Jan. 26, 1943. P. J. SCHNEIDER ET AL 2,309,480

COMBINATION SCORE-SHEET SUPPORTER AND DISPENSER

Filed Sept. 19, 1941 2 Sheets-Sheet 1

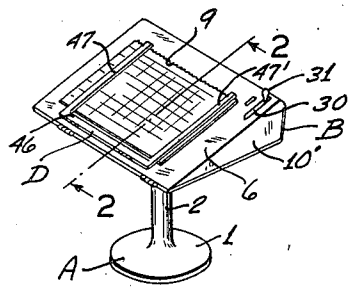


FIG. 1.

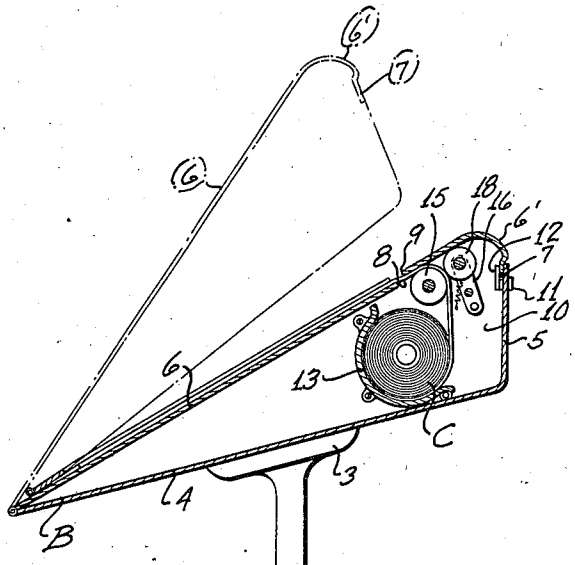


FIG. 2.

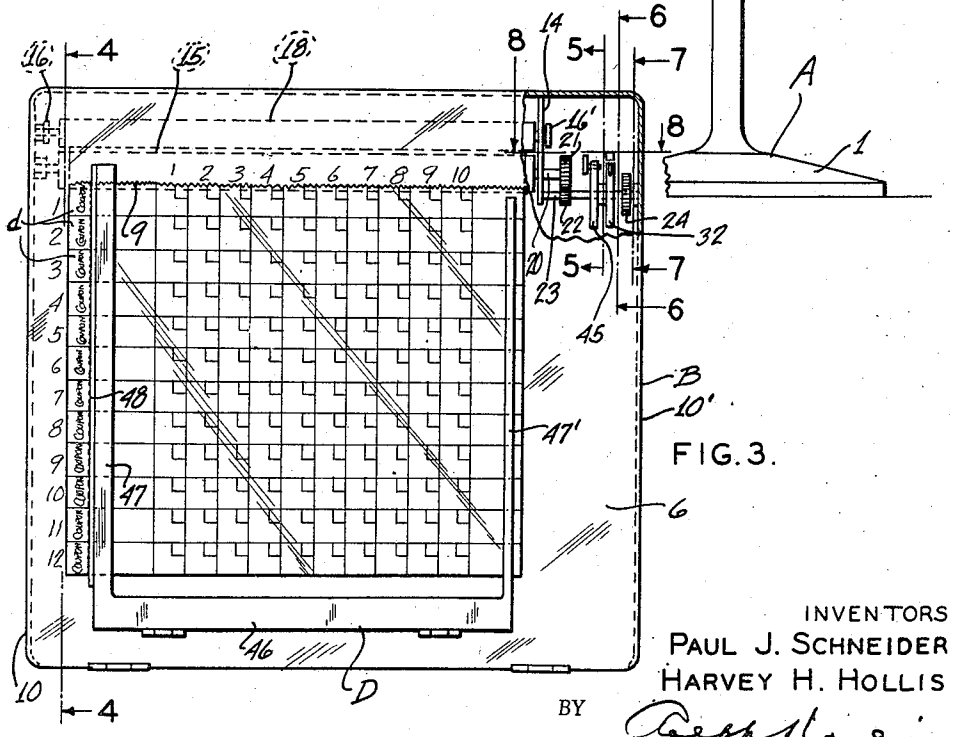


FIG. 3.

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COMBINATION SCORE-SHEET SUPPORTER AND DISPENSER

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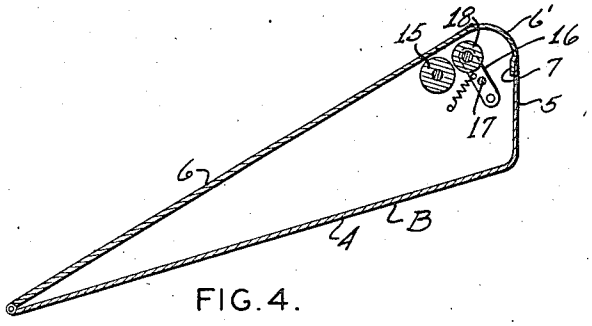


FIG. 4.

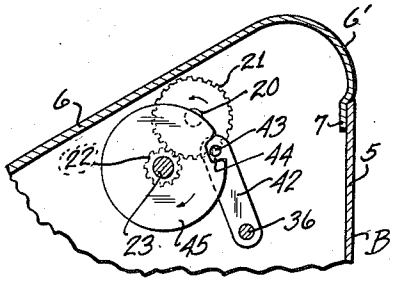


FIG. 5.

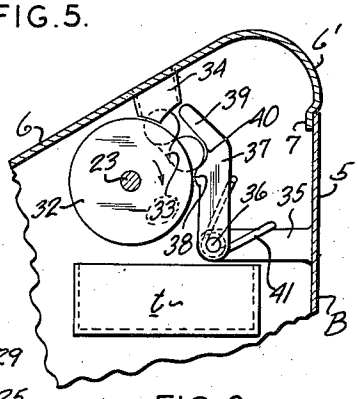


FIG. 6.

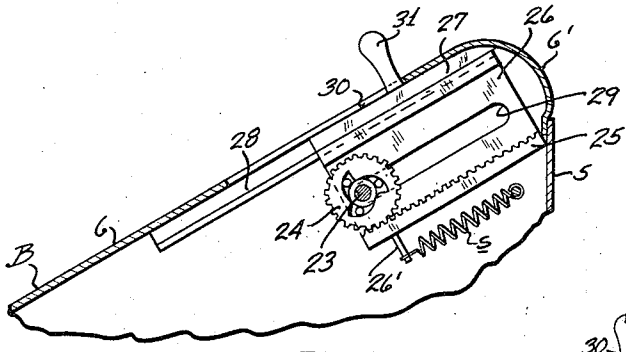


FIG. 7.

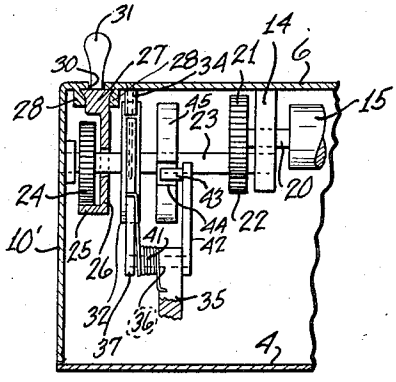


FIG. 8.

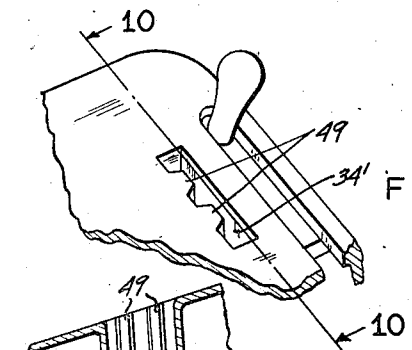


FIG. 9.

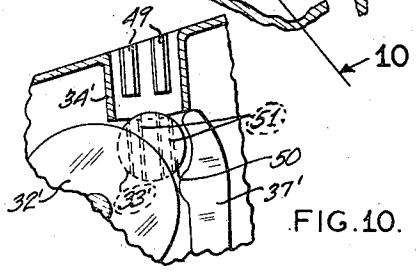


FIG. 10.

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COMBINATION SCORE-SHEET SUPPORTER AND DISPENSER

Paul J. Schneider, Normandy, and Harvey H. Hollis, St. Louis, Mo.

Application September 19, 1941, Serial No. 411,506

8 Claims. (Cl. 231—11)

This invention relates generally to coin-controlled machines or structures and, more particularly, to a certain new and useful improvement in combination coin-controlled score-sheet supporters and dispensers especially, though not exclusively, adapted for use in bowling alleys and the like.

Our invention has for its primary objects the provision of a machine or structure of the type and for the purposes stated which is simple and inexpensive in construction, which is operable with ease and facility, which will support and display a selected or measured number of rows of bowling score-lines in convenient and readily accessible position for use by the players, which will permit the players to obtain new scoring spaces or lines for successive games by insertion or deposit of a coin or coins of a proper or selected denomination into the machine, which is relatively "foolproof" and cannot be operated or actuated otherwise than by insertion or deposit of the proper coin or coins or similar element, which supports the scoring paper in positively locked position, so that unauthorized withdrawal of an additional length or measured portion of the scoring paper is prevented, which enables the provision of a coupon or other detachable stub that may be associated with each score line or space and may be removed for delivery to the pin-boy for game-checking, and which is highly efficient in the performance of its stated functions.

And with the above and other objects in view, our invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a reduced perspective view of a combination score-sheet supporter and dispenser constructed in accordance with and embodying our invention;

Figure 2 is a vertical sectional view of the structure taken approximately along the line 2—2, Figure 1;

Figure 3 is a top plan view of the structure, partly broken away and in section;

Figures 4, 5, 6, 7, and 8 are fragmentary sectional views taken approximately along the lines 4—4, 5—5, 6—6, 7—7, and 8—8, respectively, Figure 3;

Figure 9 is a fragmentary perspective view of the structure equipped with a modified form of coin-receiving mechanism; and

Figure 10 is a fragmentary vertical sectional view of the modified structure taken approximately along the line 10—10, Figure 9.

Referring now in more detail and by reference characters to the drawings, which illustrate practical embodiments of our invention, the combination score-sheet supporter and dispenser comprises a suitable standard A constructed of cast-iron or other suitable material, and which preferably integrally includes a base 1 adapted to rest on a floor or the like and an upstanding post or pedestal 2 provided at its upper end with a head 3.

Fixed to and extending symmetrically across the upper face of the head 3 at a slight downwardly pitched angle to the horizontal, as best seen in Figure 2, is a preferably wedge-shaped shell or housing B, which includes a fixed or stationary bottom wall 4 preferably of rectangular contour and integrally provided at its upper transverse margin with a vertically upstanding back wall 5.

Hingedly attached to, and along the lower transverse margin of, the bottom wall 4, is a wall 6 curved downwardly adjacent its free margin, as at 6', and at its free margin provided with a slightly offset depending lip 7 for snug, lapped engagement with the upper margin of the back wall 5, the wall 6 being provided at a suitable location preferably in suitable adjacence to rear wall 5 with a transversely extending slot, as at 8, having a serrated upper margin, as at 9, against which the paper score-sheet roll may be impinged and pulled for severance, as presently more fully appears.

Formed integrally with or fixed to, and depending from, the opposed parallel side margins of the top wall 6, are side walls 10, 10' of triangular formation and dimensions for engaging the bottom and back walls 4, 5, in completing the shell or housing B, the back wall 5 being further provided adjacent its upper margin with a suitable key-actuated lock 11 having a catch-finger 12 for locking engagement with the top wall 6 at its marginal lip 7.

Suitably fixed upon and extending transversely between the inner faces of, the shell side walls 10, is a preferably sheet metal arcuate trough 13 sized for loosely receiving and supporting a paper roll C, the trough 13 being so disposed with its chamber presented obliquely upwardly and rearwardly that, when the shell or housing B is closed, the paper roll C, irrespective of size, will be securely retained in the trough 13 and yet be freely rotatable for unwinding and discharge, all as best seen in Figure 2.

Journaled at its one end in the side wall 10 and at its other end in a bracket 14 suitably spaced from and parallel to the opposite side wall 10', and disposed adjacent to, and slightly upwardly from, the slot 8, is a preferably rubber-surfaced roller 15.

Mounted pivotally or swingably on the wall 5 adjacent the side wall 10 and upon the bracket 14, are registering or companion arms 16, 16', rigidly connected by a cross rod 17, and journaled in, and extending between the upper ends of, the arms 16, 16', is an idler roller 18 of substantially the same length as, and yieldingly under the bias of a tension spring suitably secured at its one end to the arm 16 and at its other end to the adjacent side wall 10, retained in rollable co-operation with, the feed roller 15.

Projecting through the bracket 14 from the righthand end of the roller 15, is a shaft extension 20, upon which is fixed a gear 21 meshing with a pinion 22, in turn, fixed upon a horizontally disposed drive-shaft 23 journaled at its one end in the bracket 14 and at its other end in the side wall 10'.

Also mounted upon, and having coin-directional connection adjacent the side wall 10' with, the drive-shaft 23, is a ball-clutch member 24 having a toothed periphery for meshing engagement with a rack-bar 25 mounted on, and presented laterally from, a suitably elongated plate 26 longitudinally equipped along its upper margin with a bevel-faced enlargement or block 27 fitting for slidable movement in a way formed by opposed parallel track members 28 fixed upon the under face of the shell top wall 6, the plate 26 being longitudinally slotted within its area, as at 29, for accommodating the shaft 23.

The shell top wall 6 is also provided with a relatively short closed-end slot 30 positioned over and in registration with the path of movement of the rack-bar 25 and its attached slide-block 27, and fixed at its lower end in the slide-block 27 and projecting upwardly through the slot 30 for manual engagement, is a knob, handle, or the like 31.

Depending from the lower margin of the plate 26, is a stud 26', and having one end attached to the stud 26' and its other end to the adjacent side wall 10', is a suitable spring *s* for yieldingly urging the plate 26 and its associated rack 25 upwardly and rearwardly toward the shell rear wall 5, all as best seen in Figures 1 and 7 and for purposes presently appearing.

Also fixed upon the shaft 23 in inwardly spaced relation to the plate 26, is a coin-receiving disk 32 provided in its periphery with a radial slot 33 having a segmental length sufficient to accommodate two coins of a selected denomination and having a radial depth sufficient to permit the deposited coins *c* to project substantially beyond the periphery of the disk 32, substantialy in the manner shown in Figure 6, and mounted in and extending through the shell top wall 6 in operative relation to the disk 32, is a conventional coin-chute 34 for delivering the deposited coins *c* into the slot 33 when the latter is appropriately positioned beneath the chute 34.

Rockably mounted upon a suitable bracket 35 fixed upon and projecting forwardly from the shell back wall 5, is a short shaft 36 rigidly provided at an end with an upstanding arm 37 aligned with the coin-chute 34 and having on its forwardly presented longitudinal margin an arcuate projection 38 for bearing engagement with the peripheral face of the disk 32.

Obliquely extending from the upper end of the arm 37 and spaced from the peripheral face of the disk 32 by a distance slightly greater than the chord-width of the projecting portions of the coins *c*, is a finger 39 having an arcuate cam-face 40 for engagement with a peripheral portion of a deposited lower coin *c*, the finger-extension 39 being yieldingly urged toward the coin disk 32 by means of a suitable spring 41 having engagement with the bracket 35 and arm 37, all as best seen in Figure 6.

Fixed at its one or inner end upon the other end of the shaft 36, is a second radial arm 42 swingable in unison with the arm 37 and provided at its outer end with a laterally projecting stud 43 for locking engagement within a detent-notch 44 formed in the periphery of a locking-disk 45, in turn, fixed upon the drive-shaft 23, the notch 44 having a circumferential length slightly greater than the diametral size of the stud 43, so as to permit a limited amount of free movement, as best seen in Figure 5 and for purposes presently fully appearing.

Removably disposed within the housing B under the coin-disk 32, is a tray or the like *t* for receiving the deposited coins *c* and facilitating their removal and collection when the shell B is opened for replacement or renewal of the paper-roll C.

In use and operation, the housing or shell B is unlocked and the top-wall 6 swung upwardly, substantially as shown in dotted lines in Figure 2, and a roll C of paper or the like suitably ruled and captioned for scoring, as best seen in Figure 3, is placed in the trough 13 and its free end threaded between the rollers 15 and 18 and outwardly through the slot 8, as shown in Figure 2, ready for disposition of the paper of roll C flatwise over and upon the table-top 6 of the shell B, which latter is then closed and locked.

It being customary in bowling for two people to play against each other, thus requiring two score lines, one for each player, the players now deposit two coins *c* of like denomination into the coin-chute 34. The deposited coins *c*, in turn, drop through the chute 34 and into the slot 33 of the coin-disk 32, the lower coin *c* riding against the cam-face 40 of the finger 39.

Thereupon, a player pulls the knob 31 downwardly or forwardly, rotating the ball-clutch 24 and rotarily driving the shaft 23. Since the detent-notch 44 of the locking disk 45 is substantially large to permit a limited amount of free movement, the shaft 23 and the several elements carried thereby will thereupon begin to rotate. As the disk 32 is thus caused to rotate, the two deposited coins *c* move downwardly and swing the arms 37 and 42 rearwardly against the bias of the spring 41, the stud 43 being withdrawn from notch 44 and permitting unimpeded rotation of the locking disk 45 and the shaft 23, which rotational movement is transmitted by the pinion 22 to the gear 21 and the feed roller 15 given a single revolution.

The roller 15 is circumferentially sized in relation to the printing or score-ruling on the paper roll C and the ratio of the gears 21, 22, is such that one complete revolution of the shaft 23 will deliver through the slot 8 a predetermined or measured length of the paper of roll C to expose two and only two score lines.

During the course of a single rotation, the disk 32 shifts the coins *c* downwardly out of contact with the arm 37 and drops the same into the coin box or receptacle *t*, freeing the arm 37 to yield-

ingly swing forwardly toward initial position. The locking stud 43 of the arm 42, however, comes into contact with and rides against the peripheral face of the locking disk 45 until the single revolution has been completed, whereupon the stud 43 will again drop into the detent-notch 44 and lock the entire mechanism against further actuation until two more coins have been inserted, the plate 26 and its associated rack 25, upon release of the knob 31, returning to initial position under influence of the spring *s* and freely rotating the ball-clutch 24 in reverse direction, and the sharp or serrated edge 9 facilitating quick and convenient detachment of the used portion of the roll C.

Thus it is evident, since the driving mechanism of the machine is securely locked under normal conditions, and further since the free end-portion of the paper of roll C is held tightly between the rollers 15, 18, it is practically impossible, without tearing, to pull an unauthorized scoring-length from the roll C out of the machine. When only one coin *c* is dropped into the chute 34, the machine will not function, since such single coin *c* will ride upwardly in the slot 33 as the disk 32 moves through its initial small arc of rotation, and consequently the arms 37, 42, will not be shifted for disengaging the locking disk 45.

In this same connection, it may be observed that the top or table wall 6 of shell B is preferably of such dimensions as will accommodate approximately twelve score lines, so that a large number of players may keep a simultaneous score record, such as may be desirable in team or league bowling. Of course, in such event, it will be necessary to insert the proper number of coins into the machine for a proper number of successive times to deliver the requisite number of score lines.

In addition, the paper roll C may be provided along its lefthand margin with a series of perforated coupons *d*, one for each score line, and the coupon and matching score-line may be provided with corresponding serial numbers, so that each player may detach a coupon at the beginning of each game and deliver it to the pin boy, who may later present his coupons for payment in terms of the number of games served.

For facilitating the application of scoring figures upon the exposed portions of the paper from roll C, as well as to also facilitate the detachment of the coupons *d*, a hold-down member D substantially of U-shape in plane is yieldingly pivoted at its bight 46 to and upon the shell wall 6 with its legs 47, 47' presented upwardly and extending to or adjacent the slot 8, the one leg 47 having preferably a sharp-tearing edge, as at 48.

In many large bowling alleys where it is inconvenient to maintain adequate surveillance over the several score holders, it may be desirable to provide a machine which will be actuated for delivering a single score-line upon insertion of a single slug, which may be purchased at the cashier's desk. Accordingly, we may provide a modified form of coin chute 34', as shown in Figures 9 and 10, having a plurality of serrations 49 in one side face, so arranged as to accommodate only a unique type of slug 50 having matching grooves 51. In conjunction with the modified form of chute 34', we may also provide a modified form of coin-disk 32' having a slot 33' adapted for receiving a single slug 50 and supporting it in position for actuating a suitably shaped rock arm 37'. In all other respects, the modified machine of Figures 9 and 10 is substantially identical with the preferred machine of Figures 1 to 8, both inclusive, and hence repetitious description is omitted.

The machine fulfills in every respect the objects stated, and it should be understood that changes and further modifications in the form, construction, arrangement, and combination of the several parts of the machine may be made and substituted for those herein shown and described without departing from the nature and principle of our invention.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. A combination score-sheet supporter and dispenser including a shell for housing a roll of score-sheet paper, the shell having a wall provided with a discharge slot for movement of the roll-paper from the shell, means including a feed roll rotatable within the shell for delivering paper from the roll to said slot, and means for actuating said roll, said latter means including a rack lengthwise shiftable within the shell, and a manually engageable knob projecting for movement outwardly of the shell for shifting the rack.

2. A combination score-sheet supporter and dispenser including a shell for housing a roll of score-sheet paper, the shell having a wall provided with first and second slots, the first slot for discharge movement of the roll-paper from the shell, means including a feed roll rotatable within the shell for delivering paper from the roll to said first slot, and means for actuating said roll, said latter means including a rack lengthwise shiftable within the shell, and a manually engageable knob having connection with the rack and fitting for movement in said second slot for shifting the rack.

3. A combination score-sheet supporter and dispenser including a shell for housing a roll of score-sheet paper, the shell having a wall provided with first and second slots, the first slot for discharge movement of the roll-paper from the shell, means including a feed roll rotatable within the shell for delivering paper from the roll to said first slot, and means for actuating said roll, said latter means including a rack lengthwise shiftable within the shell, a shaft journaled within the shell and having gear connection with said roll and with the rack, and a manually engageable knob having connection with the rack and fitting for movement in said second slot for shifting the rack.

4. A combination score-sheet supporter and dispenser including a shell for housing a roll of score-sheet paper, the shell having a top wall provided with first and second slots, the first slot for discharge movement of the roll-paper from the shell, means including a feed roll rotatable within the shell for delivering paper from the roll to said first slot, and means for actuating said roll, said latter means including a longitudinally slotted elongated plate slidably shiftable upon the under face of said shell-wall, a rack mounted on and presented laterally from said plate, a shaft journaled within the shell and projecting through the slot of said plate, said shaft having gear connection with said roll and with the rack, and a manually engageable knob having connection with the rack and fitting for movement in said second slot for shifting the rack.

5. A combination score-sheet supporter and dispenser including a shell for housing a roll of

score-sheet paper, the shell having a wall provided with a discharge-slot for movement of the roll-paper from the shell, means including a feed roll rotatable within the shell for delivering paper from the roll to said slot, means including a shaft journaled within the shell for actuating said roll, and means for successively limiting the rotary movement of said shaft for measuring the portions of the paper-roll delivered by the feed roll to said slot, said latter means including a notched disk fixed on the shaft, an arm yieldingly swingable within the shell, and a stud on the arm for removably engaging the disk at said notch.

6. A combination score-sheet supporter and dispenser including a shell for housing a roll of score-sheet paper, the shell having a wall provided with a discharge slot for movement of the roll-paper from the shell, means including a feed roll rotatable within the shell for delivering paper from the roll to said slot, means including a shaft journaled within the shell for actuating said roll, means for locking the shaft against rotary movement, said latter means including a notched disk fixed on the shaft, an arm yieldingly swingable within the shell, and a stud on the arm for removably engaging the disk at said notch, and means for actuating said arm for disengaging the stud from the disk for permitting limited rotary movement of said shaft for enabling measured portions of the paper-roll to be delivered by the feed roll to said slot.

7. A combination score-sheet supporter and dispenser including a shell for housing a roll of score-sheet paper, the shell having a top wall provided with a discharge-slot for movement of the roll-paper from the shell, means for successively delivering measured portions of the roll to and through the slot and upon said wall for scoring use, and U-shaped member hinged at its bight to and upon said wall for holding down the roll-paper delivered thereupon.

8. A combination score-sheet supporter and dispenser including a shell for housing a roll of score-sheet paper, the shell having a top wall provided with a discharge-slot for movement of the roll-paper from the shell, a trough within the shell for surface-resting of the roll for rotation, means comprising a feed roll disposed within the shell and a manually engageable knob shiftable upon the shell for delivering paper from the roll to the slot, and means for successively limiting the rotatory actuations of the feed roll for measuring the portions of the paper roll delivered to the slot.

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