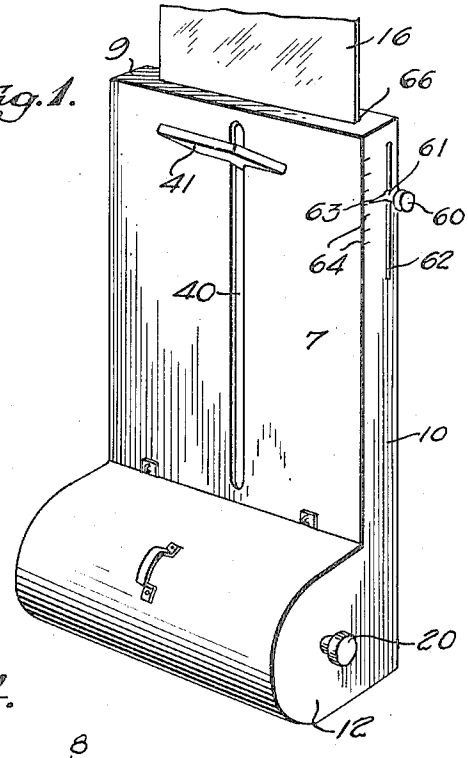
Jan. 31, 1950 B. H. WIMER 2,496,080

SHEET DISPENSING DEVICE FOR CARBON PAPER ROLLS

Filed Sept. 26, 1945 3 Sheets-Sheet 1

Fig. 1.



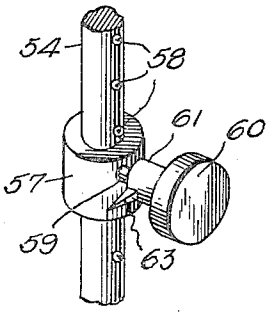
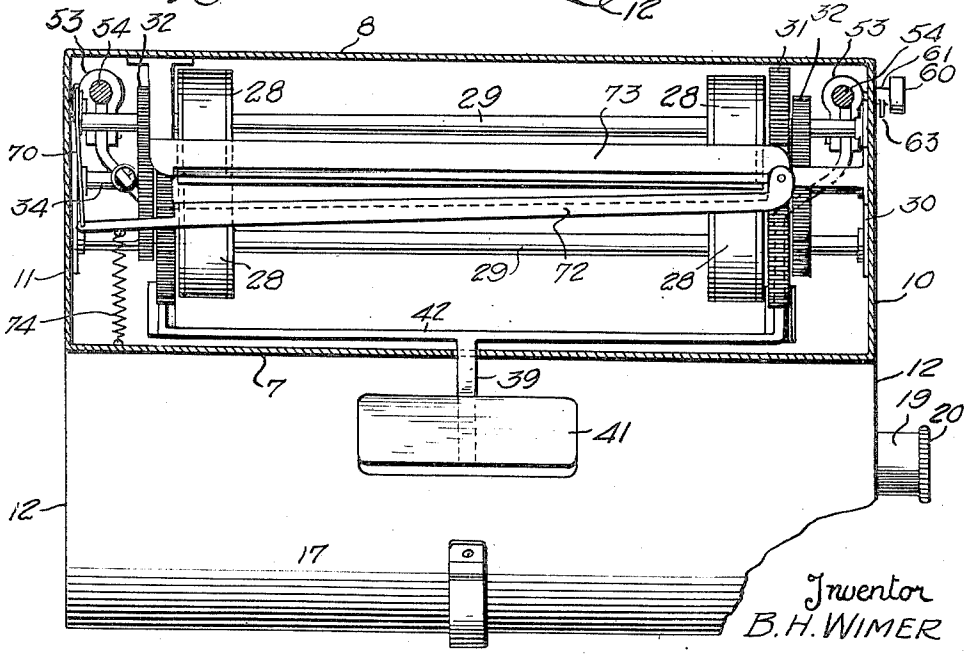


Fig. 5.

Fig. 4.



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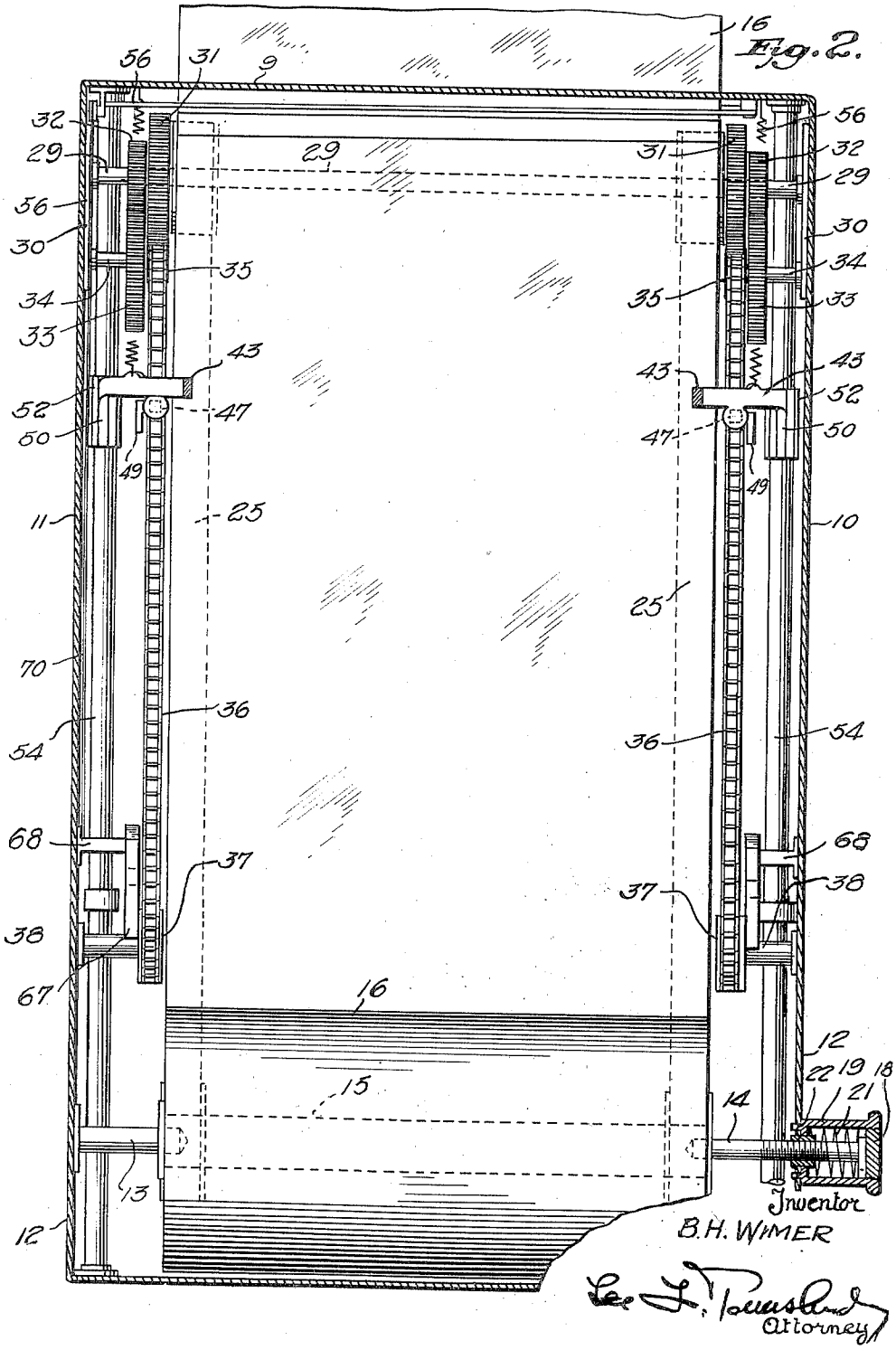
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SHEET DISPENSING DEVICE FOR CARBON PAPER ROLLS

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Fig. 2.



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SHEET DISPENSING DEVICE FOR CARBON PAPER ROLLS

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Fig. 3.

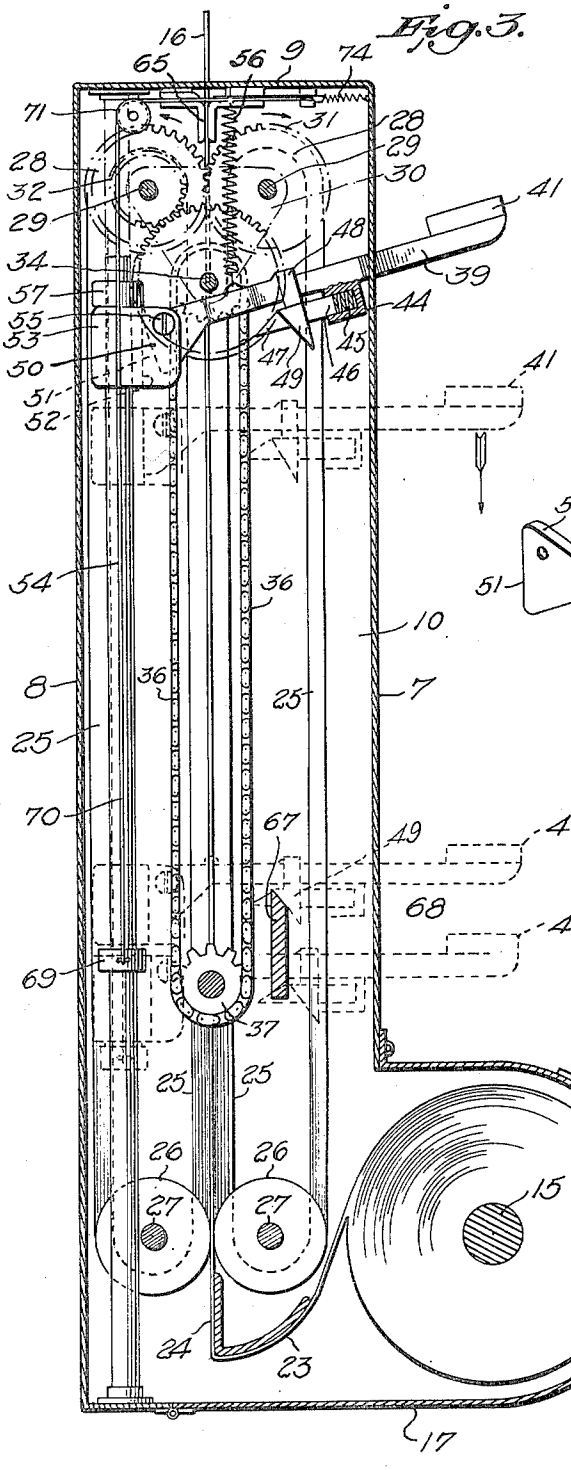
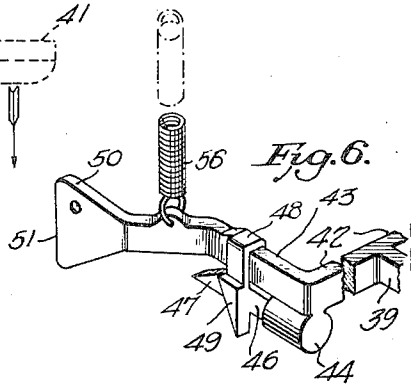


Fig. 6.



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Patented Jan. 31, 1950

2,496,080

UNITED STATES PATENT OFFICE

2,496,080

SHEET DISPENSING DEVICE FOR CARBON PAPER ROLLS

Bertram H. Wimer, Washington, D. C.

Application September 26, 1945, Serial No. 618,699

11 Claims. (Cl. 164—42)

1

This invention relates to apparatus for dispensing material in sheets of predetermined length from a supply roll on which it is wound as a continuous web of considerable length.

In the production of paper sheets, particularly sheets of carbon paper for typewriter use, the paper is produced as a continuous web of proper width and wound in relatively great lengths upon stock rolls. It is subsequently drawn from the rolls and cut into appropriate lengths for packaging in containers in which the sheets are delivered to the trade. This practice entails a multiplicity of operations which are reflected in production and consumer cost.

An object of the present invention is to provide an apparatus for individual consumer use by which sheets of carbon paper may be drawn directly from stock rolls and delivered in desired lengths as and when they are intended to be used.

Another object is to provide, in an apparatus of this character, means adjustable to vary the extent of operating movement of the sheet delivering means to provide a predetermined sheet length at each dispensing operation of the apparatus.

Another object is to provide, in an apparatus of this character, a novel mechanism by which limited manual movement of an actuator is translated into proportionally greater linear movement of the sheet delivering means.

Still another object is to provide sheet severing means operative by continued movement of the actuator following completion of its sheet delivering stroke.

Other objects will be apparent from the description. The instant disclosure constitutes an embodiment of this invention by which it is reduced to practice. Although it is illustrated as used in the dispensing of carbon paper sheets, it is not limited to such use, and the details disclosed may be varied as desired within the scope of the invention as claimed.

In the drawings:

Figure 1 is a perspective view of the apparatus;

Figure 2 is a front elevation with the front wall removed;

Figure 3 is a vertical section taken from the left of Figure 1;

Figure 4 is a top elevation with the top wall removed;

Figure 5 is a fragmentary perspective view illustrating a detail of the sheet length adjusting means; and

Figure 6 is a perspective view of the actuator member.

2

In the practice of my invention, there is provided a rectangular casing, adapted to be supported on the side of a typewriter desk or the like, comprising parallel front and back walls 7 and 8, respectively, a top wall 9 and side walls 10 and 11. The front wall 7 is shorter at its lower end than the back wall and terminates in the horizontal plane of the upper edges of forwardly directed feet 12 integral with the side walls. These feet 12 mount inwardly directed spindles 13 and 14 which engage in and support the ends of a freely rotatable core 15 of a stock roll 16 of carbon paper. A hinged cover 17 encompasses the roll and provides a bottom wall for the casing when closed. As shown in Figure 2, the spindle 14 is in threaded engagement with its support foot 12 and extends laterally outward thereof as a stem provided with a polygonal bolt head 18. The head is housed within a conforming walled cap 19 having a knurled operating head 20. An expansion spring 21 surrounds the spindle stem between the bolt head 18 and an inward annular base flange 22 of the cap and normally holds the base flange against the adjacent foot 12 which is serrated or apertured to receive complemental engaging means on the base flange to prevent rotation of the cap and spindle. When the cap 19 is pulled outwardly to release the holding engagement of its base flange, it may be rotated to advance or retract the spindle 14 to increase or lessen its frictional engagement with the stock roll core 15 and thus regulate tension of the roll.

The web of paper from the roll 16 is trained inwardly over a forming baffle 23 having an arcuate surface of reverse curvature with respect to the periphery of the stock roll. This baffle extends between and is supported by the casing side walls adjacent the bottom end of the casing. At the inner edge the baffile is formed with an upwardly directed vertical planar lip 24 which flattens out the web as it passes thereover after its roll bend has been neutralized by passage over the arcuate portion 23.

After it leaves the lip 24, the paper web is gripped between the opposed contacting faces of a pair of endless belt conveyors 25, preferably of the V-belt type, disposed at the side edges of the web. The belts are trained over lower sheaves 26 mounted on parallel shafts 27 supported by and extending between the casing side walls in rear of the stock roll. These sheaves are in vertical registry with upper sheaves 28 disposed in the upper end of the casing on shafts 29 journalled in bearing plates 30 suitably mounted on the casing side walls. The upper sheaves 28

are fixed to their shafts for rotation therewith. Their shafts 29 have fixed thereto meshed gears 31 whereby the sheaves 28 are caused to rotate in opposite directions. One shaft, preferably the rear shaft 29, has fixed thereon a driven pinion 32 in constant mesh with a larger driving gear 33 fixed on a stub shaft 34 journalled in the adjacent plate 30 with its axis disposed in the vertical plane of the paper web. Also fixed on each stub shaft 34 for rotation therewith is a sprocket wheel 35 in operative engagement with the links of an endless drive chain 36 which at its lower end is trained over an idler sprocket 37 rotatable on a stub shaft 38 suitably supported on the adjacent side wall of the casing. By this means, when the drive chain 36 is moved, the driven upper conveyor sheaves 28 are caused to rotate in opposite directions to effect operation of the sheet conveyor belts 25.

Driving movement is imparted to the chains 36 by means of a manually operated actuator lever 39. This lever 39 extends through the casing front wall 7 and is freely movable for vertical movement in a centrally disposed vertical slot 40 in the front wall. It is provided with a finger piece 41 at its outer end externally of the casing and is forked internally of the casing to provide oppositely and laterally extending arms 42. Each arm 42 of the actuator lever is formed with a rearwardly directed end portion 43 appropriately spaced to clear the adjacent run of the conveyor belt 25. Each lever portion 43 has rigidly attached to its under side a rearwardly opening socket member 44 housing an expansion spring 45 and the shank 46 of a pawl 47 normally urged outwardly by the spring into the full line position shown in Figure 3. The pawl is guided by a saddle bracket 48 integral therewith and slidably engaged over the lever portion 43. The pawl also is provided with a laterally offset depending cam 49 which functions to retract the pawl in a manner to be described.

The inner end of each lever portion 43 is flared towards the adjacent side wall of the casing and terminates in a vertically enlarged and rearwardly directed lip 50 having a depending straight inner edge 51 perpendicular to the plane of the top edge of the actuator lever. The lip is pivotally connected between a pair of lateral lugs 52 integral with a sleeve 53 that is freely slidable vertically on a bar standard 54 disposed in the rear corner of the casing and fixed at its top and bottom. A pivot pin 55 passes through the lugs 52 and the upper inner edge of the lip 50 provides a fulcrum for the actuator lever that is shiftable vertically with movement of the sleeve 53 on its standard. At each side of the casing, a retracting spring 56 is secured at its ends to the top wall of the casing and to the actuator lever forwardly of its fulcrum, serves to hold the actuator lever assembly in its elevated inoperative position as shown in Figure 3, with the lever inclined upwardly and outwardly from its fulcrum point.

On this raised inoperative position of the actuator lever, the pawl 47 clears the driving chain 36 and one of the fulcrum sleeves 53, preferably that adjacent the side wall 10, is held against further upward movement by a gage sleeve 57 that is vertically adjustable on the standard 54. The standard, as shown in Figure 5, is provided with a vertical series of spaced radial bores 58 along its upper end portion. A stud 59 mounted in a spring retracted setting handle 60 passes through the gage sleeve for anchorage in any

bore 58 of the series to lock the gage sleeve on the standard. The shank 61 of the handle 60 is passed through a vertical slot 62 in the casing side wall and carries a pointer 63 which rides over the outer face of the wall to cooperate with the scale indicia 64 thereon for indicating various sheet lengths. By this means the gage sleeve 57 may be set to provide for a desired sheet length, such as letter, legal size, etc.

When the finger piece 41 of the actuator lever is pressed down, the lever pivots on its fulcrum until stopped in a horizontal position by the engagement of the straight edge 51 against the body of the fulcrum sleeve 53. During this rocking movement of the actuator lever, the pawls 47 enter and engage links of the driving chains 36 as shown in the upper dotted line position in Figure 3. Continued downward pressure of the actuator lever causes the entire lever assembly to move bodily downward, with the fulcrum sleeves 53 sliding down their standards and with the front flights of the driving chains 36 traveling downwardly under the push imparted by the pawls 47 to effect rotation of the conveyor sheaves 28 through the gearing connection previously described. Preferably the gearing ratio is two to one so that the conveyor belts 25 will travel two inches upwardly for each inch of travel downwardly of the driving chains. At the upper end of the casing, the web 16 of paper passes from the conveyor belts upwardly between a pair of guide members 65 supported on the casing top wall and through a discharge slot 66 in the wall.

Means for automatically disengaging the actuator lever and driving chains at a predetermined point in the travel of the actuator is provided in the lower portion of the casing. It comprises a fixed cam or abutment 67 in the path of travel of each cam 49 of the pawls 47. The fixed cams 67 are mounted on rearwardly extending brackets 68 carried by side walls of the casing. The contacting faces of the cams 49 and 67 are inclined so that, as they engage, the pawls 47 will be retracted against tension of their socket springs to disengage the chain links and thus halt further movement of the conveyors and paper web.

The length of sheet delivered through the discharge slot 66 at the top of the casing is determined by the setting of the gage sleeve 57. This sleeve provides a stop for upward movement of the actuator fulcrum sleeve 53 and defines the starting point for the operating stroke of the actuator. The higher the gage sleeve 57 is set, the greater will be the extent of downward travel of the actuator lever and driving chains until their point of disengagement is reached.

Following disconnection of the actuator and driving chains upon engagement of the cams 49 and 67, the bottom edge of one sliding fulcrum sleeve 53 engages a ring member 69 that is freely slidable on the standard 54. The ring 69 has connection with a pull cable 70 that is trained over a pulley 71 in the top of the casing. The upper end of the cable is connected to the free end of a movable cutter blade 72 that is pivoted at its other end to fixed blade 73 to swing in a horizontal plane across the web guides 65 into engagement with said fixed blade 73 whereby to sever the delivered portion of the paper web. A retraction spring 74 between the free end of the movable blade 72 and the front 7 of the casing returns the blade 72 to inoperative position when downward pull on the cable 70 is relaxed.

By this means, continued downward movement of the actuator to the lowermost dotted line position, as shown in Figure 3, operates to cut the paper web and deliver the severed portion as a sheet of the length selected.

When manual pressure on the actuator lever is released at the conclusion of its downward stroke, the springs **56** pull the lever upwardly until the sliding fulcrum sleeves **53** reach the upper limit of their travel as defined by the adjustment of the gage sleeve **57**. This movement restores the actuator lever to its elevated position as shown in full lines in Figure 3, and the apparatus is then ready for the next dispensing operation.

I claim:

1. A device for dispensing sheets from rolls comprising a casing having a discharge aperture, a supply roll, a material conveyor between said roll and aperture, an actuator manually movable bodily in the casing, a member on said actuator engageable with a conveyor element to operate the same, means to disconnect said actuator and conveyor at a predetermined point, material severing means adjacent said discharge aperture, and an operating connection between said actuator and the severing means.

2. A device for dispensing sheets from rolls comprising a casing, a supply roll therein, a conveyor operative in said casing to draw a web of material from said roll and deliver it from the casing, an actuator manually operative for bodily movement in the casing, coupling means on said actuator engageable with an element of the conveyor to drive the same by movement of the actuator, means operative automatically to disconnect the coupling means at a predetermined point, and actuator engageable means movable in the casing to various fixed positions of adjustment to regulate the length of conveyor operating movement of the actuator.

3. A device for dispensing sheets from rolls comprising a casing having a discharge aperture, a supply roll, a material conveyor between said roll and aperture, an actuator manually movable bodily in the casing, a member on said actuator engageable with a conveyor element to operate the conveyor, means automatically operative to disconnect said actuator and conveyor at a predetermined point, material severing means adjacent the discharge aperture, an operating connection between said actuator and the severing means, and an actuator stop member movable in the casing to fixed positions of adjustment to regulate the length of conveyor operating movement of the actuator.

4. In a sheet dispensing device having a material supply roll and a material delivery point, a material conveyor between said roll and delivery point, an actuator bodily movable in a defined path, a driven member adjacent the path of travel of said actuator, coupling means on said actuator engageable with said driven member to drive the same by bodily movement of the actuator, a fixed abutment adjacent the path of actuator travel and engageable with said coupling means to disconnect the actuator and driven member, and an abutment engageable with said actuator to define one limit of its travel, said abutment being movable to different positions of adjustment to regulate the length of the path of travel of the actuator.

5. In a sheet dispensing device having a material supply roll and a material delivery point, a material conveyor between said roll and delivery point, a support shiftable between said roll and delivery point, an actuator lever fulcrumed on said support and manually operable to shift the lever and support as a unit, a driven chain and sprocket assembly, gearing operatively connecting the assembly and the conveyor, chain engaging means on the lever operative by manual movement of the lever on its fulcrum to drive said chain in accordance with bodily movement of said lever and its support as a unit, means biasing said lever to chain disengaged position on the release of manually applied force, and fixed means cooperative with said lever-carried chain engaging means to disconnect said lever and chain at a predetermined point in the path of travel of the lever under the application of manual force.

6. In a sheet dispensing device having a material supply roll and a material delivery point, a material conveyor between said roll and delivery point, a support shiftable between said roll and delivery point, an actuator lever fulcrumed on said support and manually operable to shift the lever and support as a unit, a driven chain and sprocket assembly, gearing operatively connecting said assembly and the conveyor, chain engaging means on said lever operative by manual movement of the lever on its fulcrum to drive said chain in accordance with bodily movement of the lever and its support as a unit, means biasing said lever to chain disengaged position, and said biasing means acting to return said lever and its support as a unit to initial position in the absence of manual force applied to the lever.

7. In a sheet dispensing device having a material supply roll and a material delivery point, a material conveyor between said roll and delivery point, a support shiftable between said roll and delivery point, a manually operable actuator lever pivotally connected at one end to said support to rock thereon, a stop on said lever engageable with said support to translate rocking movement of the lever to straight linear movement of the lever and support as a unit, chain and sprocket drive means for said conveyor adjacent the path of travel of said lever, chain engaging means on said lever operative on rocking movement of the lever into stop engagement with its support whereby to drive said chain and conveyor by bodily movement of the lever and support, and means operative to rock said lever to chain disengaged position upon release of manual operating force on the lever.

8. In a sheet dispensing device having a supply roll of material to be dispensed and a delivery point therefor, a material conveyor between said roll and point, an actuator bodily reciprocable between said roll and point, means operatively connecting said actuator and conveyor for driving the conveyor by movement of the actuator in one direction, means for disconnecting the actuator and conveyor when the actuator has travelled a predetermined distance in a conveyor driving direction, material severing means adjacent the delivery point, means operative by engagement with said actuator upon its movement past the disconnecting means to operate said severing means to deliver a sheet of the material, and means for returning the actuator in an opposite direction after completion of its operating stroke.

9. A device for dispensing sheets from rolls comprising a casing, a roll of material to be dispensed mounted therein, said casing having a sheet discharge aperture remote from the roll, material conveyor means operative between said

roll and the discharge aperture for moving a web of material from said roll through said aperture, an actuator extending through a wall of the casing, means in said casing supporting the inner end of said actuator for bodily movement therein, means on said actuator engageable with an element of the conveyor in one position of the actuator for movement of the conveyor by bodily movement of the actuator, and means supported in said casing in the path of movement of the actuator for automatically disengaging the actuator and conveyor when the actuator has travelled a predetermined distance.

10. A device for dispensing sheets from rolls comprising a casing, a roll of material freely rotatable therein, one wall of said casing having a discharge aperture therein, a pair of opposed endless belt conveyors in said casing and operative to grip and move a web of material from the roll through said discharge aperture, a chain and sprocket drive means in operative connection with said conveyors, an actuator lever extending through a wall of the casing, a support mounted in the casing for linear movement therein, a pivotal connection between said support and the inner end of said lever, a pawl on said lever engageable with said chain on movement of the lever in one direction to move said chain with the lever and its support, cam means fixed in said casing in the path of lever movement and engageable with said pawl to disconnect the drive chain and lever at a predetermined point, and spring means operative on said lever to return it to initial position following disconnection of the lever and drive chain.

11. In a sheet dispensing apparatus, a casing having a discharge aperture in one end thereof, a roll of material in the other end thereof, opposed endless belt conveyors extending longitudinally in the casing and arranged to grip material therebetween and convey it from the roll

for delivery through the discharge aperture, a standard disposed longitudinally in the casing, a sleeve freely slidable on said standard, an actuator lever pivotally attached at one end to said sleeve and extending through the wall of the casing at its other end to provide an operating handle, a drive sprocket journalled in the casing, gearing operatively connecting said conveyors and sprocket, an endless chain engaging said sprocket and disposed longitudinally of the casing, means on said actuator lever engageable with said chain on movement of the lever in one direction to connect the chain and lever for movement together whereby to operate the conveyors, said actuator lever being bodily movable in opposite directions longitudinally of the casing, a member fixed in the casing in the path of movement of the lever and engageable therewith to disconnect said lever and chain at a predetermined point, and an abutment on said standard for engagement by said lever mounting sleeve to limit movement of the actuator lever in one direction, said abutment being adjustable to different fixed positions on the standard whereby to regulate the length of material delivered through the casing discharge aperture.

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