June 23, 1936. G. W. MUDD 2,045,046

PAPER CUTTING MACHINE

Filed May 31, 1934 6 Sheets-Sheet 1

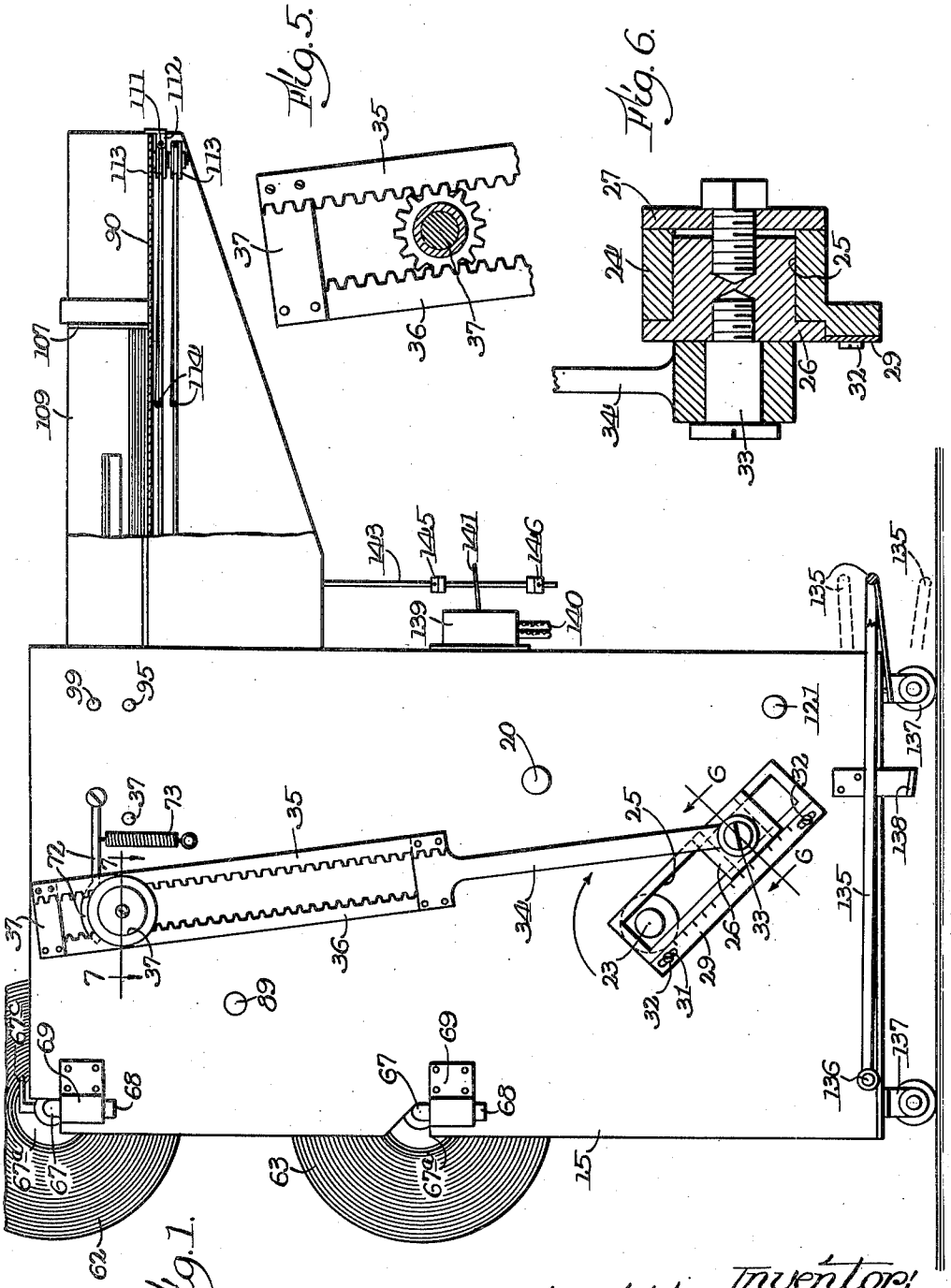


Fig. 1.

Fig. 5.

Fig. 6.

Inventor:
Garrett W. Mudd
By: [illegible]
Atty.

June 23, 1936. G. W. MUDD 2,045,046

PAPER CUTTING MACHINE

Filed May 31, 1934 6 Sheets-Sheet 2

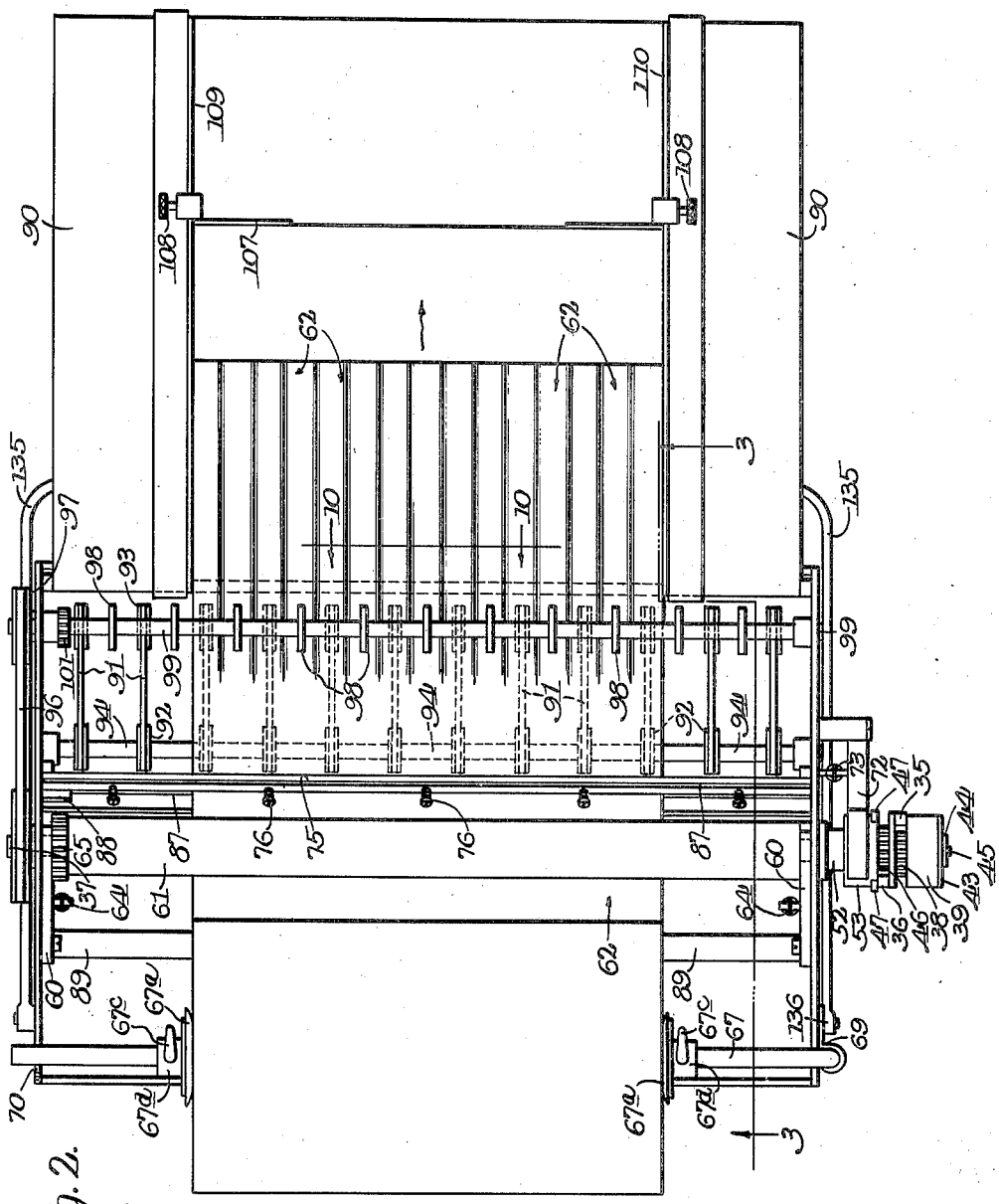


Fig. 2.

Inventor:
Garrett W. Mudd
By: [signature] Atty.

June 23, 1936. G. W. MUDD 2,045,046

PAPER CUTTING MACHINE

Filed May 31, 1934 6 Sheets-Sheet 3

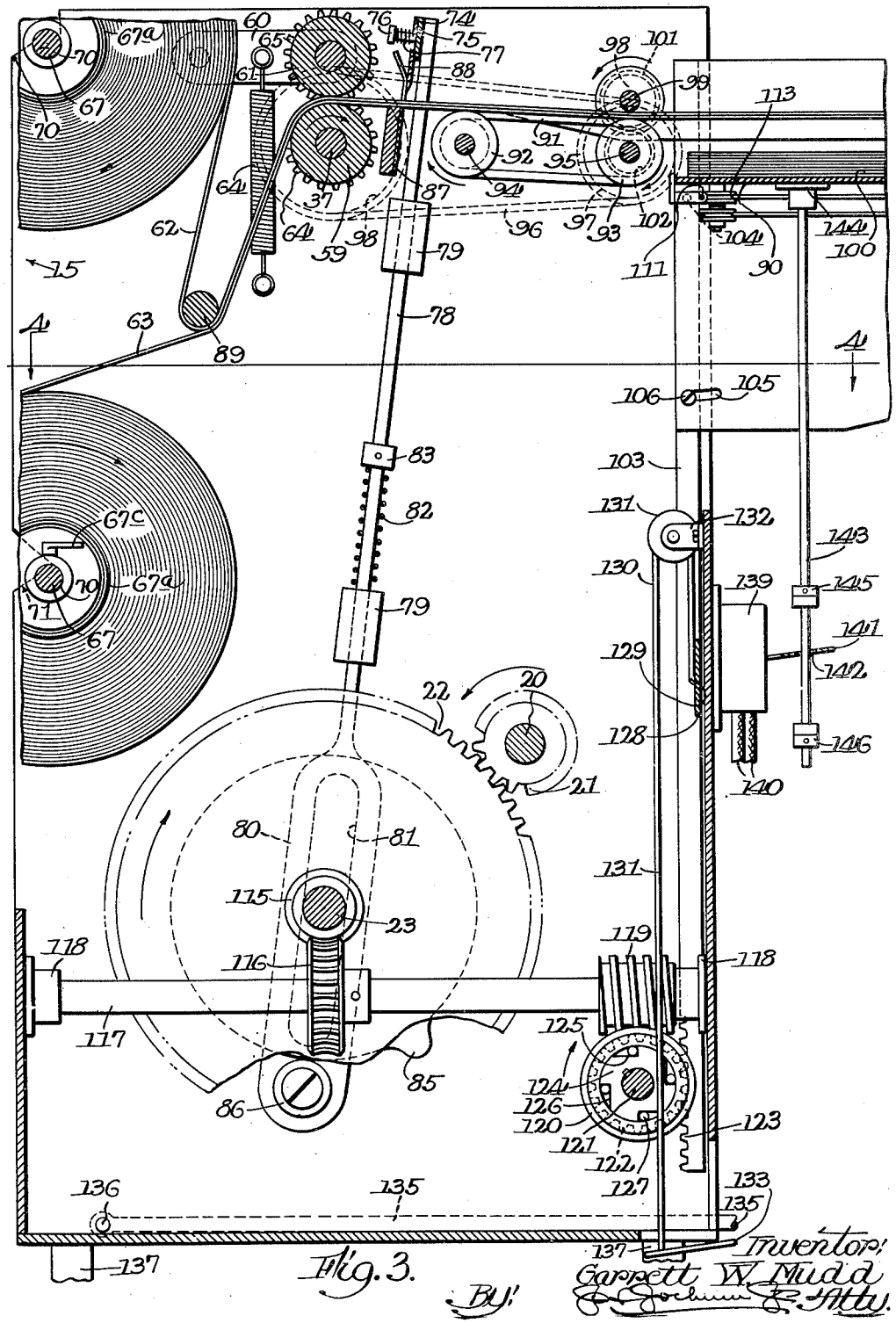


Fig. 3.

Inventor:
Garrett W. Mudd
By: Atty.

June 23, 1936. G. W. MUDD 2,045,046

PAPER CUTTING MACHINE

Filed May 31, 1934 6 Sheets-Sheet 4

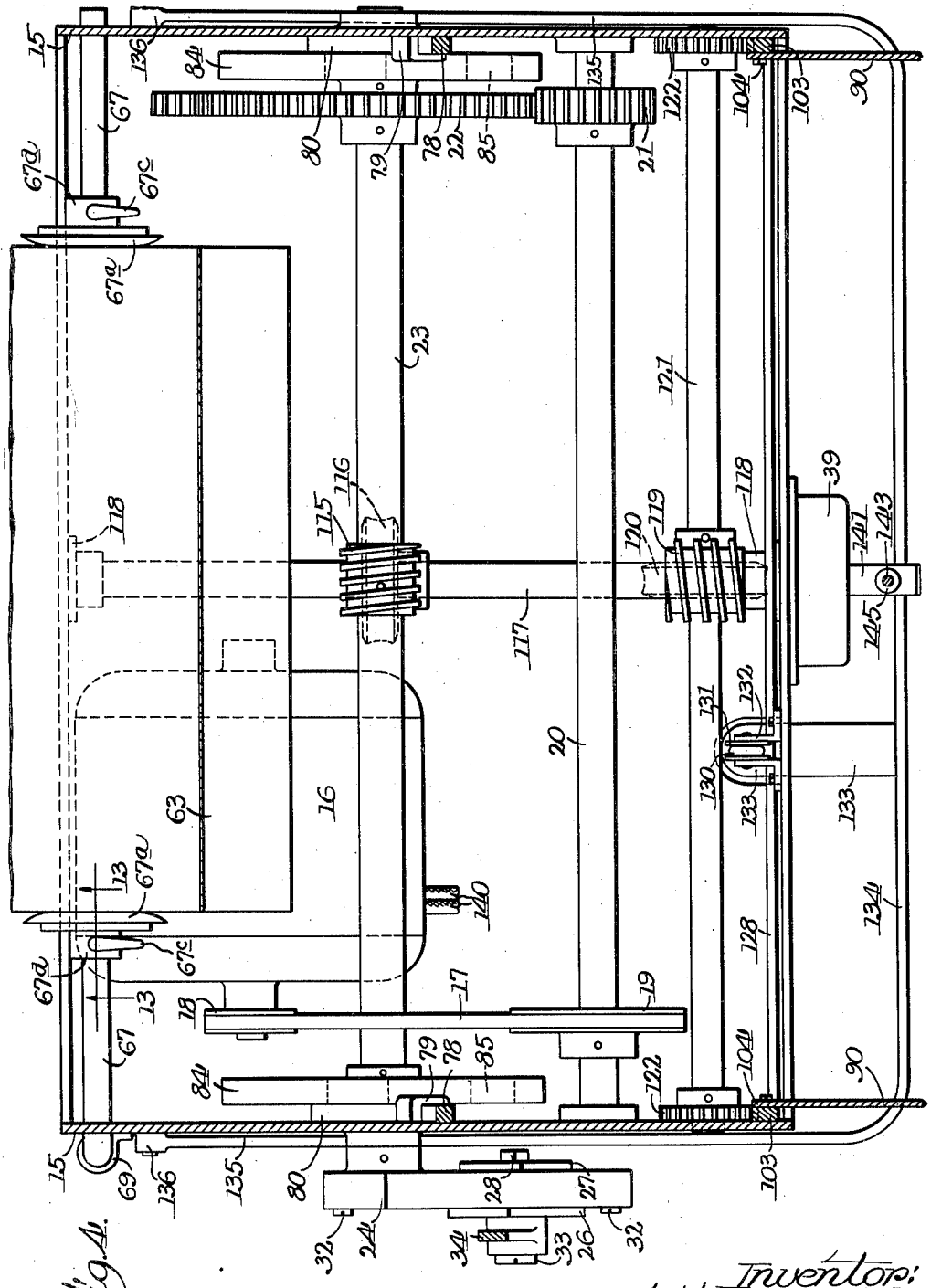


Fig. 4.

Inventor:
Garrett W. Mudd
By: [illegible] Attys.

June 23, 1936. G. W. MUDD 2,045,046

PAPER CUTTING MACHINE

Filed May 31, 1934 6 Sheets-Sheet 5

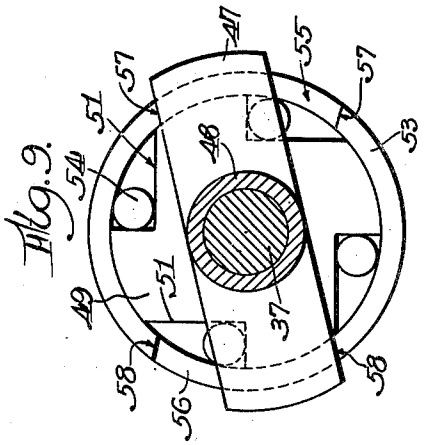


Fig. 9.

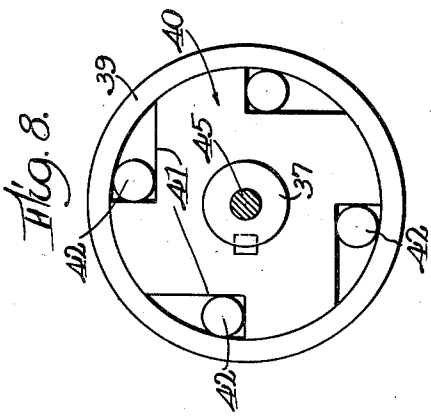


Fig. 8.

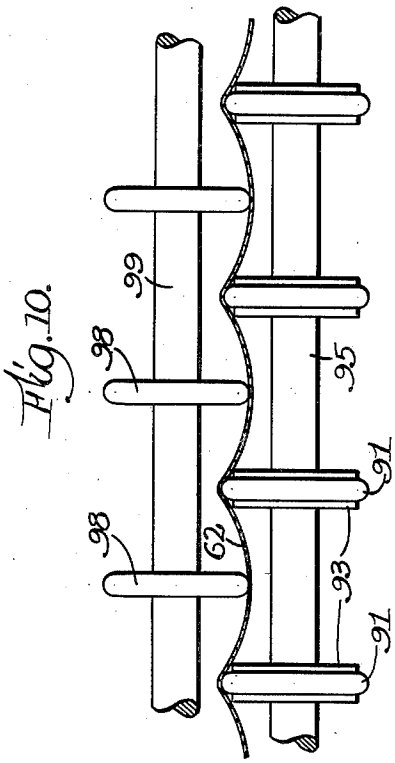


Fig. 10.

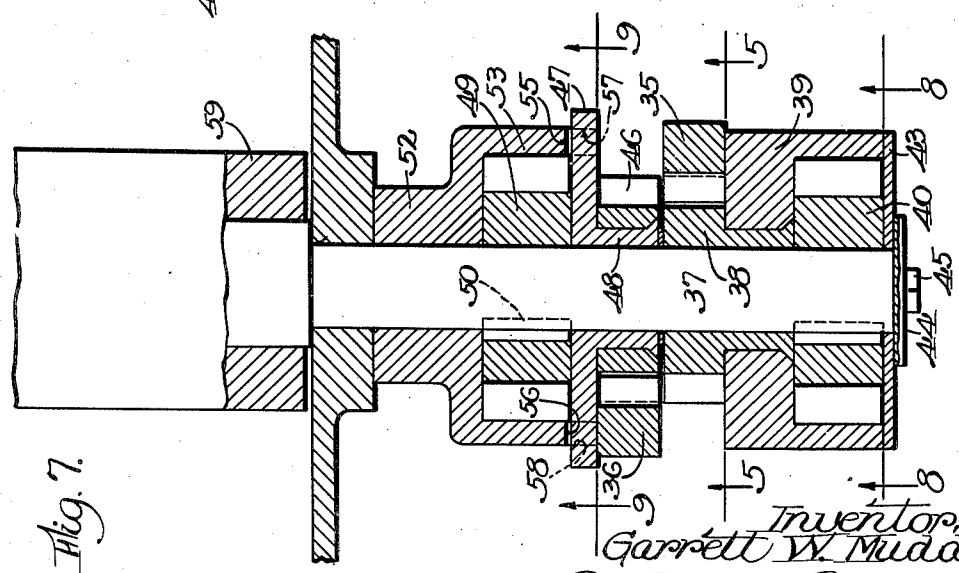


Fig. 7.

Inventor:
Garrett W. Mudd
By: Lothrop & Gitney.

June 23, 1936. G. W. MUDD 2,045,046

PAPER CUTTING MACHINE

Filed May 31, 1934 6 Sheets-Sheet 6

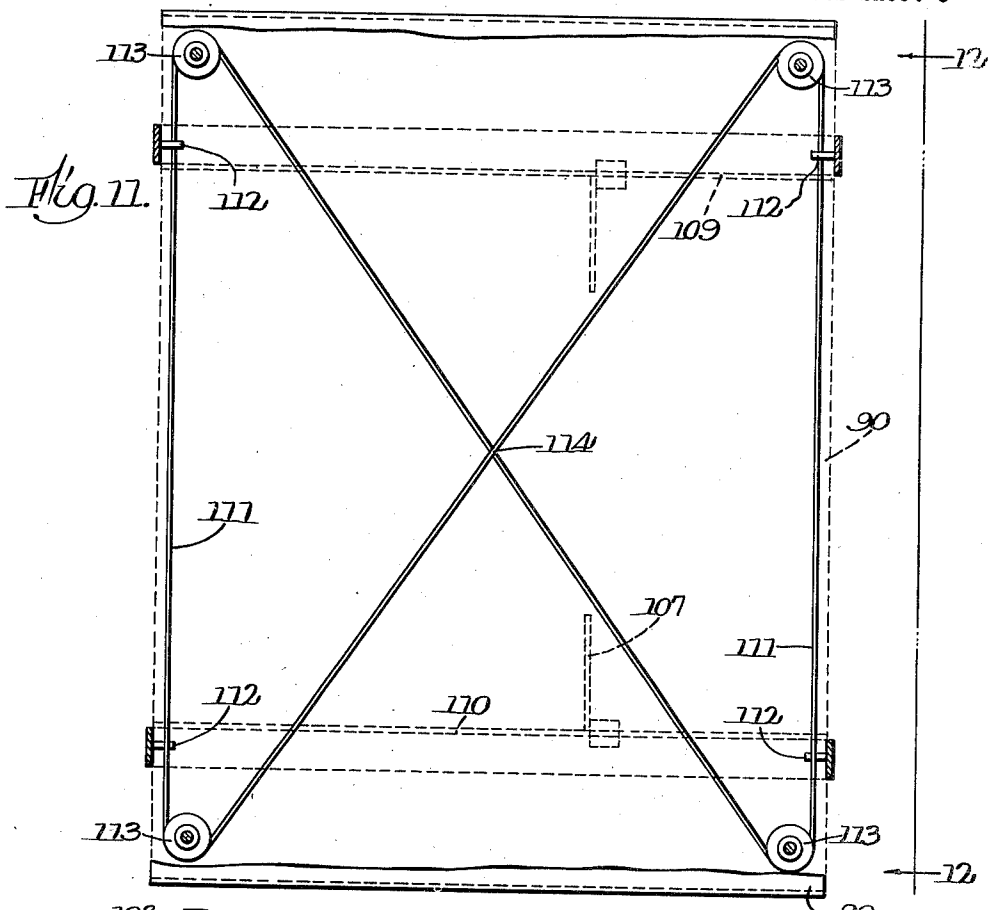


Fig. 11.

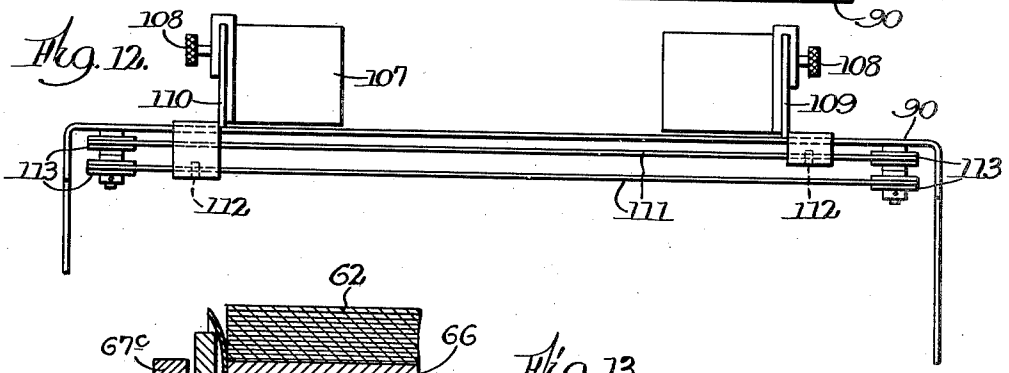


Fig. 12.

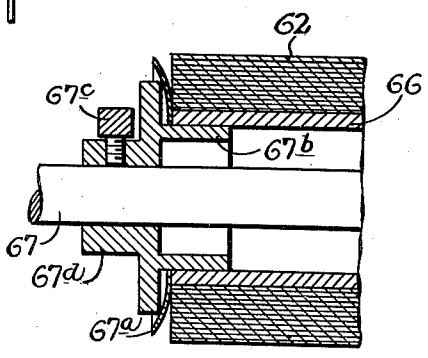


Fig. 13.

Inventor:
Garrett W. Mudd
By: [illegible]
Atty.

Patented June 23, 1936 2,045,046

UNITED STATES PATENT OFFICE

2,045,046

PAPER CUTTING MACHINE

Garrett W. Mudd, Chicago, Ill., assignor to Peters Machinery Co., Chicago, Ill., a corporation of Illinois

Application May 31, 1934, Serial No. 728,369

5 Claims. (Cl. 164—49)

This invention relates to improvements in machines for cutting paper, such as that which is commonly known in the trade as "cellophane", and one of the objects of the invention is to provide an improved machine of this character having means for handling rolls of material of this character and for cutting from the rolls sheets of predetermined sizes and then stacking and piling the same in an expeditious manner.

A further object is to provide an improved machine of this character which will be of a simple, durable and compact construction, and effective and efficient in operation.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention and in which

Figure 1 is a side view, partly in elevation, partly in section and with parts omitted, of a machine of this character constructed in accordance with the principles of this invention.

Figure 2 is a top plan view of Figure 1.

Figure 3 is a vertical, irregular, sectional view taken on line 3—3, Figure 2.

Figure 4 is a horizontal, sectional view, on an enlarged scale, as taken on line 4—4, Figure 3.

Figure 5 is an enlarged detail view, partly in elevation, partly in section and partly broken away, as taken on line 5—5, Figure 7.

Figure 6 is an enlarged, detail sectional view taken on line 6—6, Figure 1.

Figure 7 is a detail sectional view taken on line 7—7, Figure 1, on an enlarged scale.

Figure 8 is a detail sectional view taken on line 8—8, Figure 7.

Figure 9 is a detail sectional view taken on line 9—9, Figure 7.

Figure 10 is a detail sectional view taken on line 10—10, Figure 2.

Figure 11 is a top plan view, partly broken away, with parts omitted and with parts in dotted lines, of the receiving table or platform.

Figure 12 is a view taken on line 12—12, Figure 11.

Figure 13 is a detail sectional view, on an enlarged scale, taken on line 13—13, Figure 4.

Referring more particularly to the drawings, the numeral 15 designates generally a supporting structure, and mounted thereupon in any suitable manner is an actuating motor 16, which is connected by means of a drive belt 17 and intermediate pulleys 18—19 with a shaft 20 that extends across the frame and is journaled in suitable bearings. Connected to the shaft 20 (see Figure 4) is a gear 21, which in turn meshes with a gear 22 that is secured to a shaft 23. The shaft 23 is journaled in the supporting structure and is arranged parallel to the shaft 20.

To this shaft 23 and on the outside of the supporting framework is secured a crank arm 24 which is provided with a slot 25 therein and in which slot a slide 26 is positioned and is adapted to be moved towards or away from the shaft 23. The slide 25 is held in its adjusted position in any suitable manner, preferably by means of a plate 27 which rests against one face thereof, and a screw or bolt 28 passes through the plate and into the slide 26, so that by adjusting the screw or bolt a friction will be created between the plate 27 and the face of the crank arm 24 to frictionally bind these parts in position.

Secured to the opposite face of the crank arm is a plate 29 having graduations 30 therealong. This plate is provided with slots 31 through which screws 32 may pass into the face of the crank arm 24. The graduations serve the purpose of indicating the extent of adjustment of the slide 26 and by reason of the slots 31, the gage plate 29 may be adjusted longitudinally and secured in position so as to vary the adjustment of the slide 26.

Pivotally connected as at 33, to the slide 26 is a link 34. This link may be of any desired or suitable length and secured to the free end thereof are racks 35—36 which are arranged in different planes and are connected at their free ends by means of a cross bar or member 37.

The teeth of the racks 35—36 are disposed adjacent, but are laterally spaced from each other so that a shaft 37 will pass between the racks. Loosely mounted upon the shaft 37 (see Figure 7) is a gear 38 with which the teeth of the rack 35 engage and having connected with it for rotation therewith a clutch member 39, and this clutch member houses another clutch member 40, which latter is keyed or otherwise secured to the shaft 37 for rotation therewith.

The clutch member 40 is provided with any desired or suitable number of clutch faces 41 and between the clutch faces 41 and the inner periphery of the clutch member 39 are rollers 42 which, when the clutch elements 39 and 40 are rotated in one direction, will be caused to wedge between the clutch faces 41 and the wall of the clutch member 39 to frictionally lock the gear 38 for rotation with the shaft 37, but, when the clutch elements 39—40 are relatively rotated in the op-

posite direction such wedging action will be overcome and the gear 38 will be permitted to rotate freely with respect to the shaft 37.

A disc or plate 43 may be provided to form a closure for the housing within the clutch element 39 in which the clutch element 40 is located. This plate 43 may be secured in position in any suitable manner, such as by means of a washer 44 resting against the end of the shaft 37 and the plate 43 and through which washer a fastening bolt or screw 45 passes into the end of the shaft.

Loosely mounted upon the shaft 37 and in proximity to the gear 38 is another gear 46, with which the rack 36 engages and on the side of the axis of the shaft 37 opposite to the side the rack 35 engages the gear 38.

Connected with the gear 46 to rotate therewith is a member 47 preferably having a hub portion 48 through which the shaft 37 passes and upon which hub portion (see particularly Figure 7) the gear 46 is mounted so that the gear, member 47 and hub 48 will rotate freely with respect to the shaft.

A clutch member 49, similar to the clutch member 40, is secured to the shaft 37 for rotation therewith in any suitable manner, such as by means of a key 50, and the clutch member 49 is disposed in close proximity to the face of the member 47 and is provided with clutch faces 51, similar to the clutch faces 41 of the element 40.

A clutch member 52 loosely encompasses the shaft 37 and a portion 53 of the clutch member forms a housing for the element 49. Rollers 54 are arranged between the clutch faces 51 and the inner periphery of the wall of the housing 53 and serve, when the clutch elements 49 and 52 are relatively rotated in one direction, to create a friction and thereby lock the two clutch elements so that the gear 46 will be rotated with the shaft 37, and when relatively rotated in the opposite direction, the gear 46 will rotate freely with respect to the shaft 37.

The end of the wall of the housing 53 is provided with cut away portions 55—56 to respectively form spaced shoulders 57—58, and the ends of the member 47 (see particularly Figure 9) project into the respective cut away portions 55—56 between the respective shoulders 57—58.

The respective shoulders 57—58 are spaced from each other for a distance considerably greater than the width of the portion of the member 47 which projects into the space between the respective shoulders so that there will be a "lost motion" between the gear 46 and the clutch members 49—52, for the purpose of interrupting the feeding movement of the material being operated upon, while the material is being severed or cut, in a manner to be later described.

With the mechanism thus far described, it will be manifest that when the rack members 35—36 are reciprocated by the crank arm or member 24 and as the racks 35—36 engage the teeth of the respective gear wheels 38—46 on opposite sides of the center, and as the respective clutch elements are so arranged, upon the upward movement of the racks one of the gears on the shaft 37 will be locked thereto so as to impart a rotation to the shaft 37, while the clutch member on the other gear will permit the gear and shaft to rotate freely one with respect to the other, but when the racks start to move downwardly or in the opposite direction, the gear which has been locked to the shaft 37 will be unlocked with respect thereto and the gear which was heretofore free from the shaft will be locked to the shaft and the shaft will be rotated in the same direction upon a complete cycle of operation of the crank member 24 and the racks 35—36.

The shaft 37 extends across the supporting structure and is journaled in suitable bearings. Mounted upon the shaft (see particularly Figures 3 and 7) is a feeding roll 59 constructed of any suitable material, such as rubber or the like, and journaled in swinging bearings 60 is another feeding roll 61 which is disposed above and in a position to co-operate with the feeding roll 59, between which rolls the material 62—63 to be cut passes. A spring or any other suitable means 64 may be provided for holding the upper roll 61 in a co-operative position with respect to the roll 59, and these rolls 59—61 (see particularly Figures 2 and 3) are connected together at one end by means of gears 64—65 respectively secured to the rollers 59—61.

The material to be cut is in the form of rolls and each of these rolls has a core 66 through which a supporting shaft 67 passes. Adjustably secured upon the shaft 67 and at the ends of the rolls are discs 67[a] having an inwardly projecting flange portion 67[b] which telescopes into the end of the core of the roll of material. Fastening screws 67[c] pass through a hub 67[d] on the disc 67[a] for locking the latter in position against the ends of the core of the roll.

A friction washer 67[e] may be provided between the ends of the core of the roll and the disc 67[a] to prevent overthrow of the rolls while the material is being unwound therefrom.

One end of each of the shafts is bent downwardly as at 68 and is journaled in a suitable bearing 69 connected to a stationary portion of the machine. The shaft extends across the supporting structure and is adapted to enter a seat 70 in the supporting frame 15 (see particularly Figure 3), a portion of the frame being shaped to form an incline 71 so that when the shaft 67 is swung into operative position, the end of the shaft will ride up the incline 71 and then drop into the seat 70 so that the roll of material and the shaft 67 will be locked against accidentally swinging out of operative position.

A brake member 72 (see particularly Figures 1 and 2) may be provided to hold the feed rolls 59—61 against overthrow, and the brake member may engage the periphery of the portion 53 of the clutch element 52, being controlled in its operation by a spring 73.

Arranged in advance of the feed rolls 59 is a cutter for severing the stock of material into predetermined lengths, and this cutter comprises a reciprocable cutter 74 secured to a cross bar or member 75 by means of fastening screws 76, and springs 77 encompass the screws to hold the cutter member 74 in position.

The bar 75 to which the cutter is secured, extends across the supporting frame in proximity to and parallel with the feed rollers 59—61, and the bar 75 is secured to two vertically reciprocable members 78, one on each side of the machine and at the ends of the bar 75. These members 78 reciprocate in suitable bearings 79 and the lower ends of the members 78 are provided with enlarged portions 80 having elongated slots 81 therein and through which slots 81 the shaft 23 freely passes. A spring 82 encompasses each of the members 78, one end of the spring resting respectively against one of the bearings or guides 79, while the other end of the springs rest respectively against collars 83 adjustably secured

to the respective bars or rods 78, and the springs tend normally to move the cutter 74 in one direction. Secured to the shaft 23 for rotation therewith are cam members 84 which are provided with a projecting or cam portion 85 adapted to engage and cooperate with the roller 86 secured to the ends of the respective bars or rods 78, so that when the shaft 23 is rotated and the cam projections 85 engage the respective rollers 86, the cutter 74 will be lowered against the stress of the springs 82, but when the projection 85 passes out of contact with the respective rollers 86, the springs 82 will move the rods or members together with the cutter 74 in the opposite direction.

The reciprocating cutter 74 co-operates with a stationary cutter member 87 which is of a length slightly greater than the feed rolls 59—61, and at one extremity of the stationary member 87 there is provided an upwardly inclined projecting lip or extension 88 (see particularly Figures 2 and 3) which serves as a means for maintaining the cutter 74 in its proper position and prevents the cutter from passing over and behind the stationary cutter member 87.

The material 62—63 is superposed and passes under a guide roll 89, and from thence between the feed rolls 59—61 to be presented to the cutter, and as the cutter 74 is reciprocated the material will be severed and the severed portions will then be carried away from the cutter to be eventually delivered to a receiving table or platform 90.

It will be manifest that inasmuch as the feed rolls are rotated in the same direction by the reciprocation of the racks 35 and 36, there will be a continuous feeding movement of the material during the operation of the cutter, which is not desired, but on the contrary it is desirable to arrest temporarily the feeding movement of the material while it is being cut.

It is for this purpose that the lost motion between the shaft 37 and the gear 46, and as shown in Figures 7 and 9, is provided.

During the interval of time that the ends of the member 47 are moving in the spaces 55—56 out of contact with the respective shoulders 57—58 at one end of the spaces and into contact with the respective shoulders at the other ends of the said spaces, the feeding of the material to the cutter will be temporarily arrested, and at that time the cutter will be operating upon the material to sever the same.

After the stock has been severed, the severed portions will be received upon conveyor belts 91, any number of which may be provided and which may be of any desired length. These belts 91 are of the endless type and pass respectively over pulleys 92—93.

Any number of pulleys and any number of belts may be provided, and the pulleys 92 are secured to a suitable shaft 94, the pulleys being laterally spaced from each other for any desired distance, and the pulleys 93 are secured to a shaft 95 (see also Figure 10) and are similarly laterally spaced. Motion is imparted to these conveyors in any desired or suitable manner, but preferably by means of an endless belt 96 which passes over a suitable pulley 97 secured at one end of the shaft 93 and also over a pulley 98 which is secured to one end of the shaft 37 and, as the shaft 37 is rotated by the racks 35—36 on the co-operating gears, it will be manifest that through the medium of the driving belt 96, the shaft 95 will be rotated and this in turn will rotate the shaft 94 with the pulleys 92 thereon.

It has been found that in handling material such as cellophane or any other very thin material which of itself is not of a sufficient stout body to permit of the projecting of the same edgewise from conveyors on to a receiving table, it cannot be satisfactorily stacked or piled upon the receiving table and therefore in order to facilitate the handling of the same and to impart sufficient rigidity to the sheet or material, so as to permit the same to be projected edgewise on to the platform or pile of material, means are provided whereby such rigidity may be temporarily imparted to the material.

This is accomplished by temporarily producing corrugations in the material which extend in directions lengthwise of the feeding direction of the material after it has been severed from the stock.

To that end there may be provided a series of rollers 98 which are spaced laterally from each other and secured to a shaft 99 for rotation therewith. The shaft 99 is disposed in proximity to the shaft 95 and the axes of the shafts are spaced from each other for a sufficient distance so that the peripheries of the rollers 98 will overlap or project below the supporting surface of the upper run of the endless conveyors 91 and the pulleys 93 over which the endless conveyors pass.

The rollers 98 are so arranged that each one will project into the space between adjacent pulleys 93 at the ends of the endless conveyors 91, as shown more clearly in Figure 10.

With this arrangement it will be manifest that as the material 62 and 63, if two sheets are cut at the same time, will be temporarily corrugated by deflecting or distorting the body portion thereof so that the corrugations will extend in directions lengthwise of the feeding direction of the material. As soon as the material passes off of the conveyors 91 and out of contact with the rollers 98, it will assume its natural position and the deflected or corrugated portions will automatically straighten themselves out. This will render it possible to discharge the severed sheets from between the rolls 98 and conveyors 91 on to the platform or support 90, or upon the material 100 stacked thereupon.

The rollers 98 may be rotated in any desired or suitable manner, but preferably by means of a gear 101 (see particularly Figures 2 and 3) secured to the shaft 99 which meshes with a gear 102 secured to the shaft 95.

The platform or support 90 may be of any desired size and construction and is preferably pivotally mounted upon uprights 103 by means of a pivot 104, and a depending portion of the platform is provided with a slot 105 (see particularly Figure 3) through which fastening screws 106 pass into the uprights 103. Thus by loosening the screws 106, the platform or support may be allowed to swing for a desired distance about the pivots 104 and then fastened into such adjusted position by tightening the screws 106.

This is advantageous because it is sometimes found advisable and that by slightly tilting the receiving platform the material will more readily slide into position thereupon until the front edge of the material engages the stop 107 which is adjustably mounted (see also Figure 2) by means of fastening devices 108 to side members 109—110. The adjusting of the platform or support 90 will also obviate the buckling of the material or sheets as they are received upon the platform.

The side members 109—110 on the platform or support 90 are adapted to be moved towards and away from each other, and in order that they

may be maintained parallel at all times during their adjustment, their extremities are secured respectively to endless flexible members. The member 109 is secured to an endless flexible member 111 as at 112 and the flexible member passes over pulleys 113 crossing each other intermediate the pulleys as at 114, so that the extremities of the member 109 will be secured to the outer runs of this endless flexible member.

Similarly the ends of the side member 110 are secured to another endless flexible member and these endless flexible members are disposed beneath the platform or support 90 as shown more clearly in Figure 1.

It will therefore be manifest that by adjusting either of the side members 109—110, the endless flexible members 111 will maintain the side members straight and parallel.

As the sheets are superposed upon the platform 90, the latter is gradually lowered and when it has reached a predetermined point in its lowering movement the lowering mechanism will be stopped, and when the platform is raised the lowering mechanism will be again set into operation.

This is accomplished preferably in the following manner. Secured to the shaft 23 is a worm 115 (see particularly Figures 3 and 4) and this worm meshes with a worm gear 116 secured to a shaft 117 for rotation therewith, the shaft being journaled in suitable bearings 118 and being disposed at substantially right angles to the shaft 23.

Secured also to the shaft 117 for rotation therewith is another worm 119 that meshes with a worm gear 120 secured to a shaft 121 for rotation therewith. This shaft 121 is arranged parallel with the shaft 120 and is journaled in suitable bearings.

Gears 122 are secured to the shaft 121 for rotation therewith and each of these gears 122 meshes with teeth 123 on one of the uprights 103 so that when the shaft 121 is rotated through the medium of the gear and worm 118—120 in one direction, the uprights 103 and consequently the platform 90 will be lowered. When, however, the platform or receiving table 90 is raised, in a manner to be set forth, the gears 122 will freely rotate with respect to the worm 119 and worm gear 120.

This may be accomplished in the following manner (see Figure 3). The worm gear 120 is connected to the shaft 121 by means of a clutch connection which will operate when the worm gear 120 is rotated to rotate the shaft 121 in a direction to lower the platform or table 90, but when the platform or table 90 is raised, the clutch will permit the worm gear to rotate independently with respect to the shaft 121 in the following preferred manner.

The worm gear 120 is preferably in the form of a housing, the periphery of which is shaped to form the worm, and secured to the shaft 121 for rotation therewith and located within the worm gear 120, which latter constitutes a clutch element, is another clutch element 124 similar in construction to the clutch elements 40 and 49. This element 124 is provided with clutch faces 125 to form spaces 126 between such faces and the inner periphery of the wall of the worm gear housing 120. Arranged within these spaces are rollers 127 which co-operate respectively with the faces 125 and the wall of the housing of the worm gear 120 to wedge or form a frictional locking action between the elements 124 and 120, so that when the worm 119 and gear 120 are rotated in one direction, the rollers 127 will serve to frictionally lock the two elements 124 and 120 together for rotation with the shaft 121 but, when the worm gear 120 is rotated in the opposite direction, the rollers 127 will be rendered inactive as a locking medium and this will permit the shaft 121 to rotate independently with respect to the element 120.

The uprights 103 are connected by a cross bar or member 128, extending across the supporting framework and secured by one end to the cross bar as at 129, is a flexible cable 130. This cable passes over a pulley 131 journaled in a bracket 132 secured to a stationary portion of the framework. The other end of the cable 131 is connected to a member 133, which in turn is connected to a bail or substantially U shaped member 134, the arms 135 of which are pivotally connected by their ends 136 to a stationary portion of the framework and the bail 134 and member 133 are disposed adjacent the bottom of the supporting structure so as to form a treadle to be engaged by the operator's foot for the purpose of raising the table or platform 90.

As the platform 90 descends, its lowering movement will be controlled by the worm 119 and worm gear 120, and during this lowering movement and by reason of the flexible cable 131 the bail 134 will be raised about its pivoted ends 136 into the upper dotted line position as shown in Figure 1. When the platform or table has reached the limit of its lowering movement with the cut sheets superposed thereon, and after these sheets have been removed, the platform may be raised by the operator by lowering the bail 134. This movement of the bail will, through the medium of the flexible cable 131, raise the uprights 103 and with it the platform or table 90, as during the lowering of the bail 134, the gears 122 and the shaft 121 will rotate independently with respect to the worm gear 120 by reason of the disconnection or the rendering inoperative the clutch connection between the shaft 121 and the worm gear 120 through the medium of the clutch element 124 and rollers 127.

As soon as the bail 134 has been depressed to the lowermost dotted position, shown in Figure 1, the worm gear 120 will again become locked through the clutch connection with the shaft 121.

Obviously, in order to permit the bail 134 to be depressed low enough to result in such operation, the entire structure may be mounted upon casters or supports 137, a stop 138 being provided, if desired or necessary, to limit the downward movement of the bail.

As soon as the platform or support 90 has reached the limit of its lowering movement, as well as the limit of its raising movement, or at any desired points in the path of movement of the platform or support, means are provided for automatically stopping and starting the motor 16. This may be accomplished through the medium of a switch 139 (see Figures 3 and 4) from which the feed conductors 140 lead to the motor. An operating arm or member 141 is provided for the switch and this arm is provided with an opening 142 through which a rod 143, that is secured as at 144 to the bottom of the platform or support 90, loosely passes.

Adjustably secured to this rod 143 and on opposite sides of the switch arm 141 are stops 145—146 which may be positioned at any desired points lengthwise of the rod so that when the platform or support 90 is being lowered, the

stop or collar 145 will engage the switch arm 141 and depress the latter to stop the motor.

When, however, the platform 90 is raised the stop or collar 146 will engage the switch arm 141 to move the latter in the opposite direction and thereby start the motor.

Obviously, the diameter of the opening 142 in the arm 141 is of such a size that this operation will not be interfered with.

From the above description it is thought that the operation of the machine will be clearly understood, but briefly stated it is as follows.

The material is supplied from the rolls which are preferably superposed and as shown in the present invention two rolls are employed, but it is manifest that any number may be employed according to the number of sheets that it is desired to sever at the same time, provision of course having been made for the reception of additional rolls.

The material is led from the rolls beneath the pulley 89 and thence between the feed rolls 59—61, and the motor is then started. Motion being imparted to the lowermost feed roll 59, the material will be fed between the rolls to a position beneath the reciprocating cutter 74, this cutter being reciprocated by means of the cam projection 85 on the shaft 23, and the spring 82 on the bar or rod 78 connected to the cutter. As the material is advanced and as the feed roll 59 is rotated by the reciprocating movement of the racks 35 and 36, the material will be severed by the cutter and delivered to the conveyors 91. Just at the time that the cutter 74 is operating to sever the material into predetermined lengths, the feeding movement of the rolls 59—61 is interrupted. This is accomplished by reason of the construction of the clutch member as shown in Figure 9, that is just as the racks 35—36 reach the limit of their movement in a downward direction, the cutting is being effected and immediately the racks 35—36 start to ascend. In order, therefore, to permit the cutter 74 to move out of the way and to prevent the piling up of the material between the feed roll and the cutter, the lost motion is effected by reason of the construction of the clutch elements 52—53—47. As the rack starts to ascend the gear 46 will be rotated, but the rollers 54 will remain inactive as locking elements during the interval of time that the ends of the member 47 move through the spaces 55—56 of the clutch element 52—53, and until the side edges of the member 47 engage the respective walls of the spaces 55—56.

As the material is severed, the sheets are delivered to the endless conveyors 91 and as the sheets pass beneath the rollers 98, they will be temporarily distorted or corrugated, the corrugations extending lengthwise of the sheets in the direction of their travel. This will impart a certain rigidity to the sheets so as to allow them to be readily advanced and discharged on to the receiving platform or support 90 to be piled thereupon.

As the sheets are delivered and as they pass out of contact with the rollers 98, they will automatically assume their normal flat condition.

As the sheets are being delivered on to the platform or support, the latter will be slowly lowered through the medium of the worm 119 and gear 120, shaft 121, gears 122 and teeth 123 on the uprights 103 until the stop or collar 145 engages the switch arm 141. This will stop the motor.

The superposed sheets are then removed from the platform 90 and the latter will be raised by depressing the bail 134 to cause the gears 122 and shaft 121 to rotate freely and through the medium of the cable 131, the platform or support 90 will be raised until the stop or collar 146 again contacts the switch arm 141, which will then start the motor, and the same operation may be repeated.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. In a paper cutting machine, a reciprocating cutter, means embodying feed rolls for feeding the material into a position to be cut by the cutter, and means operating automatically to temporarily arrest the movement of the feed rolls while the cutter is severing the material, the last recited means embodying a clutch device comprising two co-operating members, one of said members comprising separate elements connected for movement together and also for movement one with respect to the other for providing a lost motion between the said elements.

2. In a paper cutting machine a feed roll, co-operating clutch elements for rotating the roll, one of said elements being connected with the roll, the other clutch element comprising two co-operating members, spaced abutments on one of said members, a portion of the other of said members extending into the space between said abutments and of a width considerably less than the width of the space between said abutments, and means for rotating one of the members of the second recited clutch element whereby one of the members will move in advance of the other to produce an interval of rest in the feed roll while the operation of the said rotating means remains constant.

3. In a paper cutting machine a feed roll, co-operating clutch elements for rotating the roll, one of said elements being connected with the roll, the other clutch element comprising two co-operating members, spaced abutments on one of said members, a portion of the other of said members extending into the space between said abutments and of a width considerably less than the width of the space between said abutments, and a gear and reciprocable rack construction for rotating one of the members of the second recited clutch element whereby one of the members will move in advance of the other to produce an interval of rest in the feed roll while the operation of the said rotating means remains constant.

4. In a paper cutting machine, a reciprocable cutter, means embodying a roller for feeding the material to said cutter, means for rotating said roller, the last recited means embodying a plurality of gears, means adapted to alternately lock and unlock said gears to and from said roller to impart a constant direction of rotation to said roller, racks individual to and engaging said gears on opposite sides of the axis of said roller for rotating them, and means common to said racks for reciprocating them.

5. In a paper cutting machine, a reciprocable cutter, means embodying a roller for feeding the material to said cutter, means for rotating said roller, the last recited means embodying a plu-

rality of gears, means adapted to alternately lock and unlock said gears to and from said roller to impart a constant direction of rotation to said roller, racks individual to and engaging said gears on opposite sides of the axis of said roller for rotating them, means common to said racks for reciprocating them, and means constituting a portion of one of said locking means for causing an interruption in the rotation of said roll while the reciprocation of the said racks remains continuous.

GARRETT W. MUDD.