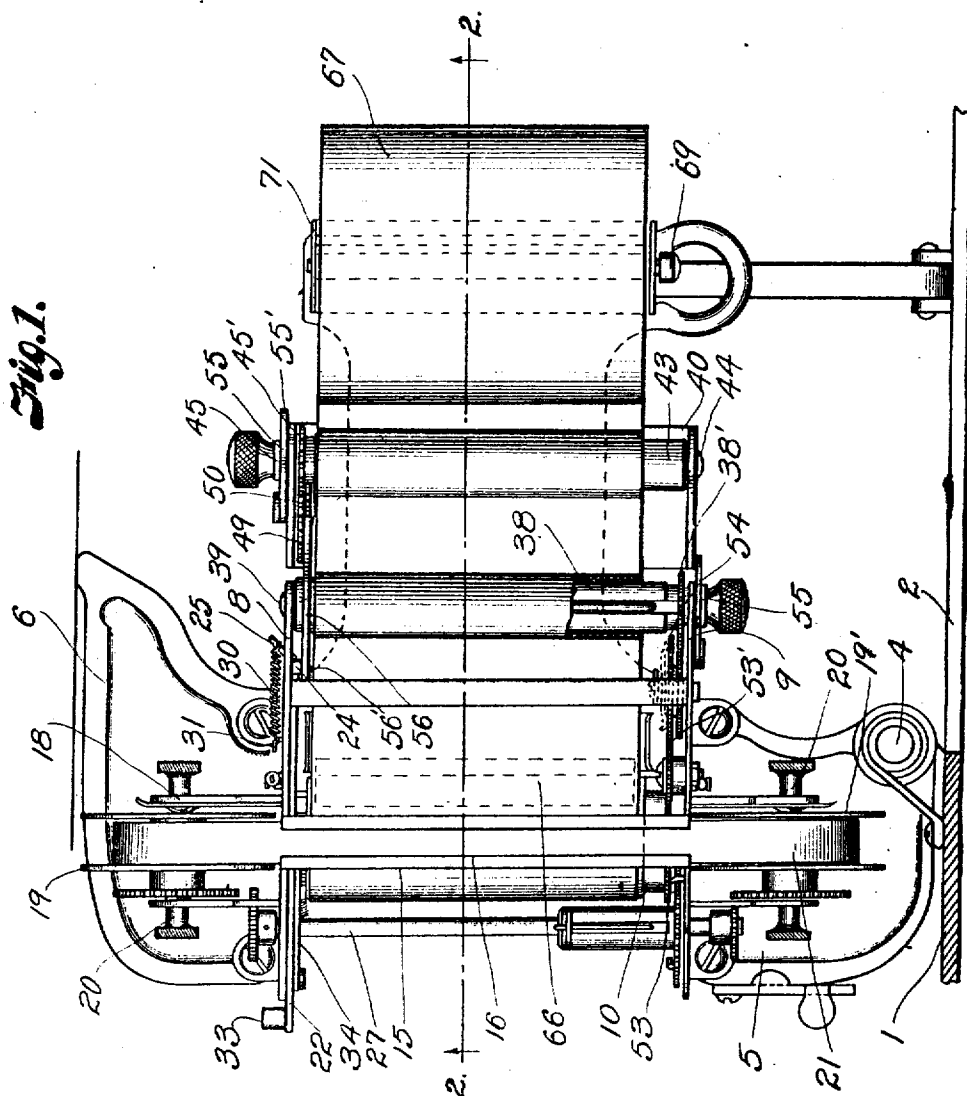
B. P. HAYES

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PRINTER TABLE FOR REGISTERS OR LIKE MACHINES

Filed Feb. 5, 1921

2 Sheets-Sheet 1



INVENTOR
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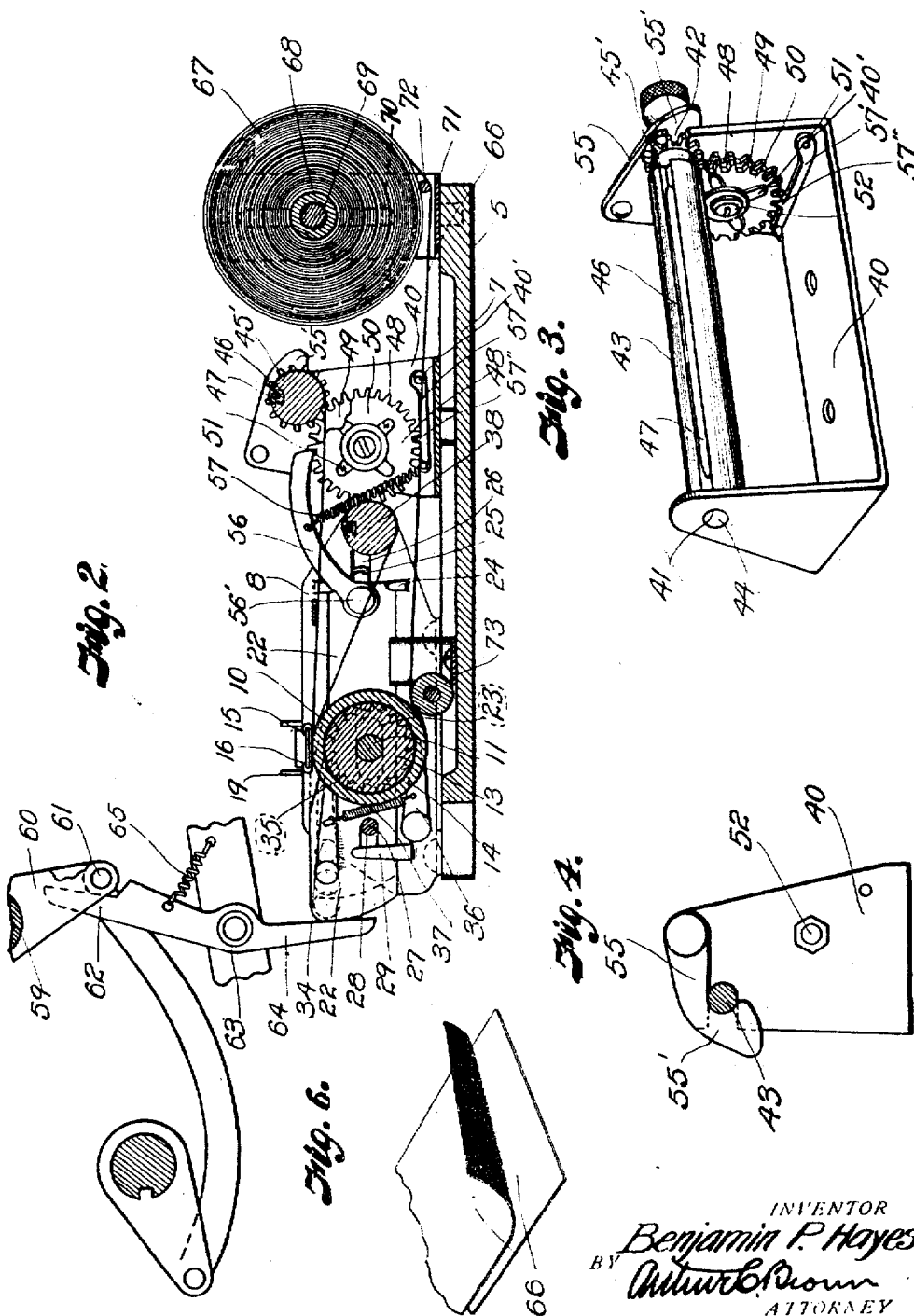
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

BENJAMIN P. HAYES, OF KANSAS CITY, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS, TO INTERNATIONAL ACCOUNTING MACHINE CO., OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

PRINTER TABLE FOR REGISTERS OR LIKE MACHINES.

Application filed February 5, 1921. Serial No. 442,716.

To all whom it may concern:

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

My invention relates to a printer table for register or like machines and more particularly to one adapted for use with accounting machines of the type shown in U. S. Patent No. 1,340,827, issued May 18, 1920 to Frank. D. Laughlin and myself; the present invention having for its object the feeding and rewinding of a double record strip, whereby a record may be removed daily from the machine and a separate, duplicate record retained in the machine for removal at longer intervals, or both records removed at the same time but distributed to separate departments or offices. An illustration of the latter is found in the use of the machine in a branch house from which one record is sent to a main office and a duplicate retained at the branch.

In accomplishing the object of the invention, I have provided improved details of construction, the preferred forms of which are illustrated in the accompanying drawings wherein:

Fig. 1 is an enlarged plan view of a printer table embodying my improvement and illustrating the primary and secondary rewind rolls, part of the secondary roll being broken away to illustrate its mechanical construction.

Fig. 2 is a vertical, longitudinal section on the line 2—2, Fig. 1 including part of a main operating mechanism.

Fig. 3 is an enlarged perspective view of the primary rewind roller and its frame.

Fig. 4 is an end view of the frame, particularly illustrating the roller latch.

Fig. 5 is an enlarged vertical section of a preferred form of friction gear.

Fig. 6 is a perspective view of a portion of the double record strip.

Referring more in detail to the drawings: 1 designates the case within which the operating mechanism of the main machine and the printer unit are housed, and which is provided with an opening 2 thru which the printer unit may be moved when the paper strip is to be observed or removed, the opening being normally closed by a door (not shown) whereby the interior mechanism may be protected from damage and observation.

Pivottally mounted within the case, preferably by means of a pin 4, is a table 5, carrying the ribbon and a strip mechanism, as hereinafter described, and adapted to swing outwardly and inwardly thru the opening 2. The table 5 comprises a body portion 6 which, when the table is in operative position, extends transversely relative to the main machine, and an L 7 which co-operates with the body portion in carrying the ribbon mechanism and the roll of record strip.

Fixed on the body of the table and extending transversely thereof, are spaced, vertical plates 8, 9. Rotatably mounted in said plates is a platen 10, having a shaft 11 rotatable in bearings in the plates 8, 9, the platen preferably comprising an interior wooden body 13 and and a hard rubber surface 14.

Also mounted on the plates 8, 9 and extending transversely across the frame formed thereby, is a ribbon guide 15, preferably formed from a piece of sheet metal, having its edges turned back to form the groove or guideway 16, and having a central portion of the body part cut away to expose the platen and the paper strip when the latter is in place.

Mounted on the outer face of each of the plates 8, 9 are yokes 18, carrying ribbon drums 19, 19', of ordinary construction having axles 20 rotatably mounted in bearing apertures in the yoke arms. An inked ribbon 21 has its ends fixed to the drums 19, 19' respectively, to wind and unwind thereon.

Located on the frame plate 8 is a slide bar 22 having a slot 23 thru which the platen shaft 11 projects to anchor the central por-

tion of the bar, the rear end of the bar being guided by the keeper lips 24 that are stamped from the plate 22, and by an ear 25 that is bent outwardly from the end of the bar and is movable in a slot 26 in the plate 8. The forward end of the bar 22 is guided by a shaft 27 that extends thru a slot 28 in the bar and by a keeper lip 29 which is stamped from the frame plate 8 and bent up along the inner face of the bar. The bar 22 is yieldingly urged to the left (Fig. 1) by a spring 30, which is connected at one end with the ear 25 on the slide bar 22 and at the other end with a hook 31 that is stamped outwardly from the plate 8, the forward projection of the bar being limited by engagement of the forward end of the slot 28 with the shaft 27, such projection being sufficient to effect engagement of a stud 33 on the bar with the free end of a rocking lever, whereby the slide bar is actuated, as presently described.

Pivotally mounted on the bar 22 is a push pawl 34, the tooth of which lies on a ratchet wheel 35 that is fixed on the platen roll 10, so that when the bar 22 is moved forwardly upon operation of the main machine, the slide bar will advance the platen one space, return movement of the bar under tension of its spring 30 dragging the push pawl back to position it for a succeeding operation.

Pivotally mounted on the frame plate 8 is a lock pawl 36, the tooth of which engages the ratchet wheel 35 from beneath and is adapted for co-operation with the push pawl to prevent overthrow of the platen, the two pawls being connected by the spring 37 so that both are yieldingly tensioned to engagement with the ratchet wheel, the push pawl yielding as it is dragged back to initial position over the teeth of the ratchet wheel and the locking pawl yielding as the ratchet wheel is advanced.

Rotatably mounted at the forward end of the frame plates is a take-up roller 38, comprising a body member having a stud 39 at one end rotatable in the frame plate 8, and spaced collars at the opposite end adapted for receiving a slotted portion of the frame plate 9, whereby the roller may be removably mounted on the frame plates and held against longitudinal displacement. The roller is held against lateral displacement by a latch 55, similar to the latch 55 for the primary rewind roller presently described. The roller 38 may be termed a secondary roller in that it is adapted for carrying a carbon copy of the record strip, the primary roller carrying the original of the strip and being located in a more convenient position on the frame than is the secondary roll.

Mounted on the table L 7 to the rear of the secondary roller 38 is a U frame 40,

having a bearing aperture 41 in one of its arms and a slot 42 in its other arm registering with the bearing aperture and opening thru the rear edge of the frame arm.

Mounted in the frame 40 is the primary rewind roller 43, having a stud 44 rotatable in the bearing aperture 41 of one of the frame arms and having spaced collars 45, 45' adjacent its opposite end seated within the slot 42 in the opposite frame arm, the collar 45' constituting a pinion whereby the rewind roller is operated, as presently described.

The roller 43 has a longitudinal groove 46 and seated in said groove is a spring finger 47, one end of which is attached to the roller while the other end is free, so that the record strip may be located within the groove 44 and held in place by the spring finger.

Rotatably mounted on the slotted arm of the frame 40 is a friction gear wheel 48, preferably comprising two toothed members 49, 50, and a spring washer 51, which latter is held in place by a bolt 52 that extends thru the washer, thru both of the toothed members and thru the frame arm. One of the toothed members 48 meshes with the pinion 44 on the roller 43 to drive the same when the friction gear is actuated as presently set forth. The rewind roller 38 is driven by the pinion 38' from a gear 53 mounted on the platen shaft, through an idler gear 53' and a friction gear 54 similar to the friction gear wheel 48.

It is apparent that with this type of friction gear wheel there will be sufficient slippage to allow for the variation in diameter of the accumulated strip as operation of the machine progresses thru the course of a day or other recording period. As the record strip must be removed from the machine at intervals, it is necessary to removably mount the rollers 38 and 43 in their mountings. This is accomplished thru the aperture and slot bearings in the frame plates 8, 9, and in the arms of the U frame 40, the studs 39 and 44 rotating in the apertures, and the opposite ends of the rollers in the slots. To locate the rollers in their mountings the studs are projected into the apertures and the opposite ends of the rollers seated in the slots. When so positioned, the rollers are anchored by latches 55 which are pivotally mounted on a frame plate or frame arm respectively and have hooked ends 55' adapted to drop over the roller shafts and close the slots to prevent escape of the shafts. The hooked ends of the latches may form half bearings for the shafts to permit their rotation in the bearing formed by the end of the slot and the hooked portion of the latch.

The friction gear wheel 48 is operated

thru a pawl 56, pivoted at one end on a pin 56' on the reciprocatory bar 22 and having a tooth at its opposite end held in yielding engagement with the driven gear member 49 of the friction gear wheel by a spring 57, so that as the slide reciprocates during the operation of the machine, the pawl will operate the friction gear wheel step by step to effect operation of the rewind roller 43. To prevent retrograde movement of the friction gear wheel by back drag of the pawl 56, I provide a stop pawl 57'', which is pivoted to the frame 40 by a pin 40' and has a tooth 57''' engageable with the friction gear member 49 to hold it against rearward movement, the pawl being extended and connected with the spring 57, so that a single spring serves to yieldingly hold both of the pawls to the gear wheel.

The secondary rewind roller is driven synchronously with the primary roller, but independently thereof, through a gear wheel 38' on the roller shaft, a gear wheel 53 on the platen shaft and intermediate gear wheels 53' and 54 on the frame plate 9, the intermediate gear wheel 54 being a friction gear wheel like the wheel 48 through which the primary roller is driven.

The slide bar 22 is reciprocated thru mechanism forming part of the main register machine, a portion of which is illustrated in the accompanying drawings, 59 designating the secondary shaft of the machine and 60 an arm fixed on said secondary shaft, having a stud 61 engageable with the arm 62 of a lever 63 pivotally mounted on a portion of the machine frame. The lever 63 has a second arm 64 engageable with the stud 33 on the slide bar 22, so that when the secondary shaft is operated clockwise the stud 61 engages the lever arm 62 and moves the arm 64 against the stud 33 to shift the slide bar rearwardly against the tension of its spring 30. The lever is returned by the slide bar, but the return movement is supplemented by a spring 65 connected with the lever arm 62 and with the portion of the frame upon which the lever is mounted.

The paper strip 66 is contained in a roll 67 wound on a roller 68 that is rotatably mounted on a shaft 69, slidably mounted in slots 70 in the arms of a U bracket 71 mounted on the rear end of the table L 7, so that the roll may have vertical movement in its supporting frame to compensate for withdrawal of the strip. The roll has no fixed support in the frame, but rests on a roller 72 extending transversely between the frame arms and which also serves as a guide for the strip as it leaves the roll to enter the printing mechanism. After passing over the combined supporting and guide roller 72 the strip passes over a guide roller 73 lo-

cated adjacent the platen, around the platen 65 and back to the rewind rollers.

When a duplicate record is desired a duplicate strip is employed, one of the members of which has a carbon back, so that it will print on the mating strip. The double strip is combined in the roll but separated after it passes the platen, so that the duplicate may rewind on the roller 38 and the original on the roller 43. With this arrangement the primary strip may be removed daily or at any other period, and the secondary strip at longer intervals, the record of the two strips being identical, however, because of the simultaneous printing by the inked ribbon on the original or primary strip and by the carbon on the duplicate or secondary strip.

It is apparent that the apparatus may be used for a single strip record by allowing one of the rewind rollers to work idle, and that while I have specifically designated one of the rollers as the primary one and the other as the secondary one, such arrangement is not essential, but has been specified merely as the most convenient arrangement. The present improvement may be considered as an addition to the printing mechanism of the main register to which I have referred, as the U frame 40 and its rewind roller may be installed or removed without affecting the single record mechanism.

I have not attempted to describe the detail operation of the main register, as this is fully disclosed in the patent to which I have referred and with which the present mechanism is adapted for use.

What I claim and desire to secure by Letters Patent is:

1. The combination of a roller upon which a double record strip is wound in overlying plies, a platen, means guiding the strip over the platen in overlying plies, a separate rewind member for each ply of the record strip, and means operating the rewind members simultaneously.

2. In combination with a printing mechanism, a pair of independently rotatable rewind rollers, a pinion on each rewind roller, a friction gear wheel operably connected with each pinion, a slide bar, a pawl on the slide bar engaging one of the friction gear wheels, intermediate gearing connected with the other friction gear wheel, and a pawl on the slide bar operating the intermediate gearing whereby both of the rewind rollers are actuated upon reciprocation of the bar.

3. In combination with a main stationary frame, a rewind roller rotatable on the frame, a supplemental, stationary frame, a rewind roller on the supplemental frame, pinions on the rewind rollers, a gear wheel on the supplemental frame, meshing with the pinions on one of the rewind rollers, a

bar slidable on the main frame, a pawl on the slide bar operable on said gear wheel, a train of gears operable on the pinion of the second rewind roller, a pawl on the slide bar operable on the train of gears, and means for reciprocating the slide bar.

4. In combination with a stationary frame, a ratchet on said frame, a rewind roll on said frame, a supplemental frame, a rewind roll on the supplemental frame, a friction gear wheel operable on said rewind roll, a slide bar, separate pawls on the slide bar operable on the ratchet and friction gear wheel respectively, and means for reciprocating the slide bar.

In testimony whereof I affix my signature.

BENJAMIN P. HAYES.