R. F. BEARDSLEY.

STRIP CUTTING MACHINE.

APPLICATION FILED OCT. 10, 1917.

1,269,368.

Patented June 11, 1918.

4 SHEETS—SHEET 1.

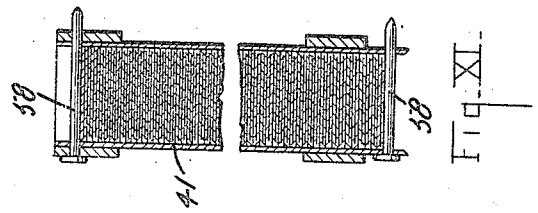

Fig. XI.

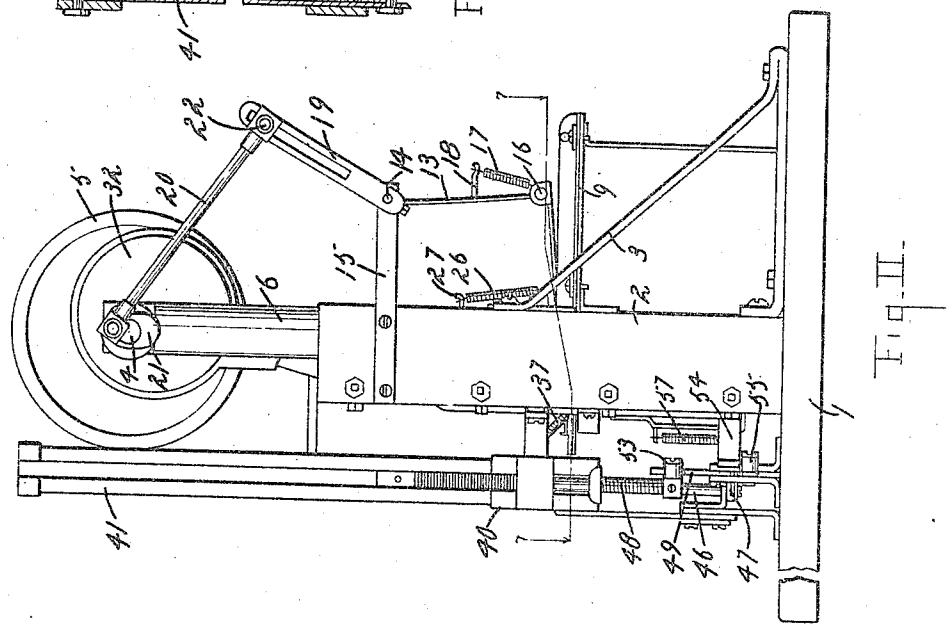

Fig. II.

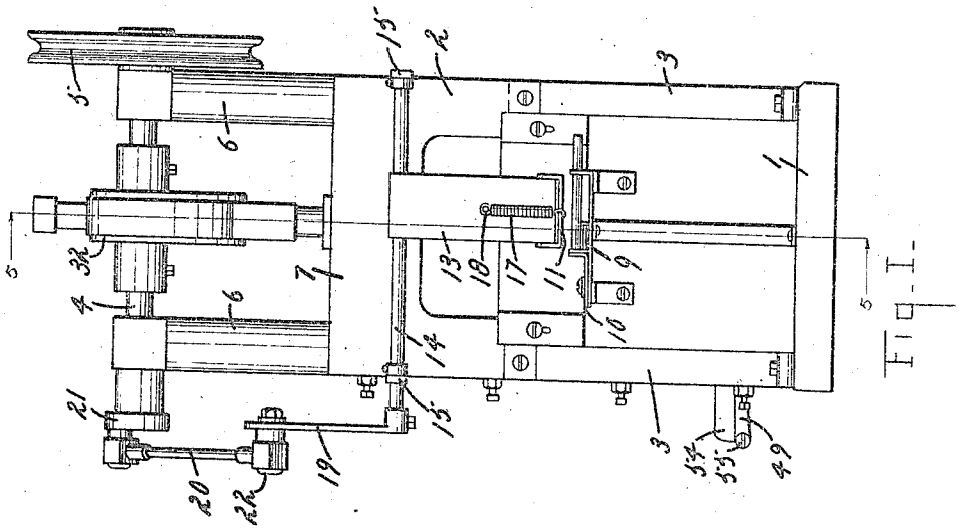

Fig. I.

WITNESSES:

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Luther Blake

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ROBERT F. BEARDSLEY

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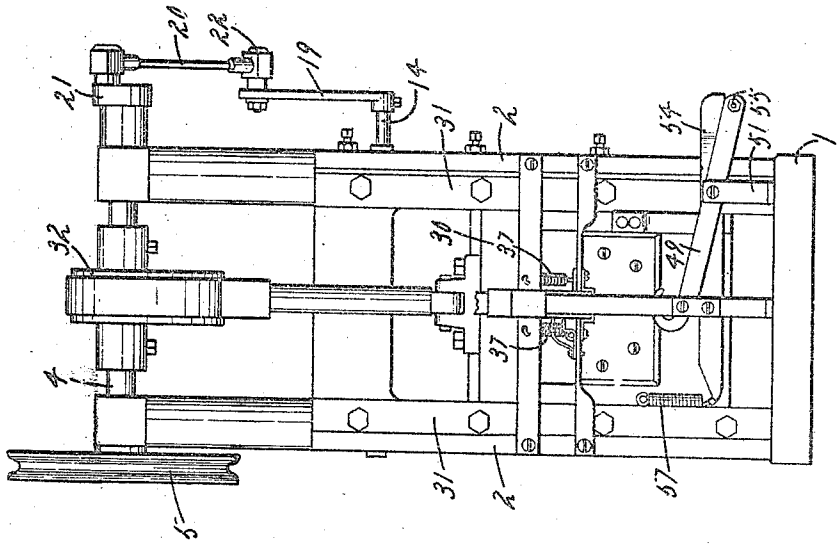

Fig. IV.

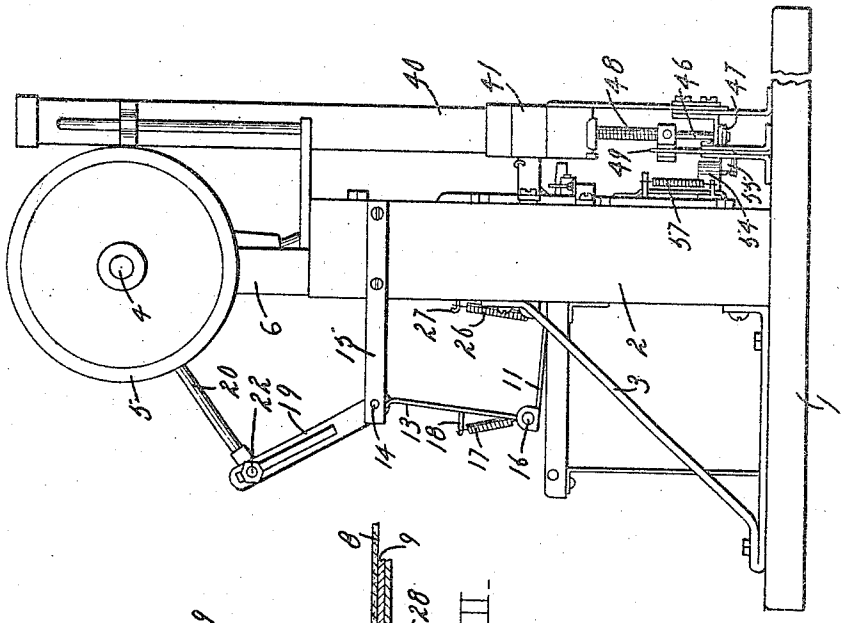

Fig. III.

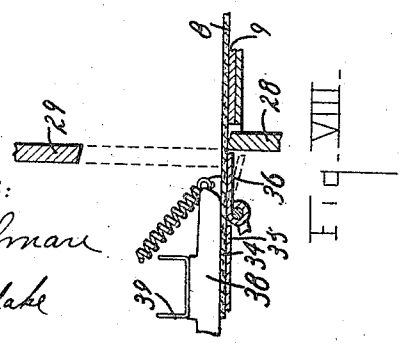

Fig. VIII.

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Fig. VI.

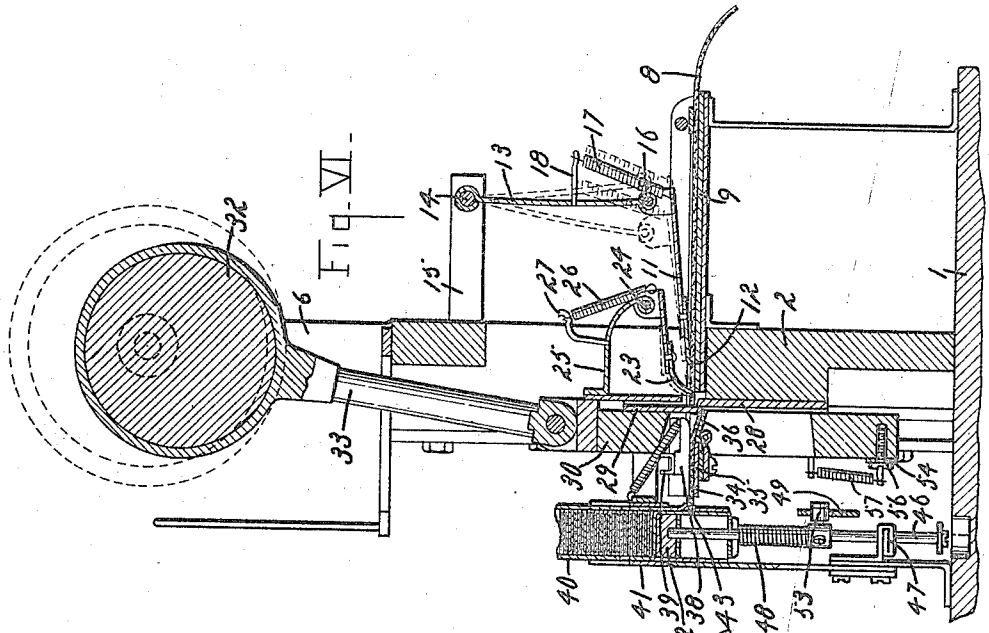
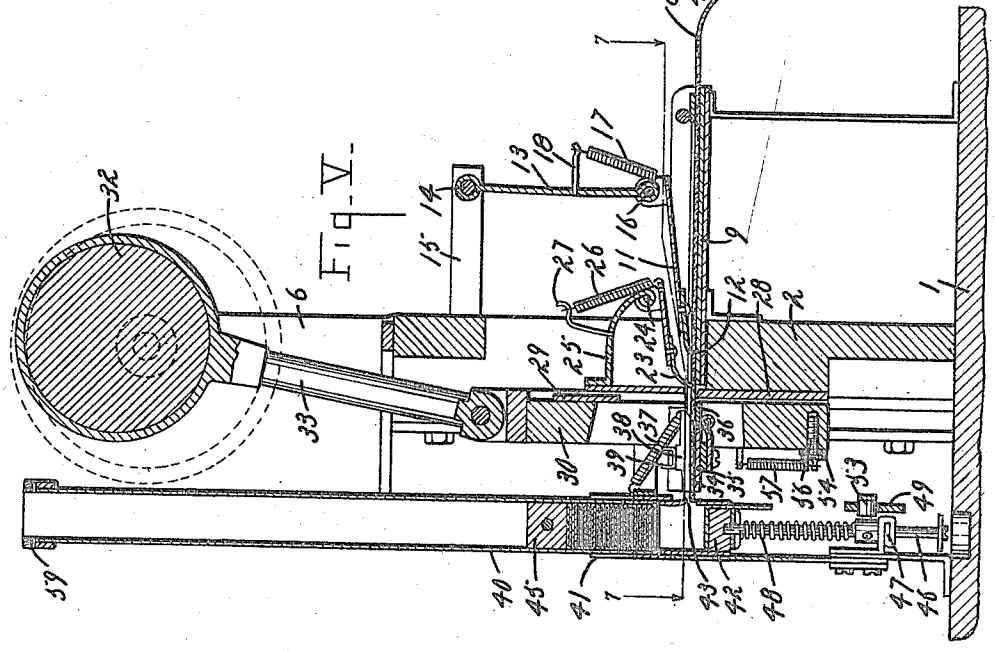


Fig. V.



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4 SHEETS—SHEET 4.

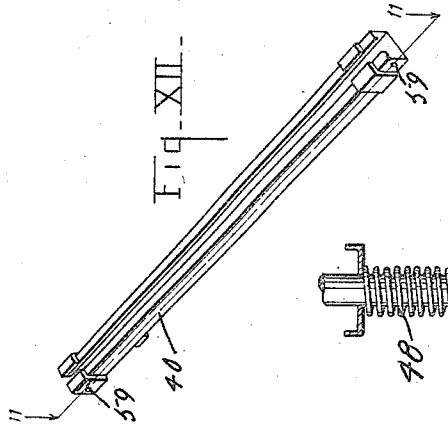

FIG. XII.

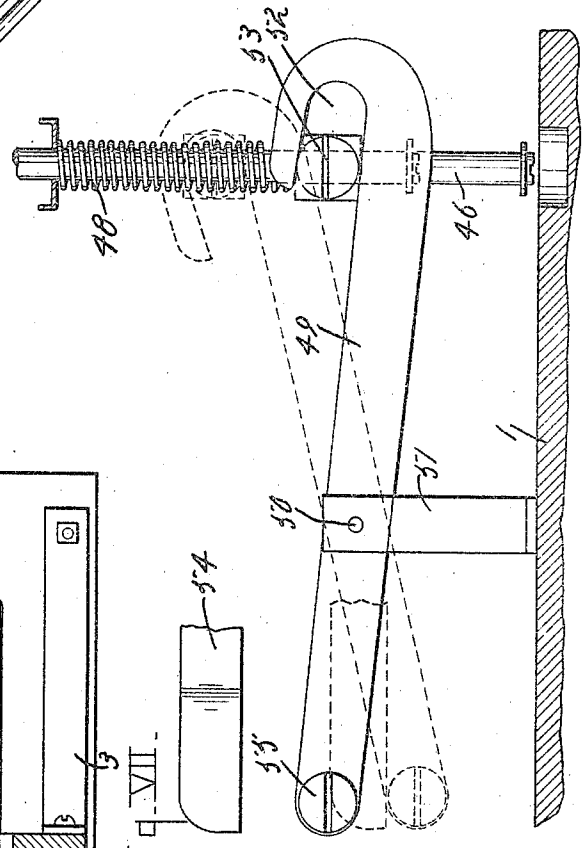

FIG. IX.

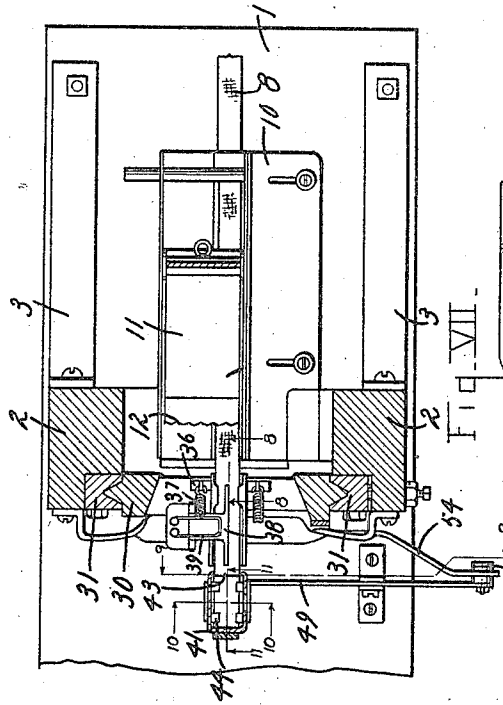

FIG. VII.

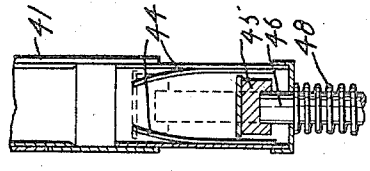

FIG. X.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT F. BEARDSLEY, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO KALAMAZOO CORSET COMPANY, OF KALAMAZOO, MICHIGAN.

STRIP-CUTTING MACHINE.

1,269,368. Specification of Letters Patent. Patented June 11, 1918.

Application filed October 10, 1917. Serial No. 195,728.

To all whom it may concern:

Be it known that I, ROBERT F. BEARDSLEY, a citizen of the United States, residing at the city and county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Strip-Cutting Machines, of which the following is a specification.

This invention relates to improvements in strip cutting machines.

My improved strip cutting machine is especially designed by me for cutting strips or tapes into pieces for use in the manufacture of ventilating inserts for garments, such as shown in my Patents #1,252,990, dated Jan. 8, 1918 and #1,252,991, dated Jan. 8, 1918, although readily adapted and desirable for use in various other relations.

The main object of this invention is to provide an improved machine for cutting tapes into strips and delivering them into holders or containers.

A further object is to provide a machine of the character described which is of a large capacity and at the same time comparatively simple and economical in structure.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplished the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which:

Figure I is a front view of a structure embodying the features of my invention.

Fig. II is a side view thereof looking from the left of Fig. I.

Fig. III is a side view thereof looking from the right of Fig. I.

Fig. IV is a rear view with the container removed.

Fig. V is a vertical section on line corresponding to line 5—5 of Fig. I.

Fig. VI is a detail vertical section similar to that of Fig. V with the cutter in actuated position.

Fig. VII is a detail horizontal section on a line corresponding to line 7—7 of Figs. II and V.

Fig. VIII is an enlarged detail section on a line corresponding to line 8—8 of Fig. VII.

Fig. IX is an enlarged detail section on a line corresponding to broken line 9—9 of Fig. VII, showing details of the delivery means.

Fig. X is an enlarged detail vertical section on a line corresponding to line 10—10 of Fig. VII, showing further details of the delivery means.

Fig. XI is a detail vertical section through the container on a line corresponding to line 11—11 of Fig. VII.

Fig. XII is a perspective view of the container.

In the drawing, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, I provide a supporting frame comprising the base 1 and uprights 2 supported upon the base and braced by the braces 3. The driving shaft 4 is provided with a grooved driving pulley 5, bearings for this shaft being carried by pedestals 6 on the upper ends of the uprights 2. The uprights 2 are connected by the cross pieces 7 at the top. The tape or strip 8, which is to be cut into short pieces for the purpose stated, shown conventionally, is fed into the machine over the feed way 9 which has an adjustable guide plate 10, which may be adjusted to suit the width of the strip. The stock is advanced step by step by means of the feed jaw 11, which has teeth 12 adapted to engage in the fabric. This feed jaw is carried by the oscillating arm 13 on the rock shaft 14 supported by brackets 15 projecting forwardly from the uprights. The jaw 11 is pivoted to the arm at 16. A coiled spring 17 is connected to the heel of the jaw and to the pin 18 projecting from the arm so that the jaw is held yieldingly against the stock. The rock shaft 14 has an arm 19 at one end connected by the pitman 20 with a crank 21 on the shaft 4. The arm 19 is slotted to receive the pin 22 so that the stroke of the feed jaw may be regulated.

The stock is retained in its advanced position by the retaining jaw 23 which is pivoted at 24 on the bracket 25 and held yieldingly in engagement with the stock by means of the coiled spring 26, one end of

which is connected to the heel of the jaw and the other to the pin 27. The stock is fed across the shear bar 28 positioned at the rear. The shear or cutter blade 29 is carried by the cutter head 30 reciprocating in ways 31, see Fig. VII. The cutter head is reciprocated by means of the eccentric 32 on the shaft 4 and the pitman 33. This provides a positive driving means for the cutter head timed so as to cut when the stock is at rest.

The severed piece 34 is supported on the support 35 positioned at the rear of the shear bar in the plane of the feed way. The support 35 is provided with a pivoted front section 36 which yields with the cutter blade, as shown in Fig. VI. This yielding section of the support is returned to its initial position by the coiled spring 37. A retaining shoe 38 pressed lightly downward by the spring 39 holds the piece while it is being severed and is being pushed into the packing trough. A container trough 40 is removably mounted upon the packing trough so that when filled it may be removed and another container placed in position.

The packing plunger 42 is mounted to reciprocate past the opening 43 in the packing trough. This opening is in the plane of the support 34 so that on the feed stroke of the stock the end severed piece is engaged by the end of the stock and the severed piece is pushed into the packing trough. This takes place while the packing plunger 42 is in its lowered position, as shown in Fig. V.

It will be noted that I have not in the accompanying drawing attempted to maintain the relative proportions of the parts.

On the upward stroke of the feed plunger it carries the piece upwardly past the spring retaining fingers 44, see Fig X, and against the piece previously delivered pushing the collected pieces upward, a weight 45 being preferably provided for holding them in a compact relation. The plunger 42 is carried by the plunger rod 46 guided at its lower end by the bracket 47. A spring 48 arranged on the plunger rod insures its prompt return. The plunger is actuated by the lever 49 pivoted at 50 on the support 51 and slotted at 52 to engage the pin 53 projecting from the plunger rod. The lever is actuated by the tappet 54 pivoted at 56 on the lower end of the cutter head 30 so that on the downward movement thereof the tappet is carried into engagement with the pins 55 on the lever, see Fig. X. A spring 57 is connected to one end of the tappet and to the frame so that the tappet is actuated as the cutter head moves downwardly.

When the container is filled pins 58 are inserted through holes 59 in the container retaining the strips therein as shown in Fig. XI.

With the parts thus formed and arranged they are simple and economical to produce, may be readily assembled, and are not liable to get out of repair in use. I have illustrated and described my invention in the form in which I have embodied the same. I have not attempted to illustrate or describe various modifications in structural details which I contemplate as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as the particular work required may render desirable.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a structure of the class described, the combination of a driving shaft, a stock feed way, a feed jaw, a rock shaft, an arm on said rock shaft on which said feed jaw is pivotally mounted, a spring arranged to hold said feed jaw yieldingly in engagement with the stock, driving connections from said rock shaft to said driving shaft, a spring pressed stock retaining jaw, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, driving connections therefor to said driving shaft, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, said support having a pivoted spring supported front section adapted to yield under the action of the cutter blade and to return the severed piece to position to be engaged and advanced by the stock, a spring pressed retaining shoe coacting with said support to hold the severed pieces, a packing trough disposed at the rear of said support and having an opening alined with said support, a packing plunger reciprocating in said packing trough past said opening therein, means for supporting the severed pieces, and means for actuating the packing plunger comprising said cutter head.

2. In a structure of the class described, the combination of a driving shaft, a stock feed, a feed jaw, a rock shaft, an arm on said rock shaft on which said feed jaw is pivotally mounted, a spring arranged to hold said feed jaw yieldingly in engagement with the stock, driving connections from said rock shaft to said driving shaft, a spring pressed stock retaining jaw, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, driving connections therefor to said driving shaft, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, said support having a pivoted spring supported front section

adapted to yield under the action of the cutter blade and to return the severed piece to position to be engaged and advanced by the stock, and a spring pressed retaining shoe coacting with said support to hold the severed pieces.

3. In a structure of the class described, the combination of a stock feed way, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, said support having a pivoted spring supported front section adapted to yield under the action of the cutter blade and to return the severed piece to position to be engaged and advanced by the stock, a spring pressed retaining shoe coacting with said support to hold the severed pieces, a packing trough disposed at the rear of said support and having an opening alined with said support, a packing plunger reciprocating in said packing trough past said opening therein, means for supporting the severed pieces in said trough, and means for actuating the packing plunger comprising said cutter head.

4. In a structure of the class described, the combination of a stock feed way, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, said support having a pivoted spring supported front section adapted to yield under the action of the cutter blade and to return the severed piece to position to be engaged and advanced by the stock, and a spring pressed retaining shoe coacting with said support to hold the severed pieces.

5. In a structure of the class described, the combination of a driving shaft, a stock feed way, a feed jaw, a rock shaft, an arm on said rock shaft on which said feed jaw is pivotally mounted, a spring arranged to hold said feed jaw yieldingly in engagement with the stock, driving connections from said rock shaft to said driving shaft, a spring pressed stock retaining jaw, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, driving connections therefor to said driving shaft, a cutter blade on said cutter head coacting with said shear bar, and a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, said support having a pivoted spring supported front section adapted to yield under the action of the cutter blade and to return the severed piece to position to be engaged and advanced by the stock.

6. In a structure of the class described, the combination of a driving shaft, a stock feed way, a feed jaw, a rock shaft, an arm on said rock shaft on which said feed jaw is pivotally mounted, a spring arranged to hold said feed jaw yieldingly in engagement with the stock, driving connections from said rock shaft to said driving shaft, a spring pressed stock retaining jaw, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, driving connections therefor to said driving shaft, and a cutter blade on said cutter head coacting with said shear bar.

7. In a structure of the class described, the combination of a frame, a stock feed way, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, said support having a section adapted to yield under the action of the cutter blade and to return the severed piece to position to be engaged and advanced by the stock, a spring pressed retaining shoe coacting with said support to hold the severed pieces. a packing trough disposed vertically at the rear of said support and having an opening in the side thereof alined with said support, said packing trough being open at its upper end and adapted to receive a container, a packing plunger reciprocating in said packing trough past said opening therein to carry the severed pieces upwardly, a retaining spring for supporting the severed pieces in an elevated position in said trough, a pivoted actuating lever for said packing plunger, an actuating tappet for said lever pivotally mounted on said cutter head, and a spring connected to one end of said tappet and to said frame so that said actuating lever is engaged by said lever on the down stroke of the cutter head and the packing plunger actuated.

8. In a structure of the class described, the combination of a frame, a stock feed way, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, a packing trough disposed vertically at the rear of said support and having an opening

in the side thereof alined with said support, said packing trough being open at its upper end and adapted to receive a container, a packing plunger reciprocating in said packing trough past said opening therein to carry the severed pieces upwardly, a retaining spring for supporting the severed pieces in an elevated position in said trough, a pivoted actuating lever for said packing plunger, an actuating tappet for said lever pivotally mounted on said cutter head, and a spring connected to one end of said tappet and to said frame so that said actuating lever is engaged by said lever on the down stroke of the cutter head and the packing plunger actuated.

9. In a structure of the class described, the combination of a frame, a stock feedway, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feedway, a reciprocating cutter head, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feedway so that the stock is fed across the shear bar onto the support, said support having a section adapted to yield under the action of the cutter blade and to return the severed pieces to position to be engaged and advanced by the stock, and a spring-pressed retaining shoe coacting with said support to hold the severed pieces.

10. In a structure of the class described, the combination of a stock feed way, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, a cutter blade on said cutter head coacting with the said shear bar, and a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, said support having a section adapted to yield under the action of the cutter blade and to return the severed piece to position to be engaged and advanced by the stock.

11. In a structure of the class described, the combination of a stock feed way, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, a packing trough disposed vertically at the rear of said support and having an opening in the side thereof alined with said support, said packing trough being open at its upper end and adapted to receive a container, a packing plunger reciprocating in said packing trough past said opening therein to carry the severed pieces upwardly, a retaining spring for supporting the severed pieces in an elevated position in said trough, and means for actuating the packing plunger comprising said cutter head.

12. In a structure of the class described, the combination of a stock feed way, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, a packing trough disposed at the rear of said support and having an opening therein alined with said support, a packing plunger reciprocating in said packing trough past said opening, and means for actuating the packing plunger comprising said cutter head.

13. In a structure of the class described, the combination of a stock feed way, means for feeding the stock step by step, a shear bar disposed at the rear of and below said feed way, a reciprocating cutter head, a cutter blade on said cutter head coacting with said shear bar, a support disposed at the rear of said shear bar in alinement with said feed way so that the stock is fed across the shear bar onto the support, a packing trough disposed at the rear of said support and having an opening therein alined with said support, and a packing plunger reciprocating in said packing trough past said opening.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

ROBERT F. BEARDSLEY. [L. S.]

Witnesses:
STELLA J. KAIN,
CHARLES T. BOWMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."