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1,532,850

A. T. YARD

SCISSORS

Filed Feb. 9, 1924

Fig. 1

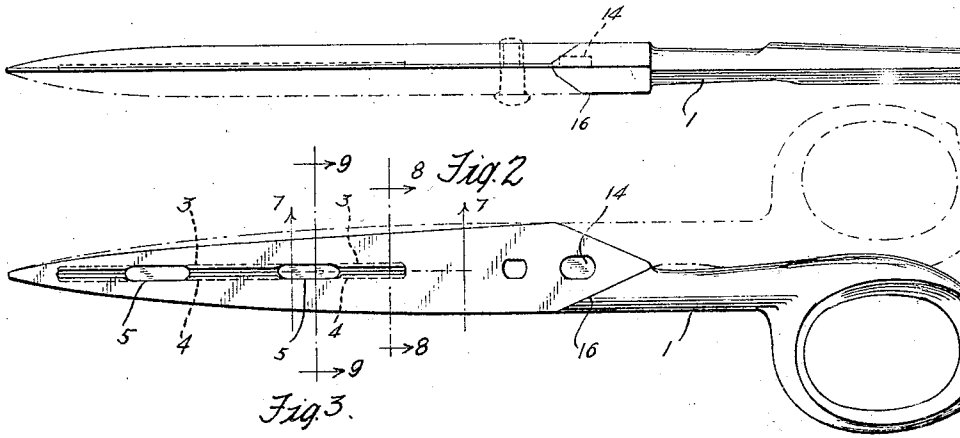


Fig. 2

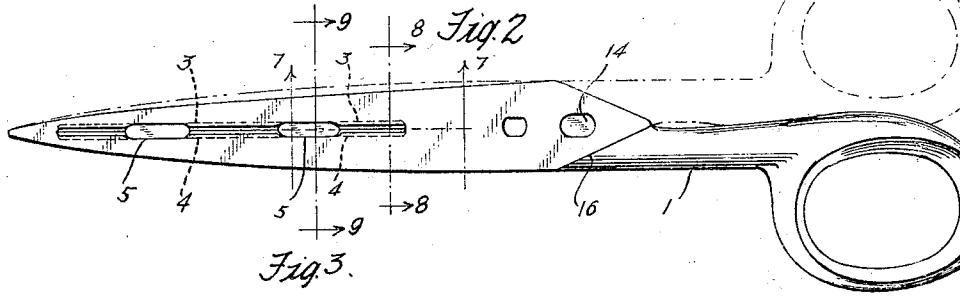


Fig. 3.

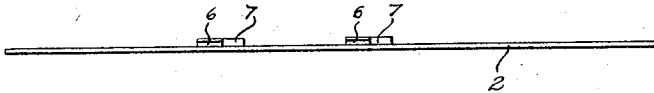


Fig. 4

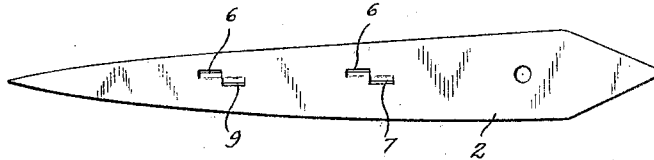


Fig. 5

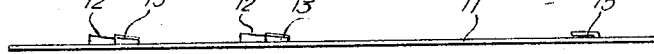


Fig. 6

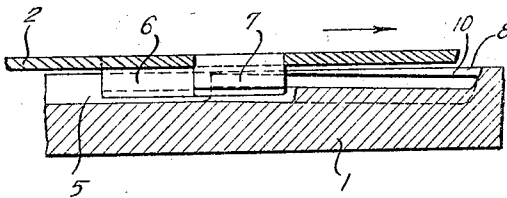
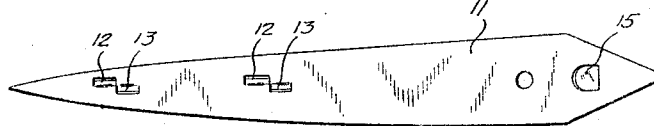


Fig. 8

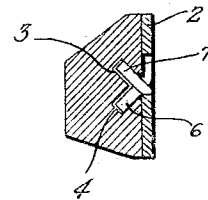


Fig. 9.

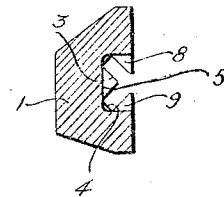


Fig. 7

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ABRAM TOWNSEND YARD, OF MAPLEWOOD, NEW JERSEY.

SCISSORS.

Application filed February 9, 1924. Serial No. 691,541.

To all whom it may concern:

Be it known that I, ABRAM TOWNSEND YARD, a citizen of the United States, and a resident of Maplewood, county of Essex, State of New Jersey, have invented an Improvement in Scissors, of which the following is a specification.

The present invention relates to an improvement in scissors or shears, one object being to produce a device of the kind indicated which will have an interchangeable blade whereby a cutting portion of the scissors can be removed and replaced at will and whereby a superior quality of steel or other suitable cutting metal may be employed in the blade. In the ordinary forms of scissors and shears, the permanent cutting qualities of the blade must usually be sacrificed because it is not possible to form the entire scissors of tool or other high grade steel economically by any known means of manufacture in large quantities. Accordingly, the scissors and shears in ordinary use are made of relatively soft steel and the cutting edges of the blades rapidly deteriorate in use. According to my invention, it is contemplated that a portion of the scissors or shears not directly employed in cutting shall be of a relatively light and easily formable material such as aluminum, for example, and the blade or cutting portion shall be of high carbon steel or other suitable hard metal and readily attachable to and detachable from the frame of the scissors at will. In forms of scissors heretofore known and in which the blade is intended to be detachable, it has been found that the instrumentalities for effecting the attachment of the blade to the scissors frame have been either cumbersome or defective in operation, or have been of such character that the cost of production has rendered the devices employing these expedients too expensive to successfully compete with the ordinary well known forms of scissors and shears.

A preferred embodiment of my invention is illustrated in the drawings accompanying the present specification, and in which—

Figure 1 is a top plan view of a blade carrier,

Figure 2, a side view thereof,

Figure 3, an edge view of a blade,

Figure 4, a plan view of the blade shown in Figure 3,

Figure 5, an edge view of a modified form of blade,

Figure 6, a plan view of the modification shown in Figure 5,

Figure 7, an enlarged detail in section on the line 7—7 of Figure 2,

Figure 8, a transverse section on the line 8—8 of Figure 2, and

Figure 9, a transverse section on the line 9—9 of Figure 2.

Referring to the drawings, scissors embodying my invention include broadly a blade carrier 1 provided with a removable blade 2 and means whereby the blade 2 may be detachably secured to the blade carrier 1. In a preferred form of my improved device, the carrier 1 is provided with opposed longitudinally extending undercut grooves 3 and 4, each communicating with a tongue receiving recess 5. The blade 2 is provided with resilient projecting tongues 6 and 7 preferably formed integrally with said blade by being struck out of the material thereof. As indicated more clearly in Figure 8, these tongues 6 and 7 are disposed at an angle to each other, said angle corresponding substantially to the angle formed between the axes of the corresponding grooves in the carrier 1. Thus, when the parts are in assembled relation, the tongues 7 engage groove 4 and the tongues 6 engage groove 3. In assembling the parts, the tongues 6 and 7 are first inserted in the recess 5 and are then moved longitudinally with the blade into effective blade retaining position. As indicated more clearly in Figures 7, 8 and 9, a preferred form of blade carrier will include flanges 8 and 9 overlying their respective tongue receiving grooves, said flanges being preferably of increasing cross sectional area from one end to the other of their effective tongue engaging length. Thus, as shown in Figure 7, the flange 8 increases in cross sectional area from the recess through which the tongues are inserted in the direction of movement of the tongues as they are moved into blade retaining position. Accordingly, as the tongues move forward in the direction of the arrow during the attaching operation, the under surface 10 of the flange 8 acts as a cam bearing against the upper surface of the corresponding tongue and depressing the same, thereby drawing the blade 2 into firm or pressed engagement with the blade engaging sur-

face of the blade carrier. It is, of course, obvious that a similar result might be obtained by utilizing a flange of substantially uniform cross sectional area and canting the tongues as indicated in Figure 5, in such a manner as to cause successive portions thereof to bear against the under surface of the flange when moved into position as contemplated.

10 With the construction thus far described, the blade 2 is moved toward the rear of the blade carrier for operative engagement and, when the blade carrier is assembled with another carrier of similar construction and
15 held securely connected thereto by a suitable bolt or other well known means, the removable blades will be retained against endwise movement and therefore remain in fixed operative engagement with their respective
20 carriers.

In Figure 5 and 6, I have illustrated a modification including a blade 11 having tongues 12 and 13 performing substantially the same function as the tongues 6 and 7
25 and cooperating in a similar manner with suitable grooves in a carrier such as the blade carrier 1. In addition thereto, the carrier is provided with a recess 14 at the rear end of the blade receiving portion, said
30 recess being positioned and adapted to receive and engage a projection 15 struck down from the material of the blade 11. It is contemplated that a blade embodying this construction will be made of steel sufficiently
35 resilient to bend readily without permanent deformation so that the blade may be assembled on the blade carrier by engaging the tongues 12 and 13 in suitable recesses and then moving the blade longitudinally toward the front end of the blade carrier.
40 During the first portion of this operation, rearwardly disposed portions of the lower surface of the blade will ride on the shoulder 16 of the blade carrier and as the blade approaches operative position, will slip down into engagement with the blade engaging surface of the carrier and in such position that the projection 15 will fit into the recess 14, thus affording additional security against
45 endwise movement of the blade.

Obviously, different conditions of use or various sizes of scissors or shears will indicate variations in construction from the details hereinabove described. Thus, in some
50 forms of scissors or shears, a single recess 5 and a single set of tongues 6 and 7 cooperating with opposed grooves will be sufficient to retain the blade in effective operative engagement with its carrier. Under
55 other conditions, it will be advantageous to provide two or more recesses as 5 communicating with tongue engaging grooves and a correspondingly increased number of sets of tongues 6 and 7. Furthermore, varying
60 conditions may indicate the necessity for

varying the relative sizes or lengths of the tongues and their cooperating grooves, it being contemplated that in some cases relatively long tongues will be more appropriate than shorter tongues. Whatever the variation as to these details of construction, it is
70 believed that the same will still be properly considered within the scope of my invention as disclosed in the drawings and defined in the claims appended hereto.

I claim as my invention:

1. Scissors comprising a blade carrier having longitudinally extending undercut grooves opening in the blade engaging face of said carrier and a tongue receiving recess
75 communicating with said undercut grooves, and a blade having tongues projecting from one face thereof and positioned to engage said grooves to retain the blade in pressed engagement with the carrier.

2. Scissors including a blade carrier having a longitudinally extending slot in its blade engaging face and opposed undercut grooves opening into said slot, and a blade having spaced pairs of opposed resilient
80 tongues engaging said undercut grooves to hold the blade in pressed engagement with the carrier.

3. Scissors comprising a blade carrier having longitudinally extending undercut
85 grooves opening in the blade engaging face of said carrier and a tongue receiving recess communicating with said undercut grooves and exposing open ends thereof and a blade having oppositely extending tongues adapted to enter said recesses and to be moved longitudinally into sliding engagement with said respective undercut grooves through
90 said open ends.

4. Scissors comprising a blade carrier having spaced tongue receiving recesses in its blade engaging face, a longitudinally extending undercut groove communicating with each of said recesses, and tongues on the blade positioned and adapted to enter
95 said recesses and to be moved longitudinally into sliding engagement with said respective undercut grooves through said open ends.

5. Scissors comprising a blade carrier having spaced tongue receiving recesses in its blade engaging face, a longitudinally extending undercut groove communicating with each of said recesses, and tongues on the blade positioned and adapted to enter
100 said recesses and to be moved longitudinally into blade retaining engagement with said respective grooves.

6. Scissors comprising a blade carrier having a tongue receiving recess, undercut grooves extending longitudinally of said carrier and opening into said recess, and a tongue retaining flange overlying each of said grooves and of progressively increasing cross sectional area from one end toward the other of its effective length.

7. Scissors comprising a blade carrier having a tongue receiving recess, undercut grooves extending longitudinally of said carrier and opening into said recess, and a tongue retaining flange overlying each of said grooves and of progressively increasing cross sectional area from said recess toward the other end of its effective length.
8. Scissors comprising a blade carrier having a tongue receiving recess, undercut grooves extending longitudinally of said carrier and opening into said recess, a tongue retaining flange overlying each of said grooves, and a blade having resilient tongues adapted to engage the under faces of said respective flanges with increasing pressure as the tongues are moved longitudinally along said grooves into effective blade retaining position.
- In testimony whereof, I have signed my name to this specification this 7th day of February 1924.

A. TOWNSEND YARD.