(No Model.)

H. V. SMITH.

SHEARS.

No. 541,294. Patented June 18, 1895.

Fig. 1.

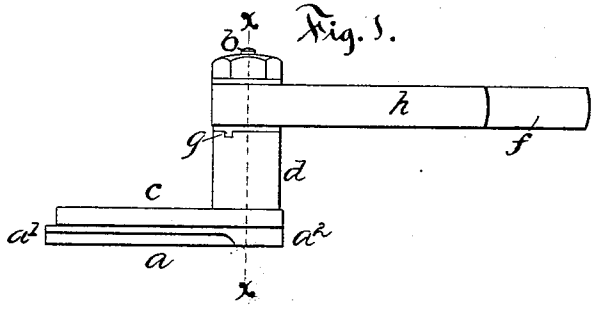


Fig. 2.

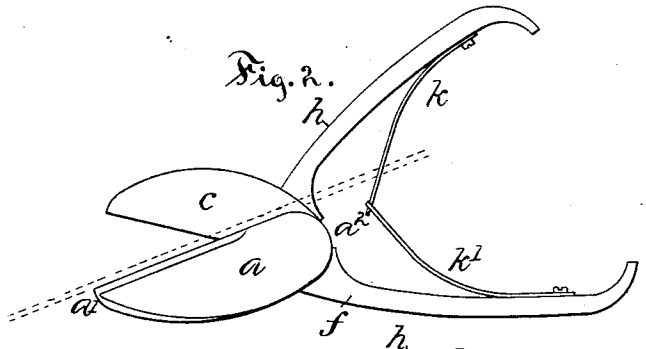


Fig. 8.

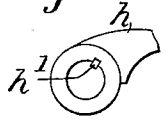


Fig. 3.

Fig. 5.

Fig. 6.

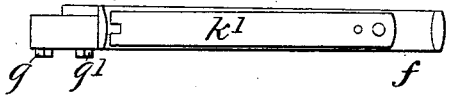


Fig. 4.

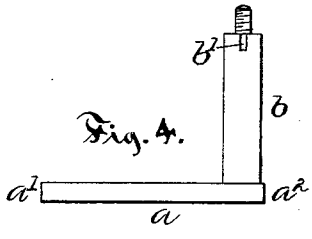
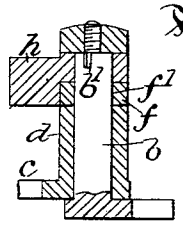


Fig. 7.



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UNITED STATES PATENT OFFICE.

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SHEARS.

SPECIFICATION forming part of Letters Patent No. 541,294, dated June 18, 1895.

Application filed March 25, 1895. Serial No. 543,064. (No model.)

To all whom it may concern:

Be it known that I, HENRY V. SMITH, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Shears, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a pair of shears that shall be more particularly adapted for cutting sheets of metal or other fairly hard material and in their use will enable a cut to be made completely across a large sheet of material without the severed portion in any way interfering with the easy forward movement of the shears in cutting.

To this end my invention consists in details of the several parts making up the shears as a whole and in the combination of the parts as more particularly hereinafter described and pointed out in the claims.

Referring to the drawings, Figure 1 is a top view of a pair of shears embodying my invention. Fig. 2 is a view in front elevation of the shears. Fig. 3 is a detail side view of one of the shear-blades. Fig. 4 is a detail edge view of the other blade. Fig. 5 is a detail view of the handle which is appurtenant to the blade shown in Fig. 4. Fig. 6 is a detail view of the other handle. Fig. 7 is a detail view, in central cross-section, through the pivot of the shears on plane denoted by the dotted line $x\,x$ in Fig. 1. Fig. 8 is a detail front view of the end of the handle shown in Fig. 5.

In the accompanying drawings the letter a denotes one of the shear blades having integral with or rigidly secured to the rear end of the blade a stem b which projects at right angles to the blade. The edge of this blade from point a' to the heel a^2 is straight, or substantially so, so as to present no obstacle to the sliding movement of any material being cut along the blade.

The complementary blade c has a tubular shank d projecting laterally from the rear end of the blade and having the opening through the shank of a size to enable it to fit snugly upon the cylindrical stem of the other blade with the adjacent faces of the two blades arranged to slide closely in contact with each other so that the edges of the blades will give a shearing cut when one blade is moved upon the other in proper direction.

The handle f is curved to proper shape and has in the broadened head portion a transverse opening f' which enables it to fit snugly upon the stem b of the blade a. On the sides of the head are projecting lugs g, g', which are adapted to engage the sockets c', c^2, in the end of the tubular hub of the blade c so that when a swinging movement is imparted to the handle it will be communicated to the blade and cause the two parts, handle f and the blade c, to move together. A similar handle h is provided with an opening at one end which enables it to fit upon the outer end of the stem b and interengaging parts h' and b' lock the handle h and the blade a together so that they operate as one portion. A nut fitted upon the threaded outer end of the stem b serves to hold the several parts of the shears together. The result of this construction and arrangement of the several parts is that the jaws and handle are offset from each other by a pivot of convenient length and by setting the handles to one side of the blade in this manner a free way is left for the use of the shears. In prior forms of shears in which the two parts, handle and blade, are practically in one line or plane the handle interferes with the proper use of the shears so as to cause them to rock over to one side in cutting a sheet of metal or like hard material, or else the substance of the sheet is bent and twisted so as to avoid contact with the handle or a projecting part back of the blade.

As already stated, the edge of the outer blade is straight from point to heel and as the handle is offset it presents no obstruction to the free movement of the shears along the sheet of material so that the cut being made by the shearing action of the blades can be easily and rapidly followed up by a forward movement of the shears along the line of cut. These two blades are preferably held open by the action of the springs k, k', which are fastened to the handle at one end and engage at their other ends so that a closing movement of the handles compresses the springs, and the latter by their reaction when the pressure is removed open the handles and the blade. This precise construction of parts is not material, nor is the construction of the interen-

gaging parts by which the handles and blades are connected together material, as other springs may be used and other forms of connecting means employed without departing from my invention, the main feature of which resides in the offsetting of blades and handles by the construction and relative combination of the parts as described, and which also secures a freeway for the passage of material along the edge of the outer blade for its entire length.

I claim as my invention—

1. In combination in a pair of shears, a blade, a tubular shank projecting laterally therefrom, a complementary blade, a stem extending laterally therefrom and through the shank, handles secured to the end of said shank and stem respectively the said stem forming the pivot, all substantially as described.

2. In combination in a pair of shears, a blade, a tubular shank projecting laterally therefrom, a complementary blade, a stem extending laterally therefrom through the shank and handles secured to the ends of the shank and stem respectively by interengaging lugs and sockets, all substantially as described.

3. In combination in a pair of shears, a blade, a tubular shank projecting laterally from the rear end of said blade, a complementary blade having a stem extending laterally from its rear end and within the shank, lever handles secured to the outer end of said shank and stem respectively, the latter forming the pivot, all substantially as described.

4. In combination in a pair of shears, a blade, a tubular shank extending laterally from its rear end, another blade having a stem extending through the shank and projecting beyond the end thereof, a lever handle mounted upon the stem and in engagement with the end of the shank, a handle secured to said stem, and a nut fitting the end of the stem, all substantially as described.

5. In combination in a pair of shears, a blade, a tubular shank extending laterally from its rear end, another blade straight from point to heel along its entire length whereby a free way is provided and having a stem extending through the shank of the opposite blade and projecting beyond the end thereof, a handle mounted upon the stem and in engagement with the aforesaid shank, another lever handle mounted upon the stem and secured thereto, and a nut secured to the outer end of the stem, all substantially as described.

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