

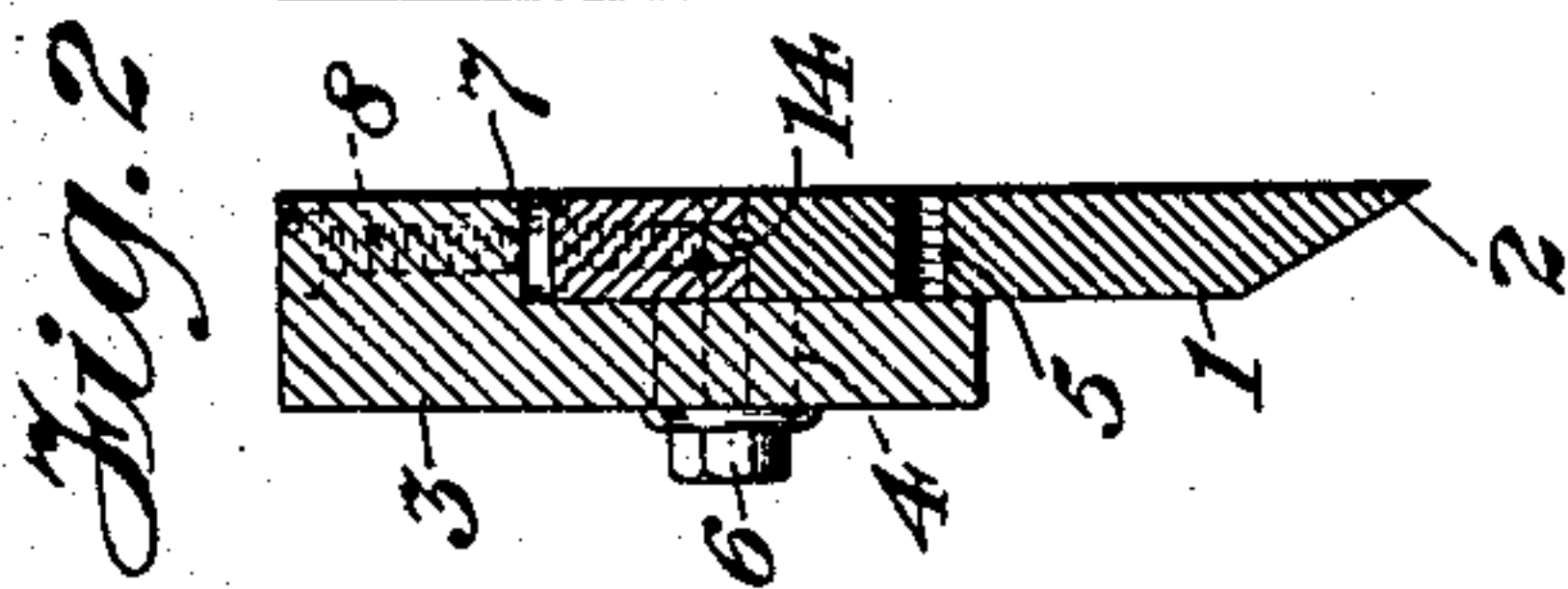
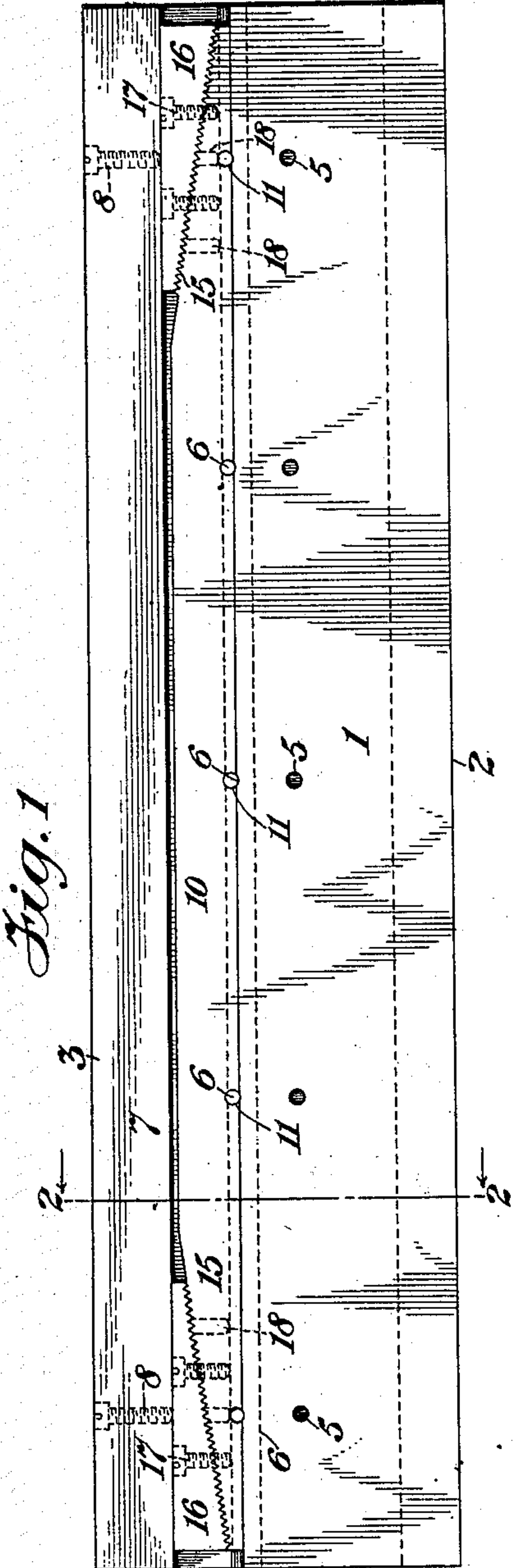
No. 860,554.

PATENTED JULY 16, 1907.

G. MEYERS.

CUTTER.

APPLICATION FILED SEPT. 23, 1905.



Witnesses  
*Chas. J. Claggett*  
*Frances Markert*

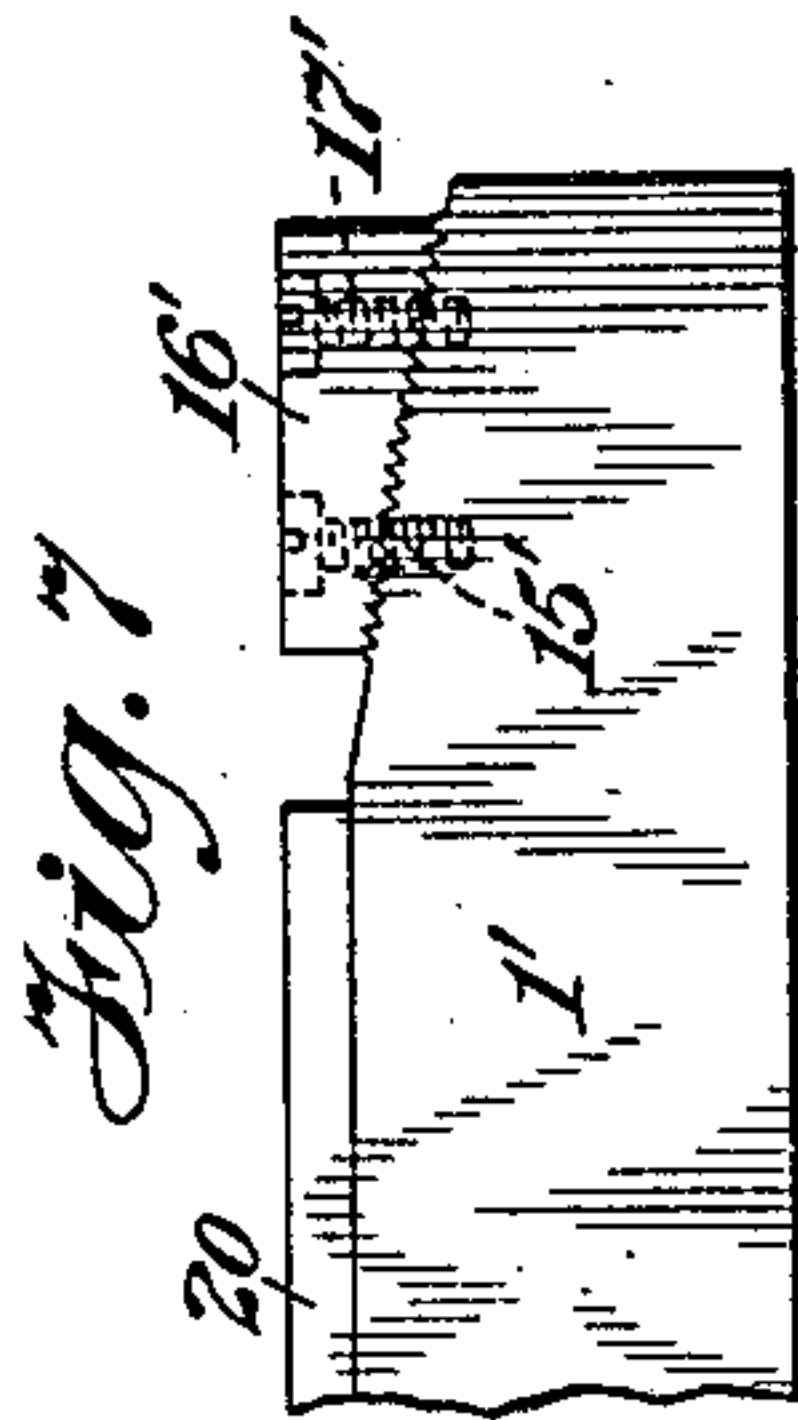


Fig. 4

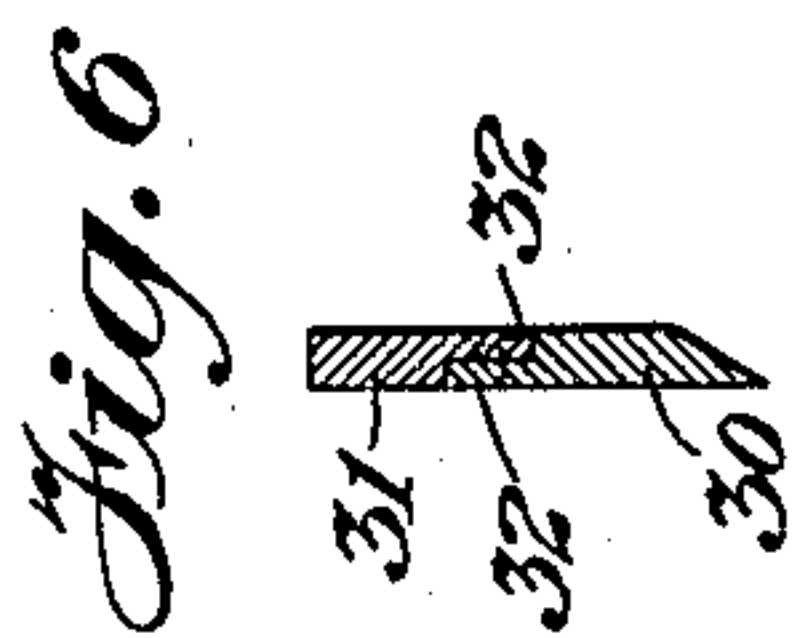
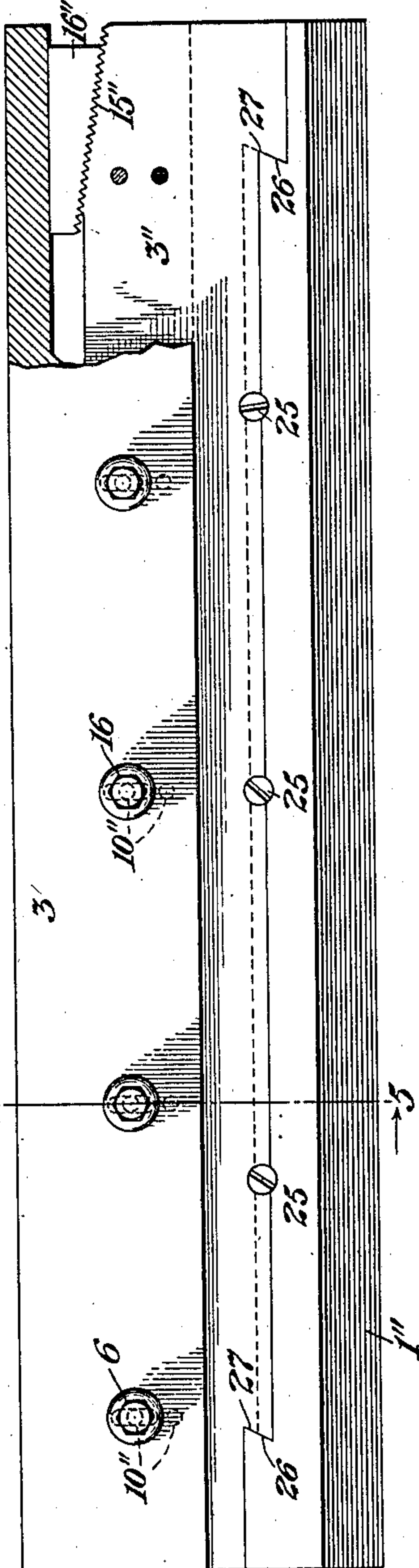


Fig. 5



Inventor  
*George Meyers*  
By *his* Attorney  
*Chas. J. Claggett*



# UNITED STATES PATENT OFFICE.

GEORGE MEYERS, OF NEW YORK, N. Y.

## CUTTER.

No. 860,554.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed September 23, 1905. Serial No. 279,772.

*To all whom it may concern:*

Be it known that I, GEORGE MEYERS, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cutters, of which the following is a specification.

This invention relates to improvements in cutters and more particularly to improvements in that class of cutters adapted for use in connection with paper-cutting machines. A cutter of this class usually comprises a cutter-bar and a cutter-blade, the latter being detachably connected with the cutter-bar in a manner to have a certain limited vertical adjustment relatively thereto for the purpose of providing for the wear of the cutter-blade which is quite rapid because of the necessity of frequent grinding to keep the same sharp. After a cutter-blade has been worn to the extent of the said limited adjustment provided, it is a usual custom to provide for the further use of the cutter-blade by fixedly attaching a plate or block thereto at its upper or blunt edge so as to substantially restore its original width and thereby provide for its further use and adjustment. The use of such back-plates is rendered more or less objectionable however because of the trouble and expense attending the attachment of the same to the cutter-blade, it being the usual custom to attach the plates to the cutter-blades by means of pins or screws, which operation necessitates the drilling or tapping of the parts and consequently the employment of a machinist or skilled workman to accomplish the same.

To avoid such objectionable features incident to the use of the back-plates referred to has been the principal object of my present invention. This I accomplish by providing a cutter blade with a back-plate having means whereby it may be readily attached to or detached from the cutter-blade by any inexperienced person, and also preferably having means whereby its width may be adjusted to provide for a further adjustment of the cutter-blade with respect to the coöperating parts of the machine on which it is used.

Referring now to the accompanying drawings forming part of this specification,—Figure 1 is a rear side view of a cutter embodying my invention. Fig. 2 is a vertical cross-section through line 2—2 of Fig. 1. Fig. 3 is a detail edge view of an adjusting wedge forming part of the cutter. Fig. 4 is a front side view of a cutter, partly broken away, showing a slightly modified form of my invention. Fig. 5 is a vertical cross-section through line 5—5 of Fig. 4, and Figs. 6 and 7 are detail views of modified forms of my invention to be hereinafter referred to in detail.

Similar reference characters in the several figures of the drawings indicate like parts.

In said drawings, and referring more particularly to Figs. 1, 2 and 3, 1 indicates a cutter-blade of usual construction, the same being in the form of a long flat bar having a beveled cutting-edge 2, and 3 indicates a cutter-bar or so-called "saddle" to which the cutter-blade is adapted to be detachably connected, the said cutter-bar and cutter-blade each being provided with a plurality of transverse perforations, indicated at 4 and 5 respectively, for the reception of fasteningscrews 6 by which the cutter-blade is detachably connected to the cutter-bar. As a means of providing for the vertical adjustment of said cutter-bar, the perforations 4 in the cutter-bar are made vertically elongated, and the cutter-bar is provided with an offset portion 7 above the upper edge of the cutter-blade for the reception of adjusting-screws 8 which are arranged to bear at their lower ends against the said upper edge of the cutter-blade. With this described construction and arrangement of parts, which is a usual one, a lowering of the cutter-blade as it becomes worn may be effected by loosening the fasteningscrews 6, turning down the adjusting-screws 8, and then again tightening the said fasteningscrews. After the fasteningscrews 6 have reached the lower ends of the perforations 4 in the cutter-bar, however, the limit of adjustment has been reached, and provision for further use and adjustment of the cutter-blade therefore becomes necessary if the said blade is not to be discarded.

In accordance with my invention in one form thereof, I make provision for the further use of the cutter-blade by removably connecting therewith at its upper or blunt edge a back-plate 10, the connection between said back-plate and the cutter-blade being preferably effected by a sliding dovetail connection, as clearly shown in Fig. 2. Such dovetail connection between the cutter-blade and the back-plate, which is shown in the present case as being effected by a dovetail projection 14 on the cutter-blade entering a counterpart groove in the back-plate, firmly locks said parts together against separation in a transverse direction, but it is also necessary that they be locked together against longitudinal movement or separation, and I accomplish this in one instance by providing the connected parts at their point of intersection, or at a point where the dovetail of one enters the groove of the other, with a series of perforations 11 for the reception of the fasteningscrews 6, as shown in Figs. 1 and 2, these fasteningscrews in such case operating to hold the cutter in connection with the cutter-bar or saddle 3 of the machine and also lock the cutter-blade and its back-plate against longitudinal displacement relatively to each other. By the means described, after a cutter-blade has been worn to the extent of its adjustment originally provided, it may be again rendered serviceable by sim-



ply connecting therewith my improved back-plate in the manner described, and made capable of being used up an additional width equal to the increased width of the attached back-plate. Furthermore, it will be understood that one back-plate furnished with each machine will suffice for any number of cutter-blades as there is practically no wear to the same.

As a means for adjustably increasing the width of the back-plate in order to provide a further adjustment of the cutter-blade, I have provided the back-plate at its upper edge and at opposite ends thereof with oppositely extending inclined surfaces, as indicated at 15, 15, and located on said inclined surfaces wedge-shaped adjusting-blocks 16, 16, which, when moved in one direction or toward each other, will project above the plane of the upper edge of the back-plate and so operate to increase the width of the latter. Any suitable means may be employed for securing the said adjusting-blocks in adjusted position on the back-plate, the means shown in the present case being the provision of serrations on the adjacent surfaces of the back-plate and adjusting-blocks for interlocking engagement, and also suitable fastening-screws 17 for retaining said parts in such engagement. When the fastening-screws 17 are employed, the back-plate will be provided with a series of threaded openings 18 to receive the ends of the said screws as the adjusting-blocks are shifted in position.

In some instances, in lieu of employing a back-plate for connection with the cutter-blade, which back-plate is provided with wedge-shaped adjusting devices, I provide for an increase in width of the cutter-blade by providing said blade itself with cooperating wedge-shaped adjusting-blocks, as shown in Fig. 7, wherein one end of the cutter-blade 1' is shown as provided with an inclined surface 15', in engagement with which an adjusting-block 16' is adjustably held by a fastening-screw 17' in the same manner as before described with respect to similar parts in Figs. 1, 2 and 3. When this form of construction is employed, a filling-block 20 is adapted to be interposed between the upper edge of the cutter-blade and the offset portion of the cutter-bar at a point between the adjusting-blocks as a support to the cutter-blade.

In the construction shown in Figs. 1 and 2, the back-plate is a comparatively narrow one and adapted for use in connection with a cutter-blade of usual construction, such cutter-blade being usually of considerable width and formed of iron with a relatively narrow portion of steel at its cutting edge. With this construction, as before described, the back-plate is adapted to be attached to the cutter-blade only after the latter has become considerably worn as a means to permit of its further use. In some instances, however, in lieu of employing the narrow back-plate and wide cutter-blade as described, I reverse the relative widths of the parts and provide a wide back-plate and a narrow cutter-blade, as shown in Figs. 4 and 5, in which event the back-plate, indicated at 3'', is adapted to be attached to the machine as a permanent part thereof, and the narrow cutter-blade, indicated at 1'', be replaced as often as worn out, the said parts being connected by a sliding dovetail connection to permit of their ready connection and disconnection as in the construction

shown in Figs. 1 and 2. When employing a relatively wide back-plate however, the said back-plate will preferably be provided with a plurality of rows of perforations 10'' to receive the fastening-screws 6 and permit of the vertical adjustment of the plate with respect to the cutter-bar, while the connection between the back-plate and the cutter-blade to lock the parts against longitudinal displacement will be effected by means of pins or screws 25 engaging the same at their point of intersection. As a means for adjusting the width of the back-plate 3'', I also provide the same with serrated inclined surfaces 15'' at its opposite ends for cooperating with wedge-shaped adjusting-blocks 16'', in the same manner as before described with reference to the other figures of the drawings showing similar forms of construction.

When narrow cutter-blades are employed, as shown in Figs. 4 and 5, it is desirable that some means be provided for holding the same against longitudinal displacement relatively to the back-plate in the direction of cutting thrust, other than the screws or pins 25. Such means, as shown in Fig. 4, comprises transverse shoulders 26, 26, on the upper edge of the cutting blade cooperating with corresponding shoulders 27, 27, on the back-plate. These shoulders operate as stops to position the cutter-blade when it is slid into connection with the back-plate and also to positively hold the same against movement relatively to the back-plate in the direction of cutting thrust, which, when viewing the cutter as shown in Fig. 4, is in a direction from left to right, it being understood that, as is usual, the cutter operates with a draw-cut.

As shown in certain figures of the drawings, the movable connection between the back-plate and cutter-blade is effected, in part, by a dovetail projection on one part entering a corresponding groove in the other. While I consider this the most desirable form of connection between said parts, I do not confine myself to such form of connection as various other suitable forms might be adopted; for instance, as shown in Fig. 6, the cutter-blade 30 and the back-plate 31 are formed with overlapping flanges, such as 32, seated one within the other.

What I claim is:

1. The combination with a cutter-bar, of a cutter plate comprising two longitudinally extending sections, an adjustable connection between one of the sections and the cutter-bar, and a detachable connection between the two sections independent of the first named connection.
2. The combination with a cutter-bar, of a cutter-blade, means for adjustably securing said cutter-blade in connection with the cutter-bar, and wedge-shaped adjusting devices interposed between the cutter-blade and the cutter-bar and being provided with roughened or serrated surfaces for cooperation with like surfaces on one of said parts.
3. The combination with a cutter-bar, of a cutter-blade, a back-plate removably connected with said cutter-blade and having an inclined surface at its upper edge, means for adjustably securing said cutter-blade in connection with the cutter-bar and an adjusting device interposed between the cutter-bar and the said inclined surface of the back-plate and being adjustably connected with the latter.
4. The combination with a cutter-bar having a perpendicular face and an over-hanging shoulder, and a cutter-blade adjustably secured to said face, of wedge-shaped adjusting devices interposed between the cutter-blade and the said shoulder.



5. The combination with a cutter-bar, of a cutter-blade, a back-plate removably connected with said cutter-blade and having inclined surfaces at its upper edge at opposite ends thereof, means for adjustably securing said cutter-blade in connection with the cutter-bar, and adjusting devices interposed between the cutter-bar and the said inclined surfaces of the back-plate and being adjustably connected with the latter.
6. The combination with the cutter-bar, of a cutter-blade, a back-plate removably connected with said cutter-blade and having oppositely extended inclined surfaces at its upper edge at opposite ends thereof, means for adjustably securing said cutter-blade in connection with the cutter-bar, and adjusting devices interposed between the said inclined surfaces of the back-plate and being adjustably connected with the latter.
7. In a cutter operating with a draw-cut and in combination a cutter-bar, a knife part connected to the cutter-bar, a second knife part detachably connected to the first,

the line of connection between the two parts being substantially parallel with the line of pressure on the knife during the cutting action of the same, and co-acting shoulders on the two parts arranged substantially at right angles to the said line of pressure to prevent the separation of the parts under said pressure.

8. The combination with the cutter-bar, of a cutter-blade and a back-plate having a sliding dovetail connection with each other along their longitudinal edges and being provided with transversely arranged cooperating shoulders, and means for securing the cutter-blade and back-plate in connection with the cutter-bar.

Signed at New York in the county of New York and State of New York this 7th day of September A. D. 1905.

GEORGE MEYERS.

Witnesses:

CHAS. F. DANE,  
FRANCES MARKERT.