Jan. 17, 1933. F. H. RAUH 1,894,787

TINNER'S SNIPS

Filed March 2, 1931

Fig.1

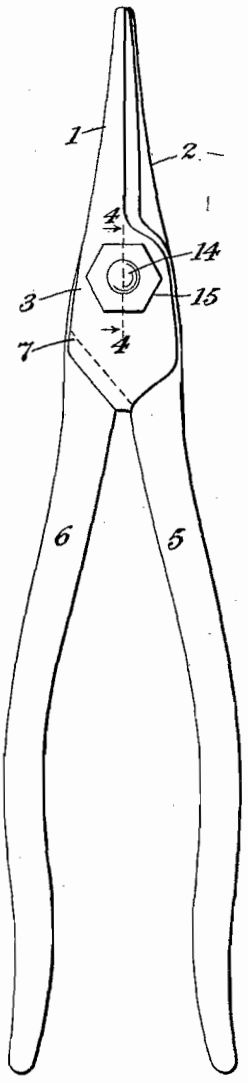


Fig.2

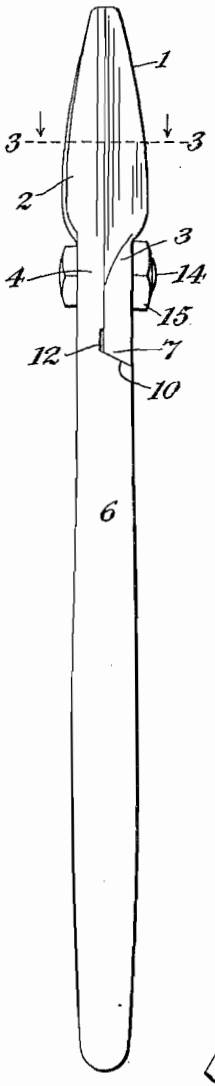


Fig.3

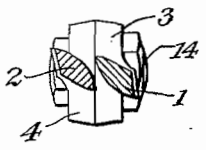


Fig.4

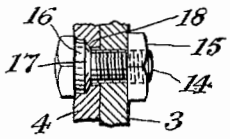
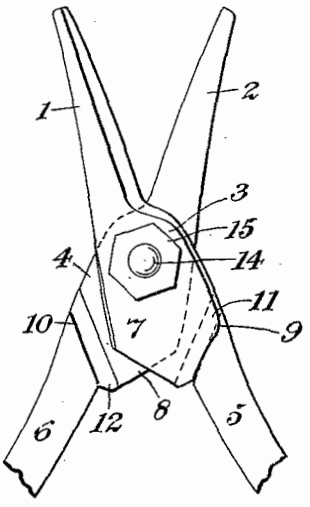


Fig.5



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Patented Jan. 17, 1933 1,894,787

UNITED STATES PATENT OFFICE

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TINNER'S SNIPS

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My invention relates to short bladed instruments of the shears type adapted to cut comparatively thin sheet metal, and the like, the instrument being operable manually by one hand.

Objects of my invention are to produce a compact and powerful instrument; to make the instrument simple in construction and not liable to bind or clog in the work; to do away with elements likely to pinch the user's hand; to provide means whereby the closing of the cutting blades is arrested by the shoulders of the mutually overlapping blade elements; to provide durable means for withstanding the strains to which the mutually cooperating blades are subjected; to provide means for facilitating the correct registering of the cooperating elements in the operation of closing; to provide means for holding and distributing a lubricant for the mutually overlapping blade elements, and to secure the other advantages hereinafter mentioned.

In the drawing Fig. 1 is a plan view and Fig. 2 is an edge view of a tinner's snips embodying my improvements; Fig. 3 is a cross sectional view taken on the line 3—3 of Fig. 2, looking down; Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 1 looking to the right; and Fig. 5 is a plan view, similar to Fig. 1, but with the jaws opened, and with parts of the handles broken away.

Similar parts are designated by similar reference numerals in all the figures.

The tool embodies a pair of members which are substantial duplicates of each other, each embodying a cutting blade, a shank and a handle, which, for clearness I have designated in the drawing as 1, 3, and 5 as applied to one member, and as 2, 4 and 6 as applied to the other member. The inner face of each blade 1 or 2 is preferably, practically flat, and the inner face of the shank lies in the same plane as the inner face of its blade, so that the blades may swing smoothly past each other, with their edges in operative cooperation, without binding.

The shank of each blade is provided with a laterally offset portion 7, or 8, the outer edge of which is sloped inward and backward toward the handle, and beveled inwardly, as shown in Figs. 1 and 2. Each offset portion 7 or 8 is adapted to register against a complementary shoulder 9, or 10 on the opposed shank, when the blades have completed their closing movement, and thereby the closing of the instrument is arrested without the handle elements coming in contact with each other at any point. This avoids the danger of catching or pinching the user's hand between the handle elements, the end portions of which preferably diverge away from each other.

On the inner face of each shank, adjacent to its shoulder 9 or 10, I form a groove 11 or 12, adapted to be overlapped by the edge of the cooperating offset portion 7 or 8. This groove serves to allow yieldable matter which may get into the opening between the shanks, to be squeezed inward out of the way of the edge 7 or 8 as it closes against its respective shoulder 9 or 10, so as to facilitate the accurate closing of the shanks and blades. The grooves also serve as recesses to hold lubricating oil or grease which may be worked out between the opposed surfaces of the shanks during their opening and closing.

I prefer to secure the shanks to each other by means of a bolt 14, threaded into one shank, as 3, locked by a nut, as 15, provided with a smooth cylindrical shank, as 16 with a beveled shoulder 17, registering with a cooperating seat 18 in shank 4, so that shank 4 may swing freely on the bolt 14 which is securely locked in the shank 3. This arrangement allows for take up between the blades so that a proper relative adjustment and compensation for wear may be made.

This form of pivotal connection is both simple and efficient. It affords the requisite resistance to stand the shock of arresting the closing blades by contacts of their shanks as distinguished from their handles; for, of course, the nearer the arresting point is to the pivot the greater will be the strain on the pivot. Hence it is important that the pivot be of increased diameter as compared with ordinary shears pivots, both where it is anchored in the shank 3 and where it carries the shank 4.

An additional necessity for increased strength in the pivot arises from the jam-

ming action which arises when the mitered shoulders of the shanks close against each other, causing a tendency for the shanks to shift longitudinally relative to each other, and also from the beveled comformation of the meeting shoulders which tends to throw them apart, laterally, thus increasing the strain between the head and nut of the pivot.

In other words to take up these increased strains safely and to allow the closing of the snips to be arrested by the shanks, leaving the handles free, I provide a pivot pin of particular construction and of increased resistance, so that the tool will stand up well in actual use.

I wish it to be understood that changes may be made in the details of my preferred form of the embodiment of my invention, which I have illustrated and described, as by the use of equivalents, without departing from the spirit of my invention or the scope of my claim.

Having thus described my invention what I claim, and desire to secure by Letters Patent of the United States is:—

In tinner's snips, the combination of a pair of complementary members, each embodying a backwardly curved blade, with a cutting edge lying in a uniform plane, a shank, and an extended handle lying at all times free of the cooperating handle through its entire length, a pivot, positively connecting the shanks in close contact against spreading, locked in one shank and passing freely through the other shank and having a tapered shoulder on its unlocked portion seated in a beveled socket in the shank, the shanks being provided with mitered shoulders beveled transversely of their planes and constituting cooperating stop-elements, each shank being provided with a transverse groove in its inner face adjacent and parallel to the mitered shoulder, and being wholly uncovered when the snips are opened, whereby surplus yieldable matter may be squeezed laterally from above the groove and up along the bevel on the closing of the snips.

FREDERIC H. RAUH.