

J. BENGough.
 BLANK CUTTING MACHINE.
 APPLICATION FILED JULY 11, 1908.

946,532.

Patented Jan. 18, 1910.

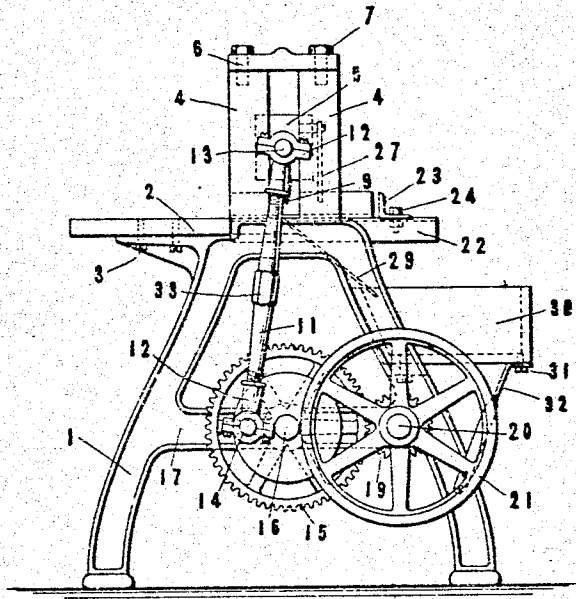


Fig. 1.

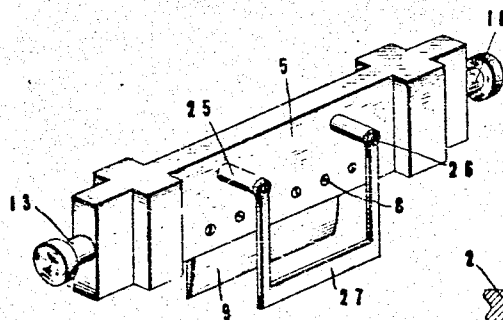


Fig. 2.

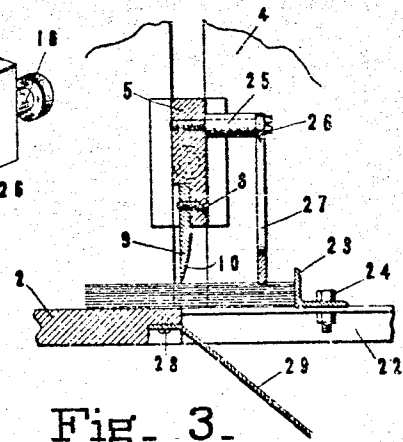


Fig. 3.

WITNESSES:

J. Clyde Taylor.
R. F. Martin.

INVENTOR

James Bengough
 BY *W. F. Taylor & Co.*
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES BENGOUGH, OF NIAGARA FALLS, NEW YORK, ASSIGNOR TO THE CARTER-CRUME CO., LIMITED, OF NIAGARA FALLS, NEW YORK. A CORPORATION OF CANADA.

BLANK-CUTTING MACHINE.

946,532.

Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed July 11, 1906. Serial No. 325,593.

To all whom it may concern:

Be it known that I, JAMES BENGOUGH, a citizen of the United States, residing at Niagara Falls, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Blank-Cutting Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to cutting machines, and one of its objects is to provide efficient means for cutting sheets from a blank and for delivering the same from the cutting device.

Another object is to provide a machine of the above type characterized by simplicity and durability and adapted to operate with a minimum amount of attendance on the part of the operator.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features construction, combinations of elements and arrangement of parts, which will be exemplified in the mechanism hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, wherein is illustrated one of the several possible embodiments of my invention, Figure 1 is an end elevation thereof. Fig. 2 is a view in perspective showing the reciprocating cutter support, the cutter and the means for delivering the sheets when severed thereby. Fig. 3 is a view in section of a portion of the machine showing the relation of the parts during the operation of cutting sheets from a blank.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawing, wherein I have shown a preferred adaptation of my invention, 1 indicates the framing of the machine, which is substantially A-shaped in end elevation, as shown in Fig. 1. In the upper portion of framework 1 a bed 2 is supported, being fastened in position by suitable means, as screws 3. Erected upon framework 1 at either end thereof are a pair of members 4 spaced apart, as shown, and between each pair of these members is

received one end of a beam 5, which is mounted to reciprocate vertically between the same and be guided thereby. The upper ends of members 4 are held in fixed relation by means of a cap piece 6, one of which is shown in Fig. 1, said cap piece being held in position by suitable means, as, in the present instance, bolts 7. Secured to beam 5, as by means of screws 8, is a knife or chopper 9. Knife 9 is beveled, as at 10, and is adapted to be reciprocated with beam 5 to and from the forward co-acting edge of bed 2 by means of a pitman 11 threaded at either end into journal blocks 12, one of which is rotatively connected with a headed member 13 extending from one end of beam 5, the other of said blocks being rotatively mounted upon spur shaft 14 carried by a gear wheel 15 fixed upon a shaft 16 that extends transversely of the machine and is journaled in the cross pieces 17 of the framework.

It will be understood, of course, that a pitman similar to the one shown is rotatively connected with the other headed member 18 of beam 5 and connects the same with a similar spur shaft carried upon a wheel fixed upon shaft 16 at the opposite end of the machine. Gear wheel 15 meshes with a pinion 19 fixed upon a shaft 20 which extends transversely of the machine and is journaled between cross pieces 17 of the framing of the machine. A pulley 21 fixed upon shaft 20 is driven by a belt from any suitable source of power, the rim of said pulley preferably being made heavy to enable the same to operate as a fly wheel.

Extending between arms 22 which extend forwardly from the framework of the machine at either end thereof, is an adjustable gage 23 which can be held in any desired adjusted position by means of bolts 24 which are received in longitudinal slots in said arms. This gage forms an abutment for the forward edges of the blanks supported on the bed 2, as shown in Fig. 3, and regulates the size of sheets to be cut therefrom.

Carried by beam 5 and spaced therefrom, as by means of long collars 25 which receive screws 26 threaded into said beam, is a depending frame 27, the lower end of which is in substantially horizontal alinement with the lower edge of knife 9.

Extending obliquely from underneath bed 2 and supported thereby, as by means of screws 28, is a chute 29 which is adapted to deliver the cut sheets into a hopper 30 secured to the frame of the machine, as by means of screws 31 and braces 32.

Pitman 11 is provided with a squared or hexagonal portion 33 adapted for receiving a wrench by means of which the portions of the knife 9 with relation to the forward edge of the bed can be adjusted.

Having thus described the structural features comprising my invention, the operation, which should be to a large extent obvious, may be briefly described as follows: The operator standing in front of the machine places a pile of blanks upon the bed thereof and projects them forwardly underneath the knife until their forward edges are in contact with the gage 23 which has been set previously to limit the amount of the forward projection of the blank according to the size of sheets it is desired to cut. Knife 9, which is being continuously reciprocated by means of pitman 11 connecting with the driving mechanism, then descends upon the pile of blanks and severs therefrom that portion of the blank projecting from the forward edge of the bed. At this point it may be well to note that the connection between pitman 11 and gear wheel 15 is such that when the knife is at its upper and lower positions, the respective ends of said pitman and shaft 16 are substantially in alinement. By means of this arrangement of the parts, a slight dwell is produced at the upper and lower extremes of the reciprocating movements of beam 5, which gives the operator sufficient time properly to insert the sheets underneath the reciprocating knife.

Simultaneously with the engagement of the knife with the blanks, frame 27 has descended and is brought into engagement therewith, as clearly shown in Fig. 3, and as the sheets are being cut from the blank, said frame depresses the outer ends of the cut sheets to clear the same from engagement with the gage so that when the cutting operation is completed, the sheets will fall upon the chute 29 and be delivered thereby into hopper 30, or said sheets may be readily grasped by the hand of a second attendant from beneath gage 23.

It will accordingly be apparent that I have contrived efficient mechanism wherein all the ends and objects of my invention are accomplished in a simple manner, and that such mechanism is exceedingly durable as the same is constituted by relatively few and strongly built operative parts.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from

the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I desire it also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fail therebetween.

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

1. In mechanism of the class described, in combination, a bed, a reciprocating cutter adapted to sever sheets, a gage for regulating the size of sheets to be severed, means for causing said cutter to reciprocate toward and away from the surface of said bed, and means carried by said cutter adapted upon each reciprocation thereof to engage the sheets and carry them beneath said gage.

2. In mechanism of the class described, the combination of a bed, a reciprocating cutter adapted to sever sheets, means for regulating the size of the sheets to be severed, means for causing said cutter to reciprocate toward and away from the surface of said bed, and means reciprocating simultaneously with said cutter for engaging the severed sheets and delivering the same from said last-mentioned means.

3. In mechanism of the class described, the combination of a bed, a reciprocating cutter adapted to sever sheets, adjustable means for regulating the size of the sheets to be severed, means for causing said cutter to reciprocate toward and away from the surface of said bed, and means operating simultaneously with said cutter and reciprocating therewith adapted for engaging the severed sheets and delivering the same from said adjustable regulating means.

4. In mechanism of the class described, the combination of a reciprocating member, a cutter carried by said member, means for regulating the size of sheets to be cut, means for causing said member to reciprocate toward and away from the sheets which are to be cut, and means carried by said reciprocating member adapted to engage the cut sheets and deliver the same from said regulating means.

5. In mechanism of the class described, the combination of a bed, a reciprocating cutter above said bed, an abutment against which sheets are engaged, and movable means for forcing the cut sheets from engagement with said abutment.

6. In mechanism of the class described, the combination of a bed, a reciprocating cutter above said bed, an adjustable abutment against which the edge of a blank is

engaged, and movable means for forcing a sheet cut from said blank from engagement with said abutment.

7. In mechanism of the class described, the combination of a bed, a reciprocating cutter above said bed, rotary means for reciprocating said cutter, an abutment against which the edge of a blank is engaged whereby the size of a sheet to be cut may be regulated, and movable means for forcing a sheet cut from said blank from engagement with said abutment.

8. In mechanism of the class described, the combination of a bed adapted to support one or more blanks to be cut into sheets, a reciprocating cutter above said bed, an abutment against which the edges of the blanks are adapted to be engaged, and means mounted to reciprocate with said cutter for depressing sheets cut from said blanks to carry them from engagement with said abutment.

9. In mechanism of the class described, the combination of a bed adapted to support a blank to be cut, a reciprocating cutter above said bed, an abutment against which an edge of the blank is adapted to be engaged whereby the size of a sheet to be cut therefrom may be regulated, and a member carried by said cutter adapted to engage a sheet cut from said blank and depress the same, whereby it is carried from engagement with said abutment.

10. In mechanism of the class described, the combination of a bed, a member reciprocating in guides extending upward from said bed, rotary means for reciprocating said member, a knife supported upon said member, an adjustable gage located forwardly of said knife and adapted to engage the edge of a blank supported upon said bed whereby the size of a sheet to be cut therefrom may be determined, and means carried by said reciprocating member adapted to engage a sheet cut from said blank and carry the same from engagement with said gage.

11. In mechanism of the class described, the combination with the framing of the machine, of a bed supported therein, a cutter adapted to reciprocate to and from said bed and located above the same, means for guiding said cutter, an adjustable device

supported upon the framework of the machine which forms an abutment for the edge of a blank resting upon said bed whereby the size of a sheet to be cut therefrom may be regulated, and means reciprocating with said cutter adapted to engage a sheet cut from said blank and carry the same from engagement with said adjustable device.

12. In mechanism of the class described, the combination with the framework of the machine, of a bed supported therein, a pair of stationary members erected upon said framework at either end of said bed and extending above the same, a cutter support adapted to reciprocate between said members, rotary driving means, a pitman connecting said rotary driving means with said supporting member, a cutter carried by said supporting member, an adjustable gage with which an edge of a blank resting upon said bed is adapted to be engaged whereby the size of the sheet to be cut therefrom may be regulated, and means carried by said supporting member for engaging a sheet cut from said blank and carrying the same from engagement with said gage.

13. In mechanism of the class described, the combination with the framing of a machine, of a bed supported therein, a pair of stationary guides arranged at either end of the machine and extending upwardly from the framework thereof, a reciprocating beam, each end of which is received between said guides, rotary driving means, a pitman connecting said rotary driving means with said beam, a cutter carried by said beam, an adjustable gage extending transversely of the machine with which the edges of blanks supported upon said bed are adapted to be engaged, a member depending from said beam and reciprocating therewith adapted to engage sheets cut from said blank and carrying the same from engagement with said gage, a hopper for receiving the cut sheets, and a chute for delivering the same to said hopper.

In testimony whereof I affix my signature, in presence of two witnesses.

JAMES BENGOUGH.

Witnesses:

ROBT. D. MCINTYRE,
HENRY DURK.