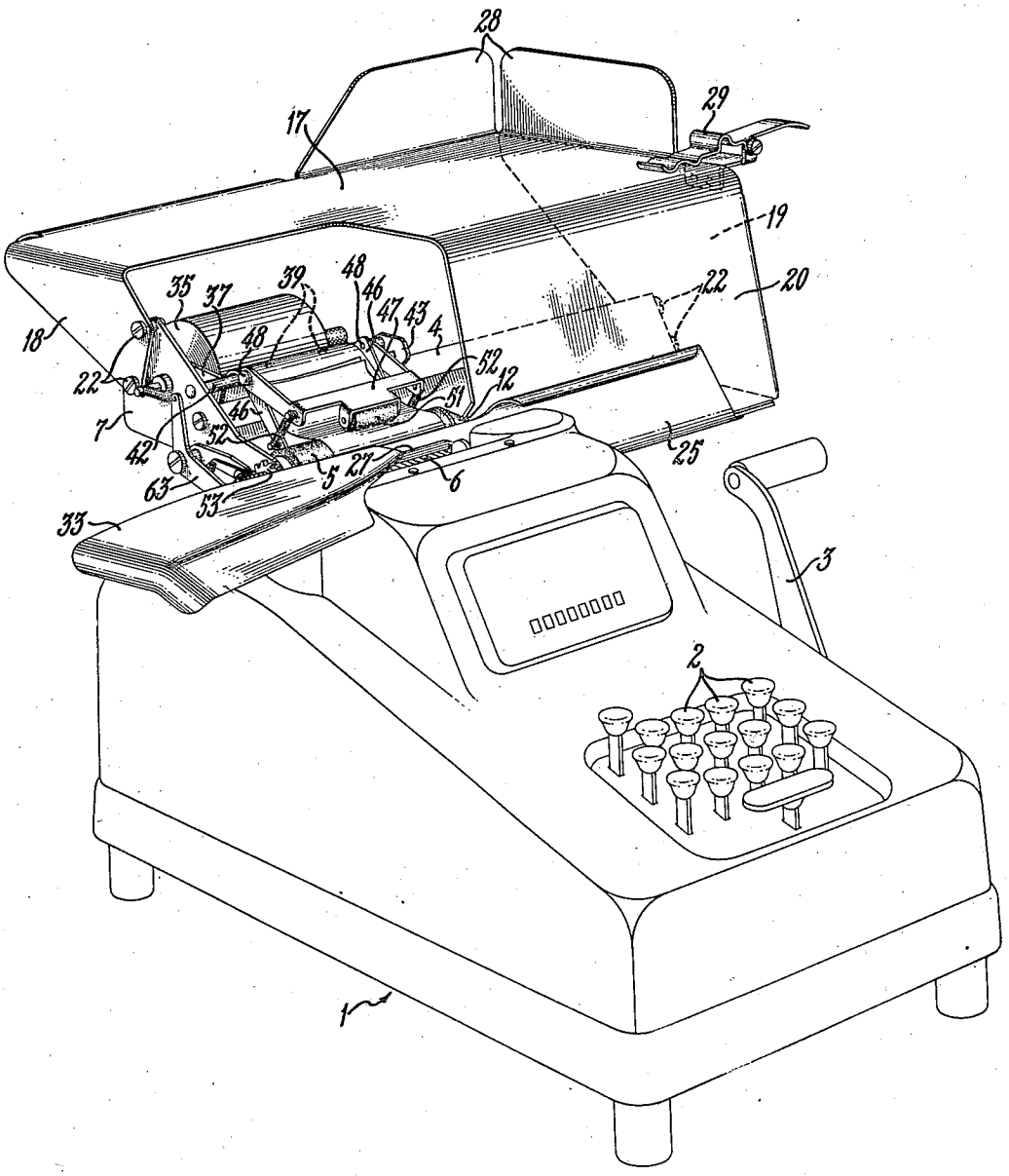
Dec. 28, 1943. W. A. ANDERSON 2,337,583

PAPER FEEDING MECHANISM FOR ACCOUNTING MACHINES

Filed Nov. 3, 1941 3 Sheets-Sheet 1

Fig. 1.



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Filed Nov. 3, 1941 3 Sheets-Sheet 2

Fig. 2.

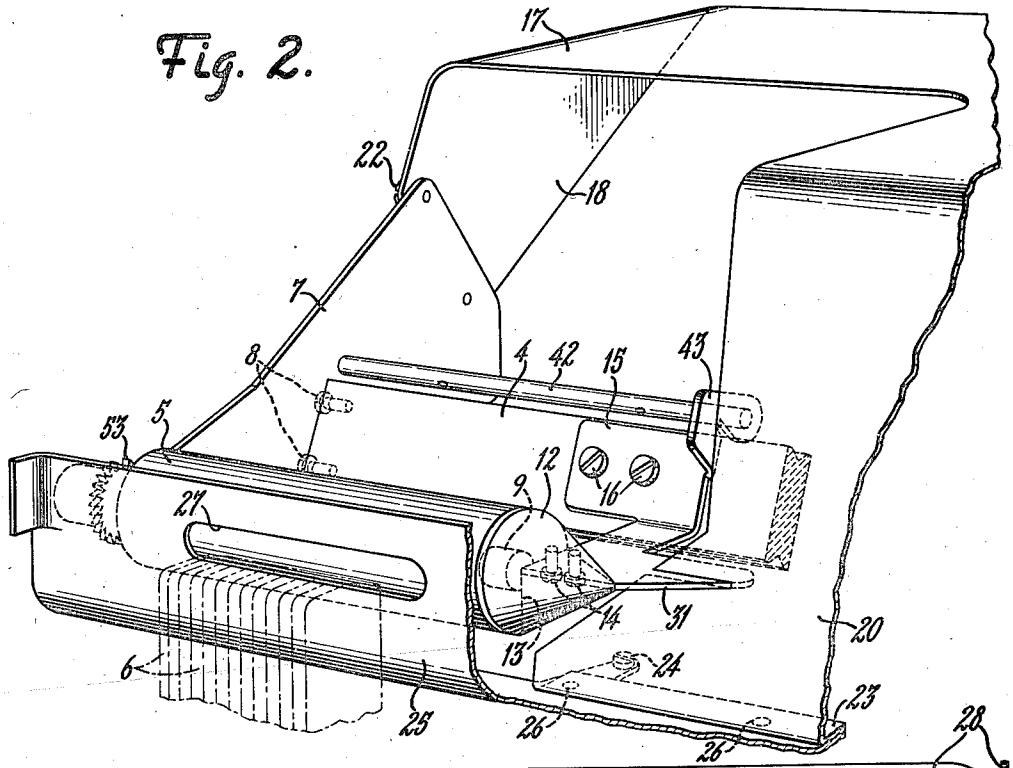
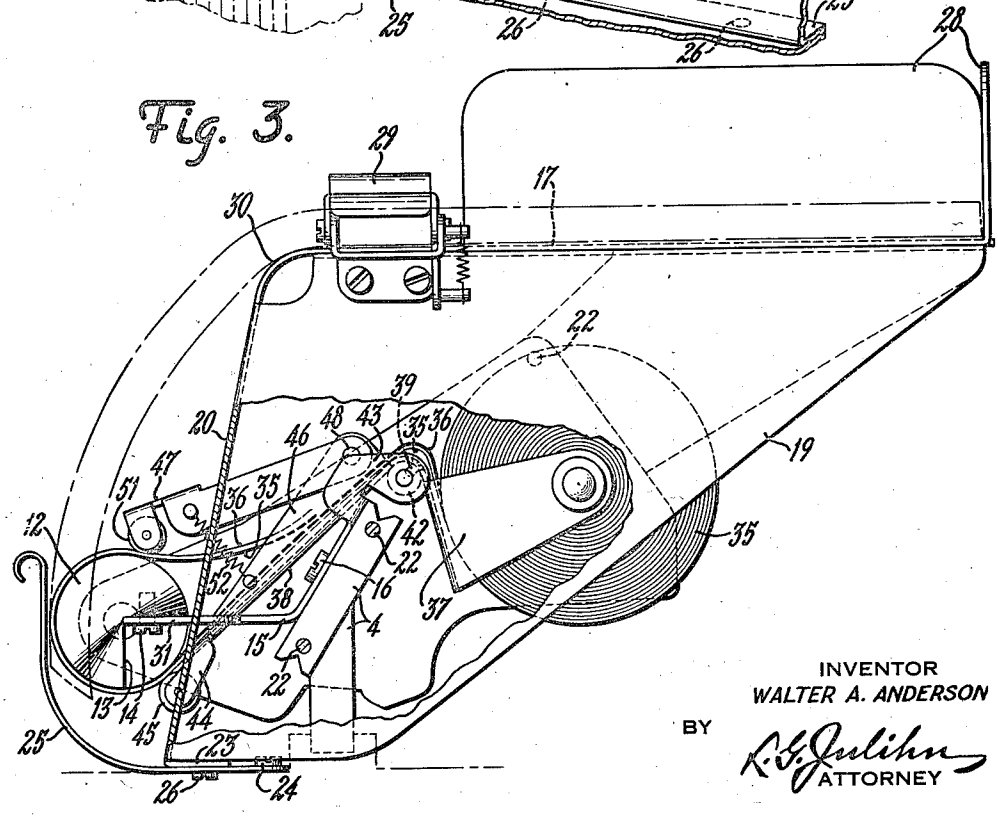


Fig. 3.



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Fig. 4.

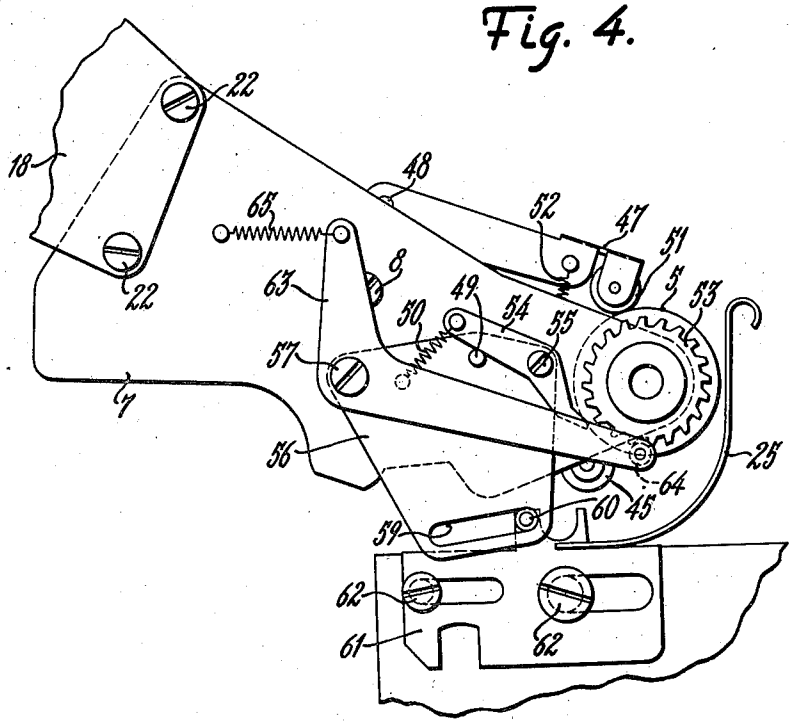
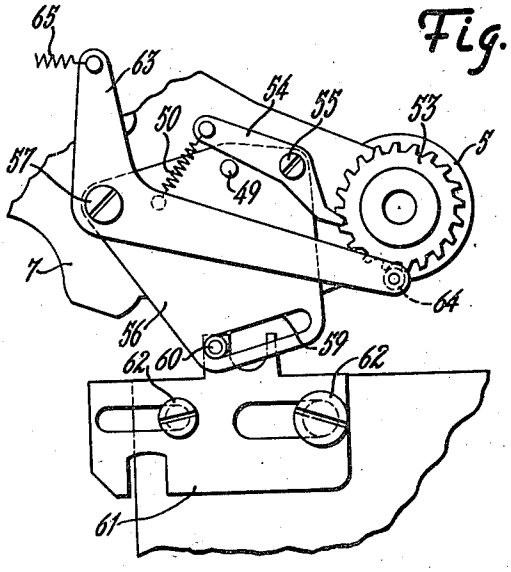


Fig. 5.



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Patented Dec. 28, 1943

2,337,583

UNITED STATES PATENT OFFICE

2,337,583

PAPER FEEDING MECHANISM FOR ACCOUNTING MACHINES

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Application November 3, 1941, Serial No. 417,643

4 Claims. (Cl. 197—128)

This invention relates to accounting machines and more particularly to mechanism for feeding work pieces therein.

The principal object of this invention is to provide a simple and effective means for facilitating the manual feeding of front fed forms, into and out of printing position, for work where a single entry is required near the bottom of each form.

Another object of the invention is to provide a table for supporting the forms in preformed condition ready for rapid feeding to printnig position.

A further object of the invention is to provide a construction for supporting the platen in such a manner that the forms may be smoothly and easily introduced to the front of the platen from one side thereof.

Another object of the invention is to provide an improved line space mechanism for rear fed paper, the mechanism being composed of parts that are simple in construction and which may be easily assembled.

With these and incidental objects in view, the invention consists in certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims, and a preferred embodiment of which is hereinafter described with reference to the drawings which accompany and form part of the specification.

In the drawings:

Figure 1 is a perspective view of an accounting machine embodying the present invention,

Figure 2 is a detailed perspective view showing the platen support,

Figure 3 is a right side elevation of the carriage generally,

Figure 4 is a left side elevation of the rear fed paper feeding mechanism in normal position, and

Figure 5 is a view similar to Figure 4 but with the parts shown in mid-cycle position, about to impart a line space.

The invention is herein shown as applied to an accounting machine of the general type disclosed in U. S. Patent No. 1,198,487, issued to Gustaf D. Sundstrand, on September 19, 1916. It embodies a paper feeding means having a source of power such as is disclosed in the U. S. Patent No. 1,708,284, issued to Oscar J. Sundstrand on April 9, 1929.

The reference numeral 1 indicates the machine generally, having amount keys 2 and an operating handle 3. It will be understood that a motor and a conventional motor bar may be applied to the machine for electrical operation. The carriage structure is supported on a bed 4 (Figure 3) extending transversely of and secured to the machine frame. A platen 5, located immediately to the rear of type bars 6, is journaled at its left end in a plate 7 secured by screws 8 (Figure 2) to bed 4. The right end of platen 5 is journaled on a bearing 9 provided on the inner face of a conically-shaped member 12. The rear lower portion of the conical member 12 is recessed as at 13, and the upper face of this recess is secured by screws 14 to a forwardly extending bracket 15 secured by screws 16 to bed 4. The paper table, indicated generally at 17, is located above the platen and has down-turned end walls 18 and 19 secured by screws 22 to plate 7 and the right end of bed 4. The right-hand forward end 20 of table 17 extends downwardly to the right and to the rear of platen 5, a flange 23 (Figure 3) along the lower edge thereof being secured by screws 24 to the machine frame.

A formed plate 25, secured by screws such as 26 to flange 23, extends forwardly and upwardly in front of portion 20 of table 17, providing a wide chute between portion 20 and plate 25. Plate 25 extends across and in front of platen 5, sufficient clearance being provided between the inner face of the plate and the outer face of the platen to permit free and easy insertion of a form. An elongated aperture 27, provided in plate 25, permits printing by type carried in the type bars 6.

Upstanding flanges 28, formed on the rear end and right side of table 17, form stops against which a stack of forms may be located on the table. A spring-tensioned clamp 29, secured on the right edge of able 17, retains the forms in postion. The forms are placed on the table substantially as shown in Figure 3; that is, with their forward ends extending downwardly into the chute provided between the plate 25 and portion 20. When the forms are so inserted and held by clamp 29, the resilience of the forms about the point 30 causes the uppermost form to bear against the inner face of plate 25, so that it is in line with the clearance provided between the inner face of plate 25 and the surface of platen 5.

An arm rest 33 (Figure 1) is secured on the machine frame to the left of type bars 6 and forwardly of the platen. In operation, the operator rests the left arm on rest 33, grasps the uppermost form in the stack with the left hand and draws it to the left and downwardly the required extent. While holding the form in this posi-

tion, the operator indexes the desired amount on keys 2 with the right hand, and operates the machine to effect printing of the entered amount. Following the printing, the operator removes the form from in front of the platen and proceeds to feed the next form. Clamp 29 serves to hold the remaining forms in position when the uppermost form is removed.

The member 12 is made in the shape of a cone, so that should the forms not have sufficient resilience to bear against plate 25, the conical surface will guide the left edge of the forms into the space between the plate 25 and the platen. To further insure a proper feeding of the forms, bracket 15 is provided with a bevelled edge 31 extending between the apex of the conical member 12 and the plate 29.

Referring to Figures 1 and 3, the rear fed paper comprises a tally roll 35 with interleaved carbon 36. The tally and carbon are supported between two arms such as 37 extending rearwardly from a plate 38 secured by screws such as 39 on a transversely extending rod 42. Rod 42 is secured at one end in plate 7, and is supported at its opposite end by an arm 43 formed integral with bracket 15 (Figure 2).

Plate 38 extends downwardly at an angle to a point close to platen 5, and carries a pair of depending flanges such as 44 between which is rotatably mounted a feed roller 45. The opposite sides of plate 38 are formed with upstanding flanges such as 46 which serve as guides in directing the paper and carbon from roll 35 downwardly between feed roller 45 and platen 5. A bail 47 (Figure 1), pivoted at 48 to the upper ends of flanges 46, carries a second feed roller 51. A pair of springs 52, connected between bail 47 and flanges 46, normally tension rollers 45 and 51 into feeding relation with platen 5. The feed rollers 45 and 51 serve to keep the paper and the carbon taut around the platen, so that they will not interfere with the lateral insertion of the forms.

Referring to Figure 4, the mechanism for feeding the tally and carbon includes a ratchet wheel 53 secured on the left end of the platen shaft. Wheel 53 is engageable by a pawl 54 pivoted at 55 on a plate 56 which is, in turn, pivoted on a bearing screw 57 secured in plate 7. Pawl 54 is normally tensioned counter-clockwise about pivot 55 by a spring 58, a stud 49 secured in plate 56 limiting the extent of its counter-clockwise movement. The lower end of plate 56 has a cam slot 59 embracing a roller 60 supported on a slide 61 mounted on screws 62 secured in the machine frame.

Slide 61 corresponds to slide 37 in the beforementioned U. S. Patent No. 1,708,284 and is reciprocated during each cycle of the machine by parts similar to those shown in that patent for reciprocating slide 37.

A bell crank 63, pivoted adjacent plate 56 on screw 57, carries, on one of its arms, a roller 64 that bears against the teeth of the ratchet wheel 53, under the tension of a spring 65 connected to the opposite arm of the bell crank.

During the first half of a machine cycle, slide 61 moves toward the left, camming plate 56 counter-clockwise about screw 57. During this movement the forward end of pawl 54 touches the underside of one of the teeth of wheel 53, and the extent of the counter-clockwise movement of plate 56 is sufficient to cause the pawl to be drawn over that tooth, and into engagement with the upper side thereof, as shown in Figure 5. During the latter half of the cycle, slide 61 moves toward the right, back to its normal position shown in Figure 4; and during this movement pawl 54 imparts a line space movement to the platen, the pawl being disengaged from wheel 53 by pin 49 striking the pawl toward the end of the clockwise movement of plate 56.

Roller 64, under tension of spring 65, maintains the platen in proper position for the next printing operation, while the various parts of the mechanism are returning to the normal position shown in Figure 4.

It will be noted that this construction provides a simple and effective line-space mechanism comprised of few parts, and which may be manufactured and assembled at a comparative low cost.

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. In a machine of the class described, having a roller platen, a paper guide plate facing the platen, forming therewith a paper-receiving space and extending beyond said one end of the platen, a back plate disposed beyond said one end of the platen and forming with the guide plate extension a chute from which a paper sheet may be moved laterally to position a portion of said sheet in said space, and a guide adjacent said one end of the platen and biased from the platen surface toward the back plate for directing the sheet in its lateral movement past the end of the platen.

2. In a machine of the class described, having a roller platen and type bars, a mechanism for facilitating the manual feeding of forms into and out of printing position between the platen and the type bars, said mechanism comprising a table for supporting the forms above and at the end of the platen, said table being formed with an apron disposed angularly toward the platen and having a chute along its lower end, the forward portion of the chute being spaced from the front of the platen to provide clearance for the lateral insertion of a form, and means for guiding a form during its lateral movement into the clearance between the platen and the chute.

3. In a machine of the class described, having a roller platen and type bars, a mechanism for facilitating the manual feeding of forms into and out of printing position between the platen and the type bars, said mechanism comprising a table for supporting a stack of forms above and at the end of the platen, said table being bent to form a depending apron terminating in a chute for receiving the ends of the forms, the chute and the front of the platen being so disposed relatively to one another as to provide clearance for lateral shifting of a form into printing position, and a means on the table for holding the upper portions of the forms at an angle to the lower portions, so that their lower ends will bear against the forward portion of the chute.

4. In a machine of the class described, having a roller platen and type bars, a mechanism for facilitating the manual feeding of forms into and out of printing position between the platen and the type bars, said mechanism comprising a table for supporting a stack of forms above and at the end of the platen, said table being bent to form

a depending apron terminating in a chute for receiving the ends of the forms, the chute and the front of the platen being so disposed relatively to one another as to provide clearance for the lateral shifting of a form into printing position, a clamp on the table for holding the upper portions of the forms flat on the table so that their lower ends will bear against the forward portion of the chute, and means on the end of the platen adjacent the apron for guiding a removed form into the clearance between the chute and the platen.

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