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2,629,440

AUTOMATIC PAPER-CUTTING MACHINE

Filed July 11, 1946

5 Sheets-Sheet 1

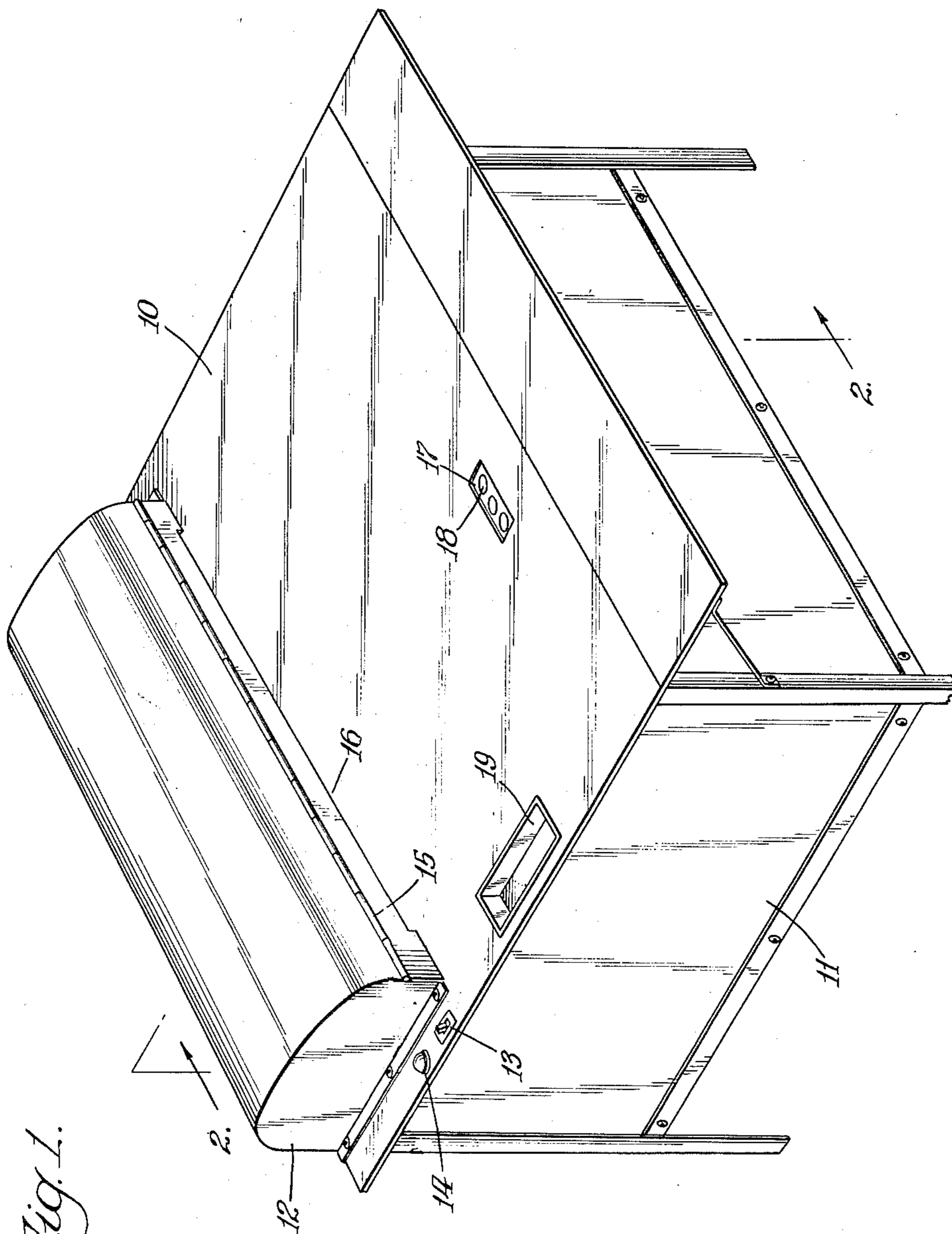


Fig. 1.

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AUTOMATIC PAPER-CUTTING MACHINE

5 Sheets-Sheet 2



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5 Sheets-Sheet 3

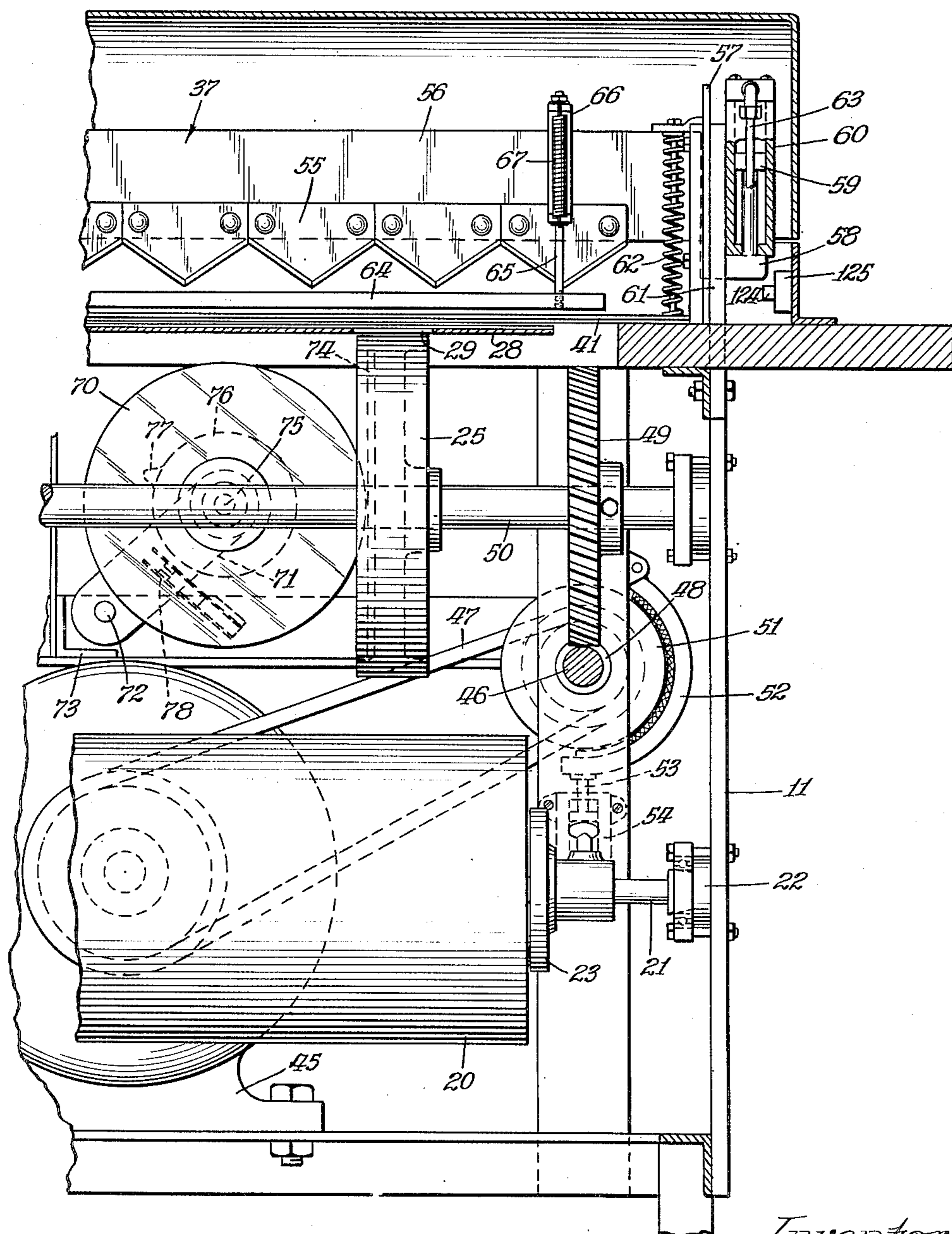


Fig. 3.

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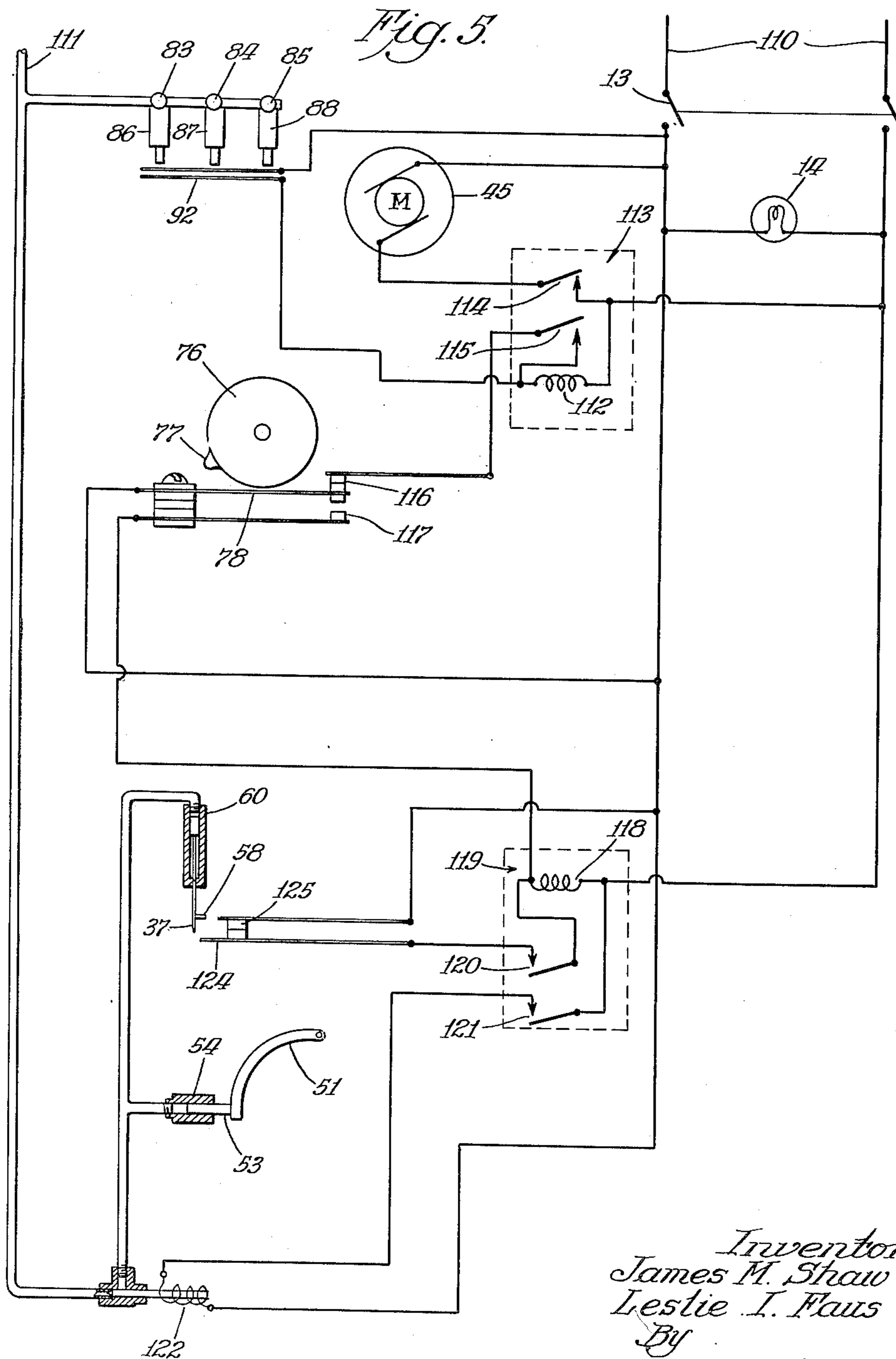
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5 Sheets-Sheet 4



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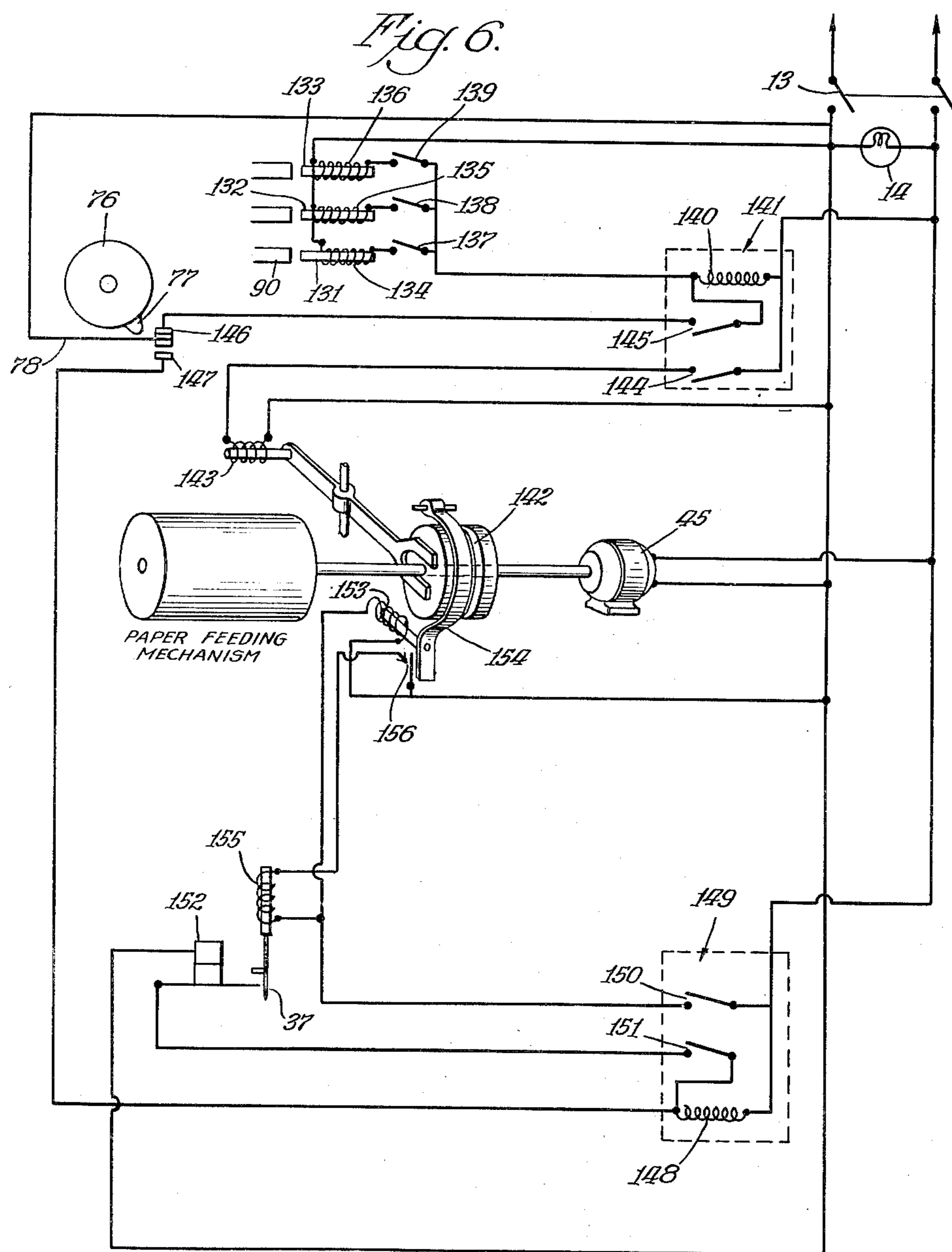
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AUTOMATIC PAPER-CUTTING MACHINE

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5 Sheets-Sheet 5



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## UNITED STATES PATENT OFFICE

2,629,440

## AUTOMATIC PAPER-CUTTING MACHINE

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Application July 11, 1946, Serial No. 682,800

20 Claims. (Cl. 164—49)

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This invention relates generally to paper cutting devices and in particular to an automatic paper cutting machine adapted to automatically cut paper to varying lengths and feed the same onto a wrapping table.

In the prior art, it has been customary practice in wrapping departments of stores, laundries, etc., to provide a wrapping table with a roll of paper mounted thereon and a knife bearing against the roll of paper so that when the desired length of paper is unrolled the paper may be pulled against the edge of the knife to thereby cut the paper from the roll. This device, although simple and effective, is both laborious and time consuming. In order to cut the paper, the piece being taken from the roll must be held high in the air and considerable force is required to cut the paper especially when using paper of heavy weight and of tough composition. In most wrapping departments the work is performed by women and the exertion required in tearing the paper is very tiring. Also as the paper must be held high to be torn off, some time is required to place the paper on the table and then place the articles to be wrapped thereon. It has been found that, using this procedure, half of the wrapping time is required to obtain a piece of paper of the desired size.

Another procedure used in wrapping departments is to provide the paper already cut in predetermined lengths and have a quantity of the various lengths available so that the wrapper may select a piece of paper of the desired length from the supply. This requires having a large supply of paper available, and in many cases the quantity of the various lengths used will differ from time to time so that the wrapping department will run out of a particular length and have an oversupply of other lengths. This causes great inconvenience and delay in the wrapping of articles. In this procedure considerable time is also required to obtain the paper from the supply cabinet and to select the desired length of paper.

It is an object of the present invention to provide an automatic paper cutting machine which overcomes one or more of the objections set forth above.

It is a further object of this invention to provide a paper cutting machine which automatically feeds paper from a roll onto a wrapping table and cuts the paper to the desired lengths.

It is another object of this invention to provide a simple and automatic paper cutting machine adapted to cut pieces of paper of predetermined lengths and a control system therefor which permits selection of the various lengths as desired by the operator.

It is a still further object of this invention to provide an automatic paper cutting machine

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whereby by operation of simple controls, pieces of paper of various predetermined lengths will be selectively fed onto a wrapping table.

A feature of this invention is the provision of an automatic paper cutting machine including means for receiving a roll of paper and feeding predetermined lengths of the paper through a knife which is adapted to automatically cut off the paper.

An additional feature of this invention is the provision of a paper cutting machine adapted for use with a wrapping table which is arranged to automatically feed paper from a roll onto a wrapping table and cut off the paper at the desired lengths.

Another feature of this invention is the provision of a combined electrical and pneumatic control system for an automatic paper cutting machine whereby by actuation of various push buttons, pieces of paper of varying lengths are provided by the machine.

A still further feature of this invention is the provision of an automatic paper cutting machine which is adapted to automatically provide pieces of paper of varying lengths having a control mechanism which may be set for a plurality of lengths which are desired and includes push button controls for selecting any one of said plurality of lengths of paper.

Other objects, features and advantages will be apparent from a consideration of the following description taken in connection with the accompanying drawings in which:

Fig. 1 is a perspective view showing the general configuration of the paper cutting machine and wrapping table in accordance with the invention;

Fig. 2 is a cross-sectional view along the lines 2—2 of Fig. 1 showing the operating mechanism;

Fig. 3 is a detailed cross sectional view of the operating mechanism;

Fig. 4 is a detailed view of the timer setting mechanism;

Fig. 5 is a diagram of the combined pneumatic and electrical control system; and

Fig. 6 is a schematic diagram of a modified control system in which only electrical controls are used.

In practicing our invention we provide a wrapping table on which is mounted an automatic paper cutting machine. The paper cutting machine includes means for supporting a roll of paper and a motor driven feeding mechanism to feed paper from the roll onto the wrapping table, a knife being provided for cutting off the piece of paper to be used. A push button operated control system is included for automatically feeding the desired amount of paper on the wrapping table and then cutting off this piece of paper. A control system is arranged so that each of a

plurality of push buttons can be set to control a timer to feed a predetermined length of paper so that any one of a plurality of predetermined lengths can be obtained by operating the push button set up for that length. The control system can be either a combined pneumatic and electrical system or may be an all electrical system.

Referring now to the drawings, in Fig. 1 there is illustrated a wrapping table 10 having a cabinet 11 thereunder and a projecting portion 12 at the rear thereof. An automatic paper feeding and cutting mechanism is enclosed in the cabinet 11 and the projecting portion 12 as will be hereinafter described. At the side of the projecting portion 12 is positioned a master switch 13 for applying power to the paper cutting mechanism and a pilot light 14 indicating when the power is on. The cover of the portion 12 is hinged at 15 to permit easy access to the operating mechanism. A slot 16 is provided through which the paper is fed onto the table 10. At the front of the table 10 is positioned a control panel 17 with three push button controls 18 positioned therein. The panel 17 and push buttons 18 are arranged to be flush with the table 10 so that they will not interfere with the wrapping operation to be performed on the table. There also may be provided a recess container 19 in the table for containing pencils, stamps or other objects which may be used in marking the packages when wrapped.

Reference is now made to Figs. 2, 3 and 4 which show the details of the paper feeding and wrapping mechanism. A roll of paper 20 is positioned on a spindle 21 which is supported by bearings 22 mounted on the framework of the cabinet 11. End plates 23 are provided for holding the roll of paper in position on the spindle 21, any suitable arrangement may be used which will permit the spindle to be removed so that a new roll of paper can be placed thereon as required. As clearly shown in Fig. 2, the paper 24 is fed over a feeding wheel 25 which has the circumference thereof covered with rubber 26 or other suitable material to provide friction between the wheel 25 and the surface of the paper. An idler 27 is positioned to bear against the paper to provide sufficient pressure thereon so that movement of the feeding wheel 25 will cause the paper to be unrolled from the roll 20. For the purpose of preventing undesired rotation of the roll of paper 20, a bar 30 bearing against the roll is provided. The bar 30 includes arms 31 pivotally supported by brackets 32 to the frame structure. Springs 33 secured to an adjustable arm 34 permits application of the desired tension to the bar 30. It may be desirable in some instances to provide a brake for the spindle 21 operated along with the brake on the paper feeding mechanism which will be described.

To provide even feeding of the paper, a plurality of feeding wheels 25 and idlers 27 are spaced across the width of the paper feeding mechanism. A curved guide plate 28 is provided having portions extending between the wheels 25 so that the paper will not buckle, and cut out portions 29 (Fig. 3) positioned around the wheels 25 so that it will not interfere with the operation thereof. The guide plate 28 is supported at its upper end on a cutting base comprised of angle members 35 and 36 having a space therebetween in which a knife 37 operates. The angle members are positioned in an opening in the wrapping table 10, the members being flush with the table to provide a continuous surface over which

the paper is fed. The idler wheels 27 are supported by arms 38 pivotally connected to a bracket 39 secured to the back of the table 10. For the purpose of lifting the idler wheels 27 off the paper when feeding paper into the paper cutting mechanism, as when putting in a new roll of paper, a member 40 is provided also hinged to the table 10 which bears against the lower surface of the arms 38. By turning the member 40, the idlers 27 are raised out of position. A deflecting plate 41 cooperates with the guide plate 28 to insure that the paper passes in the proper manner below the knife and onto the wrapping table. Instead of using a plurality of feeding wheels and a guide plate therebetween, a feeding drum can be used which would support the paper continuously along its width.

For driving the feeding wheels 25, a motor 45 is provided which is shown in Fig. 3 as driving a shaft 46 through a belt 47. A worm gear 48 is provided on the shaft 46 which meshes with gear 49 on the shaft 50 on which the feeding wheels 25 are supported. A brake wheel 51 is also secured to the shaft 46 against which brake shoe 52 bears. The brake is pneumatically operated by piston 53 operating in cylinder 54.

The detailed construction of the knife 37 is shown in Fig. 3. The knife includes a plurality of cutting members 55 riveted to the bar 56. The bar 56 is supported at either end by brackets 57 having portions 58 connected to pistons 59 positioned in cylinders 60. The brackets 57 operate in guide 61 to keep the knife in position, the knife being normally held in an upward position by springs 62. Compressed air is forced into cylinders 60 through air line 63 to force the piston 59 downward to thereby operate the knife 37. For the purpose of holding the paper against the cutting edge when the knife operates, a bar 64 is provided which is secured to the knife by rods 65 extending in brackets 66 secured to the knife, springs 67 tending to cause movement of the bar 64 with the knife 37. It is apparent from Fig. 2 that as the knife moves downward, the bar 64 will contact the paper before the cutting members 55 to thereby hold the paper firmly against the angle member 35. As the knife moves farther down the springs 67 will be stretched allowing the cutting members to pierce the paper.

For controlling the feeding and cutting mechanism there is provided a measuring or timing mechanism including a timer disc 70 supported on a carriage 71 pivotally connected to rod 72 which is secured to a frame member 73 supported on the cabinet. As shown in Fig. 3, the carriage is arranged so that the weight of the disc 70 causes the edge of the disc to bear against the bearing member 74 secured to the feeding wheel 25. The timer disc 70 is secured to a shaft 75 and a timer cam 76 is secured to the other end of the shaft. Accordingly it is seen that as the feeding wheel 25 rotates, the timer disc 70 will be driven causing movement of the timer cam 76. When a feeding drum is used, as suggested, an additional disc arranged to move with the feeding drum is provided against which the timer cam operates. The timer cam 76 includes a projection 77 arranged to engage the switch contact 78 as will be explained in detail hereinafter.

The timer carriage 71 is arranged to be moved longitudinally on the rod 72 by arm 80 connected through linkage 81 and lever 82 to a timer setting mechanism. The timer setting mechanism is shown in detail in Fig. 4. The push buttons 18 on the wrapping table 10 operate air valves 83,

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84 and 85 to permit air to enter the cylinders 86, 87 and 88. The entry of air into the cylinder 86, for example, causes the plunger 89 to be moved in a direction to contact the timer setting member 90. The plunger 89 also engages the switch actuating member 91 to cause the switch 92 to be closed. The plungers each include a projecting member 93 having a spring 94 which tends to force the member out of the plunger. The projecting member 93 bears against the timer setting member 90 and causes the plunger 89 to move back into the cylinder 86 when air pressure is no longer applied thereto. This permits the switch actuating member 91 to return to the normal position opening the switch 92.

The timer setting members 90 include fingers 95, 96 and 97 adapted to engage arms 98, 99 and 100 respectively which are secured to the shaft 101. Movement of the timer setting member 90 by a plunger 89 causes the finger 95, for example, to move the arm 98 in engagement with stop 102. Movement of the arm 98 is transmitted through shaft 101, lever 82 and linkage 81 to the timer carriage 71. Accordingly, it is seen that the position of the stop 102 determines the position of the timer disc 70 with respect to the bearing member 74. The other timer fingers 96 and 97 are adapted to bear against additional arms 99 and 100 also secured to shaft 101 to operate through linkage 81 to provide different positions of the carriage 71 and different relative positions of the timer disc 70 with respect to the bearing member 74. It is pointed out that the end timer fingers 95 and 97 bear against arms 98 and 100 which are moved into abutment with stops 102 and 103 to determine the position thereof whereas the intermediate finger 96 includes upper and lower portions which bear against the ends of arm 99 to thereby determine the position of this arm. In setting each push button to provide the amount of paper desired, it is necessary for the arms 98, 99 and 100 to move so that the timer carriage assumes a particular position as will be explained. As the position of the end arms 98 and 100 are determined by adjustable stops 102 and 103, these two positions of the carriage can be set by adjustment of the stops. Intermediate arms such as 99 may be adjusted on shaft 101 to thereby control the position of lever 82 when the arm is positioned. As lever 82 controls the carriage 71 it is seen that the proper angular setting of arm 99 on shaft 101 will provide the desired position of the carriage. It is possible to provide additional push button controls for setting the timer to still additional positions by providing more fingers constructed as finger 96 bearing against additional arms constructed as arm 99.

The operation of the timer mechanism and the manner in which the timer controls the amount of paper fed by the feeding wheels 25 will now be explained. When the timer carriage 71 is set in a given position as determined by one of the push buttons 18, the control circuit causes the motor to start to thereby drive the feeding wheels 25. As the feeding wheels revolve the timer disc 70 also revolves causing rotation of the timer cam 76. When the projection 77 on the timer cam 76 engages the switch 78 the circuit through the motor is broken and the brake 51 is energized to thereby suddenly stop movement of the feeding wheels 25. It is thus seen that in controlling the feeding mechanism, the timer disc and cam in each case make one complete revolution, but the number

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of revolutions of the feeding wheel 25 required for one revolution of the timer disc 70 depends on the relative position of the timer disc 70 with respect to the wheel 25. That is, when the timer disc 70 is close to axle 50 the line of contact of the disc 70 on the wheel 25 is a circle of small circumference and thereby causes a relatively small movement of the edge of the timer disc 70 for each revolution of the wheel 25. In such case, a large number of revolutions of the wheel 25 will be required to cause one complete revolution of the timer disc 70. On the other hand, if the timer disc 70 bears against the wheel 25 near the periphery thereof, the contact between the disc 70 and the wheel 25 is a circle of relatively large circumference to thereby cause greater movement of the edge of the disc 70 for one revolution of the wheel 25. Accordingly, when a large amount of paper is desired the timer disc 70 must be positioned near the axle 50 whereas if a small amount of paper is required the disc 70 must be positioned near the circumference of the wheel 25.

It is believed that the operation of the control system of the paper feeding and cutting device will be apparent from a consideration of Fig. 5. The control system illustrated is a combined electric and pneumatic system being connected to a source of electrical power through connectors 110 and also connected to a source of compressed air through air line 111. The positions of the main switch 13 and pilot light 14 in the circuit are shown. The cylinders 86, 87 and 88 are connected to the source of compressed air through valves 83, 84 and 85 which are operated by the push buttons 18. As previously stated, when any one of these valves is operated, the plunger connected therewith acts to close the switch 92 which closes a circuit through the coil 112 of the relay 113. This closes the switches 114 and 115 in the relay, the switch 114 energizing the motor 45 and the switch 115 establishing a holding circuit through the coil 112. The motor 45 therefore starts and drives the wheel 25 which feeds paper onto the wrapping table. The operation of one of the plungers also sets the timer to one of the predetermined positions and operation of wheel 25 causes the timer and the cam 76 to revolve. As is apparent, the projection 77 on the timer cam will engage the contact arm 78 causing the arm to be moved away from engagement with contact 116 thus breaking the holding circuit from the relay 113 deenergizing motor 45. At the same time the contact arm 78 will be moved into engagement with contact 117 thereby energizing the coil 118 of the relay 119. This causes the contacts 120 and 121 of the relay to be closed, the contact 120 establishing a holding circuit and the contact 121 energizing the electromagnetic air valve 122. The air valve 122 applies air to the cylinder 54 which operates brake 52 and to the cylinders 60 which operate the knife 37. Movement of the knife 37 causes the portion 58 of the bracket connected thereto to engage the contact 124 of switch 125 breaking the holding circuit thereby releasing the brake and the knife. This brings all the components back to their normal position so that a second operation may be had by operating one of the push buttons 18.

It is noted that the timer cam will move the switch contact 78 away from contact 116 and into engagement with 117 for only a short instant as the cam will continue to revolve for a short period of time until the motor has stopped

and the brake is applied. The cam will stop in substantially the same position after each operation so that the distance the projection must travel before it engages the contact 78 is the same in every instance. However, as previously explained the amount of rotation of the feeding wheels 25 and the amount of paper fed before the timer operates depends upon the relative position of the timer 70 with respect to the plate 74. It is, therefore, seen that the operation of the device is completely automatic requiring only actuation of a push button to provide the complete operating cycle.

Fig. 6 illustrates schematically a modification of the paper feeding and cutting mechanism in which the pneumatic control system is dispensed with and a system utilizing electrical controls only is provided. The modified arrangement will be of the same general configuration and the various components will be identical with the exceptions to be noted. The timer setting members 90 will be actuated by the magnetic cores 131, 132 and 133 of electromagnets 134, 135 and 136. These electromagnets are energized by switches 137, 138 and 139 operated by push buttons 18 as in the modification previously described. The operation of the switches will, in addition to setting the timers, also energize coil 140 in relay 141. Instead of providing a motor which is started and stopped by the control system, an arrangement is illustrated in which the motor operates continuously and the paper feeding mechanism is driven through a clutch 142. The clutch is operated by electromagnet 143 which is controlled by switch contacts 144 of the relay 141. (It is pointed out here that such an arrangement could also be used in the modification previously described.) The relay 141 includes an additional set of contacts 145 which establishes a holding circuit through the coil 140. This circuit extends to contact 146 which is in engagement with the contact 78 controlled by cam 76. As the paper feeding mechanism is driven by engagement of clutch 142 the timer operates causing the cam 76 to rotate and the projection 77 thereon to engage contact 78 breaking the holding circuit of relay 141. Contact 78 at the same time engages contact 147 energizing coil 148 in relay 149. This causes switches 150 and 151 of the relay 149 to be closed, switch 151 establishing a holding circuit through the coil 148 and switch 150 energizing electromagnet 153 which is connected to brake 154 to stop the movement of the paper feeding mechanism. For the purpose of operating knife 37 electromagnet 155 is provided which is energized through the switch 150 of relay 149 and through an additional switch 156 which is connected to the brake 154. The switch 156 is operated when the brake 154 is applied thereby preventing energization of electromagnet 155 and operation of knife 37 until the brake 154 has been operated. This arrangement is provided because it is essential that the paper feeding mechanism is stopped before the knife operates. Operation of the knife 37 opens the switch 152 in the holding circuit to thereby release the relay 149 and deenergize electromagnets 153 and 155. This restores the device to the normal position so that a second operation can be performed.

The construction of the electromagnets, clutch, brake and other elements of the modification of Fig. 6 are not illustrated as any available units can be used and the invention is not limited to particular structures. The knife 37, for exam-

ple, may be actuated by motor 45 through an additional clutch similar to clutch 142 and a mechanical linkage, instead of being solenoid operated as described. In general the arrangement of the elements of the modification of Fig. 6 is the same as that illustrated in Figs. 1 to 4. It is to be particularly noted that the mode of operation and the general construction of both modifications described are identical.

The use of the paper cutting and feeding mechanism in combination with a wrapping table as herein described has been found to be highly satisfactory and has permitted the reduction of personnel in wrapping departments more than half. This results from the saving in the time required to tear off or otherwise obtain a piece of paper of the required size and also in the reduction in fatigue of the persons doing the wrapping. It is apparent that paper of the desired size is automatically placed in a position on the wrapping table so that it will not have to be moved prior to wrapping articles therein. The operator, after determining the size of paper required, merely pushes one of the push buttons 18 and thereafter picks up the article to be wrapped. By the time the article is placed on the wrapping table, the paper has automatically been placed thereon thus providing a very fast and efficient operation. The construction of the paper feeding and cutting device is sturdy and relatively simple so that very little maintenance is required and dependable operation results.

Although we have described what we consider to be the preferred embodiments of our invention, it is apparent that various changes and modifications can be made and that various features of one embodiment may be included in the other without departing from the intended scope of our invention. Accordingly, we desire that the invention be limited only as defined in the appended claims.

We claim:

1. An automatic paper cutting machine including means for receiving a roll of paper, means for feeding paper from said roll, timing means including a portion driven by said feeding means and adapted to be set to cause said feeding means to feed the desired amount of paper, said timing means being capable of being preset to a plurality of positions, means for cutting off the paper fed by said feeding means, and a control system including a plurality of push buttons each of which is adapted to cause said timing means to be set to one of said positions and to initiate operation of said feeding means, said timing means being adapted to stop said feeding means and to cause operation of said paper cutting means when the desired amount of paper has been fed.

2. An automatic paper cutting machine including means for receiving a roll of paper, means for feeding paper from said roll including a motor and a brake, timing means for controlling said feeding means having a portion coupled to said feeding means and moving in timed relation therewith, said timing means being capable of being preset to a plurality of positions for causing said feeding means to feed corresponding amounts of paper, means for cutting off the paper fed by said feeding means including a knife and actuating means therefor, and a control system including a plurality of push buttons each of which is adapted to cause said timing means to be set to one of said positions and to energize said motor, means actuated by said timing means

for operating said brake to stop said feeding means and for operating said paper cutting means.

3. An automatic paper cutting machine including means for receiving a roll of paper, means for feeding paper from said roll, means for cutting off the paper fed from said roll, and a control system for said feeding and cutting means including a timer having portions individually adjustable to various positions to thereby control the length of paper fed by said feeding means, said timer being coupled to said feeding means and responsive to operation thereof, said portions being individually preset to positions corresponding to any desired length of paper within a given range, and means for simultaneously setting said timer to a preset position and initiating operation of paper feeding means, said timer being arranged to stop said paper feeding means and cause operation of said cutting means.

4. An automatic paper cutting machine including means for receiving a roll of paper, means for feeding paper from said roll including a driving wheel having a side face which presents a flat circular surface, timing means for controlling said feeding means including a disc having the edge thereof in engagement with said flat surface and adapted to be rotated by movement of said wheel, said disc being arranged to be moved with respect to said wheel along a radius of said wheel so that the relative movement of said wheel and said disc can be regulated, a cam connected to said disc and adapted to rotate therewith, means for cutting off the paper fed by said paper feeding means, a control system including means for setting the position of said disc with respect to said wheel and for causing operation of said driving wheel, means operated by said cam when said disc has made one complete revolution for stopping movement of said driving wheel and for causing operation of said paper cutting means.

5. In an automatic paper cutting machine including means for receiving a roll of paper, means for feeding paper from said roll, timing means having a plurality of preset positions for controlling the amount of paper fed by said feeding means, and means for cutting off the paper fed by said feeding means; a control system including means for selectively rendering one of said preset positions of said timing means operative and for starting operation of said feeding means, said timing means having a portion coupled to said feeding means and moving in timed relation therewith, and means controlled by said timing means for stopping said feeding means and for actuating said cutting means.

6. In an automatic paper cutting machine including means for receiving a roll of paper, means for feeding paper from said roll, timing means coupled to said feeding means and having a portion moving in timed relation therewith for controlling the amount of paper fed by said feeding means in accordance with the setting thereof, and means for cutting off the paper fed by said feeding means; a control system including means for setting said timing means to predetermined positions, a plurality of push buttons for selectively actuating said setting means and for starting operation of said feeding means, each of said push buttons causing said timing means to be set to one of said predetermined positions to thereby cause the feeding of a given length of paper, and means controlled by said timing means for stopping said feeding means and for actuating said cutting means.

7. In an automatic paper cutting machine in-

cluding means for receiving a roll of paper, means for feeding paper from said roll, timing means coupled to said feeding means and responsive to operation thereof for controlling the amount of paper fed by said feeding means in accordance with the setting of said timing means, and means for cutting off the paper fed by said feeding means; a control system including a plurality of push buttons, a plurality of plungers controlled by said push buttons, each of said plungers being arranged to set said timing means to a predetermined position corresponding to a particular desired amount of paper, a circuit for controlling said paper feeding means including a switch adapted to be actuated by movement of any one of said plungers for initiating operation of said paper feeding means, means actuated by said timing means for stopping the operation of said paper feeding means and for causing operation of said paper cutting means when the desired length of paper has been fed.

8. In an automatic paper cutting machine including means for receiving a roll of paper, means for feeding paper from said roll including electrical driving means and a pneumatic brake therefor, timing means for controlling the amount of paper fed by said feeding means in accordance with the setting thereof, and pneumatically operated means for cutting off the paper fed by said feeding means; a control system including a plurality of push buttons, a plurality of air valves controlled by said push buttons, a plurality of cylinders connected to said air valves having plungers movable by application of air to said cylinders, said plungers being arranged to set said timing means to predetermined positions, an electrical circuit including a relay and a switch adapted to be closed by movement of any one of said plungers to operate said relay, said relay including switches for energizing said paper feeding means and for establishing a holding circuit for said relay, a second relay means controlled by said timing means for breaking said holding circuit for energizing said second relay when the desired length of paper has been fed, an electromagnetic valve for applying air to said brake and said paper cutting means to cause operation thereof, said second relay including a switch for controlling energization of said electromagnetic valve and a switch for establishing a holding circuit through said relay, and a switch actuated by said paper cutting means for breaking said holding circuit of said second relay.

9. In an automatic paper cutting machine including means for receiving a roll of paper, means for feeding paper from said roll including electrical driving and braking means, timing means for controlling the amount of paper fed by said feeding means in accordance with the setting thereof, and electrically operated means for cutting off the paper fed by said feeding means; a control system including a plurality of push buttons, a plurality of electrical circuits each including an electromagnet having a plunger and a switch for energizing said electromagnet controlled by one of said push buttons, said plungers being arranged to set said timing means to predetermined positions, a relay having a coil for operating the same, said coil being adapted to be energized upon closing of any one of said switches, said relay including contacts for energizing said paper feeding means and for establishing a holding circuit for said relay, a second relay, means controlled by said timing means for breaking said holding circuit and for energizing said second relay when the desired length of paper has been

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fed, said second relay including contacts for energizing said brake and additional contacts for establishing a holding circuit through said relay, a switch for energizing said paper cutting means adapted to be closed by operation of said brake, and a switch for breaking said holding circuit of said second relay arranged to be actuated by movement of said paper cutting means.

10. An automatic paper cutting machine comprising means for receiving a roll of paper, means for feeding paper from said roll including electrical driving and braking means, timing means for controlling the amount of paper fed by said feeding means in accordance with the setting thereof, electrically operated means for cutting off the paper fed by said feeding means, and a control system including a plurality of push buttons, a plurality of electrical circuits each including an electromagnet having a plunger and a switch for energizing said electromagnet controlled by one of said push buttons, said plungers being arranged to set said timing means to predetermined positions, a relay having a coil for operating the same, said coil being adapted to be energized upon closing of any one of said switches, said relay including a switch for causing operation of said paper feeding means and a switch for establishing a holding circuit for said relay, a second relay, said timing means being adapted to break said holding circuit and energize said second relay when the desired length of paper has been fed, said second relay including a switch for energizing said brake and a switch for establishing a holding circuit through said relay, a switch for energizing said paper cutting means adapted to be closed by operation of said brake, and a switch for breaking said holding circuit of said relay arranged to be actuated by movement of said paper cutting means.

11. An automatic paper cutting machine comprising means for receiving a roll of paper, means for feeding paper from said roll, an electric motor for driving said paper feeding means, an electrically operated clutch for connecting said motor to said paper feeding means, an electromagnetically operated brake for stopping movement of said paper feeding means, timing means for controlling the amount of paper fed by said feeding means in accordance with the setting thereof, means for cutting off the paper fed by said feeding means, electromagnetic means for operating said paper cutting means, and a control system including a plurality of push buttons, a plurality of electrical circuits each including an electromagnet having a plunger and a switch for energizing said electromagnet controlled by one of said push buttons, said plungers being arranged to set said timing means to predetermined positions, a relay having a coil operating the same, said coil being arranged in said circuits to be energized upon closing of any one of said switches, said relay including contacts for operating said electric clutch and for establishing a holding circuit for said relay, a second relay, said timing means being arranged to break said holding circuit and energize said second relay when the desired length of paper has been fed, said second relay including contacts for energizing said brake and additional contacts for establishing a holding circuit through said relay, a switch for energizing said paper cutting means adapted to be closed by operation of said brake, and a switch for breaking said holding circuit of said relay arranged to be actuated by movement of said paper cutting means.

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12. An automatic paper cutting machine comprising means for receiving a roll of paper, means for feeding paper from said roll including electrical driving means and pneumatic brake, timing means for controlling the amount of paper fed by said feeding means in accordance with the setting thereof, pneumatically operated means for cutting off the paper fed by said feeding means, and a control system including a plurality of push buttons, a plurality of air valves controlled by said push buttons, a plurality of cylinders connected to said air valves having plungers movable by application of air to said cylinders, said plungers being arranged to set said timing means to predetermined positions, an electrical circuit including a relay and a switch adapted to be closed by movement of any one of said plungers to operate said relay, said relay including a switch for energizing said paper feeding means and a switch for establishing a holding circuit for said relay, a second relay, said timing means being arranged to break said holding circuit and to energize said second relay when the desired length of paper has been fed, an electromagnetic valve for applying air to said brake and said paper cutting means to cause operation thereof, said second relay including a switch for controlling energization of said electromagnetic valve and a switch for establishing a holding circuit through said relay, and a switch actuated by said paper cutting means for breaking said holding circuit of said second relay.

13. An automatic paper cutting machine comprising means for receiving a roll of paper, means for feeding paper from said roll, timing means for controlling the amount of paper fed by said feeding means in accordance with the setting thereof, brake means for stopping said paper feeding means, means for cutting off the paper fed by said feeding means, and a control system for controlling operation of said aforesaid means, said control system including first and second relays and a plurality of push buttons, said push buttons being arranged to set said timing means to predetermined positions and to energize said first relay, said first relay including a switch for controlling operation of said paper feeding means and a switch for establishing a holding circuit through said first relay, said timing means being arranged to break said holding circuit through said relay and energize said second relay when the desired amount of paper has been fed, said second relay including a switch for controlling said brake means and said cutting means and a switch for establishing a holding circuit through said second relay, and a switch arranged to be actuated by said cutting means for breaking the holding circuit through said second relay.

14. An automatic paper cutting machine including a spindle for receiving a roll of paper, feeding means including portions engaging said paper and driving means therefor, controlling means associated with said feeding means including a plurality of members which may be preset to different positions corresponding to desired lengths of paper, cutting means for severing the paper fed by said feeding means, and a control system including a plurality of push buttons each of which is effective when operated to select one of said preset positions and to start operation of said feeding means, said controlling means including a portion driven by said feeding means and operating to stop said feeding means and to cause operation of said knife means

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when said feeding means has operated to feed the length of paper corresponding to the member which is selected.

15. An automatic paper cutting machine including a spindle for receiving a roll of paper, feeding means including portions engaging said paper and driving means therefor, cutting means for severing the length of paper fed by said feeding means, and a control system including a plurality of push buttons and measuring means operatively associated with said feeding means, said measuring means including a plurality of members individually adjustable to preset positions which correspond to any desired length of paper within a predetermined range, said push buttons being effective when operated to select one of said members and to start operation of said feeding means, said measuring means including a portion driven by said feeding means and causing said control system to operate when the length of paper corresponding to the member which is selected has been fed to stop said feeding means and to cause operation of said knife means.

16. An automatic paper cutting machine including means for receiving a roll of paper, feeding means including a plurality of wheels engaging said paper and a motor and a brake therefor, knife means for cutting off the paper fed by said feeding means, and a control system including a plurality of push buttons and measuring means operatively associated with said feeding means, said measuring means including a plurality of members individually adjustable to preset positions corresponding to any desired lengths of paper, said push buttons being effective when operated to select one of said members and to start said motor, said control system having a portion coupled to said feeding means and being operative when the length of paper corresponding to the member which is selected has been fed to stop said motor, operate said brake, and operate said knife means.

17. An automatic paper cutting machine including means for receiving a roll of paper, means for feeding a length of paper from said roll, means for cutting off said length of paper, and a push button operated electrical control system for automatically controlling said feeding means and said cutting means, said control system including a portion coupled to said feeding means and responsive to operation thereof, a plurality of push buttons and adjustable portions individually associated therewith, said push buttons being operable to initiate operation of said feeding means and select the associated portion of said control system, said selected portion controlling said feeding means so that any desired length of paper is fed in accordance with the adjustment of said selected portion.

18. An automatic sheet material cutting machine including in combination, means for receiving a roll of sheet material, means for feeding sheet material from said roll, means for cutting off the sheet material fed from said roll, and an electrical control system for said feeding and cutting means including a timer having a plurality of portions individually adjustable to various preset positions which correspond to the desired lengths of sheet material to be fed by said feeding means, said timer also having a portion moving in timed relation with said feeding means and cooperating with said adjustable portions to cause a timed operation of said control system, and push button means for selecting one

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of said preset portions and for simultaneously initiating operation of said feeding means, said timer operating to stop said feeding means and to cause operation of said cutting means when the length of sheet material corresponding to the selected preset portion has been fed.

19. An automatic sheet material cutting device adapted for use with a wrapping table including in combination, means for receiving a roll of sheet material, means for feeding sheet material from said roll onto said wrapping table, controlling means for said feeding means having a plurality of adjustable portions which may be preadjusted to positions which correspond to any desired lengths of sheet material within a given range, said controlling means having a portion coupled to said feeding means and moving in timed relation therewith, means for cutting off the sheet material fed, and a push button operated automatic electrical control system for controlling the operation of said feeding means, said controlling means and said cutting means, said control system including push buttons positioned on said wrapping table and individually associated with said adjustable portions of said controlling means for actuating said controlling means, said control system being operable upon actuation of any one of said push buttons to cause said feeding means to automatically feed on said wrapping table the length of sheet material corresponding to the preadjusted position of said adjustable portion which is associated with the push button selected, and to automatically cut off the length of sheet material fed.

20. In combination an automatic sheet material cutting device and a wrapping table including, means for receiving a roll of sheet material, means for feeding lengths of sheet material from said roll onto said wrapping table, means for cutting off the length of sheet material fed, and an automatic electrical control system responsive to operation of said feeding means for limiting operation of said feeding means and for causing operation of said cutting means, said control system having a portion operatively connected to said feeding means and moving in timed relation therewith, said control system including a plurality of control portions having elements adjustable to positions corresponding to any desired lengths of sheet material within a predetermined range, and a plurality of actuating members in fixed position on said wrapping table and individually operatively connected to said control portions for rendering the same active to control the amount of sheet material fed in accordance with the position of said adjustable element thereof, said automatic control circuit causing operation of said cutting means after a length of sheet material has been fed onto said wrapping table.

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