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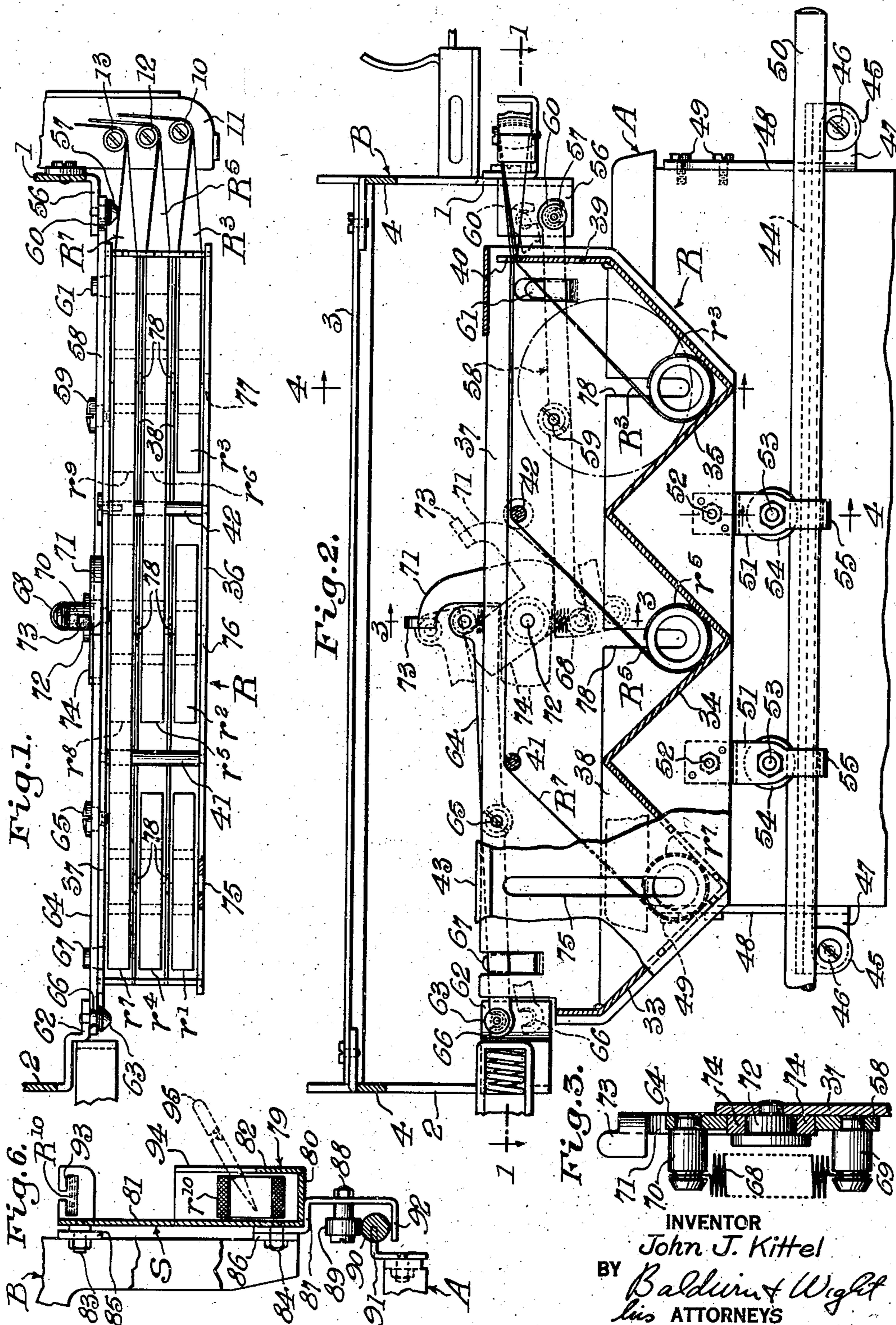
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2,486,175

RIBBON ROLL MOUNTING FOR TYPEWRITING OR LIKE MACHINES

Filed April 20, 1945

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

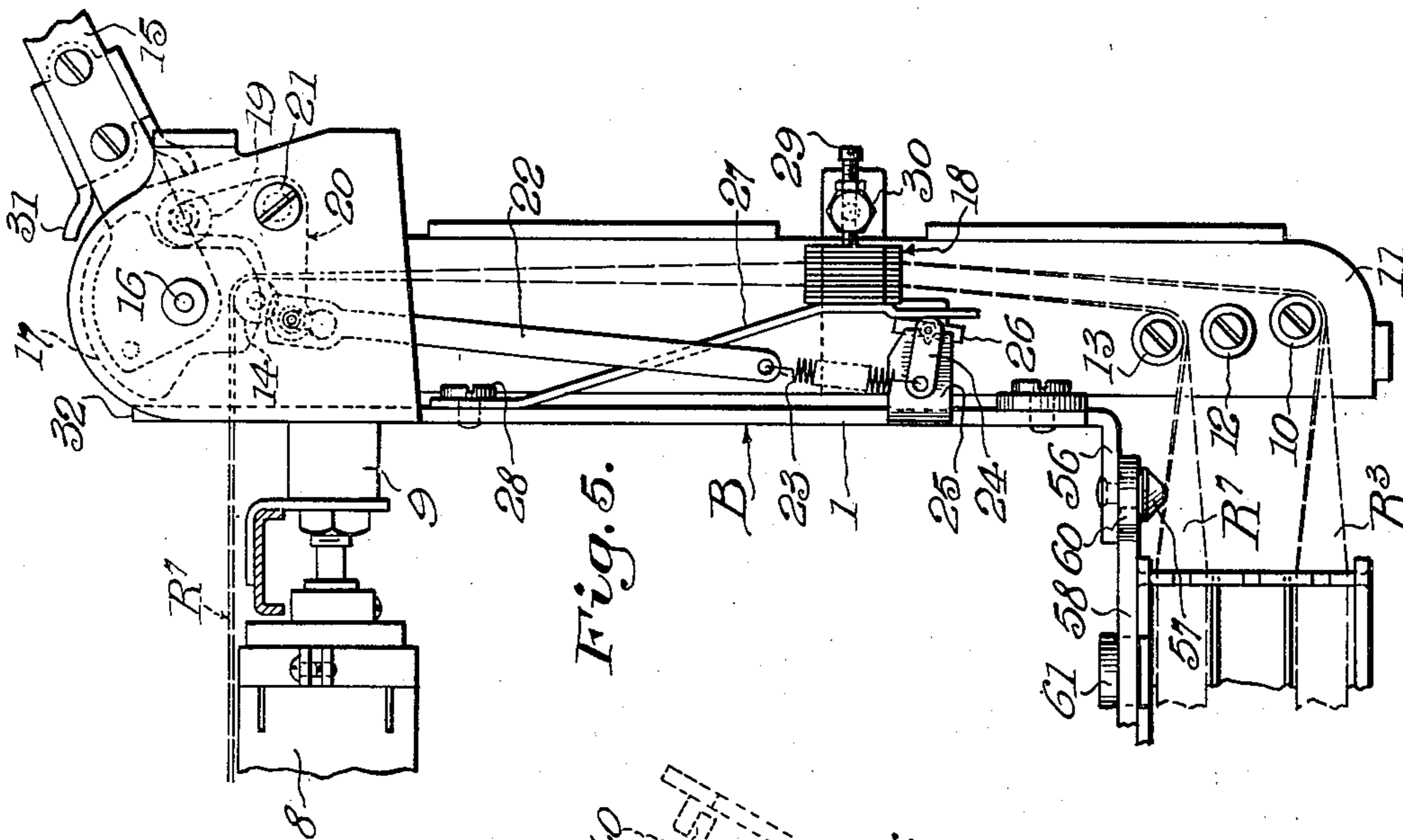


Fig. 5.

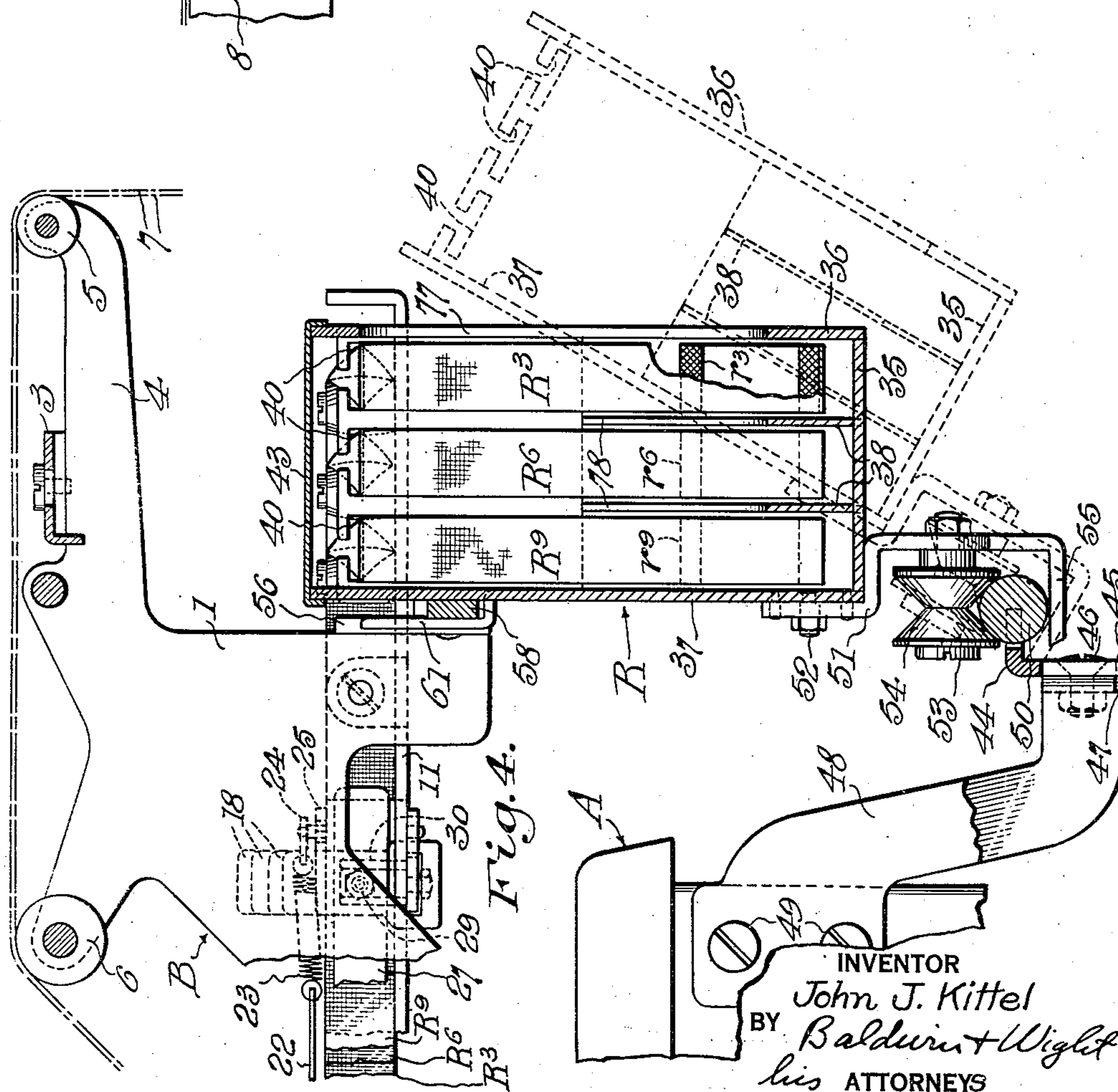


Fig. 4.

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## UNITED STATES PATENT OFFICE

2,486,175

RIBBON ROLL MOUNTING FOR TYPE-  
WRITING OR LIKE MACHINES

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Application April 20, 1945, Serial No. 589,406

13 Claims. (Cl. 197—153)

1

This invention relates to typewriting machines and more particularly to equipment for mounting and feeding thin ribbons, such as carbon paper strips, used for example in manifold-  
ing operations.

It has been common, in known constructions of this class, to mount rolls of such ribbon on spindles, axles or the like and to provide some sort of special device for resisting rotation of the axle or the roll core or journal for preventing over throwing of the rolls and consequent feeding off of surplus ribbon.

An object of the present invention is to provide a simple and efficient ribbon roll mounting which dispenses with the necessity of using such special retarding devices but which nevertheless prevents inertia over throwing of the ribbon rolls.

Another object of the invention is to provide a roll mounting of the character referred to in which inertia over throwing is prevented by friction of an exterior surface of the roll, preferably its peripheral surface, resting directly on a part of the mounting.

Another object of the invention is to provide a roll mounting of the kind referred to which is so constructed as to permit any one of a plurality of ribbon rolls to be removed without disturbing the other rolls.

Another object of the invention is to provide a typewriter ribbon roll mounting adapted to support and prevent inertia over throwing of ribbon rolls not wound upon cores as well as the more usual core-wound rolls.

Another object of the invention is to provide a ribbon roll mounting of the character referred to in which the retarding or over throw preventing action decreases as the mass of the roll decreases so that the retarding action will not be unnecessarily great at any time although the inertia of the roll decreases as its diameter and weight are diminished by unwinding of ribbon.

Another object of the invention is to provide roll mounting means of the character stated in which a ribbon roll is supported solely by having spaced portions of its periphery rest upon opposite sides or leg portions of a V-shaped pan bottom or like supporting element.

A further object of the invention is to provide a roll supporting structure of the kind referred to which is mounted on a typewriter or like machine main frame and is connected releasably to the machine carriage to travel therewith and which is adapted, when released from

2

the carriage, to be moved to a position in which replacement of a ribbon roll is facilitated.

Other objects will become apparent from a reading of the following detailed description, the appended claims, and the accompanying drawings, in which:

Figure 1 is a top view, partly in plan and partly in section on the line 1—1 of Figure 2, showing roll mounting apparatus embodying the invention with some parts omitted.

Figure 2 is a fragmentary rear view of the construction shown in Figure 1 with some parts shown in vertical section and others in elevation.

Figure 3 is a detail section on the line 3—3 of Figure 2 showing mechanism for latching a ribbon roll mounting to a typewriter carriage.

Figure 4 is an enlarged fragmentary transverse section taken substantially on the irregular lines 4—4 of Figure 2.

Figure 5 is a fragmentary top plan view of a typewriter carriage end plate, platen, roll mounting means, and mechanism for guiding, feeding, and tensioning ribbons; and

Figure 6 is a fragmentary vertical sectional view of a modified roll supporting apparatus embodying the invention.

Reference is made to the copending application of Frederick C. Wendt, Serial No. 574,469, filed January 25, 1945, and since issued as Patent No. 2,411,402, dated November 19, 1946, which discloses a typewriter ribbon roll mounting having some characteristics in common with the subject matter of the present application.

The invention may be embodied in various kinds of manifolding machines or typewriters constructed or equipped for performing manifolding operations or other operations in which it is necessary to feed a ribbon from a roll carried on the machine. Inasmuch as the invention resides in the novel ribbon roll supporting equipment and in the combination of such equipment with other parts which themselves may be of a conventional construction, the drawings show the known or conventional structure only partially.

Included in the illustrated known construction is a typewriter main frame A on which a carriage generally designated B is mounted for letter spacing and return travel. The carriage B comprises spaced end plates 1 and 2 connected by carriage frame members or cross pieces, one of which is shown at 3 as being connected to arms 4 extended rearwardly from end plates 1 and 2 to overhang the rear part of the frame A. Roll-

ers 5 and 6 between the end plates 1 and 2 serve to support a series or sheaf of work sheets 7 led from a supply at the rear of the machine forwardly over the carriage B where they are passed in front of a platen 8 mounted on end plate bosses, one of which is shown at 9.

Ribbon mounting means generally designated R constructed in accordance with the invention, is mounted at the rear of the typewriter so as to be supported mainly on the frame A for travel in the direction of carriage movement, the means R being adapted to be connected releasably to the carriage so as to travel to and fro with it during letter spacing and return movements. The ribbon mounting means R shown by way of example has a capacity of nine ribbon rolls  $r^1, r^2, r^3, r^4, r^5, r^6, r^7, r^8$ , and  $r^9$ , each of the rolls being accommodated in a separate chamber or compartment. Ribbons may be led from each of the rolls but Figures 1 and 2 show only three ribbons, namely those designated  $R^3, R^5$ , and  $R^7$  as being extended respectively from the rolls  $r^3, r^5$  and  $r^7$  for being guided and fed along the platen writing line in a manner presently to be described. Figure 4 shows the same structure as is illustrated in Figures 1 and 2, but it will be observed that in Figure 4 ribbons  $R^3, R^6$  and  $R^9$  are extended from the rolls  $r^3, r^6$ , and  $r^9$ . It will be understood that ribbons may be fed from all of the rolls  $r^1 \dots r^9$  or from any selected rolls. Any ribbons extended from the rolls  $r^1, r^2$  and  $r^3$  are passed around a guide roller 10, journaled on a bracket 11 secured to the carriage end plate 1. Ribbons extended from all or any of the rolls  $r^4, r^5$  and  $r^6$  are passed around a guide roller 12, and ribbons extended from any or all of the rolls  $r^7, r^8$ , and  $r^9$  are passed around a guide roller 13.

Strips of ribbon extending from the ribbon mounting means R and around the rollers 10, 12 and 13 are guided and fed along the writing line of the platen 8 by suitable mechanism such, for example, as the ribbon guiding and feeding mechanism disclosed in the patent to Myers and Handley 1,890,547. As shown in Figure 5, ribbons  $R^3$  and  $R^7$  trained around the rollers 10 and 13 extend to a front guide roller 14 journaled on the bracket 11 and, after passing around the roller 14, extend along the writing line in front of the platen 8 for being interleaved with the work sheets 7 in a known manner.

Mechanism for feeding the ribbons along the platen writing line includes a hand lever 15 pivoted as at 16 on the bracket 11. Rockable with the lever 15 is a cam 17 adapted to cooperate with suitable mechanism, for example, mechanism as shown in the aforesaid Myers and Handley Patent 1,890,547, for pulling the ribbons along the platen writing line toward the operator's right, that is, toward the left as viewed in Figure 5. The ribbons may be placed under tension in addition to that incident to feeding off of the ribbons from the rolls in the ribbon mounting apparatus R. For this purpose mechanism similar to that shown in the Degener Patent 1,853,761 may be provided. The illustrated mechanism includes a pack of leaf springs 18 mounted on the bracket 11. The ribbons are passed through different pairs of adjacent springs of the pack which press upon the ribbons and tend to retard passage of the ribbons through the pack. When the operating lever 15 is rocked counterclockwise as viewed in Figure 5, the cam 17 actuates a follower roller 19 to rock a lever 20 pivoted as at 21 on the bracket 11. This pulls on a link 22 and spring 23 to rock a lever 24 which is pivoted on an ear

25 extending from the carriage end plate 1. A cam 26 fast with the lever 24 is thereby rocked against a spring arm 27 mounted as at 28 on the end plate 1, thereby pushing the free end of the arm 27 against and compressing the pack of springs 18 so as to impose a frictional drag on the ribbons. The drag may be varied by adjusting a screw 29 threaded in a post 30 carried by the bracket 11.

In operation, when the end of a typed line is reached the lever 15 is operated to line-space the work sheets and feed the ribbons, as explained in the Myers and Handley Patent 1,890,547. When a stop 31 on the lever 15 engages a stop portion 32 on the bracket 11, further pressure exerted on the lever 15 causes the carriage B to be returned to the operator's right, that is, to the left as viewed in Figure 5.

In accordance with the present invention a roll of ribbon is fed from the means R in a novel and simple manner such that inertia overthrowing of the ribbon roll is checked so as to prevent unwinding of ribbon in excess of that actually fed by operation of the lever 15, thereby eliminating danger of producing unnecessarily long and slack stretches of ribbon which would be apt to become tangled and torn. A particular feature of the invention is that the ribbon roll is not journaled to rotate about a fixed central axle in the usual way, but is rested bodily on two spaced portions of a support in the nature of a pan, the friction between the pan and the peripheral surface of the roll preventing unwinding rotation of the roll except that which is due to positive pulling of the ribbon by operation of the feeding lever 15.

The ribbon mounting means R shown in Figures 1 to 5 includes a receptacle or the like provided with a bottom comprising a single sheet of material bent or otherwise formed to a zig-zag shape so as to provide three V-shaped pan bottoms 33, 34 and 35 extending in the direction of carriage travel. The receptacle is provided also with outer sides 36 and 37 and with partitions or inner sides 38, the arrangement being such as to provide nine separate chambers or compartments each of which receives one of the rolls  $r^1 \dots r^9$ . The roll mounting structure R is equipped at its right hand end, as viewed in Figures 1 and 2, with a vertically extending transverse wall part 39 formed with three guide slots 40 disposed respectively in line with the three sets of aligned co-planar pans. The three ribbons from each aligned set of ribbon rolls pass through the guide slot 40 in mutually superimposed relationship, as shown in Figure 2. A horizontal guide pin 41 extends transversely between the walls 36 and 37 for guiding ribbons led off the rolls  $r^1, r^4$  and  $r^7$  and a similar guide pin 42 extends between the outer sides 36 and 37 for guiding ribbons fed off the rolls  $r^2, r^5$  and  $r^8$ . The pan structure R may be provided with a removable cover 43.

Each of the pan compartments includes a V-shaped bottom, for example, the bottom 34, on which the roll  $r^5$  is supported. The sole vertical support for the roll is provided by resting the roll periphery directly upon the spaced leg portions of the V-shaped bottom so as to engage them frictionally whereby free rotation and inertia overthrowing of the roll is prevented. When the operating or feeding lever 15 and the associated feeding mechanism is operated the ribbon  $R^5$  will be pulled upon with sufficient force to cause the roll  $r^5$  to slip on the supporting V-shaped pan bottom, thereby allowing ribbon  $R^5$  to be fed

along the platen printing line as required. However, the frictional resistance to turning of the roll  $r^5$  is sufficient to bring the roll to rest as soon as the positive pull exerted by the feeding mechanism is discontinued. Consequently, even a sudden or jerky operation of the feeding mechanism will not cause the roll  $r^5$  to turn any more than the amount necessary to release a length of ribbon equal to that taken up by the feeding mechanism. There will be no inertia overthrowing of the roll and no slackness will be introduced in the length of ribbon  $R^5$  extending from the roll  $r^5$  to the feeding mechanism. It will be understood, of course, that the other rolls whose peripheries frictionally engage the associated V-shaped pan bottoms are retarded in a similar way so as to prevent inertia overthrowing. The retarding or overthrowing preventing action due to frictional contact of the rolls with the associated pan bottoms decreases as the masses of the rolls and their inertia decrease, so that the retarding action will not be unnecessarily great at any time.

In accordance with a further feature of the invention the roll mounting means R is supported on the main frame A for travel with the carriage and is adapted to be connected releasably to the carriage in a manner permitting tipping displacement of the pans to positions in which insertion or removal of rolls is facilitated. In the form shown, a bracket 44 is provided with ears 45 secured by screws 46 to ears 47 on plates 48 attached to ends of the main frame A by screws 49. A rail 50, which is circular in cross section, is fixed to the bracket 44 and extends longitudinally behind the main frame A and under the rear part of the carriage B. Depending from the pan structure R are two spaced legs 51 secured to the pan structure by bolts 52. Pintles 53 carried respectively by the legs 51 serve to journal grooved rollers 54 which run on the track 50 whereby the weight of the pan structure R is carried on the frame-supported rail 50 in a manner to permit the pan structure R to move in the direction of carriage travel. In order to prevent the rollers 54 from being displaced from the rail 50, the legs 51 are extended downwardly and are turned inwardly to provide retainers 55 projecting under the rail 50. The mounting of the structure R on the rail 50 by means of the rollers 54 held in place by the retainers 55 enables the pan structure R to swing angularly about the rail 50 from the operative or working position shown in full lines in Figure 4 to the position shown in dotted lines in Figure 4 wherein the roll compartments are faced away from the machine, thereby facilitating the insertion of rolls in the pans or their removal therefrom.

Means are provided for releasably connecting or securing the pan structure R to the carriage B in the normal upright or working position shown in full lines in Figure 4. The carriage end plate 1 is formed with an ear 56 equipped with a headed stud or keeper 57. A latch bar 58 pivoted as at 59 on the pan wall 37 is provided with a recessed latch end portion 60 adapted to be engaged releasably with the keeper 57. A prong 61 struck out rearwardly from the pan wall 37 extends behind the outer end portion of the latch bar 58 to hold it against bending or springing and to maintain it close to the side 37 for proper engagement with the keeper 57. When the latch bar 58 is rocked counterclockwise from the position shown in Figure 2, the recessed latch end 60 will be moved to the dotted line position shown

in Figure 2 so as to be released from the keeper 57.

The carriage end plate 2 is formed with an ear 62 on which is mounted a headed stud or keeper 63. A latch bar 64, pivoted as at 65 on the pan side 37, is formed with a recessed latch end 66 adapted to engage the keeper 63. A prong 67 struck rearwardly from the pan side 37 guides and provides lateral support for the latch bar 64. When the latch bar 64 is rocked counterclockwise from the position shown in Figure 2 the recessed latch end 66 will be released from the stud or keeper 63.

Normally the latch bars 58 and 64 are held in their operative or latching positions shown in full lines in Figure 2 so as to maintain the pan structure R in its working position connected to the carriage as shown in full lines in Figure 4. For this purpose a spring 68 is interposed between a stud 69 mounted on the inner end of the latch bar 58 and a stud 70 mounted on the inner end of the latch bar 64. In order that the latch bars 58 and 64 may be moved simultaneously to released position a single operating lever 71, pivoted as at 72 on the pan side 37, is adapted to rock both latch bars against the urge of the spring 68. The lever 71 is provided with a finger piece 73 and a cam arm 74 which extends between the inner ends of the latch bars 58 and 64 as shown in Figures 2 and 3. When the lever 71 is rocked clockwise as viewed in Figure 2 the cam arm 74 moves the inner ends of the latch bars 58 and 64 respectively downwardly and upwardly so as to rock both latch bars counterclockwise to the released positions shown in dotted lines. When the pan structure R has been thus released or disconnected from the carriage B it can be swung angularly about the rail 50 to the position shown in dotted lines in Figure 4 with the open tops of the pans facing away from the back of the machine whereby rolls may easily be inserted in or removed from the pan compartments.

When a roll has become almost entirely unwound or exhausted, requiring its replacement, it will be of small diameter and will be housed well below the top of the pan sides 36, 37 and 38. In order to assist in removing the small rolls which otherwise would be rather inaccessible, the pan outer side 36 is formed with vertical slots 75, 76 and 77 and the partitions or inner pan sides are formed with slots 78. If it is desired to remove an exhausted roll, for example, the roll  $r^3$ , a simple instrument such as a pencil or stylus may be inserted in the slot 77 and projected into the opening in the hollow roll or roll core and the roll then lifted high enough to permit its being grasped easily and then removed completely from the pan. If it is desired to remove a roll other than one adjacent the pan side 36, for example, the roll  $r^5$ , the instrument may be extended through the slot 76 and the slot 78 and projected into the opening in the center of the roll  $r^5$  after which the roll is lifted as previously described. This may necessitate passing the instrument through the center of the roll  $r^2$  also, but no harm will be done because when the rolls  $r^2$  and  $r^5$  are lifted together only the roll  $r^5$  need be grasped and removed completely.

Figure 6 shows a modified construction in which only a single longitudinal row of compartments or pans is included in the roll supporting pan structure S. Although a cross section through only one pan 79 or compartment is shown it will be understood that a longitudinal section would

show a plurality of aligned pans 79 with V-shaped bottoms as shown in Figure 2. The pans include a common bottom member 80 and sides 81 and 82, the side 81 being secured by bolts 83 and 84 to ears 85 and 86 on the carriage B. In order to relieve the carriage of most of the weight of the pan structure S, the latter preferably is supported by two spaced legs, one of which is shown at 87, each of the legs being equipped with a pintle 88 on which is journaled a roller 89 arranged to run on a rail 90 mounted on a bracket 91 secured to the main frame A. Retainers, one of which is shown at 92, are formed on lower extensions of the legs 87 so as to project under the rail 90 and prevent lifting of the pan structure S. One of the rolls  $r^{10}$  is shown supported in an associated V-shaped pan and ribbons from this roll and the other rolls, not shown, are indicated at  $R^{10}$  as passing through a guide 93 extending rearwardly from the top of the pan side or wall 81.

The rear wall 82 of each of the pans included in the structure S is formed with a slot 94 through which an instrument such as a pencil indicated at 95 may be extended for lifting a small diameter roll to a position in which it may be grasped conveniently for being removed.

The apparatus disclosed embodies the invention in a preferred form, but it will be understood that changes may be made in the construction and arrangement of the parts without departing from the invention as defined in the claims.

**I claim:**

1. In a typewriting or like machine, a platen; means for guiding a ribbon along the platen printing line; means for feeding the ribbon; and means for mounting a roll of said ribbon from which ribbon is guided and fed as aforesaid, said roll having an opening through its center, said roll mounting means comprising a pan having two spaced roll-enclosing sides between which the roll is received and a V-shaped bottom on which the roll is supported with its axis horizontal and with spaced portions of the periphery of the roll resting directly on spaced surface portions of the pan bottom which provides the sole vertical support for the roll, said pan sides extending substantially to the top of said pan and at least one of said pan sides being formed with a narrow slot having sides extending substantially vertically downwardly towards the center of the pan bottom, the portion of said pan side which is not slotted providing a cover for a ribbon roll positioned in said pan, and said slot being substantially no wider than enough to permit an instrument of a size of the order of pencil size to be extended from outside the pan into the roll center opening when said opening is below the top of the pan, whereby the instrument may then be lifted to raise the roll from between said pan sides.

2. In a typewriting or like machine, a platen; means for guiding a plurality of ribbons along the platen printing line; means for feeding the ribbons; and means for mounting a plurality of rolls from which ribbons are guided and fed as aforesaid, said roll mounting means comprising a plurality of aligned co-planar pans, one for each roll, each pan including a V-shaped bottom on which the associated roll is supported with its axis horizontal and with spaced portions of the roll periphery resting directly on both surfaces of the pan bottom which provides the sole vertical support for the roll, the bottoms of said pans being constituted by a single sheet of material of zig-zag formation providing a plurality

of integrally connected V-shaped pan bottoms.

3. In a typewriter or like machine, a platen; means for guiding a plurality of ribbons along the platen printing line; means for feeding the ribbons; and means for mounting a plurality of rolls from which ribbons are guided and fed as aforesaid, said rolls respectively having openings through their centers, said roll mounting means comprising a plurality of aligned co-planar pans, one for each roll, each pan including two spaced roll-enclosing sides between which the associated roll is received and a V-shaped bottom on which the roll is supported with its axis horizontal and with spaced portions of the roll periphery resting directly on both surfaces of the pan bottom which provides the sole vertical support for the roll, said pan sides extending substantially to the top of said pan and at least one of the sides of each of said pans being formed with a narrow slot having sides extending substantially vertically downwardly towards the center of the pan bottom, the portion of said pan side which is not slotted providing a cover for a ribbon roll positioned in said pan, and said slot being substantially no wider than enough to permit an instrument of a size of the order of pencil size to be extended from outside the pan into the roll center opening when said opening is below the top of the pan, whereby the instrument may then be lifted to raise the roll from between said pan sides.

4. In a typewriting or like machine, a platen; means for guiding a plurality of ribbons along the platen printing line; means for feeding the ribbons; and means for mounting a plurality of rolls from which ribbons are guided and fed as aforesaid, said roll mounting means comprising a plurality of aligned co-planar pans, one for each roll, each pan including a V-shaped bottom on which the associated roll is supported with its axis horizontal and with spaced portions of the roll periphery resting directly on both surfaces of the pan bottom which provides the sole vertical support for the roll, an end one of said pans having a transverse wall formed with a guide slot through which said ribbons are trained in mutually superimposed relationship.

5. In a typewriting or like machine, a platen; means for guiding a plurality of ribbons along the platen printing line; means for feeding the ribbons; and means for mounting a plurality of rolls from which ribbons are guided and fed as aforesaid, each of said rolls having an opening through its center, said roll mounting means comprising a plurality of pans arranged side-by-side and each including two spaced roll-enclosing sides between which the associated roll is received and a V-shaped bottom on which the associated roll is supported with its axis horizontal and with spaced portions of the roll periphery resting directly on spaced portions of the pan bottom which provides the sole vertical support for the roll, said pan sides extending substantially to the top of said pan and at least one of the sides of each of said pans being formed with a narrow slot having sides extending substantially vertically downwardly towards the center of the pan bottom, the portions of said pan sides which are not slotted providing covers for ribbon rolls positioned in the pans, and said slots being substantially no wider than enough to permit an instrument of a size of the order of pencil size to be extended from outside the pans into the center openings of said rolls when said openings are below the tops of

the pans, whereby the instrument may then be lifted to raise the rolls from the pans.

6. In a typewriting or like machine, a platen; means for guiding a plurality of ribbons along the platen printing line; means for feeding the ribbons; and means for mounting a plurality of rolls from which ribbons are guided and fed as aforesaid, each of said rolls having an opening through its center, said roll mounting means comprising a plurality of pans arranged side-by-side and each including two spaced roll-enclosing sides between which the associated roll is received and a bottom on which the associated roll is supported with its axis horizontal and with spaced portions of the roll periphery resting directly on the pan bottom which provides the sole vertical support for the roll, said pan sides extending substantially to the top of said pan and at least one of the sides of each of said pans being formed with a narrow slot having sides extending substantially vertically downwardly towards the center of the pan bottom, the portions of said pan sides which are not slotted providing covers for ribbon rolls positioned in the pans, and said slots being substantially no wider than enough to permit an instrument of a size of the order of pencil size to be extended from outside the pans into the center openings of said rolls when said openings are below the tops of the pans, whereby the instrument may then be lifted to raise the rolls from the pans.

7. In a typewriting or like machine, a platen; means for guiding a ribbon along the platen printing line; means for feeding the ribbon; and means for mounting a roll of said ribbon from which ribbon is guided and fed as aforesaid, said roll having an opening through its center, said roll mounting means comprising a pan having two spaced roll-enclosing sides between which the roll is received and a bottom on which the roll is supported with its axis horizontal and with spaced portions of the periphery of the roll resting directly on the pan bottom which provides the sole vertical support for the roll, said pan sides extending substantially to the top of said pan and at least one of said pan sides being formed with a narrow slot having sides extending substantially vertically downwardly towards the center of the pan bottom, the portion of said pan side which is not slotted providing a cover for a ribbon roll positioned in said pan, and said slot being substantially no wider than enough to permit an instrument of a size of the order of pencil size to be extended from outside the pan into the roll center opening when said opening is below the top of the pan, whereby the instrument may then be lifted to raise the roll from between said pan sides.

8. In a typewriting or like machine, a main frame; a carriage mounted on said frame for letter-spacing and return travel; a platen on said carriage; a rail mounted on said frame to extend parallel to the direction of carriage travel; means on said carriage over hanging said rail; means on said carriage for guiding and feeding a ribbon along the platen printing line; and means for mounting a roll of said ribbon for being guided and fed as aforesaid, said roll mounting means comprising a receptacle open at its top for receiving and permitting removal of the ribbon roll, means on said receptacle engaging said rail for supporting said receptacle and being adapted to travel longitudinally on said rail and to turn angularly about said rail whereby said receptacle can be tipped from a normal upright position un-

derneath said over hanging means to a position in which said open top is faced away from said over hanging means and is thereby disposed for convenient access to the interior of the receptacle, and means for releasably securing said receptacle to said carriage in its normal upright position.

9. In a typewriting or like machine, a main frame; a carriage mounted on said frame for letter-spacing and return travel; a platen on said carriage; a circular cross-section rail mounted on said frame to extend parallel to the direction of carriage travel; means on said carriage over hanging said rail; means on said carriage for guiding and feeding a ribbon along the platen printing line; and means for mounting a roll of said ribbon for being guided and fed as aforesaid, said roll mounting means comprising a receptacle open at its top for receiving and permitting removal of the ribbon roll, two spaced grooved rollers mounted on said receptacle and resting upon said rail for supporting said receptacle to travel longitudinally on said rail, retaining means on said receptacle extending under said rail for preventing said rollers from being lifted off said rail, the arrangement being such that said receptacle can travel with said carriage and can turn angularly about said rail whereby said receptacle can be tipped from a normal upright position underneath said over hanging means to a position in which said open top is faced away from said over hanging means and is thereby disposed for convenient access to the interior of the receptacle, and means for releasably securing said receptacle to said carriage in its normal upright position.

10. In a typewriting or like machine, a main frame; a carriage mounted on said frame for letter-spacing and return travel; a platen on said carriage; a rail mounted on said frame to extend parallel to the direction of carriage travel; means on said carriage for guiding and feeding a ribbon along the platen printing line; and means for mounting a roll of said ribbon for being guided and fed as aforesaid, said roll mounting means comprising a receptacle open at its top for receiving and permitting removal of the ribbon roll, means on said receptacle engaging said rail for supporting said receptacle and being adapted to travel longitudinally on said rail and to turn angularly about said rail whereby said receptacle can be tipped from a normal upright position to a position in which said open top is faced so as to be disposed for convenient access to the interior of the receptacle, and means for releasably securing said receptacle to said carriage in its normal upright position.

11. In a typewriting or like machine, a main frame; a carriage mounted on said frame for letter-spacing and return travel; a platen on said carriage; a rail mounted on said frame to extend parallel to the direction of carriage travel; means on said carriage over hanging said rail; means on said carriage for guiding and feeding a ribbon along the platen printing line; and means for mounting a roll of said ribbon for being guided and fed as aforesaid, said roll mounting means comprising a receptacle open at its top for receiving and permitting removal of the ribbon roll, means on said receptacle engaging said rail for supporting said receptacle and being adapted to travel longitudinally on said rail and to turn angularly about said rail whereby said receptacle can be tipped from a normal upright position underneath said over hanging means to a

11

position in which said open top is faced away from said over hanging means and is thereby disposed for convenient access to the interior of the receptacle, latches mounted on said receptacle respectively at opposite ends thereof, and keepers on said carriage with which said latches are releasably engageable.

12. In a typewriting or like machine, a main frame; a carriage mounted on said frame for letter-spacing and return travel; a platen on said carriage; a rail mounted on said frame to extend parallel to the direction of carriage travel; means on said carriage over hanging said rail; means on said carriage for guiding and feeding a ribbon along the platen printing line; and means for mounting a roll of said ribbon for being guided and fed as aforesaid, said roll mounting means comprising a receptacle open at its top for receiving and permitting removal of the ribbon roll, means on said receptacle engaging said rail for supporting said receptacle and being adapted to travel longitudinally on said rail and to turn angularly about said rail whereby said receptacle can be tipped from a normal upright position underneath said over hanging means to a position in which said open top is faced away from said over hanging means and is thereby disposed for convenient access to the interior of the receptacle, latches mounted on said receptacle respectively at opposite ends thereof, keepers on said carriage with which said latches are releasably engageable, and a single operating member connected to said latches for simultaneously effecting their engagement with or disengagement from the respectively associated keepers.

13. In a typewriting or like machine, a main frame; a carriage mounted on said frame for letter-spacing and return travel; a platen on said carriage; a rail mounted on said frame to extend parallel to the direction of carriage travel; means on said carriage over hanging said rail; means on said carriage for guiding and feeding a ribbon

12

along the platen printing line; and means for mounting a roll of said ribbon for being guided and fed as aforesaid, said roll mounting means comprising a receptacle open at its top for receiving and permitting removal of the ribbon roll, means on said receptacle engaging said rail for supporting said receptacle and being adapted to travel longitudinally on said rail and to turn angularly about said rail whereby said receptacle can be tipped from a normal upright position underneath said over hanging means to a position in which said open top is faced away from said over hanging means and is thereby disposed for convenient access to the interior of the receptacle, two keepers respectively on opposite ends of said carriage, two latch bars pivoted between the control portion of said receptacle and the opposite ends thereof respectively and having outer end portions adapted to be engaged respectively with said keepers, spring means for yieldably holding said latch bars with said portions engaging said keepers respectively, and a cam lever interposed between the inner end portions of said latch bars and being operable for swinging said latch bars to disengage their outer end portions from said keepers.

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REFERENCES CITED

30 The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
35 1,853,761	Degener	Apr. 12, 1932
2,126,323	Handley	Aug. 9, 1938
2,298,410	Pfeiffer	Oct. 13, 1942
2,411,402	Wendt	Nov. 19, 1946

FOREIGN PATENTS

Number	Country	Date
40 75,695	Australia	1919