Oct. 27, 1942. R. G. BIRR 2,299,729

DISPENSING CABINET AND STOP MECHANISM THEREFOR

Filed Feb. 3, 1941 5 Sheets-Sheet 1

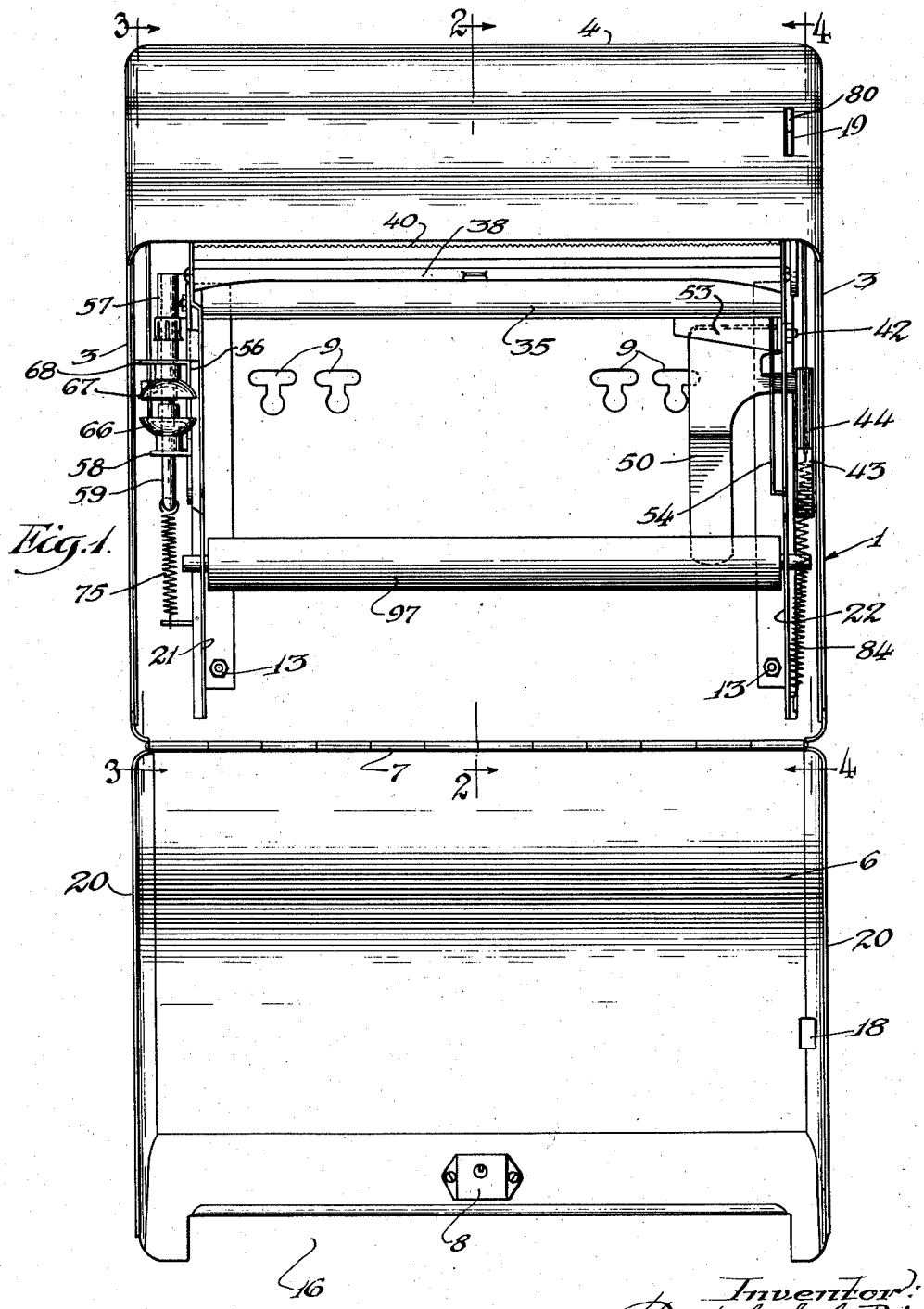


Fig. 1.

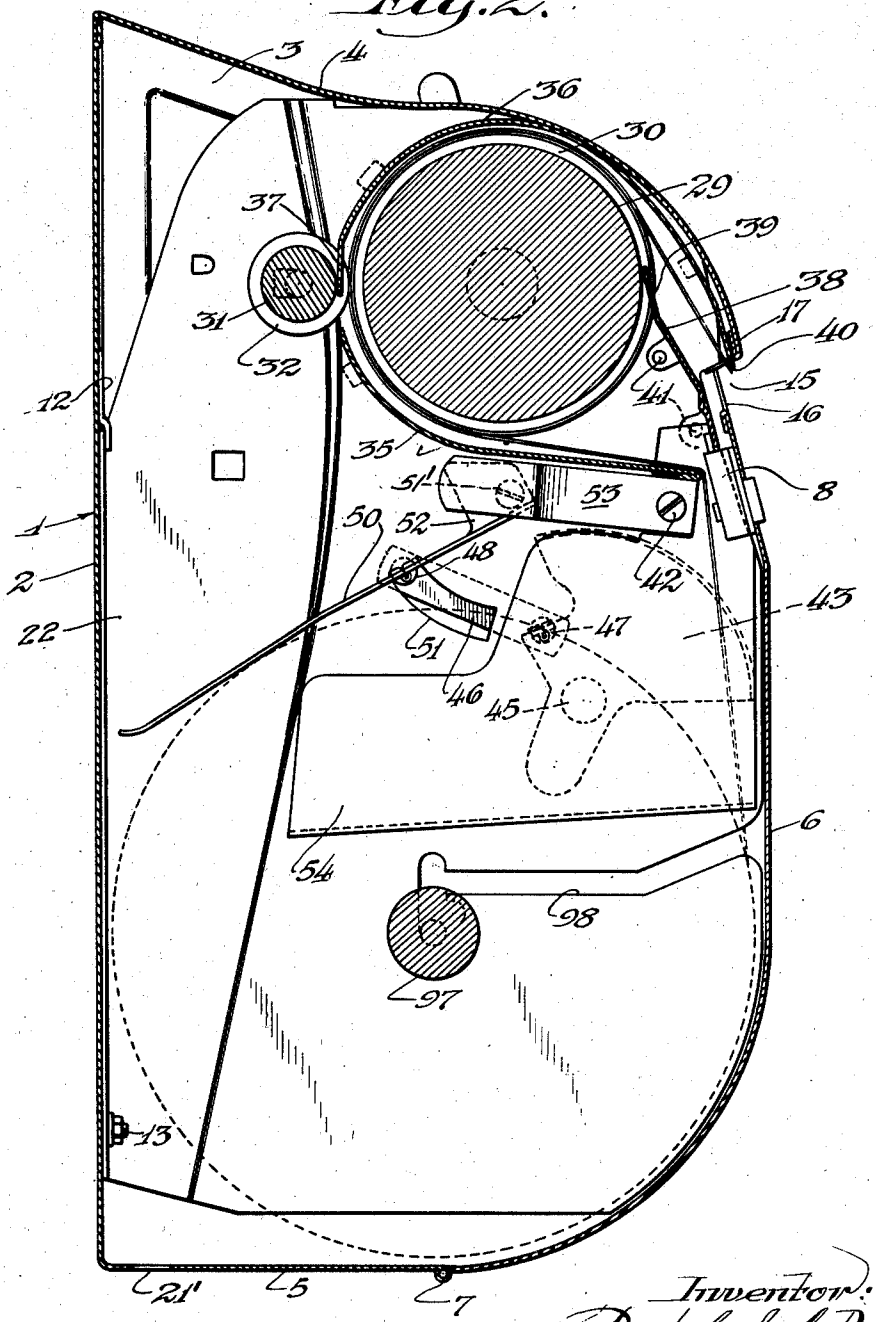
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DISPENSING CABINET AND STOP MECHANISM THEREFOR

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Fig. 2.



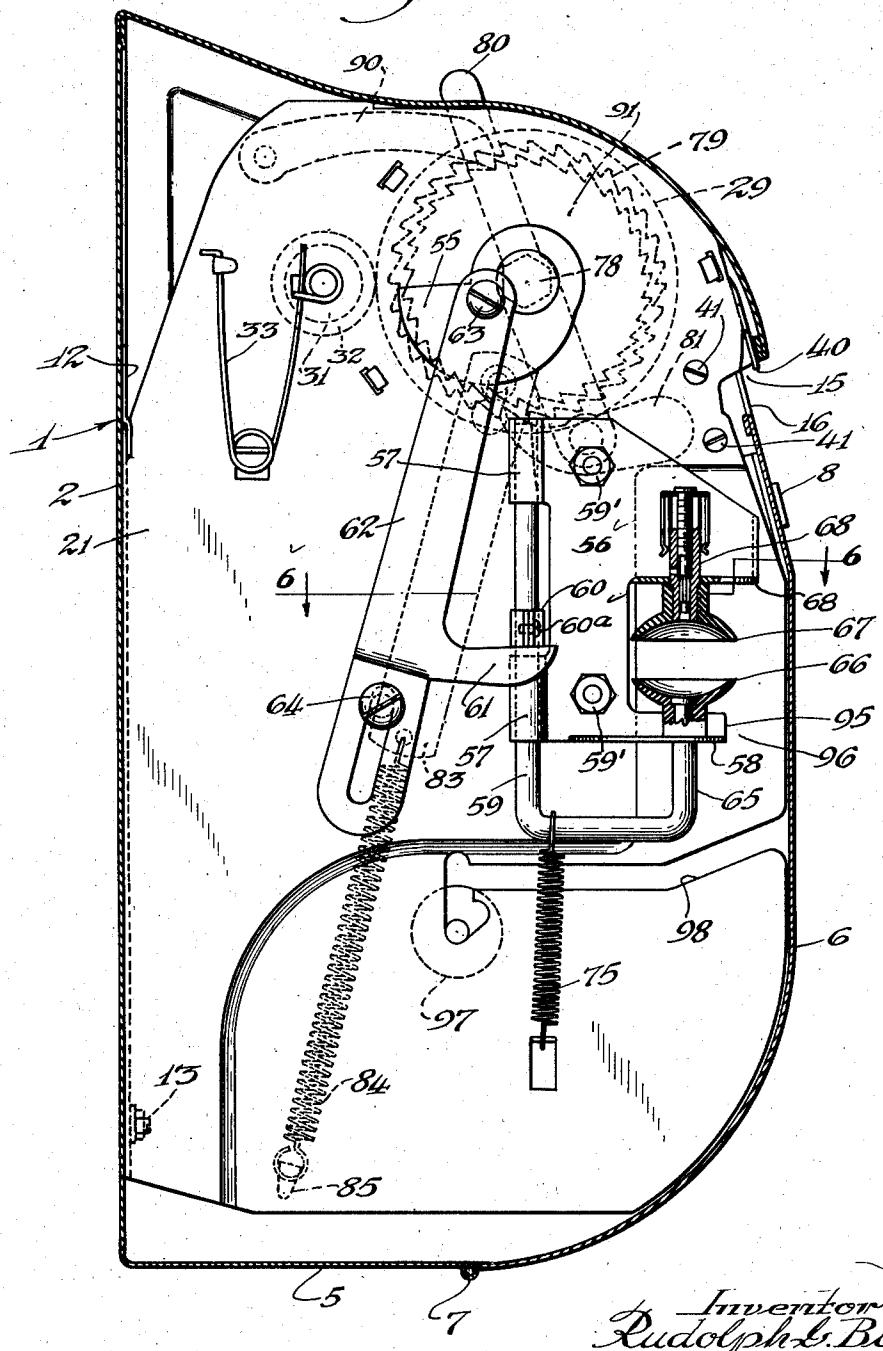
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DISPENSING CABINET AND STOP MECHANISM THEREFOR

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Fig. 3.



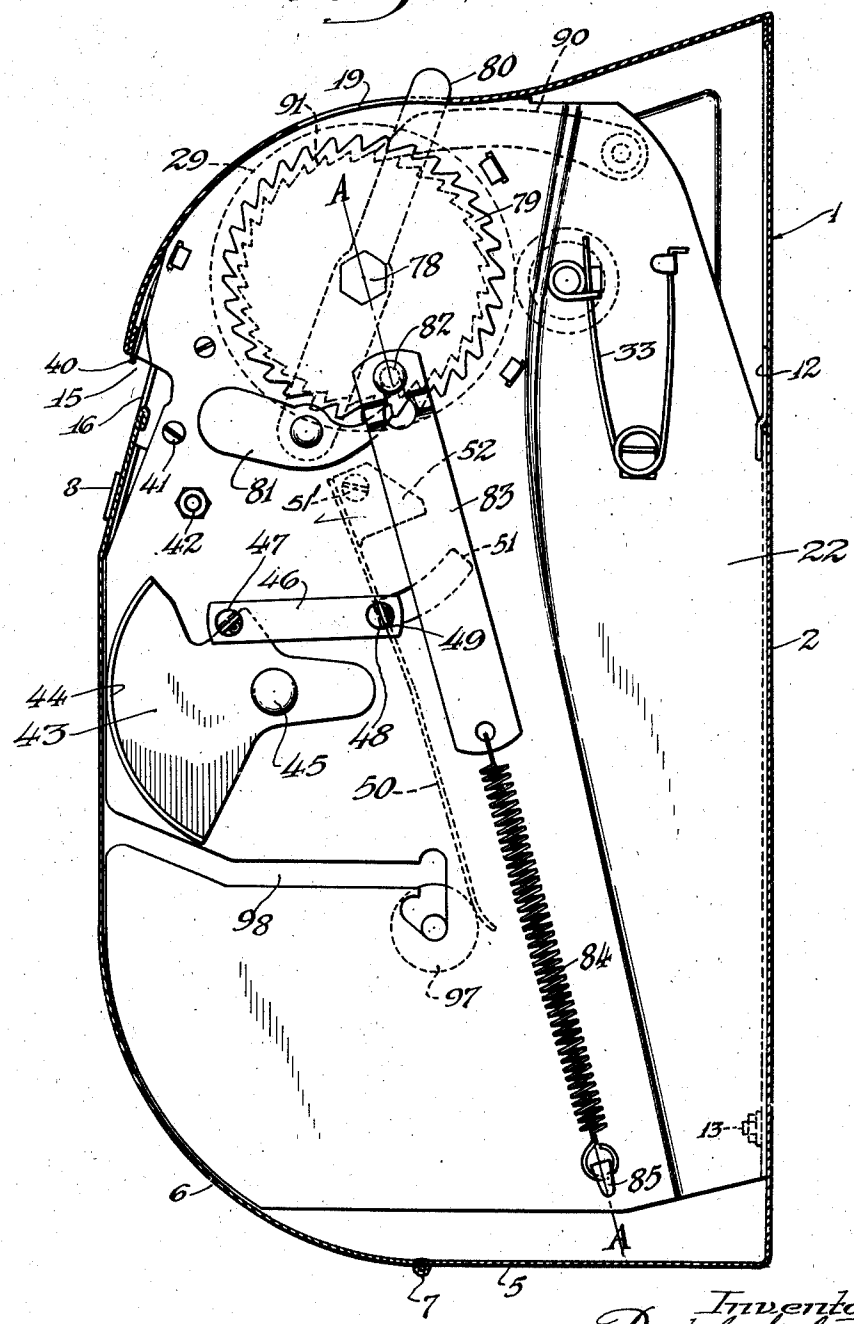
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DISPENSING CABINET AND STOP MECHANISM THEREFOR

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Fig. 4.



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DISPENSING CABINET AND STOP MECHANISM THEREFOR

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Fig. 5.

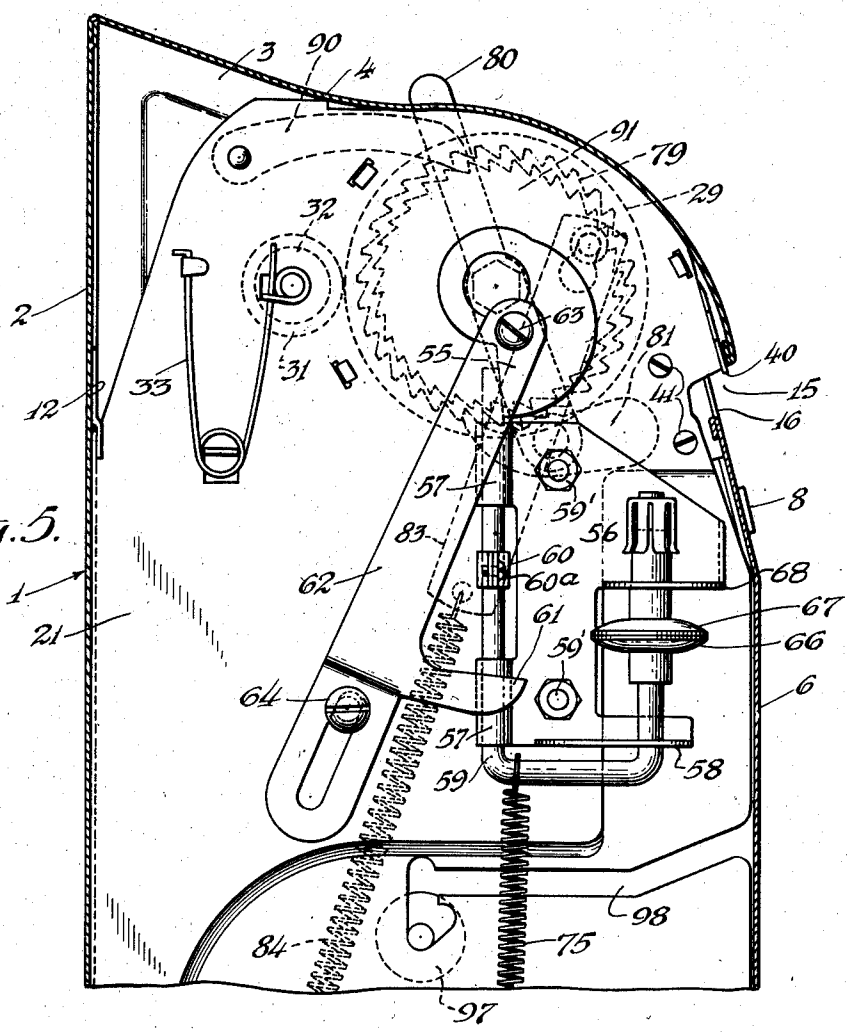
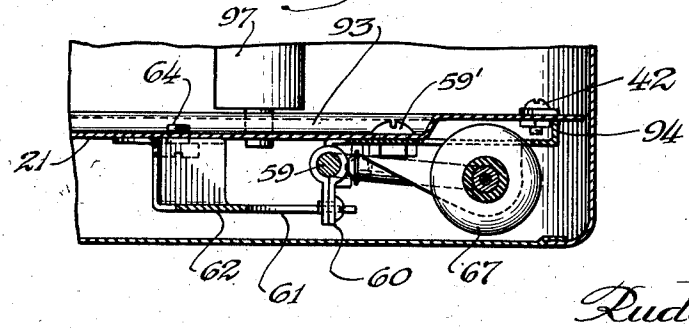


Fig. 6.



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Patented Oct. 27, 1942

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UNITED STATES PATENT OFFICE

2,299,729

DISPENSING CABINET AND STOP MECHANISM THEREFOR

Rudolph G. Birr, Lombard, Ill., assignor to Steiner Sales Company, Salt Lake City, Utah, a corporation of Utah

Application February 3, 1941, Serial No. 377,199

27 Claims. (Cl. 271—2.3)

This invention relates to improvements in dispensing mechanisms and stop mechanisms therefor, and has for an important object the simplification of the cabinet structure and of the structure and assembly of a stop mechanism, as well as of a time-stop mechanism.

An important object of this invention is to provide an improved stop mechanism in which one of the stops, with a timer which controls it, is mounted on a single detachable mounting which can be moved toward or away from a part which cooperates to operate the stop, without disconnection of the latter part.

Another object is to simplify the mechanism which operates one of the stops so that there is no positive connection between this mechanism and the stop which it operates.

Another object is to provide a simplified form of stop and guiding means for the same. A feature in relation to this object is to construct the stop of a single piece of metal bent into substantially U-shaped form and to guide the opposite legs of the U in a manner later to be described.

Another object of the invention is to provide a new kind of stop-operating mechanism which is not directly connected to and from which the stop mechanism can be easily separated.

Features of the invention include: The manner of constructing the casing; the manner of constructing the cover and a part of the top which forms part of the front of the cabinet to form a discharge opening; the specific manner of attaching the unit in the cabinet; the specific stop mechanism and the broader ideas of means of which it is symbolic; a guard finger and its associated plate in relation to an indicating mechanism; the manner of attaching the cross plates which form the passages about the measuring roll and the arrangement of the plate which divides these passages and the manner of its connection; the use of this division plate as a keeper for the lock of the door, and certain details of construction hereinafter set forth.

Objects, features and advantages of the invention will be pointed out in the description of the drawings, and in said drawings—

Figure 1 is a front view of the cabinet with the door open and illustrating several features of the invention;

Figure 2 is a vertical section on line 2—2 of Figure 1 with the door closed and the position of a full supply roll shown in dotted lines, and with the follower of the indicating device shown in a position corresponding to the full roll;

Figure 3 is a vertical section on line 3—3 of Figure 1 showing the stop mechanism released;

Figure 4 is a vertical section on line 4—4 of Figure 1, with the mechanism positioned in correspondence to that of Figure 3;

Figure 5 is a view similar to Figure 3 but showing the mechanism in stopping position; and

Figure 6 is a horizontal section on line 6—6 of Figure 3.

In the drawings, the numeral 1 generally indicates an outer casing having a rear wall 2, side walls 3, a top wall 4 which also forms part of the front wall, a bottom wall 5 which forms only part of the bottom, and a door 6 which completes the formation of the front wall and forms part of the bottom wall and is pivoted at 7 to the forward edge of the bottom wall. The door when open lies below the outer casing. The door has a suitable lock generally indicated at 8. The rear wall 2 has openings 9 therein to fit projections on a wall for hanging the cabinet.

The rear wall also has thereon a pair of members 12 forming sockets, and in vertical alinement with and below each member 12 is a screw 13 projecting forwardly from the rear wall and passing through openings in flanges of plates 21, 22 of a unit. The elements 12 and 13, with nuts for the screws, releasably secure the unit herebelow described, upon which unit the entire dispensing mechanism is mounted. By this means the unit can be easily assembled within the cabinet and so secured that paper delivered by its dispensing mechanism is projected outwardly through a dispensing opening.

The front door cooperates with that portion of the top, which also forms part of the front of the cabinet, to provide a dispensing or discharge opening 15, the upper edge of the door being cut out as at 16. When the door is closed the front portion 17 of the top overlaps and is spaced outwardly from the upper edge of the door as best shown in Figure 2. The door has an opening 18 through which the markings on the supply indicator are viewable. The top of the cabinet has an elongated slot 19 therein for a purpose to be explained. The cover has lateral marginal flanges 20 which overlap the sides 3, and the bottom has dust discharge openings 21' therein, only one of which is shown.

The inner unit is composed of two side plates respectively indicated at 21 and 22. On and be-

tween and upon the side plates is journaled a measuring roll 29 having a plurality of grooves 30, only one of which is shown. Placed rearwardly of this roll is a pinch roll 31 grooved as shown at 32 in correspondence to grooves 30. The pinch or presser roll 31 is suitably journaled in the plates to be movable toward and away from the measuring roll. Springs 33 secured as shown, act to yieldably hold the roll 31 against the measuring roll. Although the use of the measuring roll in combination with the other elements is claimed per se, it is understood that other means may be used, not necessarily a roll, which must be moved if paper is to be made accessible and which can control and be controlled by a stop mechanism or by a time-stop mechanism.

Arranged below the roll 29 (see Figure 2) is a somewhat arcuate member 35 which cooperates with the roll to form a guide channel upwardly through which the leading edge of the paper is thrust to a point whereat it will be seized by the rolls. Above the roll 29 is another arcuate plate 36, the rear edge of which has projections 37 which enter the grooves 32 in the yieldable roll 31. A division plate 38 lies between the top plate and the bottom plate and has fingers 39 on its rear edge which enter grooves 30 of the measuring roll.

This plate 38 and measuring roll 29 form an outwardly and downwardly leading passage through which the paper is delivered through the discharge opening 15. The outer edge of the upper arcuate plate 36 is serrated as at 40 to form a tear-off knife against which the delivered paper is pulled by an upward motion to sever it. The cross plate or partition 38 is releasably held by screws 41. Each of the arcuate plates has terminal projections which pass through slots in the upright side plates of the units, and these projections are thereafter bent as shown. The forward margin of the lower arcuate plate is held by sets of screws and bolts indicated at 42, one of which sets also secures a guard finger described below.

Arranged on the outside of the right hand upright plate of the unit is an indicator mechanism, the indicator of which has the form of a plate 43 having a bent flange 44 of cylindrical configuration which is visible through the sight opening 18 in the door. The outer surface of this flange may have suitable markings thereon indicative of the amount of supply. The indicator 43 is loosely pivoted at 45 to prevent binding, and a link 46 is pivoted at 47 to the indicator and this link at its opposite end is pivoted at 48 to a projection 49 of a follower 50, the projection extending through a slot 51. This follower engages the supply roll (shown in dotted lines) as shown, and when a full roll is in the cabinet such fact is indicated on the marking on the flange 44. As the supply decreases the flange marking as viewed through the opening so indicates. The supply roll is supported on a shaft removably held in slots in the side plates of the unit. The follower 50 is pivoted by a screw 51' to the inner side of the plate, this pivot passing through a right angle extension 52. A guard plate 53 having the form of a finger is secured by screw 42 at a point just below the lower side of the lower arcuate plate 35. The outer end of this finger lies adjacent the upper end of the follower.

Attached to the inner side of the upright plate 22 is a second plate 54 slightly spaced inwardly from the inner side of said upright plate of the unit. The plate 54 has an upward extension cut out to receive the forward or outer edge of the plate 35 and the upper end of this extension extends rearwardly of division plate 38 and overlaps one of the fastening devices 41. The plate 54 is held by a single fastening device 42 which holds the finger 53. These are features.

A very important object of this invention is to provide a stop mechanism which may be used with any suitable type of cabinet, including the type herein in which there is automatic feedout of the material at the end of a time period. The invention is applicable to other types of cabinets which do not have the automatic feedout feature. An important feature of the invention is the mounting of one of the stops with a timer on a single plate which is held by one or more fastening devices and which can be easily detached and moved forwardly out of engagement with a part of the means which operates the stop.

Referring first to Figure 3 in which the mechanism is shown in its nonstop or open position. To means which must be moved if the sheet material is to be made accessible, in this instance the roll 29, is attached a first stop 55. The stop 55 has the form of an arm and rotates. Attached to the outer side of the upright plate 21 of the unit is a plate 56 having guides 57 and 58 thereon. The guides 57 are formed by bending the plate. The guide 58 is formed by a shelf through an opening in which one part of a second movable stop is guided. This plate is detachably secured to plate 21 by two fastening devices such as a screw and nut generally indicated at 59', the screw having a slotted head which lies at the inner side of the upright plate 21 of the unit, while the nut lies at the outer side. The second stop, in this instance having a U-shaped form, is translatable, and has one arm 59 guided in the guides 57. The other arm is guided in the guide 58. The arm 59 has a projection 60 thereon which is adapted to be engaged by a projection 61 on a link 62, which link 62 is pivoted as at 63 to the first stop 55 and is adapted to be reciprocated when the roll 29 is rotated. There is means 64, including a screw and slot, securing the link to a stationary support, that is, to the upright plate 21 of the unit, to permit rocking and reciprocation. Slight rocking is due to the crank-like connection of the upper end of the link with the first stop 55. The second arm 65 of the U-shaped member carries one member 66 of a timer, the second member 67 of which is carried by a shelf 68 of said guide plate in the manner shown in Figure 3. These members are adapted to be brought together when and remain together while the second stop is in stopping relation to the first. These members in the present instance are constituted by cups which are vacuum attachable when brought together. Means for holding the members together may be a vacuum. The broad feature is that two members of a timer are brought together and so remain while the second stop is in stopping position and substantially do not move during the timing period and are released to move away from one another at the end of that period. Means generally indicated at 68 for releasing the members at the end of a time period may be means for controlling introduction of air between the cups to annul their vacuum-attaching action. The means 68 in this instance includes a tube upon which the

upper cup is mounted. The tube is supported by the upper shelf of the guide plate, and a needle valve controls an opening in the tube. The valve is in turn controlled by a thumb piece having spring fingers engaging the outer side of the tube as shown. This device per se is not claimed herein, but is symbolic of means for releasing the two parts of a timer, one of which is mounted on a U-shaped stop member.

The spring **75** acts as means for forcibly moving the second stop from stop position and it will be noted that the second stop has the shoulder **60** engageable by the shoulder **61** on the link to move the first stop to stop position and thereafter allow independent motion of the link shoulder **61** away from the stop shoulder **60**.

Heretofore a link or equivalent device has been directly connected with both stops of the stop mechanism, that is, has been connected at one end with one of the stops and at the opposite end directly to another stop so that neither stop could be disconnected from the link without the removal of a fastening device. In this case the link **62** is connected positively to only one of the stops or to the feed control means and to support **21** rather than to leg **59** or the other stop.

On the opposite upright plate **22** of the unit, on the outer side thereof (see Figure 4), is provided means acting automatically on the roll **29** or rotatable means, after release of the second stop to automatically move the rotatable means to make more sheet material accessible, in this instance to project a portion of it so that it may be grasped at the front of the cabinet, pulled out and torn off.

This means in the present instance has been combined, in order to reduce the number of parts, with a ratcheting device which is used when servicing the cabinet to initially feed the leading edge of the paper upwardly through the rolls and then downwardly and outwardly beneath the upper arcuate member and knife, and out of the delivery opening so that it may be grasped by the user. The manual feed device is mounted on the end of a shaft **78** of the roll and includes a ratchet wheel **79**, a ratcheting lever **80** rockable on the shaft and extending through the slot **19** in the top of the cabinet. This lever has pivoted to its bottom end a pawl **81** gravity actuated to engage the teeth of the wheel **79**. Pivoted to the ratchet wheel **79** as at **82** is a link **83** having connected to its opposite end, one end of a spring **84**, the spring being connected as at **85** to the plate. At the end of the automatic feed-out action of the spring **84** the link **83** and spring **84** lie approximately on a line A—A connecting the points **78** and **85**.

In Figure 5 the mechanism has been shown in stop position and in this position it will be noted that the pin **82** shown in dotted lines lies forwardly of the axis of the roll and that the spring **84** is under tension so that as soon as the stop **59** is released the spring will act on the ratcheting disk to automatically turn the roll to feed material. After the release of the stop mechanism the first stop moves in clockwise direction shown in the figure to the position shown in Figure 3.

When the stop **59** is in stop position as in Figure 5 the shoulders on **60** and **61** are separated. When the spring **75** moves the second stop away from stop position the shoulder **60** on the second stop approaches the shoulder **61** on the link and in the final release position of the parts in Figure 3 the two shoulders are in engagement so that promptly as the roll moves from the position shown in Figure 3, the second stop moves toward stop position. It will be understood that such a final position of these parts is not necessary and it may be that the shoulder on the link moves some distance before it engages the shoulder on the second stop.

One of the important advantages in the present invention is simplicity of assembly. It will be noted that a single plate held by two fastening devices only, having their slotted screw heads at the inner side of the plate, carries guiding means for the slide and guiding means for an extension of the slide upon which the lower cup is mounted and provides means for mounting the upper cup. The spring **75** is attached at a point near the long axis of stop-leg **59** so as to exert its force substantially lengthwise of that axis. Moreover, the second stop is constructed of a single length of heavy cylindrical metal stock and thus is very cheap to manufacture. The projection **60** has the form of a strap of which the two ends form the projection and this strap is frictionally held on the cylindrical slide **59** by means of compression or friction provided by a screw **60a**. Thus, the projection can be easily adjusted lengthwise of the slide and set in the adjusted position. This is a feature valuable in adjusting the mechanism to obtain the exact relationships needed between **60** and **61**. The link **62** can be stamped from sheet metal.

A gravity-acting pawl **90** cooperates with the teeth of wheel **91** to prevent reverse motion of the measuring roll, and is preferably disposed at that end of the roll opposite the ratchet wheel **79**.

Referring to Figure 6. It will be noted that the plate **21** is punched outwardly as at **93** and that the stop mounting plate **56** is mounted on the outer side of that punched-out portion. The forward portion of the plate is therefore spaced outwardly from the outer face of the plate **21**. The outer edge of the plate at the top has an inturned portion **94** which engages the outer surface of the unpunched-out part of the plate. The lower part of the plate **95** (see Figure 3) is spaced from the outer surface **96** of the unpunched-out portion of the plate. This offset **93** has two purposes, first, to reduce the area of the inner surface of the plate **21** contacted by the supply roll, and next to provide a recess near the front for the reception of the circular vacuum cup **67** in the manner shown in Figure 6. The plate **54** (see Figure 2), by projecting beyond the inner surface of the plate **22** also acts to reduce the area contacted by that end of the supply roll. The supply roll is shown in dotted lines in Figure 2 and by comparison it will be seen that the areas of contact of the ends of the roll with the inner surfaces of the plates **21**, **22** are relatively small.

The assembly arrangement, including the elements **12** and **13**, has a certain advantage in this specific construction. The arrangement herein is particularly advantageous in obtaining a good fit. In assembly it is desirable to have the metal part **36**, which is somewhat springy, put under tension so that its lower forward end which has the knife **40** will have a close fitting relation with the corresponding lower edge of the top wall **4** of the outer casing, which edge cooperates to form the upper side of the opening **15**. To this end, when assembly is desired, the outer casing is inverted so that its upper rear, somewhat pointed side rests against the bench or support, then

with the casing in this position the unit is dropped in so that the upper edges of the flanges of the plate **21**, **22** engage the corresponding socket members **12**. As soon as this occurs the bottom of the unit (now the top in the position in which the manipulation is made) is swung inwardly and the nuts are applied to the bolts **13**. Thus, by inverting the outer casing and manipulating the unit as aforesaid the outer end of the element **36** is sprung and so maintained under tension against the corresponding lower edge of the top wall of the cabinet.

The device is operated as follows: Let it be assumed that the stop is open and the parts are positioned as in Figures 3 and 4. Also assume that the cabinet must first be serviced. To do this the trunnioned core or support **97** is removed through the slots **98**, and is passed through the cored opening of the supply roll. The supply roll is then placed in the cabinet so that the material can be drawn from its forward side upwardly into the passage formed by the plate **35** and the roll **29**. As soon as the paper has been pushed to the meeting point of the rolls the ratchet lever **89** is operated until the paper passes from the passage defined by the plate **36** and the roll **29** outwardly through the discharge opening **15**. The paper is then pulled by the user to obtain the full length and is then torn off, leaving the stop mechanism positioned as shown in Figure 5. To bring the parts to this position the stop **55** has moved from its position in Figure 3 to its position in Figure 5. With this movement the arm **62** engages the arm **60** and moves the stop arm **59** also to the position of Figure 5. The timing period now occurs, at the end of which the vacuum cups are released and the spring **75** acts to move the parts of the stop again to the position of Figure 3 while the spring **84** moves the measuring or feed roll to automatically project a short length of paper or other material to a position accessible for pulling out. Upon pulling the previously described operation again occurs.

Due to the fact that the inner unit is easily detachable from the elements **12** and **13** (see Figure 2) the assembly of the unit within the case is comparatively simple. After assembly, if necessary, the timer and the slide-stop, all mounted on plate **56**, may be removed by an outward movement in a direction at right angles to the long axis of the roll, after merely releasing the fastening devices **59'**.

I claim as my invention:

1. A dispensing cabinet comprising movable means, mounted on a plate, a time-stop mechanism controlled by and controlling said means, including a first stop movable with said first mentioned means and adapted to engage a second stop, a second plate secured to the first mentioned plate and having guides in which the second stop is movable into and out of the path of the first stop, a timer having two members, a first carried by the second stop and a second carried by the second plate, said members adapted to be brought together when and remain together while the second stop is in stopping relation with the first stop, and means operable by the first mentioned movable means to move the second stop to stop position and thereafter allow independent motion of the same away from stop position.

2. A dispensing cabinet comprising movable means, a time-stop mechanism controlled by and controlling said means, including a first stop movable with said first mentioned means and adapted to engage the second stop, means having guides in which the second stop is movable into and out of the path of the first stop, a timer having two members, a first carried by the second stop and a second carried by the means which has the guides, said members adapted to be brought together when and remain together while the second stop is in stopping relation with the first stop, means for forcibly moving the second stop away from stop position, a link and means pivoting it to the rotatable means in a manner to be reciprocated when the rotatable means is rotated, means securing the link to a stationary support to permit rocking and reciprocation, said second stop having a shoulder engageable by a shoulder on the link to move the first stop to stop position and thereafter allow independent motion of the link shoulder away from the stop shoulder.

3. A dispensing cabinet comprising rotatable means which must be moved if sheet material is to be made accessible, a time-stop mechanism controlled by and controlling said means, including a first stop movable with said first mentioned means and adapted to engage the second stop, means having guides in which the second stop is movable into and out of the path of the first stop, a timer having two members, a first carried by the second stop and a second carried by the means which has the guide, said members adapted to be brought together when and remain together while the second stop is in stopping relation with the first stop, means for forcibly moving the second stop away from stop position, a link and means pivoting it to the rotatable means in a manner to be reciprocated when the rotatable means is rotated, means securing the link to a stationary support to permit rocking and reciprocation, said second stop having a shoulder engageable by a shoulder on the link to move the first stop to stop position and thereafter allow independent motion of the link shoulder away from the stop shoulder, and means acting automatically on said rotatable means after release of said second stop to move said rotatable means to make sheet material accessible.

4. A device of the class described, including a support, a plate secured to said support and having guides, a U-shaped element having legs slidable in said guides, a first movable stop into the path of which a first one of said legs is adapted to project to prevent motion of the first stop, a vacuum cup on the second of said legs, a second vacuum cup on said plate with which the first cup is adapted to become vacuum attached when the first leg is projected to prevent motion of the first stop, and means for annulling vacuum action of said cups at the end of a time period.

5. A device of the class described, including a support, a plate secured to said support and having guides, a U-shaped element having legs slidable in said guides, a first movable stop into the path of which a first one of said legs is adapted to project to prevent motion of the first stop, a vacuum cup on the second of said legs, a second vacuum cup on said plate with which the first cup is adapted to become vacuum attached when the first leg is projected to prevent motion of the first stop, means for annulling vacuum action of said cups at the end of a time period, and means operable by the first stop to move said U-shaped element to bring said first leg to stopping position and thereafter release it to move away from stopping position.

6. A dispensing cabinet comprising means

which must be moved if dispensing is to occur, a stop mechanism controlled by and controlling said means, including a slide-stop movable into and out of the path of a second stop movable with said first mentioned means, a stationary support, a link pivoted to the second stop, means connecting the link with the support for sliding and rocking motion, and a projection on the link engageable with a projection on the slide-stop to move the slide-stop to stopping position and then allow the projection on the link to move away from the projection on the slide, a plate having guides for the slide-stop and detachably secured to the support, said slide-stop having an extension guided in said plate and carrying one part of a timer, means mounting another part of the timer on said plate in such manner that the two parts are normally spaced but come into contact when the slide is in stopping position, a spring for forcibly moving the slide-stop away from stop position, and a spring and means connecting it to the means which must be moved if dispensing is to occur, to cause a movement of said means in dispensing direction on release of said slide-stop.

7. A dispensing cabinet comprising means which must be moved if dispensing is to occur, a stop mechanism controlled by and controlling said means, including a slide-stop movable into and out of the path of a second stop movable with said first mentioned means, a stationary support, a link pivoted to the second stop, means connecting the link with the support for sliding and rocking motion, and a projection on the link engageable with a projection on the slide-stop to move the slide-stop to stop position and then allow the projection on the link to move away from the projection on the slide.

8. A dispensing cabinet comprising means which must be moved if dispensing is to occur, a stop mechanism controlled by and controlling said means, including a rotary stop and a slide-stop movable into and out of the path of the rotary stop, a stationary support, a link pivoted to the rotary stop, means connecting the link with the support for sliding and rocking motion and a projection on the link engageable with a projection on the slide-stop to move the slide-stop to stop position and then allow the projection on the link to move away from the projection on the slide.

9. A device of the class described comprising a support, a feed roll journaled in the support, a first stop attached to one end of the roll, a U-shaped member, a plate detachably secured to the first support and having means guiding both legs of the member, one leg serving as a second stop adapted to be translatably moved into and out of the path of the first stop, and the other leg having a vacuum cup mounted thereon, a second vacuum cup mounted on the plate, a spring for moving the U-shaped member away from stopping position, a link pivoted to the first stop, and means attaching the link to the support to reciprocate and swing, said link having a projection, and said second stop having a projection engageable by the link projecting to move the stop to stop position when the roll moves in feeding direction, said cups being adapted to engage and become vacuum attached when the top-leg is in stop position, means for annulling vacuum action at the end of a predetermined time period, a spring and means attaching it to the roll to move the roll in feeding direction after release of the second stop as a result of movement of the stop-leg through the action of the first mentioned spring.

10. A dispensing cabinet comprising, a unit including a pair of plates which support a dispensing mechanism, a plate having guides, and means releasably securing it on the outer face of one of said pair of plates, a first movable stop operated by a dispensing mechanism which is carried by said pair of plates, and into the path of which first stop a second stop slidable in said guides is adapted to project, a timer having one part carried by the second stop, a second part on the plate with which the first part is adapted to abut when the second stop is projected to prevent motion of the first stop, means operable by the first stop to bring said second stop into stopping position and thereafter release it to move away from stopping position, but unattached to said second stop and therefore permitting free withdrawal of said plate which carries said timer and second stop, after release of said releasable securing means.

11. A stop mechanism comprising a rotary stop and a slide-stop movable into the path of the rotary stop, a link pivoted to the rotary stop, means securing one end of the link to a stationary support to slide and rock, means on the link engageable with means on the slide-stop for moving the slide-stop into stop position and thereafter permitting free motion of the stop away from such position, a plate attached to the support and providing guides for the slide-stop, said slide-stop having an extension, and said plate providing a guide for said extension, said extension having a vacuum cup thereon, and said plate having mounted thereon a vacuum cup adapted to be engaged by and become vacuum-attached to the first cup when the slide-stop is in stopping position, means annulling the vacuum-attaching action at the end of a time period, a spring and means by which it moves the rotatable stop away from stop position and in the same direction as that in which the stop approached stopping position.

12. A device of the class described comprising a support, a roll having one end journaled in the support, a stop arm attached to one end of the roll, a U-shaped member, and means guiding both legs of the same, one leg being adapted to be moved into the path of the arm, a link pivoted to the stop-arm, said link having a slot, stationary means cooperative with the slot to permit translation and rocking of the link, said link having a projection, said stop-leg having a projection engageable thereby to move the leg into stop position and thereafter release the leg for free motion away from stop position, and a spring for retracting said U-shaped member, and said stop-leg.

13. A device of the class described, including a support, a plate detachably secured to said support and having guides, a U-shaped element having legs slidable in said guides, a first stop movable into the path of which a first one of said legs is adapted to project to prevent motion of the first stop, a vacuum cup on the second of said legs, a second vacuum cup on said plate with which the first cup is adapted to become vacuum attached when the first leg is projected to prevent motion of the first stop, means for annulling vacuum action of said cups at the end of a time period, and means operable by the first stop to bring said first leg to stopping position and thereafter release it to move away from stopping position, and a spring for moving said U-shaped element to move said first leg away from stopping

position acting along a line which is parallel with an extension of the long axis of said first leg.

14. A device of the class described including a support, a member releasably secured to said support and having a guide, a member rotatable in the support and having a first stop and a link operated by said rotatable member, means connecting the link to the support for sliding and rocking a second stop movable in said guide and adapted to be projected into the path of the first stop, a timer including two elements, one carried by said guide member and the other carried by said second stop, which members are adapted to be brought together when the second stop is in the path of the first stop, and means on the link cooperable with means on the second stop for moving said second stop to stopping position and then releasing said second stop.

15. A device of the class described comprising a support having a feed roll journaled therein, a link operated by said roll, a first stop operated by the roll, guide means releasably secured on the support, a second stop guided by said guide means and adapted to be projected into the path of the first stop, means on said second stop and on said link engageable to move the second stop to stop position, said means being so related that the guide means along with said second stop carried thereby can be freely moved in direction at right angles to the axis of the roll and away from said means on the link to an inoperative position following release of the guide means from the support.

16. A dispensing apparatus having a stop mechanism in which a first stop is moved into the stopping path of a second stop and is then released for independent automatic motion away from stop position, dispensing means for controlling the second stop, and means operable by the last mentioned means and unconnected to the first stop and adapted to move into engagement with a part of the first stop to move that stop into stop position and capable of thereafter moving away from that part in a direction opposite to the direction of motion of the first stop toward stop position.

17. A dispensing apparatus having a stop mechanism in which a first stop is moved into the stopping path of a second stop and in which said first stop can move away from stop position, means for controlling the second stop, and means operable by the last mentioned means and adapted to move the first stop into stop position and to thereafter allow independent motion of said first stop away from stop position, said first stop-moving means being unconnected to said first stop, and detachable mounting means for said first stop permitting it to be bodily removed as a unit independently of all other parts, and while those parts are operatively connected.

18. A dispensing apparatus having a time-stop mechanism in which the timer is set when a first stop is moved into stopping path of a second stop and in which the timer holds the first stop in that path and in which said first stop can move away from stop position at the end of the timing action of the timer, means for controlling the second stop, and means operable by the last mentioned means and unconnected to the first stop and adapted to engage a part of the first stop to move that stop into stop position and capable of thereafter moving away from that part in a direction opposite to the direction of motion of the first stop toward stop position, and detachable mounting means for said first stop and timer permitting unit removal independently of all other parts and while those other parts are operatively connected.

19. A time-stop assembly comprising a single plate having two guides thereon, a U-shaped member having one leg acting as a stop and slidable in one of the guides and the second leg slidable in the remaining guide, and a timer including a first element mounted on the plate and a second element carried by the second leg and adapted to engage the first element when the stop leg is in stopping position.

20. A time-stop assembly comprising a single plate having two guides, a U-shaped member having one leg acting as a stop and slidable in one of the guides and the second leg slidable in the remaining guide, said plate having a shelf having thereon a vacuum cup as one part of a timer, a second cup carried by the second leg and adapted to engage the first cup when the stop leg is in stopping position.

21. A support, a dispensing means mounted thereon, a stop mechanism including a first stop controlled by the dispensing means, a plate having a second stop thereon movable into the path of the first stop, means detachably securing said plate to said support, means by which said dispensing means operates the second stop by first engaging and then releasing the same, said operating means being unconnected with the second stop and adapted to allow the plate with its stop to be removed by a motion in a direction substantially perpendicularly to said operating means, and substantially parallel with the face of the support after release of said securing means and without interference by the first stop.

22. A support, a dispensing means mounted thereon, a stop mechanism including a first stop controlled by the dispensing means, a plate having a second stop thereon movable into the path of the first stop, means detachably securing said plate to said support, a link adapted to engage means on the second stop to move the second stop and then release it, said link being unconnected with the second stop, said link being so placed as to allow the plate with its stop to be removed by motion in a direction substantially perpendicular to it, after release of said securing means, and without interference by the first stop.

23. A dispensing cabinet comprising means which must be moved if dispensing is to occur, a stop mechanism controlled by and controlling said means, including a first stop and a second stop movable into and out of the path of the first stop, a stationary support, a link pivoted to a part which is movable by said first mentioned means, means connecting the link with the support for sliding and rocking motion, and means on the link engageable with means on the second stop to move said second stop into stopping position and then allow the means on the link to move away from the means on the second stop to permit the latter to move from stopping position.

24. A device of the class described having feeding means, a stop mechanism for controlling said feeding means, including a first stop operated by the feeding means and a second stop movable into and out of the path of the first stop, a stationary support, a link having means cooperable with said second stop and having a slot through which a screw passes to be secured in said support, and means for pivoting the link to a part which is operated by said feeding means so that by operation of the feeding means said

link will move said second stop into the path of the first stop and release said second stop for independent movement away from the stopping path of the first stop.

25. A stop mechanism comprising a second stop movable into the path of a first stop, feeding means, a link operated by said means, a slot in the link, a guiding pin traversing the slot, said link having means engageable with the second stop and adapted to move the second stop into stopping path of the first stop and thereafter leave the second stop free for independent movement out of the stopping path of the first stop, the first stop being operated by the feeding means and said link being pivoted to said first stop.

26. A device of the class described, including a support, a plate releasably secured to said support and having guiding means, an element slidable in the guiding means, a first stop into the path of which a part of said element is adapted to be projected to prevent motion of the first stop, said element having movable therewith one element of a timer, a second part of the timer attached to said plate, said parts being adapted to be brought into contacting relation when the element is moved to a position to prevent motion of the first stop, and to remain immovably engaged, and means to cause release of said parts at the end of a time period.

27. A dispensing cabinet comprising a support, means on said support which must be moved if dispensing is to occur, a time-stop mechanism controlled by and controlling said means, including a first stop movable with the first mentioned means, a second stop translatable on said support movable into and out of the path of the first stop and having a projection, and means for adjusting said projection lengthwise of said second stop, means for operating the second stop and having a projection, means so connecting said operating means with the first stop and with the support that the projections are engaged when said operating means is moved in one direction and disengaged and separated when said operating means moves in the opposite direction, whereby the second stop can move out of the path of the first stop, means for temporarily holding the first stop stationary while the second stop moves away therefrom, and means for annulling the action of the holding means at the end of the time period.

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