May 27, 1958 A. K. ANANDER 2,836,373

ROLL FILM SHEET DISPENSER

Filed Nov. 4, 1954 5 Sheets-Sheet 1

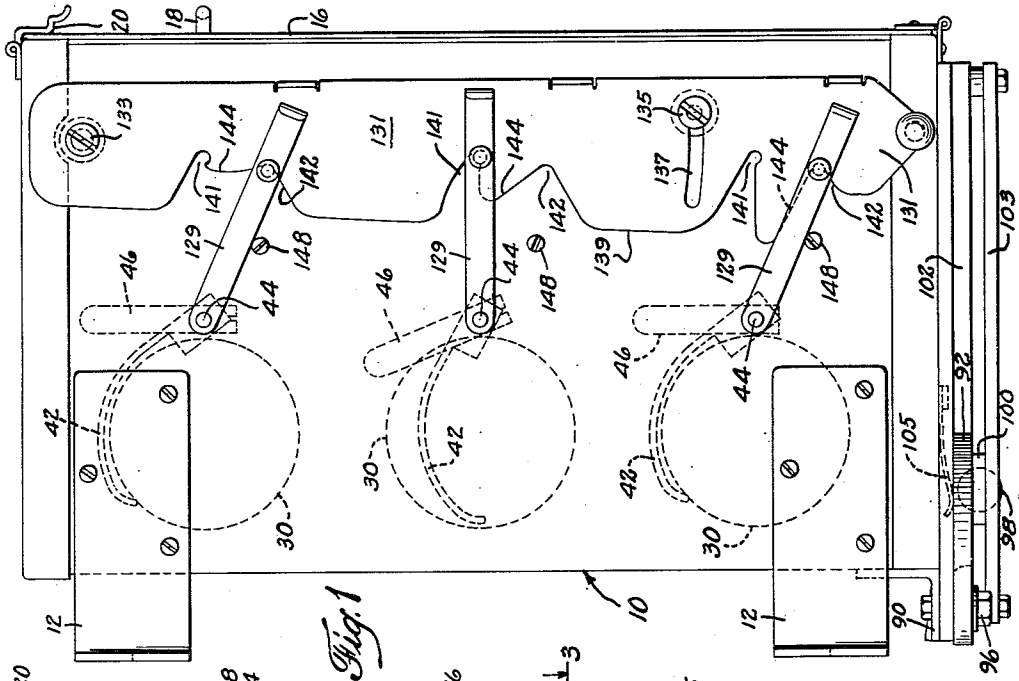


Fig. 1

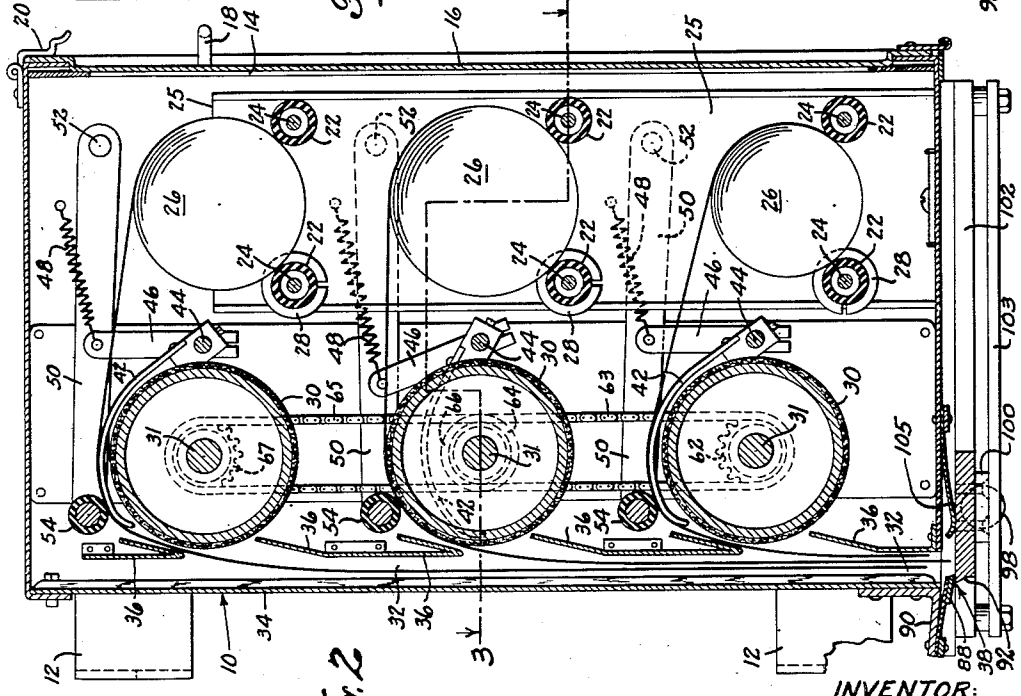


Fig. 2

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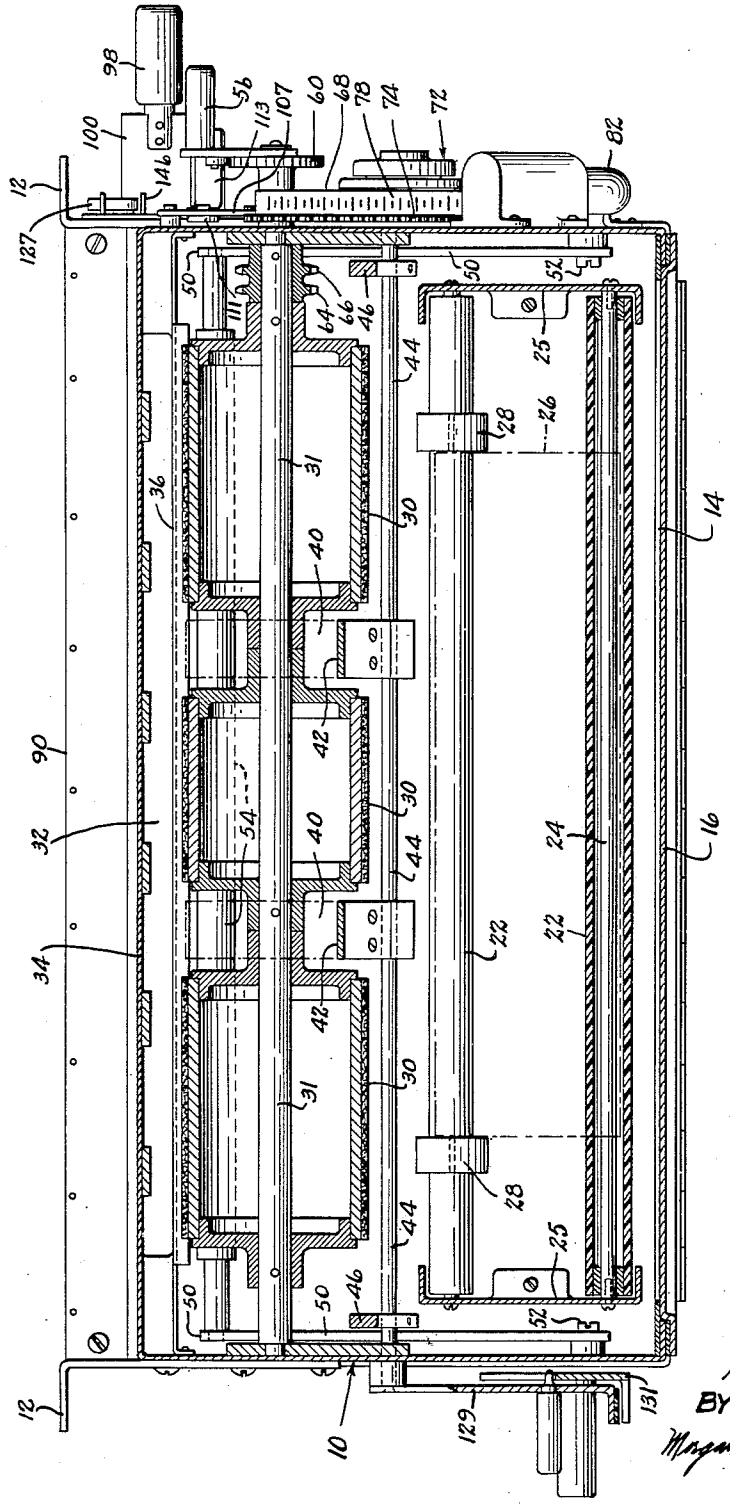


Fig. 3

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ROLL FILM SHEET DISPENSER

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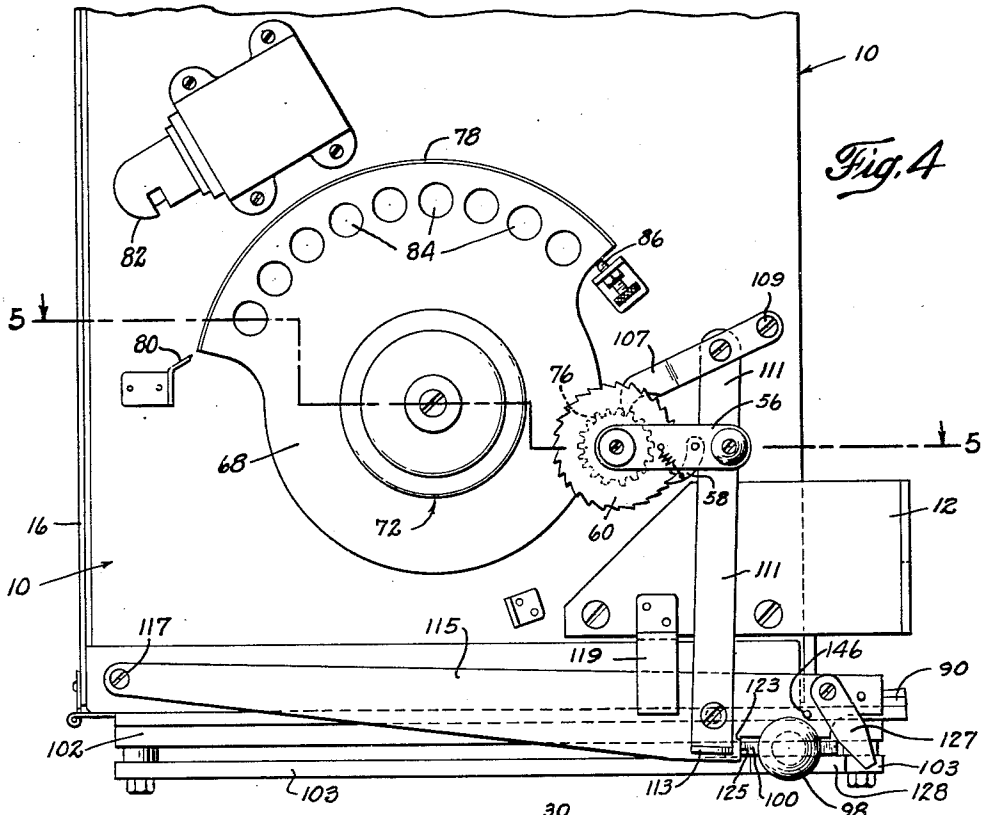


Fig. 4

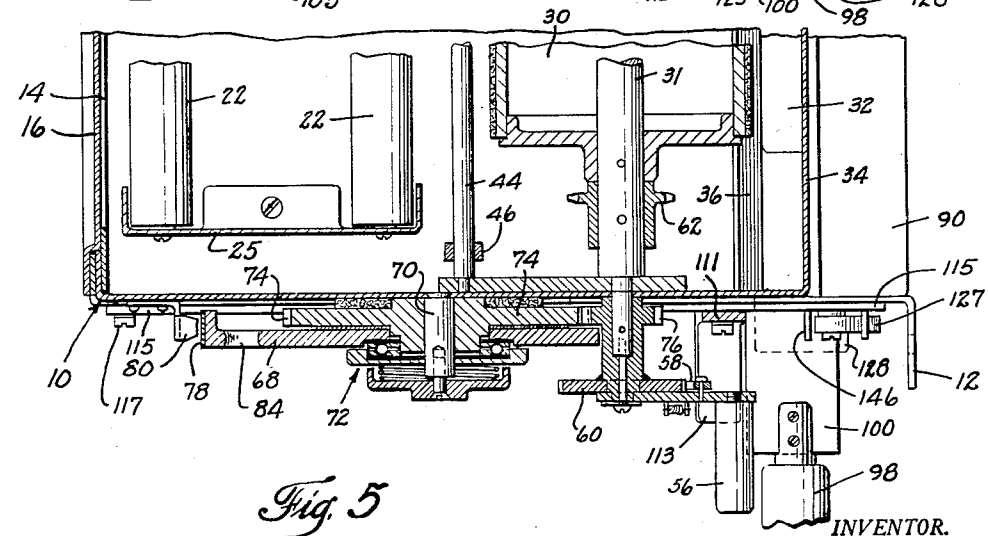


Fig. 5

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ROLL FILM SHEET DISPENSER

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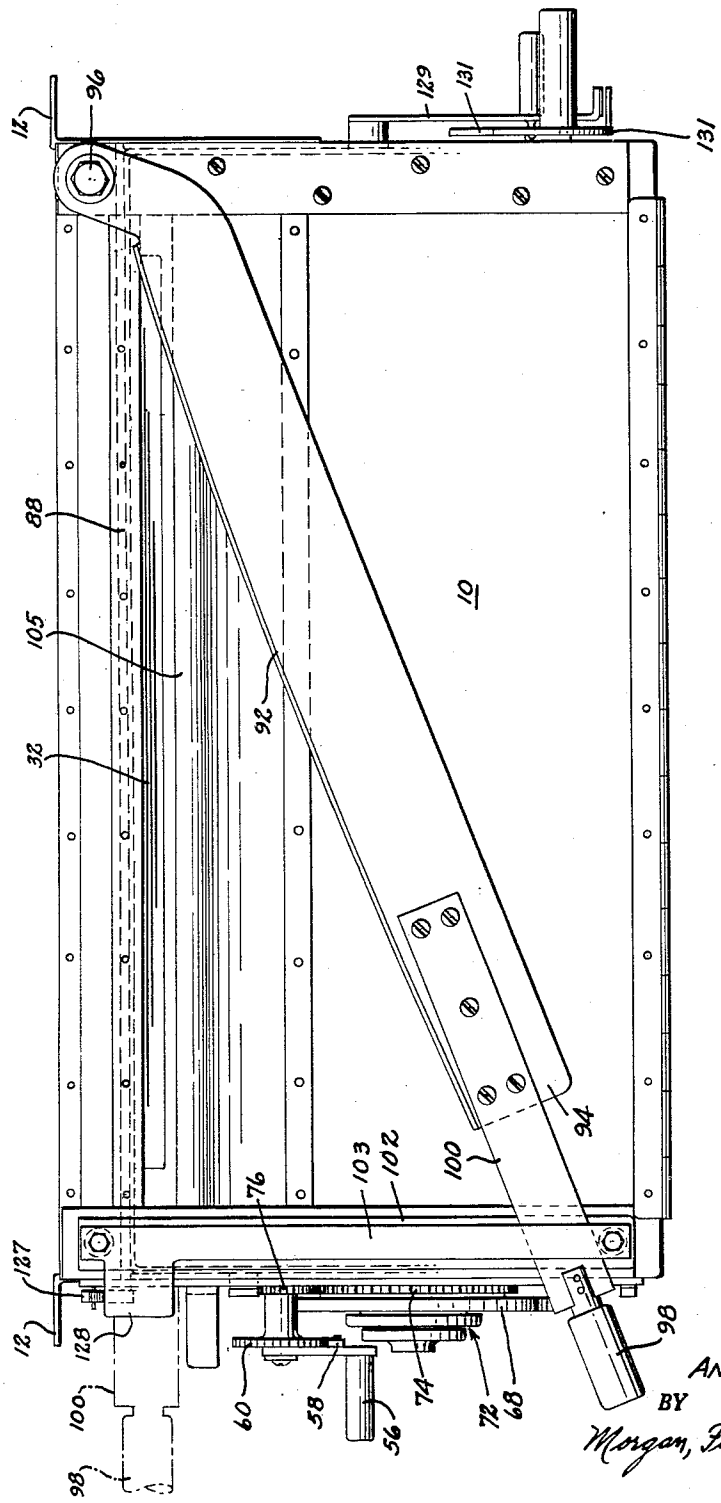


Fig. 6

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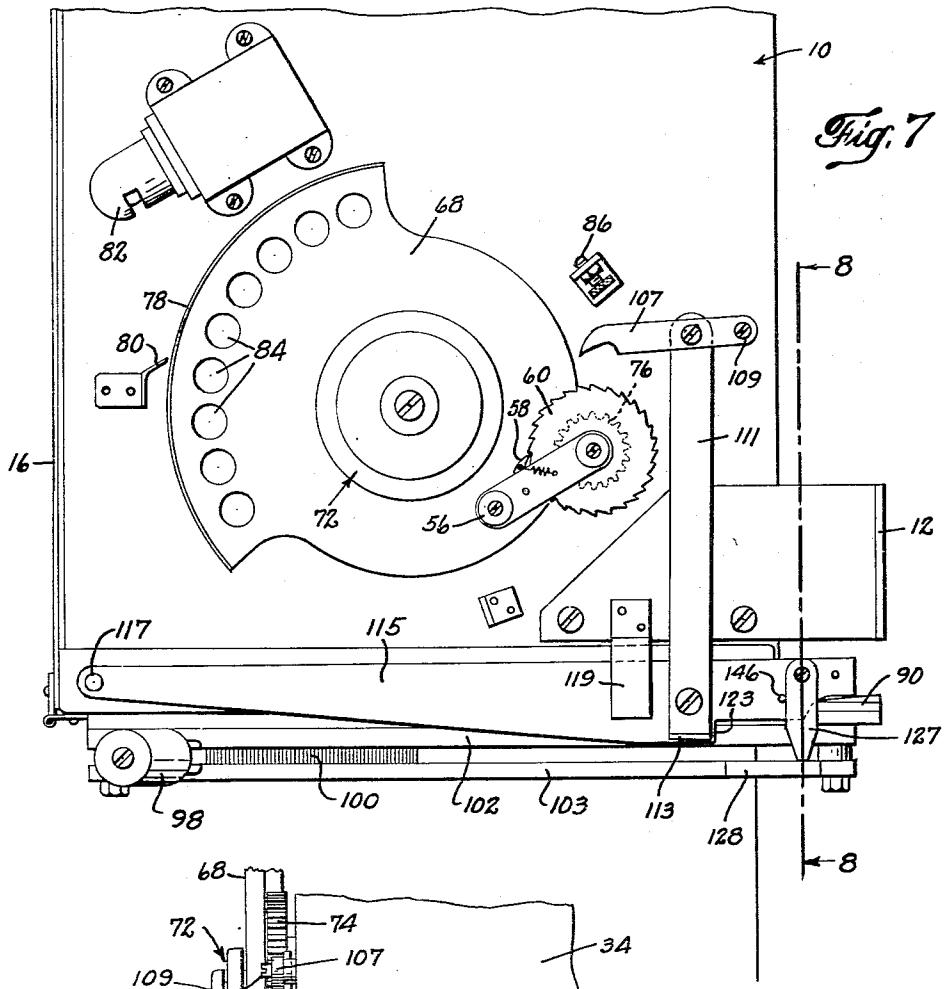


Fig. 7

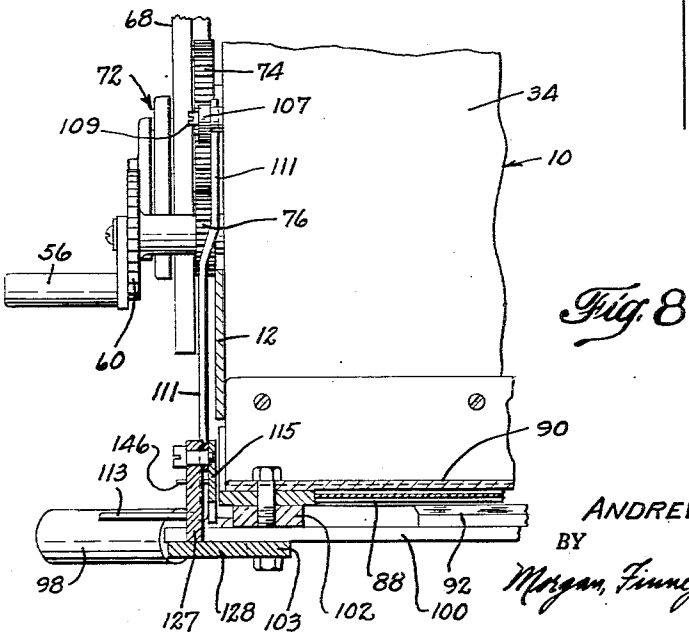


Fig. 8

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ROLL FILM SHEET DISPENSER

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Application November 4, 1954, Serial No. 466,802

14 Claims. (Cl. 242—55.4)

The invention relates to a film dispenser and more particularly to a dispenser for roll film whereby various widths of film may be selectively cut to predetermined sizes.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The present invention has for its object the provision of a novel and improved roll film sheet dispenser for dispensing sheets of film of predetermined size, and especially being capable of dispensing sheets of predetermined size in a plurality of different widths. A further object of the invention is the provision of a dispenser which may be conveniently mounted and operated in a dark room, or other suitable place, without error and with great ease. Still another object of the invention is the provision of suitable locking and sealing mechanisms on and in the dispenser whereby accidental exposure of the film to light or the accidental withdrawal of the wrong size film from the dispenser is prevented.

Briefly, the invention comprises a light-tight container having a plurality of film rolls rotatably mounted therein. Feeding means are provided in the container for feeding the film from the roll into a passageway which guides the film to a cutting means where the film is cut into sheets of predetermined sizes said feeding means preferably comprising a plurality of feed rollers mounted for simultaneous rotation. Each individual feed roller is provided with one or more cavities adapted to receive finger-like members mounted on a shaft adjacent the feed rollers. The finger members are constantly urged in a direction to pivot the members outwardly of the cavities in the feed rollers and to lift the film off the feed roller thereby preventing the film from being fed into the passageway. Pivoted guide rolls are also provided to bear against the outer surface of the film to urge the film into contact with the feed rollers whenever the finger members are retracted into the cavities. Manually operated means are provided for selectively rotating the finger members of individual feed rollers into the cavities in the rollers and a locking mechanism is also provided constructed so as to engage the selecting means to permit only one of the feed rollers to drive the film at any one time.

Cutting means are provided at the end of the passageway in the container to cut the film into sheets of predetermined sizes said cutting means constituting a light seal for the passageway when in its closed position. The cutting means is also inter-connected with the driving means in such a manner that movement of the feed rollers is prevented while the cutting means is in the closed position and sealing the passageway in the container. An

indicator is also provided on the outside of the container to indicate the sizes of the sheets being cut, the indicator being clutched with the driving means whereby the indicator may be returned to its initial reading after each sheet has been cut.

It will be understood that the foregoing general description and the following detailed description as well are exemplary and explanatory of the invention but are not restrictive thereof.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:

Fig. 1 is a side elevation of the dispenser showing the selecting means and the locking means therefor,

Fig. 2 is a vertical section through the center line of the dispenser showing the position of the film rolls, feed rollers and the mechanism for driving the film rolls,

Fig. 3 is a transverse section taken along the line 3—3 of Fig. 2 looking in the direction of the arrows,

Fig. 4 is a partial side elevation showing the side of the dispenser opposite to that shown in Fig. 1 showing the indicator, the cutting means and the inter-connecting mechanism between the driving means and the cutting means,

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 4 looking in the direction of the arrows,

Fig. 6 is a bottom view of the dispenser showing the cutting means in greater detail,

Fig. 7 is a side elevation similar to that of Fig. 4 showing the cutting means in its open position, and

Fig. 8 is a sectional view taken along the line 8—8 of Fig. 7 looking in the direction of the arrows.

Referring now to the drawings for a detailed description of a preferred and illustrative embodiment of the invention, and at first to Fig. 2, there is shown a substantially rectangular-shaped, light-tight container, generally designated by the numeral **10**, having mounting brackets **12** so as to be mountable upon a wall or other vertical support (not shown). At the front, the container **10** is provided with an access opening **14** and a cover **16** operable by means of the handle **18**. At the top of the container a catch **20** maintains the cover **16** in light-tight sealing engagement therewith. Positioned within the container **10** and adjacent the access opening **16** are a plurality of hollow rollers **22** mounted for rotation on the shafts **24** secured on the channel members **25** and disposed horizontally in parallel sets of pairs one above the other. The rollers **22** form supports for rolls of film **26** which are placed upon the rollers and positioned thereon by collars **28**. Each roll of film **26** has a width different from that of the other rolls or a different emulsion.

Also positioned within the container **10** are a plurality of feed rollers **30**, each of which, is positioned adjacent a roll of film **26**. The function of the feed rollers **30** is to selectively feed the film from the rolls **26** into a passageway **32**, formed between the back wall **34** of the container **10** and the film guides **36**, which directs the film downwardly to a cutting means **38** where it may be cut into sheets of predetermined size. To this end the feed rollers **30** are mounted on shafts **31** and provided with recesses or cavities **40** (Fig. 3) preferably formed by sections of decreased roller diameter. Suitable finger-like members **42**, adapted to fit within the recesses **40**, are mounted on shafts **44** positioned adjacent each feed roller **30**. Each of the shafts **44** is provided at one end with a lever **46** joined to a spring **48** which urges the lever **46** and shaft **44** in a direction tending to rotate the finger-members **42** out of the recesses **40**. Whenever the finger members are out of the recesses they contact the under-

side of the film from the rolls 26 and lift the film out of engagement with the feed rollers 30 thereby preventing the film from being fed into the passageway 32. Guide bars 50 are provided on each side of the container 10 and are pivotally joined thereto as at 52. Disposed between the guide bars 50 and secured to their ends are rotatable rollers 54 which rest upon the upper surface of the film and urge the film toward engagement with the feed rollers 30.

The feed rollers 30 are simultaneously rotated by means of a crank 56 (Fig. 5) acting through pawl 58 and ratchet 60. Rotation of ratchet 60 drives the lowermost shaft 31 and sprocket 62. An endless chain 63 is mounted on the sprocket 62 and a similar sprocket 64 is journaled on the next higher shaft 31 so that the rotation of the next shaft is effected at the same time. Rotation of the next shaft 31 is obtained by another endless chain 65 mounted on sprocket 66 and a similar sprocket 67 on the next higher shaft.

Means are provided on the outside of the container 10 for selectively determining which of the feed rollers 30 shall feed film from the rolls 26 into the passageway 32. As embodied, the means comprise manually operable levers 129 secured at one end to the shafts 44. Rotation of one of the levers 129 in a counterclockwise direction (as shown in Fig. 1) rotates the corresponding shaft 44 so as to retract the finger members 42 into the recesses 40 in one of the feed rollers 30 thereby allowing the pivotal guide bars 50 to urge the film into contact with that feed roller. In Fig. 1 the intermediate lever 129 is illustrated in this retracting position.

Locking means are also provided to insure that only one film roll will be fed to the cutting means at any one time. To this end a locking lever or arm 131 is pivotally secured at 133 to the container 10. A screw 135 in slot 137 limits the magnitude of pivotal movement of the lever 131. The back edge 139 of lever 131 is formed with a series of notches 141, 142, two of said notches being provided for each of the levers 129. Upper notches 141 are so located that the levers 129 are in their finger retracting position when placed within these notches while the notches 142 are so located that the levers 129 are in a finger removing position when placed within these notches. Additionally the edge portions 144 between the pairs of notches 141, 142 are formed so that the pivoting of the lever 131 will release any of the levers 129 from notches 141 before another lever 129 is placed in its notch. This construction insures against the possibility of raising one of the levers 129 to a retracting position with another lever already in the retracting position. Thus only one film roll is allowed to be driven at one time.

A correct indication of the amount of film being fed from the film roll is obtained by providing a rotatable indicator 68 journaled on a stub shaft 70 on the outside of the container 10. The indicator 68 is driven through a friction clutch 72 by a gear 74 meshing with gear 76 joined to shaft 31 and has a suitable scale 78 mounted on its periphery whereby the amount of film fed from the rolls 26 may be easily determined by means of a pointer 80. A small light 82 enables the operator to read the scale in the dark and finger holes 84 are provided in the body of the indicator to enable the operator to dial the indicator back to its initial position against the stop 86. As the pawl 58 and ratchet 60 operate in only one direction motion of the scale 78 cannot move or reverse the feed rollers 30, relative movement between the indicator 68 and the gear 74 being permitted by the spring-loaded friction clutch 72.

The passageway 32 terminates in an opening in the bottom of the container 10. Immediately adjacent the opening is the cutting means 38 which preferably comprises the usual shear type cutting blade. A stationary cutting edge 88 is secured to a bracket 90 at the back edge of the container while the movable cutting edge or blade 92 is pivoted at one end 96 and at its opposite end 94 mounted on a bar 100 provided with a handle 98. Bar 100 is positioned between guide bars 102—103, to correctly position the movable cutting blade 92 with respect to the stationary blade 88. A spring plate 105 is positioned intermediate of the upper surface of the movable blade 92 and the underside of the container so that it forms a light-tight seal with the blade when the blade is in its closed position. The cutting means thereby forms a light-tight seal for the passageway 32 whenever it is in its closed position.

Turning now to Fig 4, interlocking holding means are provided between the cutting means and the feed roller driving means to hold the driving means against operation whenever the cutting means is in its closed position blocking the passageway 32. The holding means preferably comprises a pawl 107 pivoted on the side of container at 109 which normally engages the gear 76 and prevents rotation thereof. A link 111 is joined at one end to the pawl 107 intermediate of its end portions and at its opposite end is provided with a lug 113. The link 111 is also secured to a locking lever 115 for the cutting means said lever being pivotally connected to the container 10 at 117 so as to pivot within the guide member 119. The lower edge of the lever 115 is formed with a notched surface 123 adapted to abut the front edge 125 of the bar 100 to prevent the withdrawal of the cutting blade 92 from the closed position. Lever 115 is also provided at its outer end portion with a pivoted peg 127 which maintains the lever in a releasing position (see Fig. 7) by abutment with an extension 128 on the lower guide bar 103. When the lever 115 is raised to its upper position the link 111 lifts the pawl 107 out of engagement with the gear 76 thereby permitting operation of the driving means by the crank 56.

The operation of the dispenser is as follows: The operator places his hand on the handle 98 of the cutting means and at the same time lifts the locking lever 115 by placing his thumb under the lug 113 on link 111 and thrusting upwardly. Upward movement of the link 111 removes the pawl 107 from the gear 76 and releases the driving means for operation. When the locking lever 115 is moved upwardly the notch 123 is removed from the front edge of bar 100 and the knife may be drawn forwardly to its open position thereby opening the passageway 32. As the knife is withdrawn the pivoted peg 127 pivots against the stop 146, abuts the extension 128 on the guide bar 103 and retains the lever 115 and pawl 107 in their open positions.

The operator now selects the roll he wishes to cut (if he has not done this already) and draws the locking lever 131 forward, at the same time, manually lifting the proper selective lever 129. As the lever 131 is drawn forward the previously set lever 129 drops against the stops 148. Lever 131 is then released and lever 129 placed in notch 141. This retracts the finger members 42 into the recesses 40 of the selected feed roller 30 permitting the guide bar roller 54 to urge the film into feeding engagement with the feed roller.

Crank 56 is then turned until the indicator indicates that the proper length has been fed through the cutting means whereupon the handle 98 is thrust toward the back to close the cutting means and cut the film. When the bar 100 strikes peg 127 the locking lever 115, link 111 and pawl 107 are dropped to their locking positions. The indicator is then dialed to its initial position against the stop.

It will be noted that when the next operator uses the dispenser and wishes film from a different roll he will change the positions of the selective levers 129 thereby rotating the fingers 42 out of the recesses. This will withdraw the end of the film just cut from the cutting means thereby insuring that on the next cut the first film will not be cut again.

The invention in its broader aspects is not limited

to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

I claim:

1. A roll film sheet dispenser comprising in combination a light-tight container having a passageway, a plurality of film rolls rotatably mounted in the container, individual feed rollers for feeding film from the film rolls into the passageway, means for simultaneously driving the feed rollers, means for maintaining the film on the rolls out of engagement with the feed rollers, means for selectively positioning the film of one roll on its feed roller, and cutting means to cut the film into sheets of predetermined sizes.

2. A roll film sheet dispenser as set forth in claim 1 in which the means for maintaining the film out of engagement with the feed rollers retracts the film from the cutting means whenever another film is to be cut.

3. A roll film sheet dispenser as set forth in claim 1 having locking means for engagement with the selective positioning means whereby only one film may engage a feed roller at one time.

4. A roll film sheet dispenser as set forth in claim 1 in which the cutting means forms a light-tight seal for the passageway when in a closed position.

5. A roll film sheet dispenser as set forth in claim 4 having an interlock between the cutting means and the feed roller driving means to prevent movement of the feed rollers while the cutting means is in a closed position.

6. A roll film sheet dispenser comprising in combination a light-tight container having a passageway therein, a plurality of film rolls rotatably mounted within the container, individual feed rollers for feeding the film from the rolls into the passageway, means for simultaneously driving the feed rollers, retractable means adjacent each feed roller adapted to lift the film off the roller in the non-retracted position, pivoted members bearing against each film to press the film into contact with the feed rollers when the retractable means are in a retracted position, means for selectively retracting one of said retractable means, and cutting means to cut the film into sheets of pre-determined sizes.

7. A roll film sheet dispenser as set forth in claim 6 having an indicator driven by the driving means for the feed rollers to indicate the length of film to be cut and adapted to be moved in a direction opposite to the driving means to return the indicator to its initial reading.

8. A roll film sheet dispenser as set forth in claim 6 in which the feed rollers are provided with cavities, and the retractable means comprises a plurality of finger-like members mounted for partial rotation so as to be retractable within the cavities of the feed rollers.

9. A roll film sheet dispenser as set forth in claim 8 in which the pivoted members are connected with the retractable finger members so as to force the film against the feed rollers when the finger members are retracted into the cavities in the feed rollers.

10. A roll film sheet dispenser comprising in combination a light-tight container having a passageway therein, a plurality of film rolls rotatably mounted within the container, a plurality of individual feed rollers in the container for feeding the film from the rolls into the passageway, means for simultaneously driving the feed rollers, each of said rollers having cavities formed therein, a rotatable shaft adjacent each feed roller, finger-like members mounted thereon and adapted to fit within the cavities in the feed rollers, means for urging the shaft in a direction to rotate the finger members out of said cavities, pivoted guides for urging the film into engagement with the feed rollers, a manually actuated lever for each shaft whereby the shaft may be rotated to retract the finger members into the cavities in the feed rollers, and cutting means to cut the film into pre-determined sizes.

11. A roll film sheet dispenser as set forth in claim 10 having a lock for the manually actuated levers comprising a pivoted arm having a pair of notches for each of said levers located in one edge thereof, said notches being so posiitoned that only one lever may be locked in a finger retracting position at one time.

12. A roll film sheet dispenser as set forth in claim 10 in which the driving means for the feed rollers is movable in only one direction and having an indicator frictionally engaged therewith to move in accordance with the driving means to indicate the size of the film sheet, said indicator being movable in a direction opposite to the direction of the driving means to enable the indicator to be turned to a zero reading after each cutting.

13. A roll film sheet dispenser as set forth in claim 10 having means for holding the driving means inoperative said means being connected to the cutting means to hold the driving means against operation when cutting means are in a closed position and to permit operation when the cutting means are in an open position.

14. A roll film sheet dispenser as set forth in claim 11 in which the notches in the locking lever are positioned to simultaneously release all of the manually actuated levers upon pivotal movement of the locking lever.

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