

COMPLETE SPECIFICATION.

Improvements in and relating to Blades for Scissors, Shears and the like.

I, JAMES HENRY CARTNER BOYD, of "St. Margarets", Bath Road, Salt Hill, Slough, Buckinghamshire, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in and relating to scissors and the like provided with detachable cutting blades, and more particularly to such tools as described in my previous British Patents Nos. 290,307 and 290,522.

The object of the present invention is to provide on the one hand a detachable blade so designed as to constitute an article possessing a cutting efficiency greater than that of the detachable blades previously proposed, and on the other hand to provide a design such that the manufacture of the blade is reduced to very simple operations.

To these ends, and in accordance with the present invention, the blade consists essentially of a thin metal plate provided with an inclined tongue and a cut-away portion as described in my previous Patents in addition to which the blade is formed with a substantially concave portion extending from a point adjacent to the pivot portion to the tip of the blade, whilst that portion of the blade extending from said pivot portion to the heel end of the blade is formed with a substantially convex portion as hereinafter described.

The concave and convex portions above referred to may be produced in any convenient manner as by grinding, stamping, pressing, rolling, or any other convenient manner as hereinafter described.

The invention will be described with reference to the annexed drawings, wherein Figure 1 is a plan view of a blade constructed in accordance with the present invention, whilst Figures 2 and 3 are respectively sections on lines AA and BB (Figure 1) Figures 2 and 3 being drawn to a larger scale than that of Figure 1 for the sake of clearness. Figure 4 is a similar view to Figure 1, shewing the blade as fitted to one carrier of a pair

of scissors fitted with a detachable blade, Figures 5 and 6 being respectively sections on line CC and DD of Figure 4, Figures 5 and 6 being drawn to a larger scale than that of Figure 4.

Figure 7 is a section of a blade portion of substantially concavo-convex form in cross section whilst Figure 8 is a similar view shewing such a blade in position on a carrier. Figure 9 is a cross section of a heel portion of a blade of substantially concavo-convex form similar to that shewn in Figure 7, it being understood when the terms concave and convex are used in this specification, that such denomination is given with respect to a plane extending normal to that of the material during the cutting operation.

The blade, shewn in Figure 1, consists of a thin steel plate 10 formed with a bevelled cutting edge 11, a locating tongue 12, a pivot hole 13, and a cut-away back portion 14, all as described in my previous Patents above referred to.

That portion of the blade extending between the pivot hole 13 and the tip of the blade 15 is brought in any convenient manner as hereinafter described, to concave form as shewn at 16 in Figure 3, the effect of such concavity being to facilitate greatly the cutting operation by preventing contact between the two adjacent blades throughout the surface of each blade, during the cutting operation, as in this case the friction between the blades is limited to a relatively small area adjacent to the cutting edge.

That portion of the blade extending from the pivot hole 13 to the heel portion 17 is formed with a substantially convex portion 18 as shewn, particularly in Figure 2, the convexity of such heel portion being of a height greater than the thickness of the blade between the pivot hole 13 and the tip of the blade 15 above referred to, and having for effect, when the blades are brought together during the cutting operation, and provided there is sufficient play for such motion between the pivot hole 13 and the pivot itself (not shewn) as will cause the convex portion 18 on one blade to ride on, or co-act with, the corresponding convex portion on the

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other blade, in such a manner that relative tilt of the blades will result, which will throw the cutting edge of one blade against the cutting edge of the other and disengage the trailing edges of such blades, thus considerably assisting in the cutting operation by reducing the considerable amount of friction which would take place were the blades flat or were they of a shape such that friction would be liable to take place throughout the width of the blade.

In Figure 4 the blade 10 is shewn on one carrier 19 of a pair of scissors, such carrier being provided with a backing 20 adapted to engage the cut-away portion 14 of the blade and with a slot (not shewn) for the engagement of the tongue 12 on the blade, both of such features being fully described in my previous Patent No. 290,307.

It is to be understood that the shape of the heel portion 17, which is shewn as of substantially spear shape form, may be varied, as such a shape depends to a large extent on the configuration of the carrier 19 at such point, but whatever be the particular shape adopted, it is essential—for the purpose above described—that this portion should be of a convex form, Figure 5 illustrating the relative positioning of the blade 10, carrier 19, and backing wall 20, on line CC of Figure 4, whilst Figure 6 shews the relative positioning of the parts on line DD of Figure 4.

In Figures 1 to 6 the blade is shewn as consisting of a strip of steel formed with a flat under-surface 21, adapted to engage a similar flat surface on the corresponding carrier.

The concave and convex surfaces may be formed of such strip in any convenient manner, for instance, by grinding away the material until the desired curvature has been obtained.

To reduce the amount of grinding necessary, the strip may be stamped, pressed, or rolled, until it is of a shape in cross section corresponding with those shewn in Figures 1 and 2, after which a very slight grinding operation only is necessary to bring the finished surfaces to the desired degree of finish to give the best cutting edge, it being understood that the actual chamfer on the cutting edge 11 would be produced in the ordinary manner.

Figures 7 and 8 illustrate a modified form of blade in which the flat under-surface 21 described with reference to Figures 2 and 3 is replaced by curved surface 22, in which case the strip initially used may be brought to such form by any one of the processes described, whilst the flat surface on the carrier would be brought to a corresponding curvature as shewn at 22A (Figure 8), during the manufacturing operation of the carrier, whilst that portion of the same blade extending from the pivot hole 13 to the tip of the heel 17, would be brought to convex form, as shewn at 23 in Figure 9.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A detachable blade for scissors shears and the like, wherein the blade portion consists essentially of a thin metal blade formed with a substantially concave portion extending from a point adjacent to the pivot hole to the tip of the blade, whilst that portion of the blade extending from such pivot portion to the heel end of the blade is formed with a substantially convex portion, substantially as described.

2. A detachable blade for scissors shears and the like, as claimed in Claim 1, wherein the concave and convex surfaces are formed on a strip provided with a flat under-surface, substantially as described.

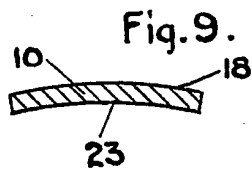
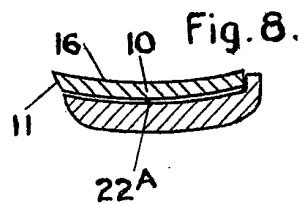
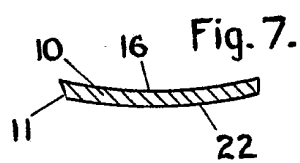
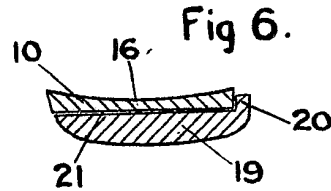
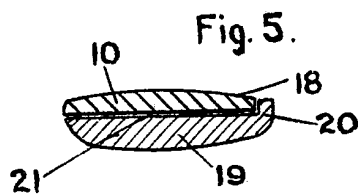
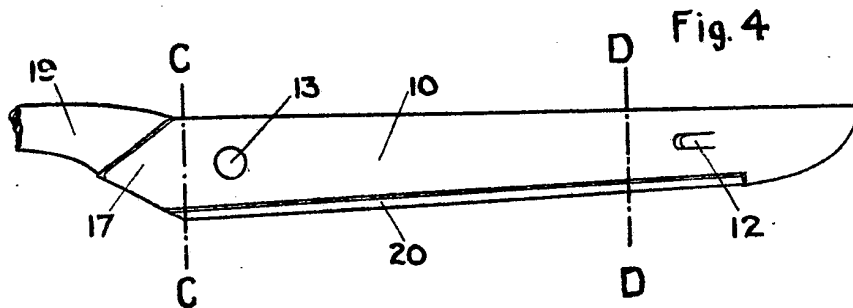
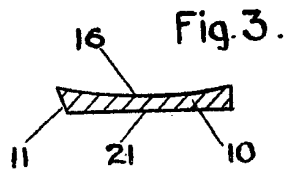
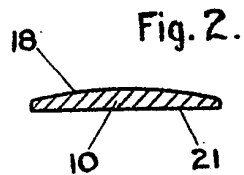
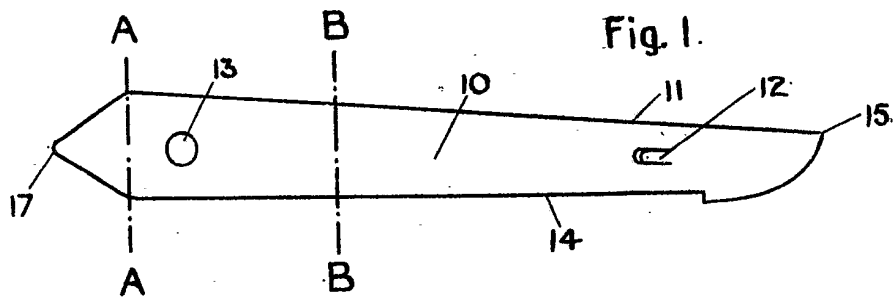
3. A detachable blade for scissors shears and the like, as claimed in Claim 1, wherein the thin metal plate is formed with curved upper and lower surfaces as shewn in Figures 7, 8 and 9.

4. A detachable blade for scissors shears and the like, as claimed in Claim 1, wherein the plate constituting the blade is brought to substantially finished form before the grinding operation, by submitting same to a stamping, pressing or rolling operation, substantially as described.

5. Blades for scissors shears and the like constructed, arranged and adapted for use substantially as herein described with reference to the accompanying drawings.

Dated the 2nd day of July, 1928.

JAMES HENRY CARTNER BOYD.



[This Drawing is a reproduction of the Original on a reduced scale.]