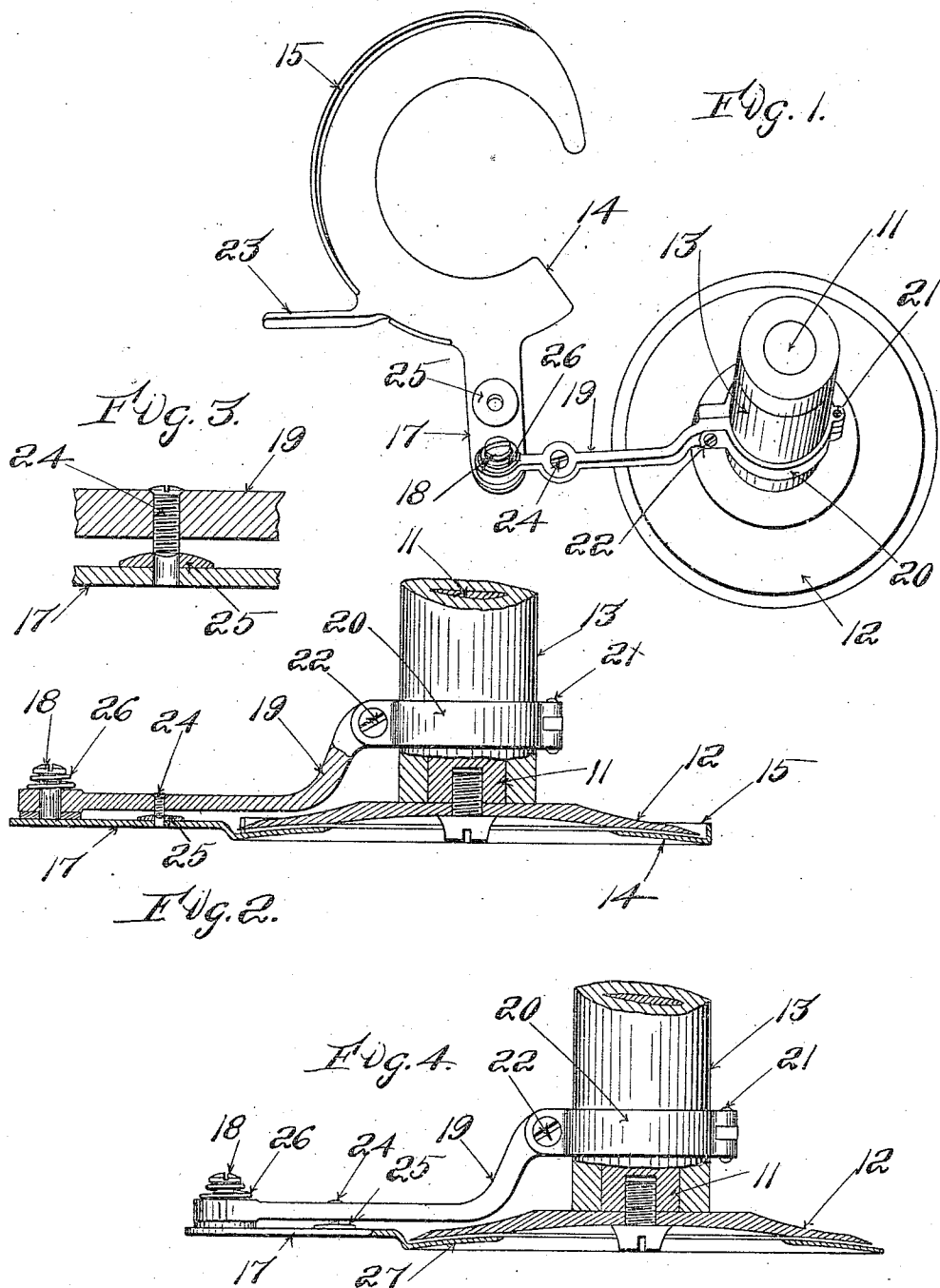


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CUTTER GUARD FOR SKIVING MACHINES.  
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Patented May 31, 1910.



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# UNITED STATES PATENT OFFICE.

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## CUTTER-GUARD FOR SKIVING-MACHINES.

959,830.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed February 29, 1908. Serial No. 418,473.

*To all whom it may concern:*

Be it known that we, ARTHUR B. ALDEN and LOUIS W. REINHARDT, citizens of the United States, residing at Brockton, county of Plymouth, Commonwealth of Massachusetts, and at Whitman, in said county and Commonwealth, respectively, have invented a certain new and useful Improvement in Cutter-Guards for Skiving-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates particularly to machines for skiving or thinning the edges of pieces of leather of the type in which a rapidly rotating disk-shaped knife acts upon the work which is fed to the said knife by means of a feed-roll and feed-disks. Such machines are well known in this art and an example of them may be seen in the patent to Amazeen No. 273,931.

The particular object of the present invention is to afford a guard for the rotating knife which shall be effective in protecting the stock and the operator from injury by the knife.

A guard embodying our invention is so constructed that it does not require to be varied in shape when used with different knives or to be fitted particularly for the individual knives with which it may be used as has heretofore been sometimes necessary. The guard is also so constructed that no inconvenience or annoyance arises through the liability of shavings of the leather to become lodged between the guard and the knife which has hitherto frequently occurred and has required that the machine be stopped and taken to pieces in order that the obstructions may be removed. A guard embodying our invention also has the advantage that should any foreign substance become lodged between the guard and the knife, it will naturally be dislodged whenever the guard is removed to permit the knife to be ground. The guard is thoroughly effective to protect the stock as well as the fingers of the operator from injury and is of such a shape that it does not in any way interfere with the operation of the

machine. It may also be readily applied to or removed from the machine should circumstances require.

The invention will be fully understood by reference to the accompanying drawings, and the novel features thereof are pointed out and clearly defined in the claims at the close of this specification.

In the drawings,—Figure 1 is a view in perspective of a portion of a skiving machine including the rotating knife thereof to which is applied a guard embodying our invention, the said guard being swung out of engagement with the knife, in order that it may be seen more clearly. Fig. 2 is a vertical section of the portion of the machine as seen in Fig. 1, with the guard in operative position. Fig. 3 is a detail of the locking means by which the guard is retained in place. Fig. 4 is a vertical section similar to that in Fig. 2 but the guard shown is of a modified form.

Referring to the drawings and more particularly to Figs. 1 and 2,—at 11 is shown the spindle or cutter-shaft upon the lower end of which the knife 12 is fast and by means of which said knife is caused to rotate. The cutter-shaft 11 is mounted in a bushing or barrel 13 fast to the frame of the machine, not shown. The parts heretofore described are old and well known in the art and form no part of our present invention. It has not been thought necessary, therefore, to give them a fuller description.

Our improved guard is shown at 14. It consists of a crescent shaped piece of metal, projecting beyond the edge of the knife 12 to prevent the work or fingers of the operator from coming in contact with the edge of the knife. In the embodiment shown in Figs. 1 and 2, an upturned rib or flange 15 is provided extending about a portion of the edge of the guard 14. The said rib or flange 15 may be of such length as may be found necessary under the peculiar conditions of the work with which the guard is to be used, but we consider it preferable that it should not extend around more than half of the periphery of the knife because if it extends a greater distance, it may interfere with the

operation of the machine. The body of the guard 14 is slightly convex to correspond substantially with the concaved under surface of the knife. This convex upper surface of the guard 14 lies very nearly in contact with the knife, but in practice it is found desirable not to have it actually in contact as otherwise it is likely to cause trouble by heating. It is found, however, that satisfactory operation may be obtained even though a small portion of the surface of the guard is actually in contact with the knife as such small portion of the guard does not cause sufficient friction to make trouble.

The guard 14 is movably secured to the barrel 13 by means of the arm 17 hinged at 18 to a corresponding arm 19 which projects from a collar 20 fast to the said barrel or bearing 13. The collar 20 is preferably hinged at 21 and provided with a lug screw 22 by means of which the parts of the collar 13 and this construction forms a convenient means for a vertical adjustment of the guard 14 with relation to the under surface of the knife 12.

The guard 14 is furnished with a handle 23 by means of which it may be moved from its operative position to the position shown in Fig. 1, and with some convenient locking means by which said guard is retained in its operative position when in place underneath the knife 12. In the drawings, we have shown this locking means as comprising a stud 24 which rides up an inclined surface 25 on the arm 17, see Fig. 3, and drops into a hole therein which is formed to receive the point of the stud 24. A spring 26 between the head of the stud 18 and the upper surface of the arm 19 tends to hold the guard 14 against the under surface of the arm 19 with a yielding pressure, so that when in operative position the guard 14 always occupies a certain position with relation to the knife 12 determined by the position of the collar 20 on the barrel 13. It also affords means so that while the concave knife and convex guard fit closely together, the guard may be readily removed when desired.

When it is desired to move the guard from contact with the rotating knife 12, it is only necessary to swing it into position shown in Fig. 1 by means of the handle 23. When in this position, the knife 12 is left entirely free for grinding, and at the same time any particles of leather or dust which may have worked between the guard and the knife during the operation of the machine are apt to be dislodged. We find, however, that there is little or no trouble because shavings or dust get between the guard and the knife, but should they do so, they may be immediately removed and without the necessity of stopping the machine or taking it apart.

By placing our improved guard on the under side of the knife instead of on the upper side, it is possible to make a guard which may be instantly and completely removed from the knife; also a guard so constructed may be made to fit more closely to any knife with which it may be used since all knives are substantially the same in shape as regards their bottom surface, but they vary considerably in shape on the upper side and it has frequently been necessary heretofore to fit the guard especially to the knife or else to suffer from the inconvenience caused by particles of leather lodging between the guard and the knife.

While we have shown in the accompanying drawings the guard as provided with a rib 15 which extends slightly above the edge of the knife and which is preferably used as it affords a more complete protection against the introduction of shavings and dust between the guard and the knife, yet a guard embodying our invention may be constructed without the said rib which shall be substantially as serviceable as the guard shown in the figures previously referred to. Such a guard is shown Fig. 4 where the guard is indicated at 27. In that case it will be seen that no rib is employed but the guard is of a diameter slightly greater than the diameter of the knife and extends slightly beyond the edge of the knife so that anything coming toward the knife strikes the guard first and does not come in contact with the edge of the knife.

We claim as our invention:

1. In a machine of the character described, the combination with a knife having the under side thereof concave, of a guard comprising a guard member located beneath the knife in a plane parallel to and adjacent the under side thereof and having its upper surface convexed to correspond with the adjacent concave under surface of the knife.

2. The improved cutter guard for the knife of a machine of the character described comprising a substantially circular guard member located beneath the knife adjacent the under surface thereof, said guard member being cut away at the center and at one side thereof so that the central portion of the knife and a portion of the periphery thereof are left exposed.

3. The improved cutter guard for the knife of a machine of the character described comprising a guard member of crescent shape located beneath the knife in a plane parallel to and adjacent the under surface thereof, said guard having one end drawn out to a point to lie nearly in contact with the under side of the knife.

4. The improved cutter guard for the knife of a machine of the character described which said knife is concaved on its lower

surface, comprising a guard member having  
its upper surface convexed to correspond  
with the said concave surface of the knife  
and being cut away at the center and at one  
5 side thereof so that the central portion of  
the knife and a portion of the periphery  
thereof are left exposed.

In testimony whereof we affix our signatures, in presence of two witnesses.

ARTHUR B. ALDEN.

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