

June 24, 1924.

1,499,157

C. E. DOTY

BUTTON SLUG CUTTING MACHINE

Filed March 16, 1923

3 Sheets-Sheet 1

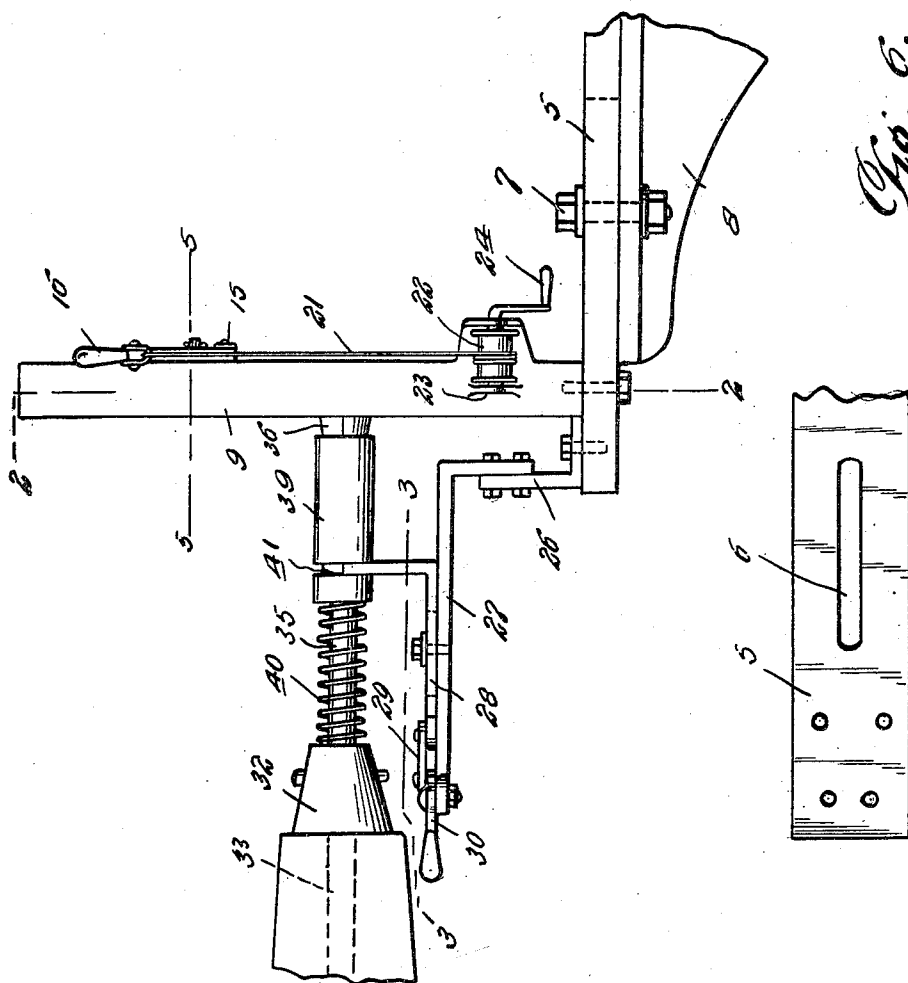


Fig. 6.

Fig. 1.

Witnesses:

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June 24, 1924.

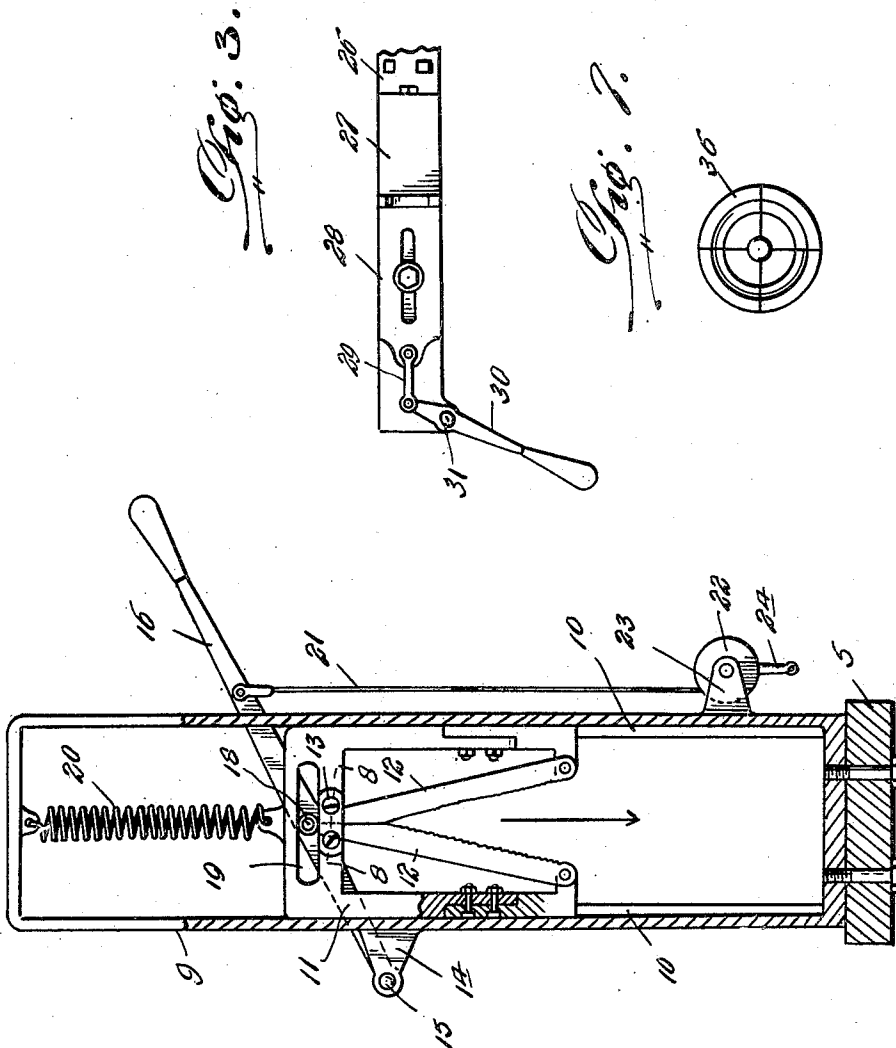
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BUTTON SLUG CUTTING MACHINE

Filed March 16, 1923

3 Sheets-Sheet 2



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BUTTON SLUG CUTTING MACHINE

Filed March 16, 1923

3 Sheets-Sheet 3

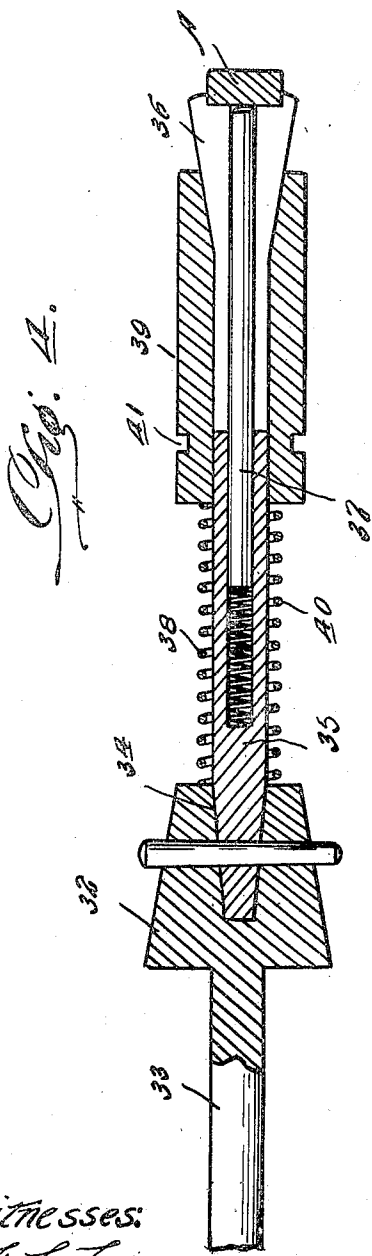
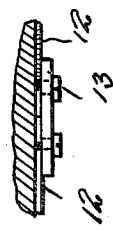
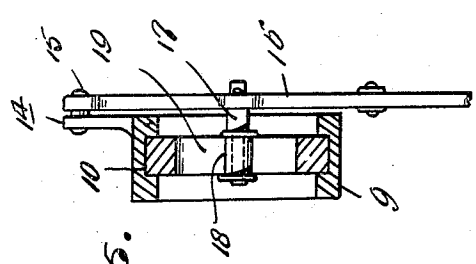


Fig. 8.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES E. DOTY, OF COLUMBUS JUNCTION, IOWA.

BUTTON-SLUG-CUTTING MACHINE.

Application filed March 16, 1923. Serial No. 625,678.

To all whom it may concern:

Be it known that CHARLES E. DOTY, a citizen of the United States, residing at Columbus Junction, State of Iowa, has invented certain new and useful Improvements in Button-Slug-Cutting Machines, of which the following is a specification.

In the manufacture of pearl buttons from slugs or blanks it is often necessary that these slugs or blanks be ground to a specific thickness. Oftentimes I have noticed that these slugs or blanks are of such a thickness as to permit of the manufacture of two buttons therefrom if any means were known for dividing these slugs into two parts of equal thickness.

My invention therefore has for its primary object the provision of such a machine that will effectively divide button slugs or blanks into two parts for permitting two buttons to be manufactured from a single slug of a certain thickness.

A further object of my invention is the provision of such a button slug cutting machine that embodies all of the characteristics of simplicity of construction, inexpensiveness of manufacture and high usefulness of purpose.

The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawings, the invention residing in the construction, combination, and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views, and wherein:

Figure 1 is a vertical elevation of my improved button slug cutting machine;

Figure 2 is a vertical cross section taken substantially upon the line 2—2 of Figure 1 disclosing more clearly the cutting saw of the machine;

Figure 3 is a detail cross section upon the line 3—3 of the same figure;

Figure 4 is a detail cross section of the button slug holding chuck;

Figure 5 is a transverse cross section upon the line 5—5 of Figure 1;

Figure 6 is a fragmentary plan of the bed plate comprised in my invention;

Figure 7 is an end elevation of the button slug chuck; and

Figure 8 is a detail cross section upon the line 8—8 of Figure 2, more clearly showing the securing means between the upper ends of the saw blades and their carrying frame.

Referring to the drawings in detail, 5 designates what may be termed a bed plate provided with a longitudinal slot 6 adjacent one end thereof. This plate is adjustably secured through the medium of a bolt 7 passing through said slot 6 to one side of the bed 8 of the button making machine.

Secured adjacent one end of the said bed plate 5 is a vertically extending saw frame guide 9, the vertical side walls of which are slotted as at 10, more clearly shown in Figures 2 and 5. Slidable within the said channels 10 of the said saw frame guide 9 is a substantially inverted V-shaped saw frame 11 and secured to the lower ends of the legs constituting a portion of the frame are the hack-saw blades 12, these blades extending upwardly and converging inwardly toward each other and being secured through the instrumentality of a bracket plate 13 to the said frame 11.

Formed upon one of the vertical side walls of the said saw frame guide 9 is a lateral projection 14 to which is pivotally secured at 15 one end of a hand operating lever 16. This lever carries a forwardly projecting pin 17 upon which is freely movable a flanged roller 18, the same adapted for free movement within a horizontal slot 19 in said saw frame 11. The saw frame is normally maintained in a position upwardly within the guide 9 through the instrumentality of a coiled spring 20.

Connected to the lever 16 is one end of a flexible cable 21, the other end of this cable being secured to a cable drum 22 which is journaled between brackets 23 formed upon the adjacent vertical side wall of the guide frame 9. This drum 22 is provided with a handle 24 and it will at once be apparent that by winding the cable 21 upon the said drum 22 the saw frame 11 will be moved downwardly within its guide, the lever 16 also effecting an appropriate means for controlling the movement in a reverse direction of the said saw frame.

Upon the frame end of the bed plate 5 is a bracket 26 to which is secured one end of a horizontally extending plate 27. Slidable upon the member 27 is an L arm 28

to one end of which is pivotally secured a link 29, this link being in turn pivotally secured to one end of a lever 30, which lever is pivoted at 31 to the member 27.

5 Directly above the member 27 and in longitudinal alinement therewith is the headed end 32 of a power shaft 33, this headed end being socketed at 34 for receiving therein one end of a hollow chuck
10 shaft 35. The front portion of this chuck shaft 35 is split for providing fingers 36 which normally tend to spring away from each other in the well known manner. Within the said hollow chuck shaft 35 is a pin
15 or rod 37 normally forced toward the front end of the shaft through the instrumentality of a coil spring 38. Upon the said chuck shaft 35 is the well known type of chuck collar 39, the same being normally forced forwardly
20 upon the shaft through the medium of an expansion spring 40 for closing the said spring fingers upon the chuck shaft. As is obvious, the chuck collar 39 is circumferentially grooved adjacent its inner end at 41 and engaging therein is the notched end of the
25 vertical portion of said L-shaped arm 28.

The front end of each of the fingers 36 constituting the chuck shaft 35 are recessed for receiving a button slug or blank A, Figure 4, when these fingers are extended and in view of the above description it will, of course, be understood that when the saw
30 frame 11 is raised within the guide 9 by the operation of the lever 30 the chuck collar 39 will be moved rearwardly upon the shaft 35 for permitting of the insertion of a button slug or blank between the spring fingers 36 of the chuck shaft. Upon releasing the
35 handle 30 the collar 39 will move forwardly opposing the fingers upon the slug.

I do not desire to limit myself to any specific means of rotating the shaft 33 as any means may be provided without affecting the scope and spirit of the invention. After a button slug or blank has been
45 received within the end of the chuck shaft 35 the same is rotated, the saw frame 11 is slid downwardly within the guide 9 by winding the cable 21 upon the drum; it being of course clearly understood that the slug will engage the toothed edges of the
50 saws 12 as they move downwardly and will be effectively divided into two equal parts.

Although I have herein shown and described the preferred embodiment of the present invention, it is nevertheless to be understood that minor changes may be made therein, without departing from the spirit and scope of the invention as claimed.

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

1. In a machine of the class described, a guide frame, a pair of saws rectilinearly
65 movable within said frame and arranged in

inclined relation thereto, a power shaft rotatably mounted forwardly of said guide having means upon one end thereof for receiving and rotating a button slug, means for moving the said saws downwardly within the frame, and automatic means for normally raising said saws within the frame whereby the downward movement of the saws will cut the rotating slugs carried by the shaft.

2. In a machine of the class described, a guide, a cutting member slidable within said guide, means for moving said cutting member downwardly within the guide, automatic means for raising said cutting member within the guide, and a power shaft rotatably mounted forwardly of the guide having means upon the end adjacent to the guide for receiving and rotating a button slug whereby said slug is divided in the movement of the cutting member in the guide.

3. In a machine of the class described, a vertical guide member, a saw frame vertically movable within said guide and carrying a pair of cutting saws mounted in inclined relation in said frame, automatic means for raising said frame within the guide, manually operated means for moving said frame downwardly within the guide, and a power shaft rotatably mounted forwardly of the guide and having one end disposed within the guide with means thereon for receiving and rotating a button slug to be cut by said saws in the movement of the saw frame in the guide member.

4. In a machine of the class described, a vertical guide member, a saw frame movably mounted within said guide and carrying a pair of cutting saws, mounted in relatively inclined relation to each other and said frame, automatic means for raising said frame within the guide, manually operated means for moving said frame downwardly within the guide, a power shaft rotatably mounted forwardly of the guide and having one end disposed within the guide with means thereon for receiving and rotating a button slug, and means for adjusting said guide in a direction toward or away from the end of said power shaft, whereby said slug may be divided into desired lengths.

5. In a machine of the class described, a vertical guide member, a saw frame vertically movable within said guide and carrying a pair of cutting saws arranged in inclined relation to each other and said frame for cutting cooperation in the movement of the frame, automatic means for raising said frame within the guide, manually operated means for moving said frame downwardly within the guide, a power shaft rotatably mounted forwardly of the guide and having one end disposed within the guide with means thereon for receiving and rotating a

button slug, and means for releasing said button slug from the end of said power shaft.

6. In a machine of the class described, a
5 vertical guide member, a saw frame slidable
in said guide member and carrying a pair of
cutting saws arranged in an inverted V-
shape, means for normally holding said saw
frame in one position in the guide member,
10 manually operated means for moving said
saw frame in the member, and a shaft ro-

tatably mounted forwardly of the guide
member and having one end disposed ad-
jacent thereto and provided with means for
receiving and rotating a button slug in the 15
path of the saw frame, whereby said saws
will divide said slug in the rotation thereof
during the movement of the saw frame in
the member.

In testimony whereof I affix my signa- 20
ture.

CHARLES E. DOTY.