Jan. 9, 1940. S. TRANTINO 2,186,507

DEVICE FOR SHARPENING CLOTH CUTTING MACHINE BLADES

Filed June 20, 1938

Fig. 1.

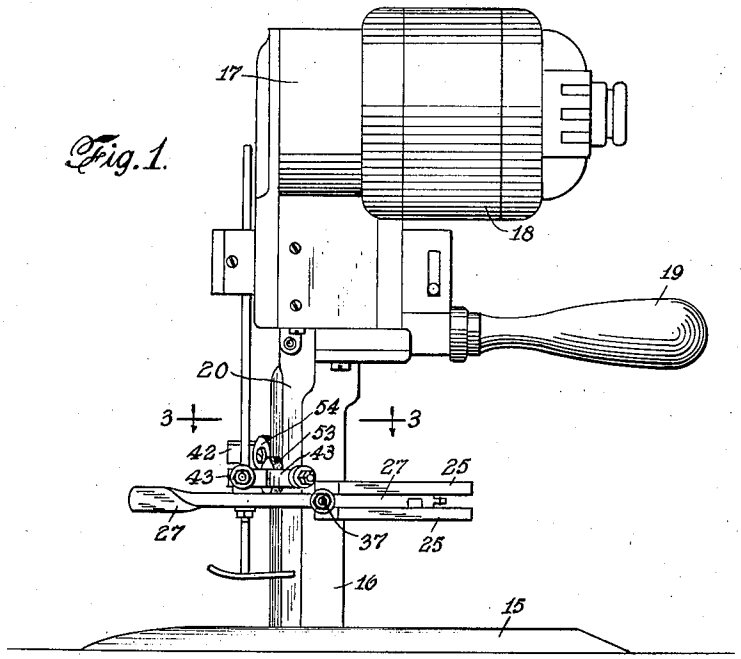


Fig. 2.

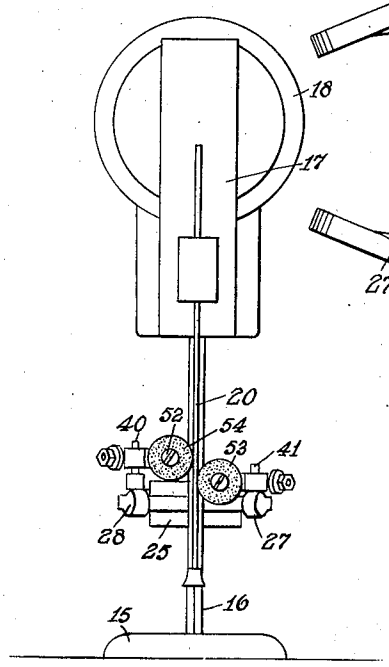


Fig. 3.

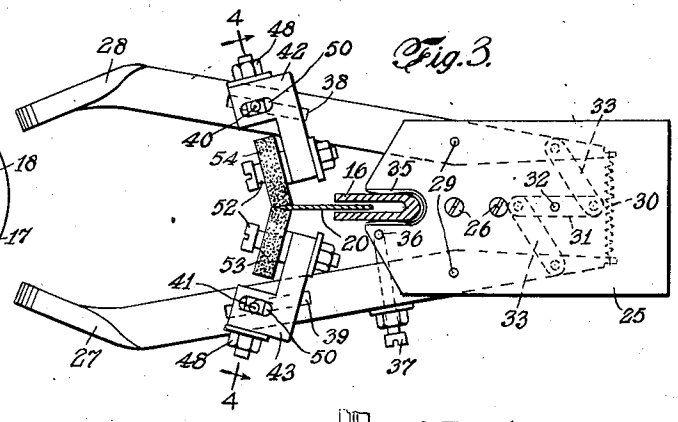
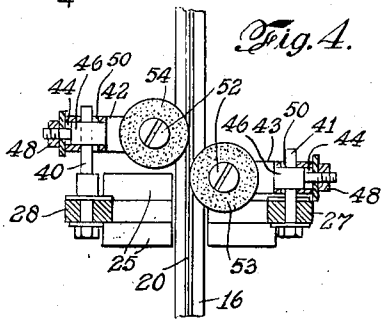


Fig. 4.



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DEVICE FOR SHARPENING CLOTH CUTTING MACHINE BLADES

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2 Claims. (Cl. 51—248)

This invention relates to devices for sharpening the cutting edges of reciprocatively actuated knives, and more particularly to the vertical knives used in cloth cutting machines.

Formerly, whenever the cutting edge of the vertical knife used in a cloth cutting machine became too dull for efficient use, it was necessary to stop the operation of the machine, remove the knife, sharpen the blade and re-enter the knife, whereupon the machine could again be used. This, obviously, was an undesirable practice, inasmuch as it resulted in considerable loss of time.

Subsequently, knife sharpening devices were introduced, which permitted the sharpening of the cutting edge of the knife without necessitating an interruption in the operation of the machine. However, the serious disadvantage of these devices is that, they must be permanently fixed to the machine, and furthermore, each device, which is automatically operated, can be used only for the particular type of cloth cutting machine for which it has been constructed.

With this in mind, it is the principal object of the present invention to provide a manually operable sharpener, universally useful with any standard make of long knife cutter.

A further feature is in the provision of a sharpener so arranged, as to be engaged and disengaged, relative to the knife, in an easy and effective manner, and in which the abrasive elements are self-adjusting to the angle of the cutting edge.

A further feature resides in the provision of a device of this character, which is capable of rendering such cutting blades super-sharp at any time it is required, without making it necessary to stop the operation of the cutting machine.

These and other meritorius objects are accomplished by the novel construction, combination and arrangement of parts, hereinafter described and illustrated in the accompanying drawing, forming a material component of this disclosure, and in which:

Figure 1 is a side elevational view of a conventional type of cloth cutting machine, showing the application of an embodiment of the invention, as in operative position.

Figure 2 is a front elevational view of the same.

Figure 3 is a transverse sectional view, taken on line 3—3 of Figure 1, and drawn to an enlarged scale.

Figure 4 is a sectional view, taken on line 4—4 of Figure 3.

Referring in greater detail to the drawing, the numeral 15 designates a base, from which rises a narrow, channelled standard 16, supporting the knife actuating mechanism 17, driven by motor 18 and provided with a control handle 19 for directing the cutting knife 20 as it is reciprocated, all of these several elements being of well known construction.

The invention comprises a pair of flat, substantially rectangular plates 25, held in spaced relation and secured by screws 26.

A pair of levers 27—28 are pivoted between the plates on pins 29, their other end portions twisted to produce a pair of finger grip handles and their inner, reduced ends connected by a coiled tension spring 30, by which the lever handles are normally spaced apart.

The levers are constrained to move equally and simultaneously in either direction by a lazy tong device consisting of a flat bar 31, pivoted midway its length between the plates 25 on a pin 32, its ends connected by pivoted links 33 with the inner portions of the levers 27—28, as best seen in Figure 3.

The forward ends of the plates 25 contain a central longitudinal recess in which is fixed a U-shaped cross-sectional spring socket 35, its free, forwardly reaching wing portions contacting the outer side surfaces of the standard 16, in the channel of which the blade of knife 20 operates.

Set in the plates 25, adjacent the recess, is a stop pin 36 against which the point of a screw 37 abuts, the screw adjustable in the lever 27, thereby limiting the distance the levers approach each other.

Longitudinal slots 38—39 are formed through the levers 27—28 respectively, in which are adjustably clamped studs 40—41, relatively long and short, and revoluble on those studs are L-shaped brackets 42—43 having inwardly extending offset arms.

The outer, wider portions of the brackets have longitudinal bores 44 containing transversely drilled plugs 46, having stems extending through the bores and provided with clamp nuts 48 by which the studs 41, passed through the plugs, are firmly clamped in adjustment.

The studs 40—41 pass freely through transverse slots 50 in the brackets, thereby permitting them to be tilted angularly as well as rotated on the studs and, as will be seen, the brackets can thereby be accurately adjusted and firmly clamped on them.

Spindles 52 are fixed transversely in the arms of the brackets 50—51, and freely revoluble on the spindles are abrasive rolls 53—54, the latter

roll 54 being in a higher plane than the roll 53, as indicated in Figures 2 and 4.

From the foregoing it will be seen that the abrasive rolls may be universally and individually adjusted to present their peripheral grinding faces to opposite sides of the knife 20 in conformity with the bevelled surface of the blade.

It will be apparent that the screw 37 limits closing of the lever carried rolls, normally drawn apart by the spring 30, and closed by manual pressure on the lever ends, while the sharpener is guided by contact of the walls of the spring socket 35 and standard 16.

After use, the sharpener is removed in its entirety from the cutting apparatus.

From the foregoing it will be seen, that a simple device for blade sharpening purposes has been disclosed in the preferred form of its embodiment, but it is not desired to restrict the details to the exact construction shown, it being obvious that changes may be made without departing from the scope of the claims hereunto appended.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. A manual sharpening implement for reciprocating knives of cloth cutting machines comprising a pair of spaced-apart plates of a size sufficiently large to be grasped by the fingers of one hand, a pair of elongated levers pivoted between said plates and normally held apart by a spring connected across the upper ends of said levers, said spring and the upper portion of said levers being disposed between said plates, the outer terminal ends of said levers being preformed to provide means for grasping the terminal ends of said levers by the other hand, brackets pivotally attached to said levers at points between said plates and terminal ends of said levers, and said brackets having secured thereto disc-shaped sharpening elements.

2. A manually operable sharpening device for reciprocating knives of cloth cutting machines comprising a pair of spaced plates constituting a grip for one hand, a pair of levers pivoted between said plates, means connected across the upper ends of said levers for normally holding said levers apart, said means and the upper ends of said levers being disposed between said plates, means at the lower ends of said levers for grasping said levers with the other hand, brackets pivotally attached to said levers at points between said plates and the ends of said levers, and said brackets having secured thereto abrasive discs.

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