

Dec. 5, 1939.

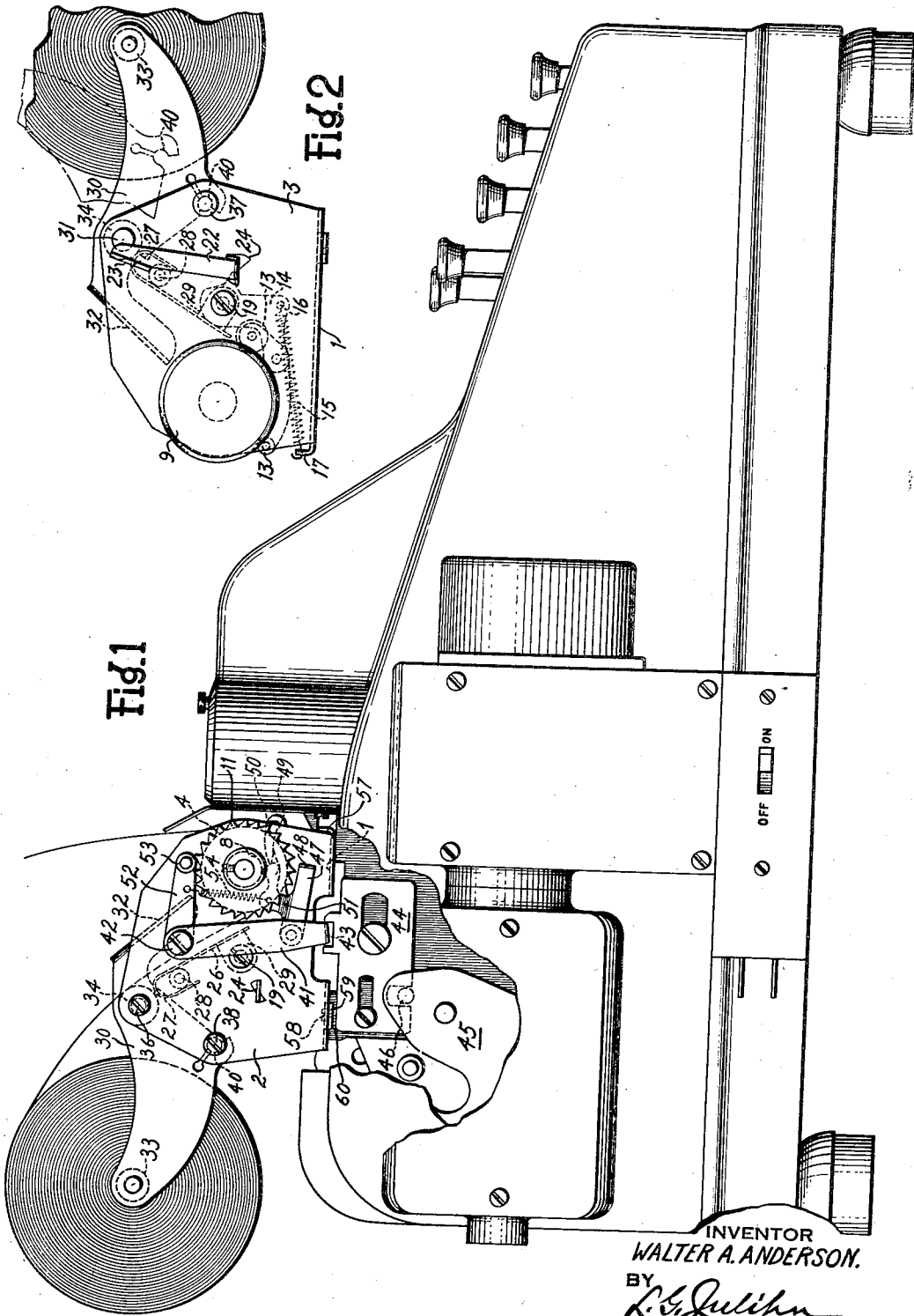
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2,182,108

PAPER HOLDING AND FEEDING APPARATUS FOR COMPUTING MACHINES

Filed June 25, 1937

2 Sheets-Sheet 1



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Fig. 3

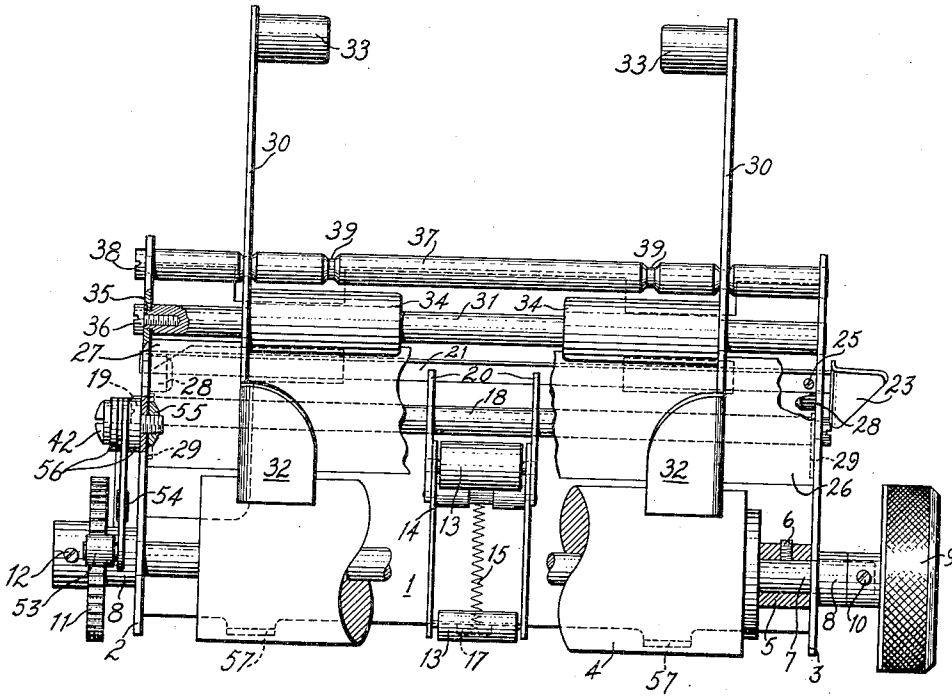
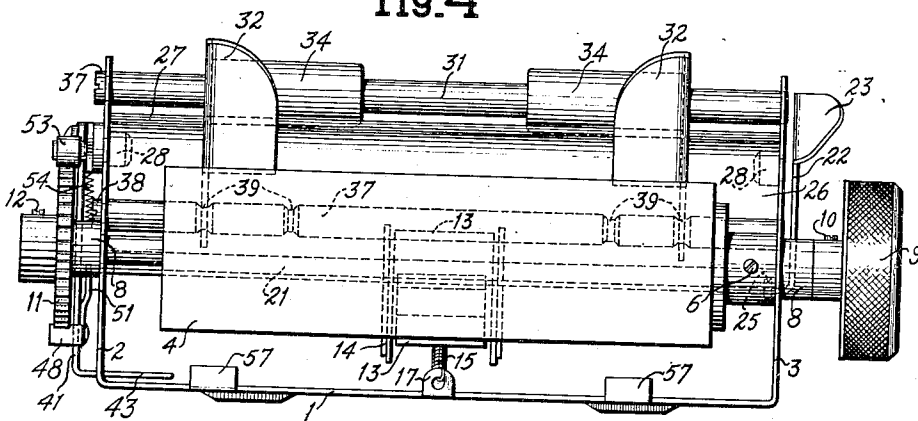


Fig. 4



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2,182,108

PAPER HOLDING AND FEEDING APPARATUS FOR COMPUTING MACHINES

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Application June 25, 1937, Serial No. 150,369

4 Claims. (Cl. 242—55.2)

This invention relates to computing machines, and more particularly to the paper holding and feeding apparatus thereof.

In the ordinary type of paper carriage now being used it is necessary to adjust the tally roll supports and the paper guides individually when changing from one width of tally roll to another. This arrangement makes such changing operations cumbersome and increases the cost of assembling and production.

The present invention has for one of its objects the provision of a simple tally roll support which may be readily and quickly adjusted to accommodate varying widths of tally rolls and which provides for simultaneous lateral adjustment of the paper guides to the width of said tally roll.

Another object of the invention is to provide a means for securely but removably latching the tally roll mechanism in its adjusted position.

A further object of the invention is to provide a paper feed and carriage structure generally, which is of few parts, simple in design and construction and economic of manufacture.

Further objects and advantages in details of construction and simplicity of operation will be apparent as the description proceeds, reference now being had to the figures of the accompanying drawings forming a part of this application, and wherein like reference numerals indicate like parts.

In the drawings:

Figure 1 is a left side elevation of a computing machine with the carriage mounted thereon,

Figure 2 is a right side elevation of the carriage,

Figure 3 is a front view of the improved carriage, and

Figure 4 is a plan view thereof.

The invention is herein shown as embodied in a machine of the Sundstrand electrically driven type, but is not limited to machines of this character. For a detailed understanding of the machine on which the invention is shown, attention is directed to the United States Patent Nos. 1,925,735 and 1,965,611, issued to Oscar J. Sundstrand.

The frame of my improved carriage is preferably a one piece stamping, blanked and formed with a base 1 (Figure 4) and upstanding sides 2 and 3, which are pierced or formed with apertures for mounting the platen, tally supporting rods and appurtenant parts thereon.

Forwardly of the frame is a platen 4 (Figure 3) having a flanged collar 5 secured thereto.

The collar 5 is provided with a set screw 6 for securing it and the platen to a shaft 7. Collars 8 are provided on shaft 7 adjacent the outer surfaces of the sides 2 and 3. A hand-knob 9 is rigidly fixed to one end of the platen shaft 7 by a screw 10, and a toothed ratchet wheel 11 is secured to the opposite end of the shaft by a screw 12.

A pair of auxiliary paper feed rollers 13 are rotatably mounted in a cradle 14 located centrally between the sides 2 and 3 of the frame, and frictionally hold the paper against the platen under the tension of a spring 15 secured at one end to a pin 16 (Figure 2) of the cradle and at its opposite end to a lug 17 struck upwardly from the base 1.

The cradle 14 is loosely mounted upon a tie rod 18 (Figure 3) firmly secured between the sides 2 and 3 by screws 19. Rearwardly extending lugs 20 formed on the cradle 14 are adapted to overlie a releasing lever 21 (Figure 2). The releasing lever is preferably made of a flat strip of metal bent upwardly as at 22 (Figure 4) and formed with a finger piece 23 on its right end. In assembling, this releasing lever 21 is passed through slots 24 (Figures 1 and 2) provided in the sides 2 and 3 of the frame 1. These slots, as best illustrated in Figure 1, are formed with their mid portions narrow to provide bearings for the pivotal movement of releasing lever 21, and with their end portions wide to allow such pivotal movement. A screw 25 (Figure 3) is secured in lever 21 adjacent side member 3 of the frame to maintain the lever in its assembled position.

By this construction, rearward pressure on the finger piece 23 (Figure 2) rocks cradle 14 counter-clockwise on rod 18 against the tension of spring 15, moving the rollers 13 away from the platen to facilitate insertion or adjustment of the paper. When pressure upon the finger piece 23 is removed, spring 15 restores cradle 14 and lever 21 to their normal position shown in Figure 2.

A paper guide 26 (Figures 1 and 3) for directing the paper from the supply roll to the platen is mounted rearwardly thereof within the frame. This guide 26 is preferably a one piece stamping having a width substantially the same as the space between the side members 2 and 3. The stamping 26 is bent over as at 27 (Figure 4) along its upper edge to form a hook, which embraces a pair of inwardly projecting studs 28 riveted to sides 2 and 3. Flanges 29 are formed on both ends of the guide 26 adjacent its lower

edge. These flanges are pierced and screws 19 pass therethrough when the tie rod 18 is placed in the frame, thus securing the guide 26 as well as rod 18. It will be noted that in the above method of assembly the tie rod 18 and screws 19 serve the three-fold purpose of bracing the side members 2 and 3, supporting the cradle 14, and anchoring the paper guide 26.

A pair of laterally adjustable tally roll supports 30 are slidably mounted upon a rod 31 (Figure 3) secured rearwardly of and just above the paper guide 26. Supports 30 are formed at their forward ends with inward projections 32, which tend to deflect and guide the paper as it is inserted thereunder. The sides of the supports serve as lateral guides and insure smooth, straight and even unwinding of the paper during the feeding thereof.

Cylindrical studs 33 of a size to fit snugly within the tally roll core are riveted to the inner sides of the rear ends of the supports 30 for mounting the roll. The snug fit between the studs and the core provides sufficient friction to preclude superfluous unwinding of the paper as it is fed.

Rod 31 is substantially of the same diameter as a hole pierced in the side member 3, and in assembling is passed therethrough. Inwardly projecting sleeves 34 secured between the ends of the supports 30 are adapted to be slid over the rod as it is assembled. A reduced end 35 of the rod fits within a hole in the side member 2, and a screw 36 securely retains the rod in the frame (Figure 3). In like manner, a second rod 37 is secured by screw 38 rearwardly of and below rod 31.

Annular grooves 39 are cut in rod 37 at spaced points corresponding to the different widths of tally rolls to be used. Supports 30 are provided on their lower edges with recesses 40 (Figure 1), the entrances to which are slightly narrower than the diameter of the rod 37 at the base of the grooves 39. Hence, when the supports are adjusted to the correct lateral position for the tally roll, they may be latched within the grooves.

When changing from a tally roll of one width to one of another width, the operator need only rock the supports 30 upwardly upon the shaft 31 out of their latched engagement with rod 37 to the dotted line position shown in Figure 2. In this position the supports 30 are free to be adjusted laterally to accommodate the new roll. The supports are then swung downwardly and latched in the set of grooves corresponding to the new width of paper.

The paper feed mechanism is mounted on the left side 2 (Figure 1) of the frame. A downwardly extending arm 41 is pivoted at its upper end to the side 2 by a screw 42. A projection 43 extends inwardly from the lower end of the arm and is adapted to lie within a reciprocating slide 44 when the carriage is mounted on the computing machine, as shown in Figure 1. An actuating lever 45 of the computing machine, having a pin and slot connection 46 with the slide 44, causes the slide to reciprocate forwardly and rearwardly in the machine at every cycle thereof, thus oscillating arm 41 about the screw 42.

A feed pawl 47, formed of a single stamping, is pivotally secured at one end to the arm 41 adjacent the lower end thereof. A lug 48, struck outwardly from the pawl, engages the teeth of the ratchet wheel 11. An upwardly and forwardly extending projection 49 of the feed pawl 47 is slightly beveled at the forward edge 50

thereof. This projection 49 is offset as at 51 (Figure 4) so that the beveled edge 50 is in the plane of and directly under the bearing 8.

A horizontally disposed retainer 52 is pivoted at one end upon the screw 42 and carries at its opposite end a laterally projecting roller 53 which rests between the teeth of the ratchet wheel 11. A spring 54 is secured at one end to the retainer 52, and at its opposite end to the pawl 47, and serves the dual purpose of tensioning the roller 53 of the retainer into frictional engagement with the teeth of the ratchet wheel 11 and urging the beveled edge 50 of the pawl upwardly against the bearing 8.

When the machine is at rest, as shown in Figure 1, slide 44 and lever 41 are in their forward position wherein the beveled edge 50 of the pawl, by virtue of its engagement with bearing 8, cams the pawl clockwise and downwardly about its pivot an amount sufficient to bring the lug 48 out of engagement with the teeth of the ratchet wheel 11. Hence the platen is free to be rotated in either direction by the hand-knob 9 when the machine is in its normal position.

During the cycling of the machine, slide 44 moves arm 41 rearwardly an amount sufficient to allow the lug 48 of the pawl to pass under and be pulled up behind a tooth of the ratchet wheel 11 as the beveled edge 50 moves away from bearing 8. Subsequent forward movement of lever 41 will thereupon advance the platen.

As the crest of a tooth moves past roller 53, the tension of spring 54 is effective to complete the full line space movement of the platen and prevents overthrow thereof. Continued forward movement of lever 41 cams pawl 47 out of engagement with the ratchet wheel.

It will be noted that this paper feed mechanism is comprised of a minimum number of parts which are assembled upon the frame by means of the single screw 42. The screw is threaded in the side member 2 and adjusted to permit pivotal action of retainer 52 and arm 41. A lock nut 55 (Figure 3) secures the screw 42 in such adjusted position. Spacing washers 56 are interposed between the parts and the frame.

Spaced lugs 57 (Figures 1 and 3), struck upwardly from the forward edge of the base 1, hook under a rearward projection of the machine bed when the carriage is mounted thereon. Screws 58 (Figure 1), passing through opening in depressed portions 59 of the frame 1, fit within a channel 60 of the bed, securely holding the carriage in its mounted position.

It is apparent from the foregoing that I have provided a paper holding and feeding apparatus in which certain of the parts are constructed and arranged to serve multiple functions, and which is composed of relatively few and simple parts that are easily assembled. The cost of manufacture of the mechanism is thereby greatly reduced.

While the form of mechanism herein shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form of embodiment herein disclosed for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow.

What is claimed is:

1. A paper holding and feeding apparatus for computing machines comprising a frame having upstanding side members, a pair of rods extending from one side member to the other in cooperative relation to support a pair of laterally adjustable

5 supports for holding paper of variable widths, the said supports being slidably and pivotally mounted on one of said rods, spaced grooves in the other of said rods corresponding to the paper width, and recesses in said supports, said recesses being slightly smaller at their entrances than the minimum diameter of said grooved rod where-
10 by to latch said supports within the grooves.

2. A paper holding and feeding apparatus for
10 computing machines including a frame having upstanding side members, a rod extending from one side member to the other, and two supports pivoted on said rod for holding a paper roll and for guiding the paper after it leaves the roll,
15 said supports having means at their rear ends for supporting the paper roll and overturned portions at their forward ends for guiding the paper.

3. A paper holding and feeding apparatus for
20 computing machines including a frame having

upstanding side members, a rod extending from one side member to the other, and two supports pivoted on said rod for holding a paper roll and for guiding the paper after it leaves the roll,
5 said supports having means at their rear ends for supporting the paper roll and overturned portions at their forward ends for guiding the paper, and being slidable on said rod to accommodate paper rolls of different widths.

4. A paper holding and feeding apparatus for
10 computing machines including a frame having upstanding side members, a rod extending from one side member to the other, and two supports carried by said rod for holding a paper roll and for guiding the paper after it leaves the roll, the
15 said supports each being formed from a single piece of metal having one end overturned to act as a paper guide and its other end provided with a stud to support the paper roll.

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