

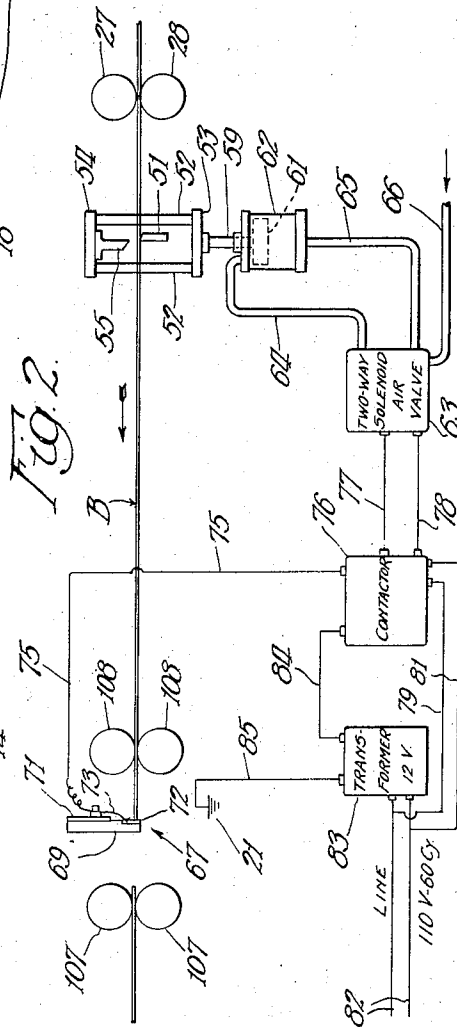
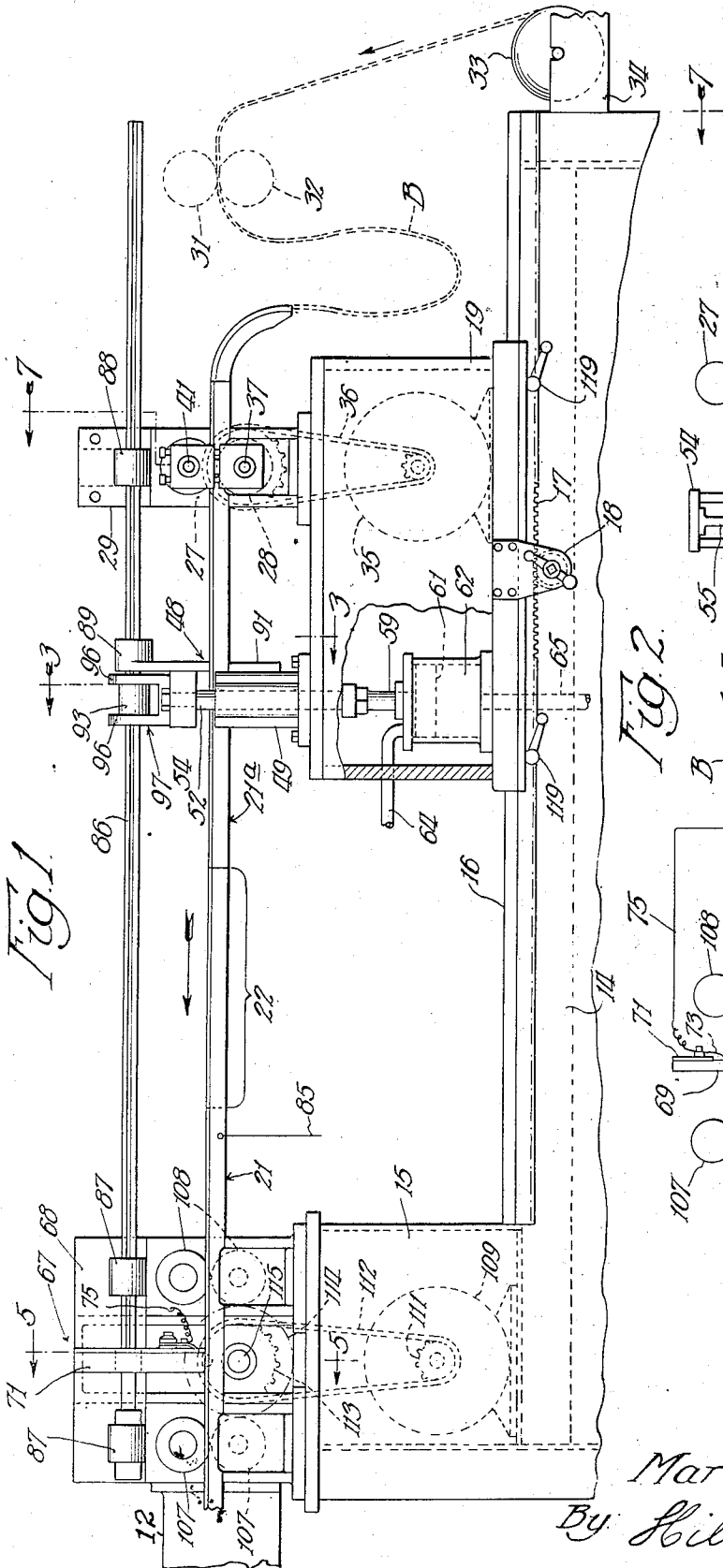
July 1, 1941.

M. G. BOERGER
CUTOFF MACHINE

2,247,766

Filed June 3, 1939

4 Sheets-Sheet 1



Inventor
Martin G. Boerger
By Hill & Hill, Attys

July 1, 1941.

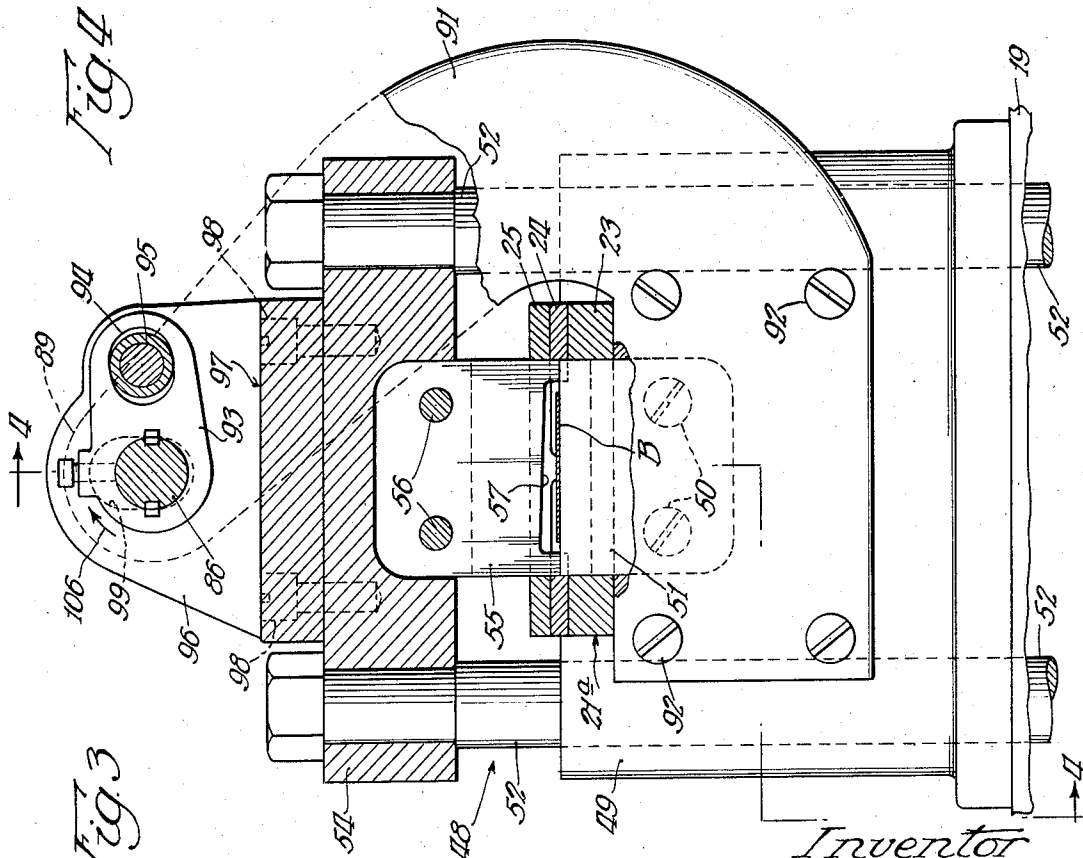
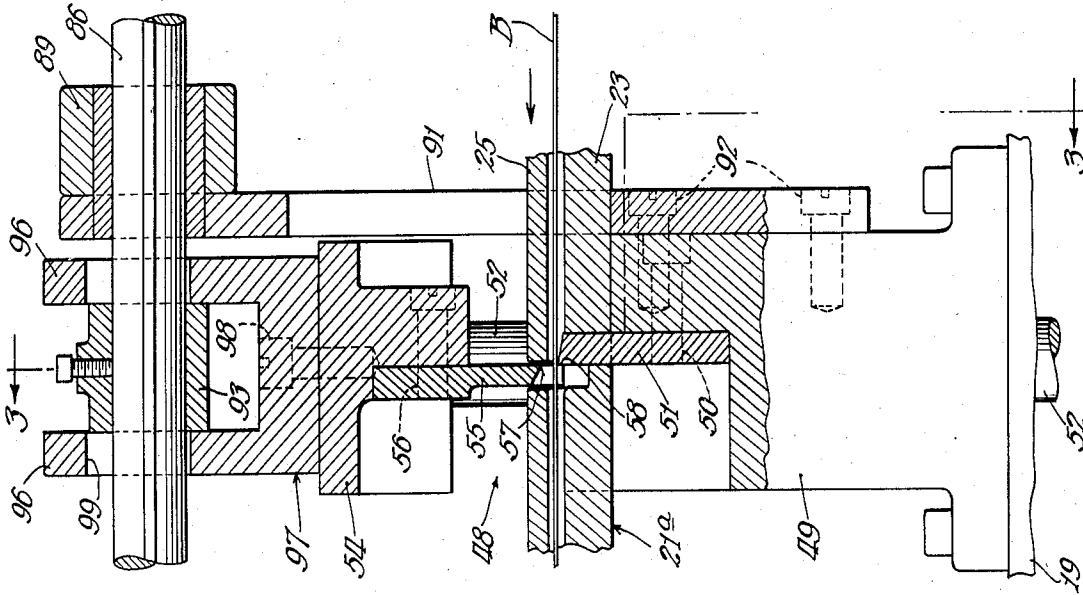
M. G. BOERGER

2,247,766

CUTOFF MACHINE

Filed June 3, 1939

4 Sheets-Sheet 2



Inventor
Martin G. Boerger
By Hill & Hill, Attys.

July 1, 1941.

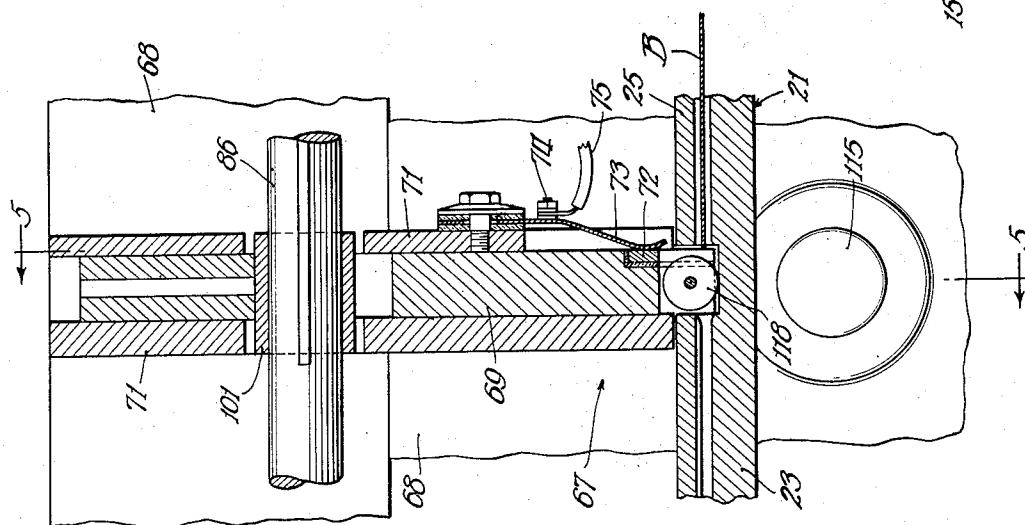
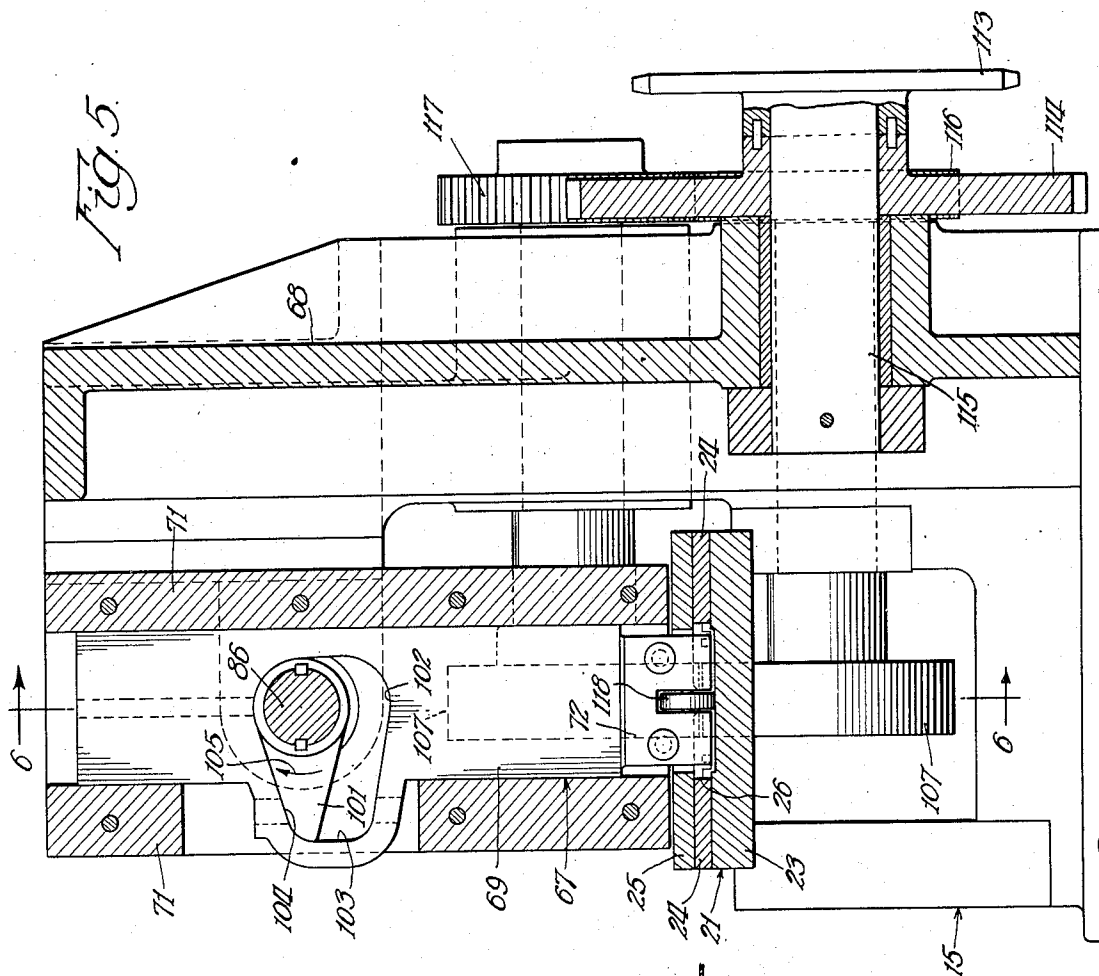
M. G. BOERGER

2,247,766

CUTOFF MACHINE

Filed June 3, 1939

4 Sheets-Sheet 3



Inventor
Martin G. Boerger
By Hill & Hill Attys

July 1, 1941.

M. G. BOERGER
CUTOFF MACHINE

2,247,766

Filed June 3, 1939

4 Sheets-Sheet 4

Fig. 7.

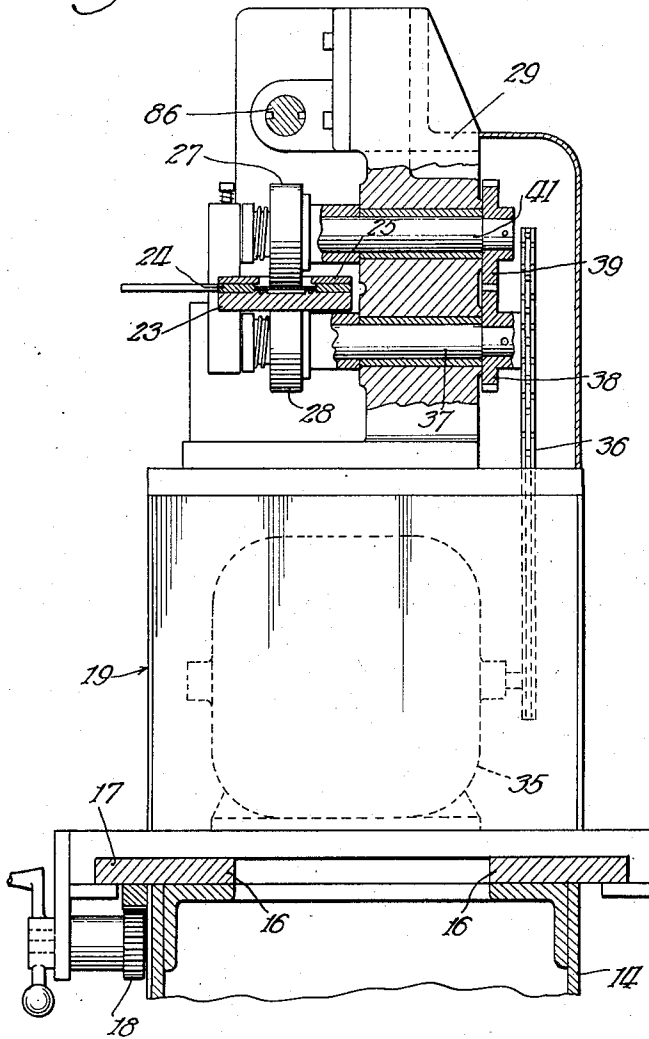
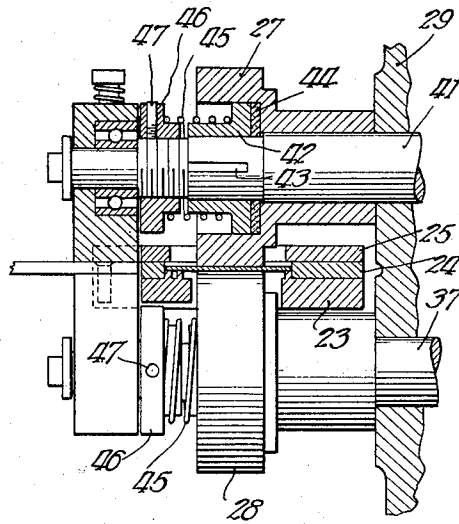


Fig. 8.



Inventor
Martin G. Boerger
By: Hill & Hill. Attys.

UNITED STATES PATENT OFFICE

2,247,766

CUTOFF MACHINE

Martin G. Boerger, Racine, Wis., assignor to
Modine Manufacturing Company, Racine, Wis.,
a corporation of Wisconsin

Application June 3, 1939, Serial No. 277,186

16 Claims. (Cl. 164—49)

This invention relates to material feeding and cut-off machines, and particularly to a cut-off machine having novel mechanism for feeding a strip of tube stock, for example, to a gauge or stop member and cutting device for cutting the strip into suitable or desired lengths and delivering the cut off portions to a tube forming machine, or the like.

The present invention is an improvement over the structure disclosed in my United States Letters Patent No. 2,156,049, issued April 25, 1939.

One object of the present invention is to provide a machine having mechanism of novel construction and arrangement whereby a strip of tube stock, for example, may be fed to the machine and intermittently cut off into desired lengths.

Another object of the invention is to provide novel feeding means for the strip which will permit of arresting the movement of the strip during the operation of the gauging and cutting devices.

Another object of the invention is to provide novel actuating means operatively related to the gauge or stop member and to the cutting device whereby the operations of the stop member and cutting device are maintained substantially in synchronism.

Another object of the invention is to provide novel means whereby the strips may be cut into various length as desired.

Another object of the invention is to provide novel actuating means operatively related to the gauge or stop members and to the cutting device whereby the operation of the cutting device is controlled by the relationship of the strip of stock to be cut and the stop member.

Another object of the invention is to provide novel actuating means operatively related to the stop member and cutting device whereby the latter is operated by engagement of the stock strip with the stop member.

A further object of the invention is to provide a novel construction and arrangement whereby a severed piece of stock cut from the strip may be released from the stop member upon completion of the severing operation of the cutting device.

A still further object of the invention is to improve machines of the character described in sundry details hereinafter referred to and particularly pointed out in the appended claims.

One embodiment of the present invention is shown for illustrative purposes in the accompanying drawings in which:

Fig. 1 is a side elevational view of a cut-off machine embodying features of the present invention;

Fig. 2 is a diagrammatic elevational view of the gauge or stop members and the cutting device operatively related thereto, and illustrating the relationship of the actuating means therefor;

Fig. 3 is a transverse sectional elevational view of the cutting device, and taken substantially as indicated by the lines 3—3 of Figs. 1 and 4, respectively;

Fig. 4 is a sectional elevational view of the structure illustrated in Fig. 3, and taken substantially as indicated by the line 4—4 thereof;

Fig. 5 is a transverse sectional elevational view of the gauge or stop mechanism, taken substantially as indicated by the lines 5—5 of Figs. 1 and 6, respectively;

Fig. 6 is a sectional elevational view of the structure illustrated in Fig. 5, and taken substantially as indicated by the line 6—6 thereof;

Fig. 7 is a sectional elevational view of a portion of the strip feeding mechanism, and taken substantially as indicated by the line 7—7 of Fig. 1; and

Fig. 8 is an enlarged sectional elevational view of a portion of the structure illustrated in Fig. 7, showing the character or type of the friction driven feed rolls employed in the feeding of the strip of material into the machine, and for transferring the severed portions of the material therefrom.

The illustrative embodiment of the present invention is shown as applied to a machine for cutting off portions or sections of desired length from a strip of tube stock indicated at B, and shown as of a long relatively narrow strip of material suitable for forming tubes for radiator cores, or the like, and delivering or transferring the cut off sections or portions to a tube forming machine indicated at 12 (Fig. 1), but forming no part of the present invention.

As illustrated in the drawings, the present invention comprises a base 14 having an upwardly extending portion 15 adjacent one of its ends, and provided throughout a substantial portion of its length with slides or ways 16.

Slidably mounted on and adapted to be moved longitudinally of the way 16 by means of a rack and pinion connection 17—18 is an adjustable hollow frame 19, and mounted on the upwardly extending portion 15 and frame 19, respectively, are elongated aligned guide members indicated as a whole by the numerals 21 and 21a, respectively, for guiding the strip B through the ma-

chine, the adjacent ends of the members 21 and 21a being adapted to overlap as indicated at 22 to permit of relative movement of the guide members 21 and 21a.

The guide members shown, in the present instance, comprise an elongated bed plate or table portion 23 having a pair of laterally spaced substantially parallel guide bars 24 adjacent its edge portions and provided with a cap plate 25 mounted thereon and forming a channel 26 for directing the tube stock or strip B longitudinally of the machine.

For feeding the strip B to the machine, a pair of upper and lower feed rolls 27 and 28, respectively, are rotatably mounted in a bearing bracket 29 carried by the frame 19, and in conjunction with upper and lower slack rolls, indicated diagrammatically at 31 and 32, respectively, serve to draw the strip of material or tube stock B from a roll 33 of the material rotatably mounted in a bracket 34 carried on the base 14 of the machine, as illustrated in Fig. 1.

The slack rolls 31 and 32 may be driven in any suitable manner, and inasmuch as they form no part of the present invention, and are operatively related to the feed rolls 27 and 28 in substantially the same manner as shown and described in my above noted Patent No. 2,156,049, a more detailed description thereof is believed unnecessary.

The feed rolls 27 and 28 are, preferably, friction driven, and for driving these rolls, a motor 35 is mounted in the slidable frame 19 and operatively connected by a chain belt 36 to a shaft 37, on which the feed roll 28 is mounted (Fig. 7), and through a pair of pinions 38 and 39, power is transmitted to a shaft 41 on which the feed roll 27 is mounted.

Although other types of friction drive may be employed, the preferred type of drive between the feed rolls 27 and 28 and their respective shafts 37 and 41 is clearly illustrated in Fig. 8, particularly the sectioned portion thereof, wherein the shaft 41 is provided with a sliding ring or collar 42 secured against rotation on the shaft by a key 43 and operatively related to one side of a friction disk 44, the opposite side or face of the disk engaging an inner portion of the upper feed roll 27, thereby providing a frictional connection between the shaft 41 and the upper feed roll. The pressure exerted against the disk 44 is provided by a spring 45, and may be varied by adjusting a collar 46 longitudinally of the shaft 41, and securing the collar in adjusted position by a set-screw 47.

Mounted also on the hollow frame 19 beyond the feed rolls 27 and 28, and suitably spaced therefrom is a cutting device indicated, as a whole, by the numeral 48 and, as clearly illustrated in Figs. 1, 2, 3, and 4, comprises a base member 49 on which, the bed plate or table portion 23 of the guide member 21a is mounted, and on which is secured by means of bolts 50, a relatively stationary cutter or knife section 51 (Figs. 3 and 4).

Slidably mounted in the base member 49 at the respective opposite sides of the guide member 21a are a pair of vertically disposed rods 52 having their lower ends connected to a cross-head 53, and their upper ends connected to a cutter frame or cross-head 54, on which a relatively movable cutter or knife section 55 is mounted and secured thereto by bolts 56, the cutting edge portion 57 of the cutter 55 being adapted to cooperate with the cutting edge 58 of the stationary

knife section 51 for severing a portion from the strip B when the connected cross-heads 53-54 and cutter 55 are lowered.

For actuating the upper or movable knife section 55, the lower cross-head 53 is connected by a rod 59 to a piston 61 mounted in a cylinder 62 carried by and, preferably, within the hollow frame 19, and for controlling the movements of the piston 61 within the cylinder, a solenoid air valve 63 is provided, and shown, in the present instance (Fig. 2), as communicating with the cylinder 62 at opposite sides of the piston 61 by means of conduits 64 and 65, and adapted to communicate with a suitable source of pressure supply (not shown) through a conduit 66, the valve connection to the conduit 65 being normally open to maintain the movable cutter 55, normally in raised position.

It will be apparent from the foregoing description that when the solenoid valve 63 is operated to admit air under pressure to the conduit 64, the piston 61 will be forced downwardly, and the movable knife section or cutter 55 actuated to sever a portion from the strip B, and that when air pressure is admitted to the conduit 65, the piston 61 and movable cutter 55 will be moved to their raised or normal position. Inasmuch as the solenoid valve 63 is of well known standard construction, a detailed description of its construction is thought to be unnecessary.

Mounted on the upwardly extending portion 15 of the base 14, on which the guide member 21 is mounted, is a gauge or stop member indicated, as a whole by the numeral 67 and, as clearly illustrated in Figs. 1, 2, 5, and 6, comprises a bracket 68, in which is mounted a stop member 69 shown, in the present instance, as slidably mounted in a guide 71, and having a contact plate 72 of electric current conducting material mounted on the stop member 69 adjacent its lower end portion and on the side thereof adjacent the cutting device 48.

The contact plate 72 is insulated from the stop member 69 and, as clearly illustrated in Figs. 2, 5, and 6 is adapted to be positioned in the path of movement of the strip B in a manner to be engaged by the leading end thereof as the strip is fed into the machine.

Mounted on the guide 71 and electrically insulated therefrom is a spring contact finger 73 of current conducting material adapted to engage the contact plate 72, and mounted on the spring finger 73 is a binding post 74 adapted to receive one end of an electrical conductor 75, the opposite end of which is connected to a contactor 76 of well known construction, which in turn is operatively and electrically connected by conductors 77 and 78 to the solenoid valve 63, and by conductors 79 and 81 to a service line 82 or other suitable source of current supply.

The circuit of which the electrical conductor 75 forms a part is shown, in the present instance, as including a "step down" transformer 83 of ordinary construction operatively connected to the service line 82, and to the contactor 76 by a conductor 84, the secondary winding of the transformer being grounded to the frame of the machine as, for example, to the guide way 21 by a conductor 85, thus providing a relatively low voltage circuit for operating the contactor 76.

It will be observed from the foregoing description that when the leading end portion of the strip B, fed along the channel 26 of the guide members 21 and 21a, engages the contact plate 72, an electrical circuit will be established

through the plate 72, spring finger 73, conductor 75, contactor 76, conductor 84, transformer 83, conductor 85, ground or guide member 21 and a portion of the strip B, thereby actuating the contactor 76 to connect the solenoid valve 63 to the line 82 through the conductors 77, 78, 79 and 81 for operating the solenoid valve to admit air under pressure through the conduit 64 to the cylinder 62 in a manner to move the piston 61 and movable knife section or cutter 55 downwardly to sever a portion of the strip B from the main or body portion thereof.

For moving the stop member 69 and contact plate 72 out of engagement with the leading end portion of the strip B to break the circuit through the contactor 76, and permit the severed portion of the strip to be delivered or transferred from the machine, a rock-shaft 86 having a key-way therein is rotatably mounted in bearings 87 on the bracket 68, bearing 88 on the bracket 29, and in a bearing 89 on an arm or bracket 91 carried by and secured to the base member 49 by bolts 92 (Figs. 3 and 4).

Splined to the rock-shaft 86 in a manner to be relatively movable longitudinally thereof, but secured against rotation thereon is an arm 93 (Figs. 3 and 4) having an elongated aperture 94 formed therein adjacent its free end portion adapted to receive a pin 95 mounted in the side portions 96 of a forked or U-shaped bracket 97 mounted on and secured to the upper cross-head 54, of the cutting device 48 by means of bolts 98, the side portions 96 of the bracket 97 having vertically extending elongated apertures 99 formed therein and adapted to loosely receive the rock-shaft 86 in a manner to permit vertical movement of the cross-head 54 on which the movable knife section or cutter 55 is mounted, without interference by the rock-shaft.

Mounted also on the rock-shaft 86 and secured against rotation thereon, adjacent the gauge or stop member 67, is a laterally extending cam or finger 101 (Fig. 5) adapted to be positioned, together with the rock-shaft 86, in an enlarged opening 102 formed in the stop member 69, the said opening having a portion 103 extending laterally at one side of the rock-shaft, into which the finger 101 extends, and, by reason of the engagement of the free end of the cam or finger 101 with the stop member 69 adjacent the upper side portion 104 of the opening 102, it will be apparent that rotation of the rock-shaft in a clockwise direction as indicated by the arrow 105 (Fig. 5) will serve to raise the stop member 69 and the contact plate 72 out of the path of movement of the strip B.

It will be observed from the foregoing description and a consideration of Figs. 3 and 5, that when the cross-head 54 (Fig. 3) and movable knife section or cutter 55 mounted thereon is moved downwardly to sever a portion from the strip B, the rock-shaft 86 will be rotated in a clock-wise direction as indicated by the arrow 106 (Fig. 3), and that the cam or finger 101 (Fig. 5) will be rotated also in a clock-wise direction, as above described, to move the stop member 69 and contact plate 72 out of engagement with the end of the strip B, substantially simultaneously with the severing of a portion therefrom, thereby breaking the contactor-circuit and permitting the severed portion of the strip to be delivered or transferred from the machine.

For delivering or removing the severed portion of the strip B from the machine, a plurality of pairs of transfer rolls 107 and 108, preferably

frictionally driven, are positioned at the respective opposite sides of the stop member in vertical line with the strip and operatively related thereto.

The delivery rolls 107—108 may be provided with the type of friction drive illustrated in Figs. 7 and 8 and described with reference to the feed rolls 27 and 28, and by reason of this type of drive, it will be apparent that a slippage may take place momentarily adjacent the friction disks of the delivery rolls 108 when the leading end portion of the strip B is in engagement with the stop member and contact plate 72 just prior to the severing of a portion from the strip.

The transfer rolls 107—108 are operated at relatively higher speed than the feed rolls 27—28, and are driven, preferably, by a motor 109 (Fig. 1) having a sprocket 111 operatively related to a chain belt 112 for driving a sprocket 113 and large gear 114 mounted on a stub shaft 115 carried by the bracket 68 (Figs. 1 and 5). The gear 114 is adapted to drive relatively smaller pinions 116 associated with the lowermost rolls of the respective pairs of transfer rolls 107—108, and the pinions 116 are operatively related to pinions 117 of substantially like size associated with the uppermost transfer rolls of the respective pairs.

It will be observed from the foregoing description that immediately upon the severing of a portion of the material from the strip B and the lifting of the stop 69 and contact plate 72 from engagement with the leading end of the severed portion of the strip, the transfer rolls 108—107, by reason of their relatively high speed, will remove the severed portion rapidly from the machine at a much higher speed than the body portion of the strip B is fed into the machine by the feed rolls 27—28, thereby providing a gap between the trailing end of the severed portion and the then leading end of the strip, into which gap, the stop member and contact plate 72 may drop to be again engaged by the leading end portion of the strip B as it is fed into the machine, it being understood that immediately upon the removal of the contact plate 72 from engagement with the leading end of the severed portion of the strip, the circuit through the contactor 76 will be broken and the solenoid valve will be returned to normal position to admit air pressure through the conduit 65 to raise the movable knife section 55 and cross-head 54, rock the shaft 86 in a counter clock-wise direction and permit the stop member 69 and contact 72 to assume their normal position in the path of the strip when the severed portion of the strip has been removed.

To maintain the contact plate 72 out of engagement with the severed portion of the strip during its removal from the machine, the stop member 69 is provided with an anti-friction roller 118 (Figs. 5 and 6) adapted to ride on the severed portion until it has passed the stop member, thereby retaining the contact 72 above the severed portion of the strip, after which the contact 72 again will be positioned in the path of the incoming strip B to be engaged by the leading end thereof.

By reason of the overlapping relationship of the guide members 21 and 21a indicated at 22 (Fig. 1), and the adjustability of the frame 19, on which the cutting device 48 is mounted, it will be apparent that the knife sections 51 and 55 may be positioned as desired with respect to the stop member 69 and contact plate 72 for determining the length of the portion to be severed from the strip B, and when so adjusted, the frame 19 and cutting device 48 mounted

thereon may be secured in desired position by well known locking devices indicated at 119 in Fig. 1.

In operation, the strip B is fed into the machine by the frictionally driven feed rolls 27—28 until the leading end of the strip engages the contact plate 72 of the stop member 69 positioned in the channel 26, at which time the movement of the strip will be arrested, and an electrical circuit completed to actuate the contactor 76 for operating the solenoid valve 63 and admit air under pressure through the conduit 64 into the upper portion of the cylinder 62, thereby forcing the piston 61 and connected parts, including the movable knife section 55, downwardly to sever a portion from the strip B.

Substantially simultaneously with the severing of a portion of the strip, the shaft 86 is rocked in its bearings to lift the stop member 69 and contact 72 from the path of, and out of engagement with the severed portion to permit the removal thereof from the machine by the transfer rolls 108—107 and break the circuit through the contactor 76, thus permitting the solenoid valve 63 to return to its normal position for admitting air pressure through the conduit 65 to the lower portion of the cylinder 62 and move the piston 61 and movable knife section 55 upwardly, whereupon the feeding of the strip B will be resumed by the feed rolls 27—28.

Owing to the relatively higher speed of the delivery rolls 107—108, as above described, the severed portion is quickly removed and a gap created therebetween and the then leading end of the strip B, into which gap the stop member 69 and contact plate 72 may drop to be again engaged by the leading end portion of the strip and the operation of the machine repeated.

It will be observed from the foregoing description that the present invention provides a novel construction and arrangement whereby a strip of material fed to the machine may be intermittently arrested in its movement there-through and a portion of desired length cut from said strip, and wherein the length of the cut-off portions may be varied as desired.

Also, that the present invention provides a novel arrangement whereby the operations of the stop member and cutting device are maintained substantially in synchronism, and wherein the operation of the cutting device is controlled by the relationship and cooperation of the strip to be cut with the gauge or stop member.

Obviously, the present invention is not limited to the precise construction and arrangement shown and described, as the same may be variously modified. Moreover, all the features of the invention need not be used conjointly, as the same may be used to advantage in variously different combinations and sub-combinations.

What I claim as new and desire to secure by Letters Patent is:

1. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a stop member movable into and out of the path of movement of said strip and adapted to be engaged thereby, means for securing said stop member against movement longitudinally of the machine when engaged by the strip, a cutter in spaced relation with respect to said stop member and operatively related to said strip, and means operatively related to said stop member and

controlled by the position thereof with respect to said strip for actuating said cutter.

2. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member adapted to be engaged by said strip, and movable laterally from the path thereof means for securing said stop member against movement with the strip when engaged thereby, a cutter adjustably positioned in spaced relation with respect to said stop member and operatively related to said strip, and means operatively related to said stop member and controlled by the position thereof with respect to said strip for actuating said cutter to sever a portion from said strip and for removing said stop member from engagement with the strip.

3. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material longitudinally to the machine, a stop member movable transversely with respect to the path of movement of the strip and adapted to be engaged by said strip, means for securing said stop member against movement with the strip when engaged thereby, a cutter adjustably positioned in spaced relation with respect to said stop member and operatively related to said strip, means operatively related to said stop member and controlled by the position thereof with respect to said strip for actuating said cutter to sever a portion from said strip, and means for removing said severed portion from the machine.

4. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member positioned normally in the path of movement of the strip and adapted to be engaged thereby, means for securing said stop member against movement longitudinally of the machine when engaged by the strip, a cutter in spaced relation with respect to said member and operatively related to said strip, and means operatively related to said stop member and controlled by the engagement of the strip with said member for actuating said cutter to sever a portion from said strip and for moving said stop member out of the path of movement of the strip substantially simultaneously with the severing of said portion.

5. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member positioned normally in the path of movement of the strip and adapted to be engaged by the leading end portion thereof, means for securing said stop member against movement longitudinally of the machine when engaged by the strip, a cutter adjustably positioned in spaced relation with respect to said stop member and operatively related to said strip, means operatively related to said stop member and controlled by the engagement of the strip with said member for actuating said cutter to sever a portion from said strip, means for removing the stop member laterally from the path of the strip upon the severance of a portion thereof, and a pair of relatively high speed rolls for removing said severed portion from the machine in alignment with respect to the incoming strip.

6. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member adapted to be engaged by said

strip, a cutter in spaced relation with respect to said stop member and operatively related to said strip, means for operating said cutter, and electrical means operatively related to said stop member and electrically connected to said strip for controlling the operation of said cutter operating means.

7. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member adapted to be engaged by said strip, a cutter in spaced relation with respect to said stop member and operatively related to said strip, fluid pressure actuated means for operating said cutter, and means operatively related to said stop member and strip for controlling the operation of said fluid pressure actuated means.

8. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member adapted to be engaged by said strip, a cutter in spaced relation with respect to said stop member and operatively related to said strip, fluid pressure actuated means for operating said cutter, and electrical means operatively related to said stop member and controlled by engagement of the strip therewith for controlling the operation of said fluid pressure actuated means.

9. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member positioned normally in the path of movement of the strip and adapted to be engaged by the leading end portion thereof, a cutter in spaced relation with respect to said stop member and operatively related to said strip, pressure actuated means for operating said cutter, electrical means operatively related to said stop member and strip for controlling the operation of said pressure actuated means, and means operatively related to said cutter and stop member and operable by the movement of the cutter for determining the position of the stop member with respect to the path of said strip.

10. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member positioned normally in the path of movement of the strip and adapted to be engaged by the leading end portion thereof, a cutter in spaced relation with respect to said stop member and operatively related to said strip for severing a portion therefrom, pressure actuated means for operating said cutter, electrical means operatively related to said stop member and strip for controlling the operation of said pressure actuated means, and means operatively related to said cutter and stop member and operable by the cutting movement of the cutter to remove the stop member from the path of said strip.

11. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member positioned normally in the path of movement of the strip and adapted to be engaged by the leading end portion thereof, a cutter adjustably positioned in spaced relation with respect to said stop member and operatively related to said strip for severing a portion therefrom, pressure actuated means for operating said cutter, electrical means operatively related to said stop member and strip for controlling the

operation of said pressure actuated means, said electrical means including an electric circuit adapted to be closed by engagement of the strip with said stop member, and means operatively related to said cutter and stop member and operable by the cutting movement of the cutter to remove the stop member from the path of said strip.

12. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member positioned normally in the path of movement of the strip and adapted to be engaged by the leading end portion thereof, a cutter adjustably positioned in spaced relation with respect to said stop member and operatively related to said strip for severing a portion therefrom, pressure actuated means for operating said cutter, electrical means operatively related to said stop member and strip for controlling the operation of said pressure actuated means, said electrical means including an electric circuit adapted to be closed by engagement of the strip with said stop member, a rock shaft having an arm operatively related to said cutter and having a laterally extending portion operatively related to said stop member for removing the stop member from engagement with the leading end of said strip when the cutter is moved to sever a portion therefrom.

13. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a movable stop member positioned normally in the path of movement of the strip and adapted to be engaged by the leading end portion thereof, a cutter adjustably positioned in spaced relation with respect to said stop member and operatively related to said strip for severing a portion therefrom, pressure actuated means including a solenoid air valve for operating said cutter, electrical means operatively related to said stop member and strip for controlling the operation of said solenoid valve, said electrical means including an electric circuit adapted to be closed by engagement of the strip with said stop member, a rock shaft having an arm operatively related to said cutter and having a laterally extending portion operatively related to said stop member for removing the stop member from engagement with the leading end of said strip to break said electrical circuit when the cutter is moved to sever a portion from said strip, and transfer rolls of relatively higher speed than said feeding rolls for removing the severed portion of the strip from the machine.

14. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a vertically movable stop member including an electrical contact positioned normally in the path of movement of said strip and adapted to be engaged by the leading end portion thereof, a cutter having a frame positioned adjustably in spaced relation to said stop member, said cutter being operatively related to said strip for severing a portion therefrom, a pressure cylinder having a piston therein operatively connected to said cutter frame, a solenoid valve connected to a source of pressure supply and communicating with said cylinder in operative relationship with respect to said piston, an electric circuit connected to said contact and operatively related to said solenoid valve, said circuit being completed by engagement of the leading end of said strip with

said electrical contact for actuating said cutter, a rock shaft having an arm connected to said cutter frame and having a finger engaging said stop member for raising the electrical contact out of engagement with the adjacent end of the strip when the cutter is operated to sever a portion from the strip, relatively high speed transfer rolls for removing the severed portion from the machine, and means operatively related to said stop member for retaining the electrical contact out of engagement with the severed portion of the strip during its removal from the machine.

15. In a material feeding and cut-off machine, the combination of a pair of friction driven rolls for feeding a strip of material to the machine, a vertically movable stop member including an electric contact positioned normally in the path of movement of said strip and adapted to be engaged by the leading end portion thereof, a vertically movable cutter having a frame positioned adjustably in spaced relation with respect to said stop member, said cutter being operatively related to said strip for severing a portion therefrom, a pressure cylinder having a piston therein operatively connected to said cutter frame, a solenoid valve connected to a source of pressure supply and communicating with said cylinder at opposite sides of said piston, an electric circuit connected to said contact and operatively related to said solenoid valve, said circuit being completed by engagement of the leading end of said strip with said electrical contact for actuating said

cutter, a rock shaft having an arm connected to said cutter frame and having a finger engaging said stop member for raising the electrical contact out of engagement with the adjacent end of the strip when the cutter is operated to sever a portion from said strip, relatively high speed friction driven transfer rolls for removing the severed portion from the machine, and means on said stop member engageable with the severed portion of the strip for retaining the electrical contact out of engagement therewith during the removal of said severed portion from the machine.

16. In a material feeding and cut-off machine, the combination of a pair of rolls for feeding a strip of material to the machine, a vertically movable stop member having an electrical contact mounted thereon and insulated therefrom, said contact being adapted to be positioned in the path of movement of the strip through the machine and to be engaged thereby, a cutter for severing a portion of predetermined length from said strip while in engagement with said stop, means operatively related to the cutter for moving the contact out of engagement with said strip, means for removing the severed portion from the machine, and a roller on said stop member engageable with said severed portion for retaining the contact out of engagement with said portion during the removal thereof.

MARTIN G. BOERGER.