H. S. WILLIAMS.

KNIFE FOR CUTTERS.

APPLICATION FILED MAY 5, 1920.

1,377,042. Patented May 3, 1921.

Fig. 1.

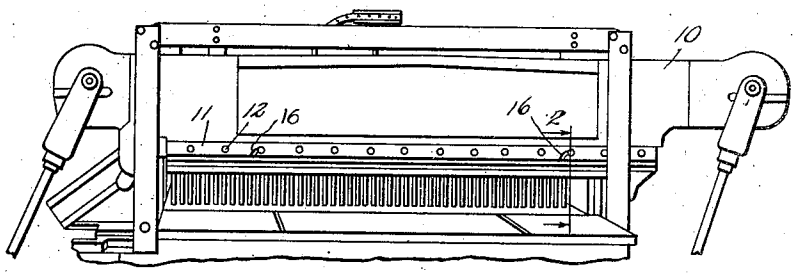


Fig. 2.

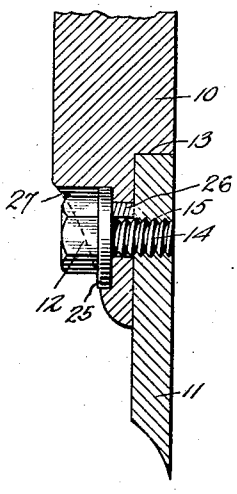


Fig. 3.

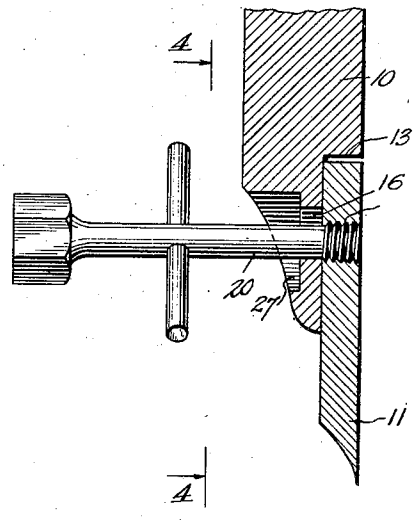


Fig. 4.

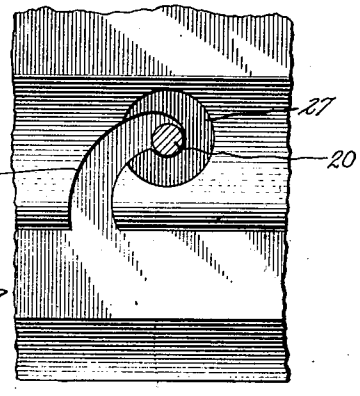
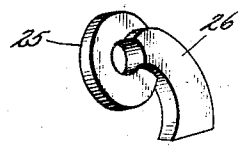


Fig. 5.



WITNESSES

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KNIFE FOR CUTTERS.

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To all whom it may concern:

Be it known that I, HORACE S. WILLIAMS, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county and State of New York, have invented a new and Improved Knife for Cutters, of which the following is a full, clear, and exact description.

The present invention relates to new and useful improvements in cutting machines, and it pertains more particularly to machines employed for trimming paper. In machines of this character great difficulty has been experienced in attaching and detaching the knives to and from the knife carriers, and it is the primary object of the present invention to so construct the knife carrier as to greatly facilitate the operation of placing the knife therein and removing the same therefrom.

In machines of this character as ordinarily constructed, the knife carrier consists of a heavy casing formed with a right-angular rabbet in which the knife is set, and the latter is secured to its carrier by means of bolts, the present invention providing means whereby the positioning of the knife in its rabbet is facilitated.

Referring to the drawings—

Figure 1 is a front elevation of the upper portion of a paper-cutting machine showing a knife carrier constructed in accordance with the present invention;

Fig. 2 is a detail sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a similar view showing one of the steps in the operation of positioning the knife;

Fig. 4 is a detail front elevational view of a portion of the knife carrier on an enlarged scale;

Fig. 5 is a detail perspective view of one portion of the knife carrier.

Referring more particularly to the drawings, the reference character 10 designates the knife carrier and said knife carrier moves from one side to the other of the machine with a shearing action.

The reference character 11 designates the knife, and said knife is secured in position by means of bolts 12. As best seen in Fig. 2, the knife carrier 10 is rabbeted out as at 13, to provide a rest for the knife and the bolts 12 are provided with a screw-threaded extension 14, which passes through openings provided in the knife carrier into threaded engagement with openings 15 in the knife.

In carrying out the present invention, the knife carrier 10 is provided with curved passages 16, there being two of these passages, one arranged adjacent each end of the machine. These passages 16 lead from the lower end of the rabbet 13 into one of the bolt openings of the carrier and serve as a guiding means for a tool to be hereinafter described.

The reference character 20 designates a tool which may be of any preferred form, but is shown in the present instance as a wrench used about other parts of the machine. This tool 20 is provided on one of its ends with screw threads 21 of the same character as the threads in the openings 15 in the knife 11, and said threaded end of the tool 20 is adapted to be positioned within one of these openings as shown in Fig. 3.

The reference character 25 designates a filling block and one of these blocks 25 is adapted to be received within each of the passages 16 to close the same and prevent the lodging of paper or other material therein during the use or operation of the device. Each of these blocks 25 is provided with a circular head portion 26 adapted to lie in a recess 27 formed around each of the bolt openings in the knife carrier which is provided with a passage 16.

The device operates in the following manner:

Assuming that the operator desires to position and secure a knife to the knife carrier 10, two of the tools or wrenches 20 are employed, and each of these is engaged with one of the screw-threaded openings 15 in the knife 11, by means of its threaded extension 21. With these members secured in place on the blade, the latter is provided with manipulating handles by means of which it may be lifted and readily moved from place to place. The operator grasping these handles positions them beneath the curved passages 16. After this has been accomplished, the knife is lifted with the tools or wrenches 20 passing through their respective passages 16 until each handle engages its respective central bolt opening in the carrier. This positioning of the parts is shown in Fig. 3. With the blade in this position, the several bolts 12 are set to secure the blade, after which the tools or

handles 20 are removed, the filling blocks 25 placed in their respective passages, and the bolts 12 positioned in the openings left vacant by the removal of the tools or wrenches 20.

From the foregoing, it will be seen that the present invention provides means by which the operation of attaching heavy knives to their carriers and detaching the same therefrom, is greatly facilitated, and, at the same time, is carried out in such a manner as to greatly lessen the possibility of accidental injury either to the machine or to the operator.

What is claimed is:

1. A device of the character described comprising a cutter bar provided with a cutter seat and a plurality of openings adapted to receive a cutter-securing means, a cutting element adapted to be engaged by the seat of the cutter bar, and means for elevating said cutting element, said elevating means being detachably secured to the cutting element in the openings normally engaged by the securing means, said elevating means being adapted to pass through slots in the cutter bar to permit of the movement of the cutting element to the seat of the cutter bar, said elevating means being subsequently removed, and means adapted to be received within the slots after the elevating means has been removed in order to close the slots to present a smooth surface on the exterior of the cutter bar.

2. A device of the character described comprising a cutter bar having openings to receive cutter-securing bolts, a cutter, means for securing said cutter in place upon the cutter bar, detachable elevating means for said cutter, said cutter bar being provided with curved slots leading from one edge thereof to certain of the cutter-securing bolt-receiving openings to permit of the free passage of the cutter elevating means during the positioning of the cutter relative to the cutter bar.

HORACE S. WILLIAMS.