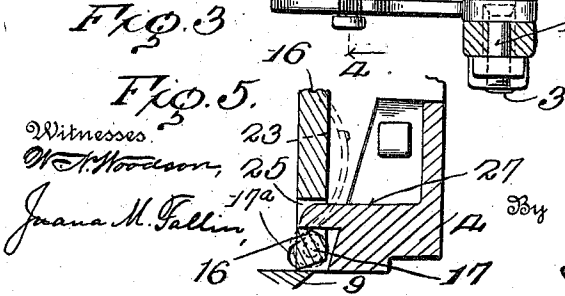
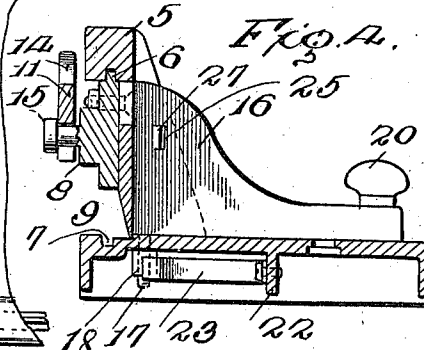
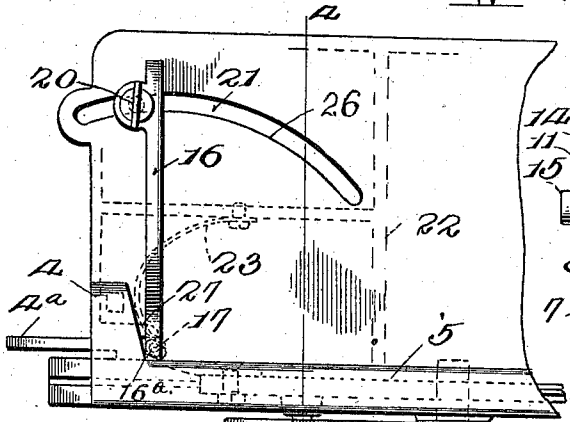
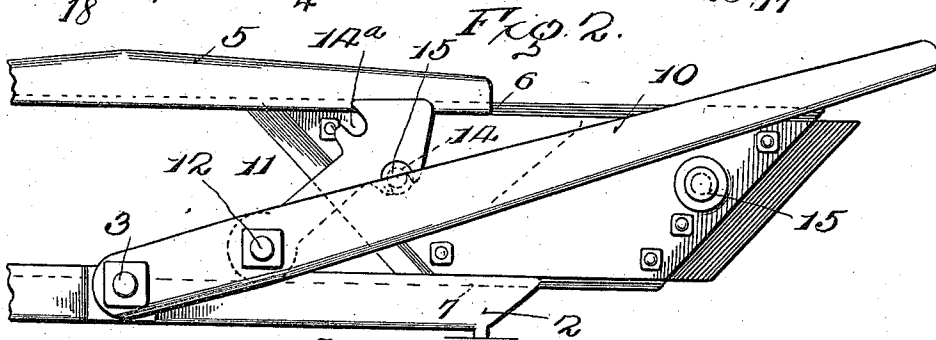
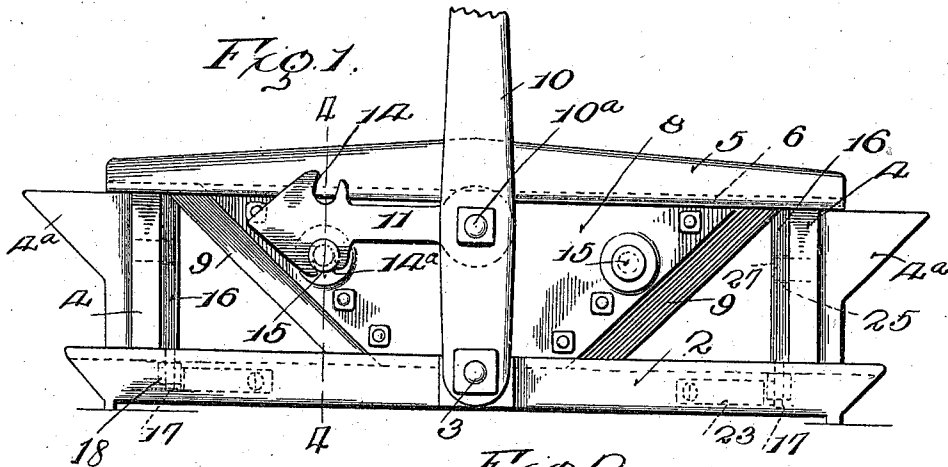


E. M. WHITNEY.
MITER CUTTER.
APPLICATION FILED NOV. 18, 1909.

963,344.

Patented July 5, 1910.



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UNITED STATES PATENT OFFICE.

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MITER-CUTTER.

963,344.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed November 18, 1909. Serial No. 528,726.

To all whom it may concern:

Be it known that I, ELI M. WHITNEY, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Miter-Cutters, of which the following is a specification.

My invention relates to improvements in that class of miter-cutting machines or trimmers, in which a carriage carrying double cutting knives operates across the front of a bed plate, the bed plate being provided with gages whereby the stock may be accurately and properly placed with relation to the knives.

The main object of my invention is to produce a machine of greater capacity than those in common use, by so connecting the operating lever with the knife carriage as to secure a particularly long travel.

Another object of the invention is to provide means for holding the gages more firmly in position, and yet permit them to be easily shifted to their various gaging positions.

These objects I accomplish by means of the mechanism illustrated in the accompanying drawings, wherein:

Figure 1 is a face view of my improved miter cutter, the parts being in their normal position; Fig. 2 is a fragmental face view of the cutter, but showing the knives as moved to their full stroke; Fig. 3 is a fragmentary plan view of my device; Fig. 4 is a section on the line 4-4 of Fig. 1; and, Fig. 5 is a fragmentary section taken through one of the posts.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Referring to these figures, 2 designates a bed plate constructed in the ordinary manner and provided with a hub 3 projecting from the middle of the edge of the bed plate and affording means for the attachment of the extremity of the operating lever. Located at opposite ends of the bed plate are the opposed posts 4 having the usual wings 4^a. The posts are set somewhat back from the front edge of the bed plate and support a transverse guide bar 5. The guide bar is formed with a longitudinal groove 6, and a corresponding groove 7 is formed in the bed plate. A knife carriage 8 travels in this

groove and carries upon it the opposed knives 9. These constructions so far described are what is to be found in practically all miter cutters of this character.

In order to secure a maximum travel for the knife carriage, I provide the lever 10 which is pivoted on the hub 3 in any suitable manner and which projects above the machine. Pivottally supported on the inside face of the lever 10 is the link 11, this link being pivoted at 12. The end of the link is provided with a head 13 having opposed notches or recesses 14, 14^a upon its edge. These notches are adapted to engage with studs 15 which project from the front face of the carriage. There are two of these studs, opposed to each other at the opposite ends of the carriage. It will be obvious that by engaging the link 11 with one or the other of the studs 15, a reciprocating movement of the lever will be transmitted to the carriage so that the carriage and the knives thereon will be lifted across the front of the bed plate and will cut any stock which may be supported on the bed plate, whose end projects into the line of travel of the knives.

In order to provide means for accurately gaging the stock, I provide opposed gage wings 16 which are pivottally supported at their forward ends on the bed plate, each by a stud bolt 17 which projects down through a short arcuate slot 17^a in the bed plate, rearward of the front edge thereof. Each bolt is screw-threaded and provided with a nut-like head 18. The free end of each gage wing is provided with a set screw 20, the shank of which passes through an arcuate slot 21 struck from a center which is co-incident with the inside corner 16^a of each wing. In order to hold the wings at all times against the cutting edges of the knives, I have provided the spring 23 which at one end is supported upon a longitudinal flange 22 projecting downward from the under side of the base plate. Each spring is arcuate-shaped and its extremity bears against the head 18, the extremity of the spring being curved to fit against said head, as shown in Fig. 5. As a further means of holding the gages at all times against the cutting edges of the knives, I have formed the wings each with a slot 25, this slot having a curved wall 26 on the side toward the pivot bolt 17. The curved wall is struck on the arc of a circle whose center is co-

incident with the corner 16^a of the gage. Projecting from the inner side of each of the posts 4 are the lugs 27, the front face of said lugs being parallel with but back of the front face of the posts. These lugs project from the posts, and are of sufficient length to project nearly through the wings or gages 16, when they are in full contact with the sides of the posts. By reason of the curved face 26 of the slot or recess, the lugs will contact with the curved wall of the slot, no matter what position is taken by the wings or gages.

The greatest difficulty heretofore met with in this class of machines is due to the short travel of the knives, for the reason that the mechanism usually used to transmit the motion of the lever to the knives will not permit the carriage to be moved a sufficient distance and still give sufficient leverage to do the work properly. To overcome this defect, I have provided the lever and link 10 and 11 whereby the carriage may be moved part way across the front of the base plate with one motion of the lever, then the link reversed, engaged with the second stud of the two projecting from the face of the carriage, and the carriage moved through the remainder of the distance with a full second motion of the lever. One motion of the lever is sufficient for all ordinary classes of work, but for a longer cut, a second motion is necessary. In ordinary use, the lever stands between the studs 15 with its link engaged with either stud. When it is desired to make a long cut, the lever is carried over toward one end of the carriage, until the stud at that end is near the center of the machine. Then the link is raised, the lever is reversed, and the link thrown over to engage the stud at the other end of the carriage, whereupon another motion of the lever will move the carriage to the extreme length of its travel. To return the carriage, the motion is reversed. By this construction, I am enabled to double the length of cut, and therefore double the capacity of the machine.

The advantage of the gage construction heretofore described, lies in the fact that the butt end of the gage is held so that its corner 16^a is in contact with the knife, no matter to what position the gage is moved.

While I have described what I believe to be the best form of my invention, I do not wish to be limited to the details illustrated, as it is obvious that my device may be varied in many ways without departing from the spirit of the invention.

Having thus described the invention, what I claim is:—

1. In a miter-cutting machine, the combination with a horizontally disposed bed having longitudinal ways along its edge, of a vertically disposed carriage mounted on

the bed and movable in said ways, and carrying an angular cutting knife, an operating lever, a bolt passing through the lower end of the operating lever and into said bed, said bolt permitting the rotary movement of the lever but preventing any lateral movement thereof, and a link pivoted to the lever and adapted to be detachably connected at any one of a number of points with said carriage.

2. In a miter-cutting machine, a base-plate, a carriage movable transversely across the base-plate, knives on the carriage, an operating lever, a link pivoted to the operating lever, and a plurality of spaced studs on said carriage disposed in the direction of travel of the knives, with any of which the link is adapted to detachably engage.

3. In a miter-cutting machine, a base plate; a carriage movable transversely across the face of the base plate, knives on the carriage, an operating lever pivoted to the base plate, a link pivoted to the operating lever and having opposed notches at its end, and spaced studs longitudinally disposed in the direction of travel of the knife and projecting from the face of said carriage, with either of which the link is adapted to engage.

4. In a miter-cutting machine, the combination with a horizontally disposed bed having longitudinal ways along its edge, of a carriage arranged on the bed, movable in said ways and carrying a cutting knife, an operating lever pivoted to the base, and a link pivoted to the operating lever and detachably engaging with either one or the other end of the carriage.

5. In a miter cutting machine, a base plate, a carriage movable across the face of the base plate and carrying opposed knives, means for reciprocating said carriage, opposed posts on the base plate, gage wings rotatably supported on the base plate with their front edges in alinement with the front of the base plate, said gage wings being formed each with a slot having an arcuate front wall, and a lug projecting inward from each of the posts, extending inside said slot, and bearing against said arcuate wall.

6. In a miter cutting machine, a base plate, opposed posts on the base plate, a carriage movable across the face of the base plate, means for reciprocating said carriage, wings located on the inside faces of each of the posts, the front edges of the wings being in alinement with the front edge of the base plate, bolts on the lower edges of the wings passing through slots in the base plate, each of said bolts being provided with a screw-threaded head, and springs mounted beneath the base plate, at opposite ends thereof, the free ends of said springs bearing against the heads of said bolts.

7. In a miter cutting machine, a base plate, opposed posts on the base plate, a guide bar

supported on said posts, a carriage slidably mounted between the guide bar and the base plate and carrying knives, mechanism for reciprocating the carriage, gage plates 5 mounted on either end of the base plate, the front edges of said gage plates abutting against the inside faces of the posts and being in alinement with the front edge of said base plate, bolts each passing up through a 10 slot in the base plate and into the front ends of the gage wings, said bolts being provided with screw-threaded heads beneath the base plate, said screws on the free ends of the wings projecting through arcuate slots in 15 the base plate, springs mounted on the under side of the base plate and engaging with the heads of the bolts to force the wings toward said posts, and lugs projecting one from each of the posts, said gage wings being recessed 20 to receive the projecting ends of the lugs, said recess being formed with a curved face with which the lugs at all times engage.

8. In a device of the character described, a base plate, rotatable gage plates mounted on each end of the base plate, with their 25 front ends in alinement with the front edge of the base plate, a bolt on the front end of each of said wings passing through an arcuate slot in the base plate and provided with a screw-threaded clamping head, means for 30 clamping the free ends of the wings in any adjusted position, springs mounted on the under side of the base plate, their free ends engaging with the heads of the bolts to force the free ends of the wings laterally, and 35 means engaging with the wings permitting their rotation but preventing any rearward movement of the wings.

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

ELI M. WHITNEY. [L. s.]

Witnesses:

KATHERINE C. SOMERS,
HENRY F. PALMER.