

W. C. BAXTER.  
TRIMMING AND SPLITTING MACHINE.  
APPLICATION FILED JAN. 15, 1916.

1,238,088.

Patented Aug. 28, 1917.

2 SHEETS—SHEET 1.

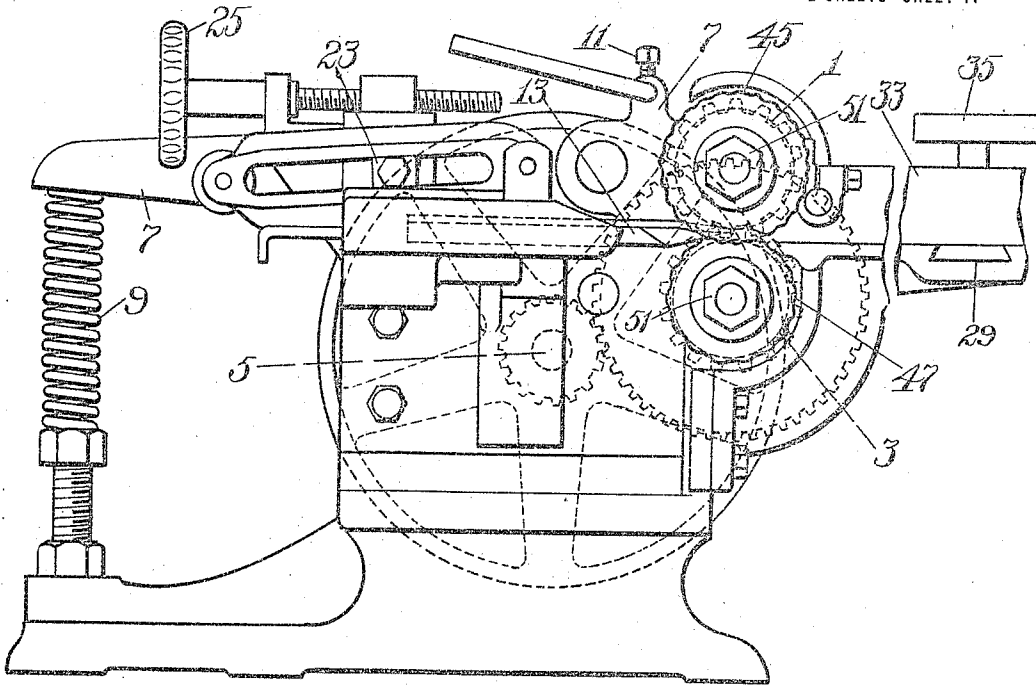


Fig. 1.

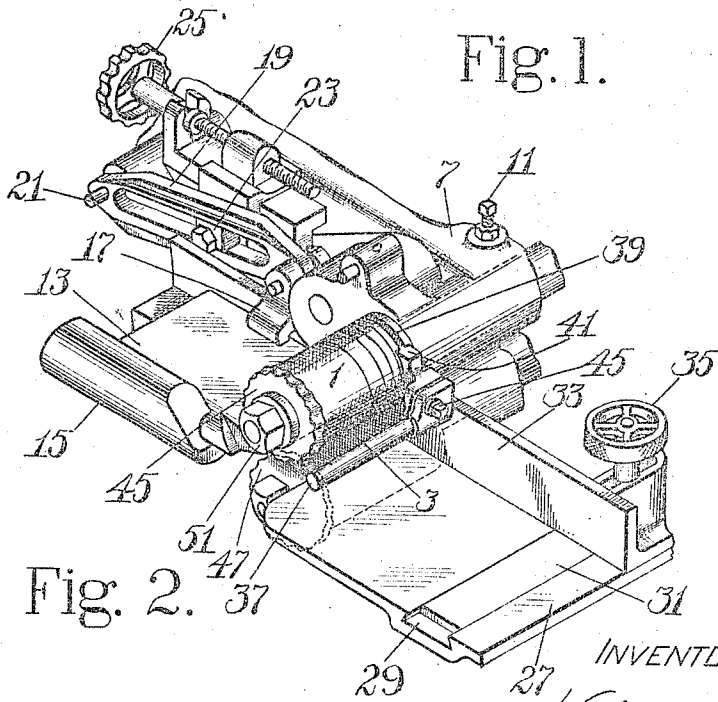


Fig. 2.

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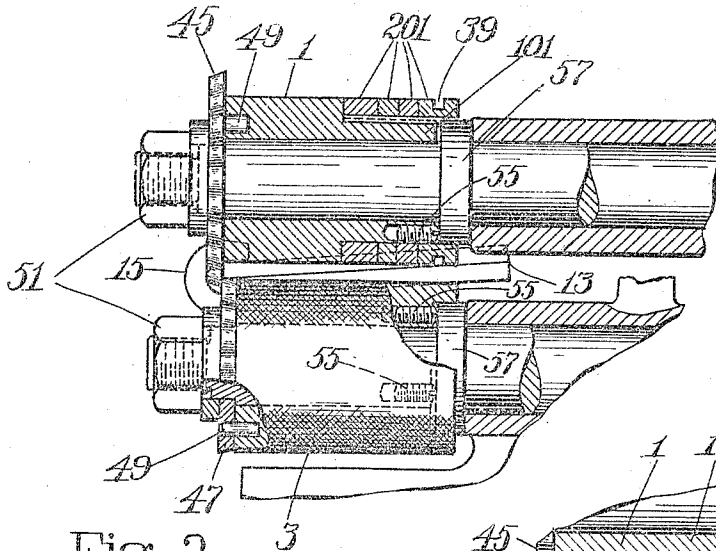


Fig. 3.

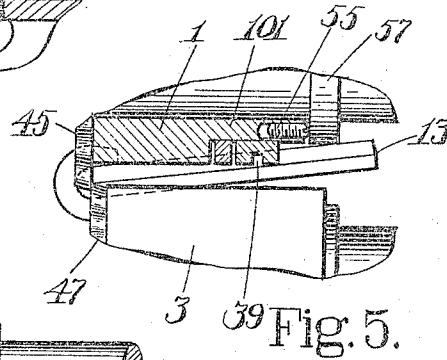


Fig. 5.

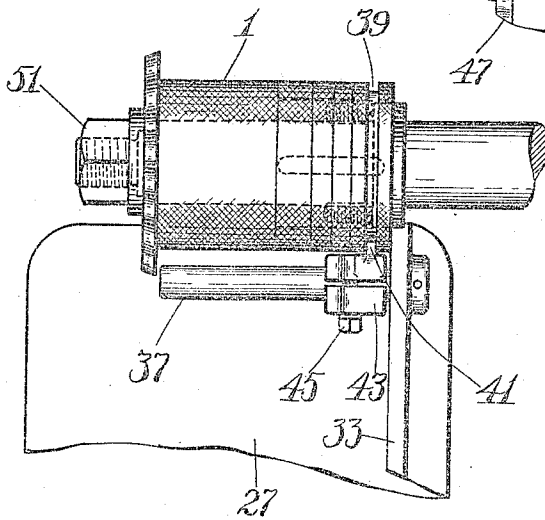


Fig. 4.

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# UNITED STATES PATENT OFFICE.

WILLIAM C. BAXTER, OF BEVERLY, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## TRIMMING AND SPLITTING MACHINE.

1,238,088.

Specification of Letters Patent.

Patented Aug. 28, 1917.

Application filed January 15, 1916. Serial No. 72,273.

### *To all whom it may concern:*

Be it known that I, WILLIAM C. BAXTER, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain Improvements in Trimming and Splitting Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for use in the manufacture of boots and shoes and is herein set forth in connection with a machine for cutting from a sheet of leather-board or similar material a strip of desired width and for splitting the strip so cut into two symmetrical portions irrespective of variations in the thickness of the strip, the illustrative machine being an improvement upon the machine shown in United States Patent to Benjamin, No. 1,048,278.

In machines of this type the stock is fed to an inclined knife which is so connected with one of the rolls that its angle varies with the distance between said rolls and the strip of stock is split diagonally into two symmetrical portions. If the machine is set to split a strip the width of which is equal to the width of the feed rolls and it is desired to split a narrower strip, some provision should be made for permitting the angular inclination of the knife to be increased. If no such provision were made adjustment of the knife to increase its angular inclination would be prevented by reason of contact by the knife with the end of one of the feed rolls since the edge of the knife is necessarily located close to the bite of said rolls. One object of the present invention is to provide a feed roll the length of which may be changed to permit angular adjustment of the knife. To this end one feature of the invention comprises, in a machine of the class described, a pair of feed rolls and an inclined splitting knife, one of said rolls having removable and replaceable sections.

It is customary to trim or cut the strip, which is to be split diagonally, from a sheet of stock; and in the patented machine a fixed trimming knife is used. Another feature of the invention comprises a pair of feed rolls, a pair of shears for cutting a strip

from a piece of stock presented to said rolls, and means for splitting said strip, one of said rolls having removable and replaceable sections. With this construction it is possible to cut off and split strips of different widths without disturbing the coöperative relation of the shear members.

These and other features of the invention, including certain details of construction and combinations of parts, will be set forth in connection with an illustrative machine and pointed out in the appended claims.

Referring now to the accompanying drawings,—

Figure 1 is a side elevation of a machine in which the present invention is embodied;

Fig. 2 is a detail perspective of the trimming and splitting mechanism;

Fig. 3 is a detail elevation of the feed rolls and splitting knife adjusted to split a strip the width of which is equal to the width of the rolls;

Fig. 4 is a plan of the upper roll and the edge gage, and

Fig. 5 is a detail elevation similar to Fig. 3 but showing the rolls and knife in position to operate upon a narrower strip of stock, the upper roll having been shortened by the removal of two sections.

Referring first to Figs. 1 and 2, which are similar to Figs. 2 and 5 of the patent referred to above, the machine comprises two feed rolls 1 and 3 driven in a suitable manner from a shaft 5, the bearings of the upper roll being carried by a pivoted bracket 7 the rear end of which is held upwardly by a spring 9 so as to move the upper roll toward the lower roll. A set screw 11 limits the extent of the downward movement of the upper roll. The splitting knife 13 has a rounded edge fitting in a rounded socket in a bracket 15, the opposite edge being supported by a carrier 17 pivoted to one end of a lever 19 the other end of which is pivoted at 21 to the bracket 7. A fulcrum block 23 located in a slot in the lever 19 may be adjusted by turning the screw 25 whereby the initial angular position of the knife 13 may be adjusted. In front of the feed rolls is a table 27 having a dovetailed slot 29 to receive a slide 31 which is fast to an edge gage 33. A screw 35 holds the edge gage in adjusted position, and a guard 37 is carried by said edge gage. As best shown in Fig.

3, the angular movement of the knife takes place about an axis which coincides with a median line through the outer edge of the knife and consequently the outer corner of the cutting edge of the knife remains stationary. As thus far described the present machine is identical with that of the patent and no further detailed description of its construction and mode of operation will be given.

In the machine of the patent the upper roll is splined to its shaft and may be adjusted longitudinally thereof, said roll being provided with grooves to receive the trimming knife in the different adjusted positions of the roll. In the present machine the upper roll 1 has an inner portion 101 of reduced diameter to which are splined removable sections 201, the innermost section being provided with a groove 39 to receive a finger 41 formed upon a split member 43 which may be clamped by a screw bolt 45 in any desired position on the guard 37. When therefore it is desired to shorten this roll one or more of the sections may be removed entirely or removed and replaced by a thinner one. The edge gage 33 is then moved to the left until the gap caused by such removal or replacement is closed, the roll then having the appearance shown in Fig. 5. After the roll has been shortened the screw 25 is manipulated to increase the angular inclination of the knife 13 as is also shown in Fig. 5. For convenience the process of shortening the roll has been described but it will be obvious that the length of the roll may be increased by reversing the process.

In the patented machine, as has been explained, a drag knife is used to cut or trim the strip, from the piece of stock prior to the splitting operation. In the illustrative machine a pair of corrugated shear members 45, 47 are provided. These rotary shear members are held from rotation with respect to the rolls 1 and 3 by pins 49 and are clamped to the end of said rolls by nuts 51. The point at which the shears 45, 47 cut the stock should lie substantially in the axis about which the knife 13 is angularly movable as shown in Figs. 3 and 5. In order to permit this relation of parts to be secured and maintained each roll 1 and 3 is secured to its shaft by a spline (not shown) and is provided at its inner end with three adjusting screws 55 the heads of which bear against collars 57 on the respective shafts. To adjust the rolls they are first removed from their shafts, then, by a method of trial and error which may involve putting on and taking off the lower roll one or more times, the screws 55 of said roll are adjusted until when the heads of said screws are in contact with their respective collar 57 the upper edge of the shear member 47 is substantially

in line with the axis about which the knife 13 swings. The screws 55 of the upper roll are then similarly adjusted until the upper shear member 45 coöperates properly with the lower shear member.

The operation of the machine is briefly as follows: A sheet of leather is supported at one side upon the table 27 with its edge in contact with the gage 33 and is pushed forward. The corrugated shears seize the forward edge of the stock and tend to draw it toward the rolls at the same time cutting from the sheet a strip the width of which depends upon the position of the edge gage 33. The rolls seize the strip and force it against the knife 13, the inclination of the knife varying at all times with the thickness of the strip at the point engaged by the feed rolls.

Although the invention has been set forth in connection with a particular machine, it should be understood that the invention is not limited in the scope of its application to the particular machine shown and described.

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

1. A machine of the class described, having, in combination, a pair of feed rolls, a pair of rotary shears carried by said rolls, one of said rolls comprising removable and replaceable sections whereby the effective length of said last-named roll may be changed while maintaining the coöperative relation of the shear members, an edge gage, and a connection between said gage and one of the sections such that adjustment of the gage and the connected section take place together.

2. A machine of the class described, having, in combination, a pair of feed rolls, an inclined splitting knife the angle of inclination of which varies with the distance between said rolls, one of said rolls comprising removable and replaceable sections, an adjustable edge gage for guiding the stock to the knife, and a connection between said gage and one of said sections.

3. A machine of the class described, having, in combination, a pair of feed rolls, rotary shears carried by said rolls, and an inclined knife the angle of inclination of which varies with variations in the distance between said rolls, one of said rolls comprising removable and replaceable sections whereby the effective length of said last-named roll may be changed while maintaining the coöperative relation of the shear members.

4. A machine of the class described, having, in combination, a pair of feed rolls, a knife to which the stock is fed by said rolls and rotary shears carried by said rolls whereby a strip is removed by said shears from a piece of stock fed to said rolls and

said strip is split by said knife, one of said rolls comprising removable and replaceable sections.

5 A machine of the class described, having, in combination, a pair of feed rolls, an inclined knife to which the stock is fed by said rolls, and rotary shears carried by said rolls whereby a strip is removed by said shears from a piece of stock fed to said rolls  
10 and said strip is split on an angle by said knife, one of said rolls comprising removable and replaceable sections.

6 A machine of the class described having, in combination, a pair of feed rolls, shafts on which said rolls are mounted,  
15 means for cutting a strip from a piece of stock presented to said rolls, and means for splitting said strip, one of said rolls comprising removable and replaceable sections  
20 splined to the shaft upon which they are mounted.

7 A machine of the class described having, in combination, a pair of feed rolls, a pair of shears for cutting a strip from a  
25 piece of stock presented to said rolls, and means for splitting said strip, one of said rolls comprising removable and replaceable sections.

8 A machine of the class described having, in combination, a pair of feed rolls, rotary shears carried by said rolls, an inclined knife the angle of inclination of which varies with variations in the distance  
30 between said rolls, one of said rolls comprising removable and replaceable sections whereby the effective length of said last-

named roll may be changed while maintaining the coöperative relation of the shear members, an adjustable edge gage the position of which determines the width of the  
40 strip removed from a piece of stock by said shears, and a connection between said gage and one of the sections of said sectional roll such that adjustment of the gage and the connected section take place together. 45

9 A machine of the class described having, in combination, a pair of feed rolls, means for cutting a strip from a piece of stock presented to said rolls, means for  
50 splitting said strip, one of said rolls comprising removable and replaceable sections, an adjustable edge gage, the position of which determines the width of the strip removed and a connection between said gage  
55 and one of the sections of said sectional roll such that adjustment of the gage and connected section take place together.

10 A machine of the class described having, in combination, a pair of feed rolls, a pair of shears for cutting a strip from a  
60 piece of stock presented to said rolls, means for splitting said strip, one of said rolls comprising removable and replaceable sections, an adjustable edge gage, the position of which determines the width of the strip  
65 removed, and a connection between said gage and one of the sections of said sectional roll such that adjustment of the gage and connected section take place together.

In testimony whereof I have signed my  
70 name to this specification.

WILLIAM C. BAXTER.

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