

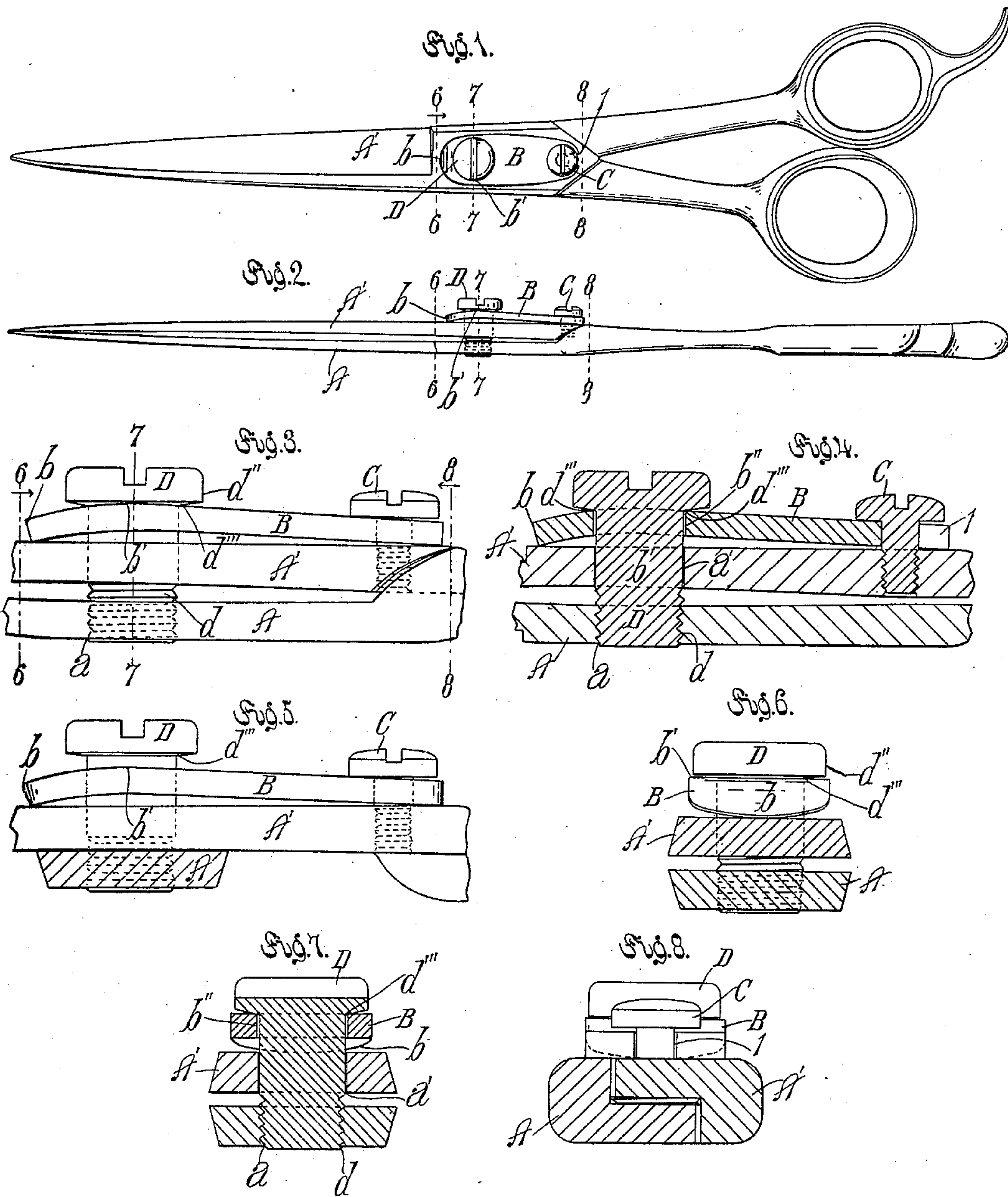
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A. ZINSGRAF.
SHEARS.

(Application filed Nov. 22, 1897.)

(No Model.)



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AUGUST ZINSGRAF, OF LOS ANGELES, CALIFORNIA.

SHEARS.

SPECIFICATION forming part of Letters Patent No. 613,873, dated November 8, 1898.

Application filed November 22, 1897. Serial No. 659,516. (No model.)

To all whom it may concern:

Be it known that I, AUGUST ZINSGRAF, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Shears, of which the following is a specification.

My invention relates to that class of shears in which an arched spring-bar is applied on the outside of one of the blades and by which pressure is applied through the shears-pivot to yieldingly hold the edges of the shears together in making the cut.

An object of my invention is to provide simpler and better means for accomplishing the purpose than has heretofore been provided.

One object which I have in view is to provide very simple and practical means for adjusting the pressure of the spring to hold the edges of the blades in proper contact while the cutting is being done and to leave the blades entirely free when the shears are open, so as to avoid any unnecessary expenditure of force in operating the shears. In this regard an object of my invention is to apply the blade-holding pressure as near the mid-line of the blade as possible, as distinguished from applying such pressure at the sides or at either side of the mid-line of the blade, thus to allow the blades to readily adjust themselves with their cutting edges in the best position for cutting. By my construction the front end of the spring presses the blade at a point on the mid-line of the blade in front of the pivot and the head of the pivot presses on the spring close to the body of the pivot only, as shown in Figure 2, so that the blade, which is curved, as usual with shear-blades, will adjust itself to contact with the other blade at a point on the edge and at another point behind the pivot, and will thus contact with changing points during the entire stroke of the blades in closing and opening.

Another object is to provide for the use of a screw-threaded pivot to screw into the under blade and to so arrange the parts that said screw will not unscrew after it has been set, but will hold its set position without the use of a set-nut until the shears become dull and have to be resharpened. My shears are so made that when the grinder has ground

them upon the inner faces he can readily adjust them to the exact tension necessary for holding the cutting edges together for cutting with the greatest ease.

My invention is especially desirable for barbers' shears, as by means of it the grinder can accurately set the blades so that they will cut perfectly, although when the blades are fully open they are not spring-pressed, but the blades play loosely and freely, and after they have become dull and need re-grinding they can, after being ground, again be set accurately, the construction being such as to allow for taking up the space which is made by frequent grinding. It is to be understood that the adjustment of the cutting edges of the shears is a very delicate proposition and that the size of some of the important features is practically microscopic.

An object of my invention is to provide for the use of a very strong, stiff, but not unwieldy spring which will not be liable to deterioration, but will last without weakening or losing its efficiency so long as the shears last. I place the pivot-hole through the curve or arch at one end of the spring and extend the main body of the spring rearward in a straight bar for a considerable distance and to its end, so that the resiliency of the spring is afforded by the main part of the body of the bar; but the force of the spring is applied to the pivot close to the fulcrum by the curved portion of the arched end, and although the resiliency of the spring is a positive quality it is impossible to destroy or weaken this resiliency, regardless of the frequent or severe use to which it may be put.

The accompanying drawings illustrate my invention, some of the views being enlarged very materially in order to illustrate the invention.

Fig. 1 is a plan of my newly-invented shears closed. Fig. 2 is an edge elevation of the same. Fig. 3 is a fragmental enlarged side elevation showing my invention. Fig. 4 is a longitudinal mid-section of Fig. 3, cutting axially through the pivot. Fig. 5 is a side elevation of the parts shown in Fig. 3 with the shears open and supported by the under blade. Fig. 6 is a cross-section on line 6 6, Figs. 1, 2, and 3, looking to the right. Fig. 7 is a cross-section on line 7 7, Figs. 1, 2, and

3, looking to the right. Fig. 8 is a cross-section on line 8 8, Figs. 1, 2, and 3, looking to the left.

A indicates the under shears or scissors blade, with screw-threaded hole a to receive and hold the pivot.

A' is the upper blade, provided with the ordinary plain outer face a^2 , through which is made a smooth circular pivot-hole a' to fit the pivot.

B is a stiff strong spring-bar straight at its rear end and throughout its greater length, and having its front end b rounded and curved to form an arch b' near the rounded end and provided with a pivot-hole b'' through the arch and slightly larger than the pivot-hole a' of the upper blade A'. Suitable means, such as the screw C, passing through a slot 1 in the rear end of the spring-bar and screwed into the upper blade A', is provided for fastening the rear end of the bar to the blade behind the pivot.

D is a pivot screw-threaded, as at d , at one end and inserted through the hole b'' in the bar and through the pivot-hole a' in the upper blade and screwed into the screw-threaded hole a in the lower blade and provided with a head d'' , having a beveled or cone-shaped bearing-face d''' around the stem of the pivot to bear on the crown of the arch of the spring-bar. The effect of the slant of the front end of the spring-bar is to cause the lower edge of the rounded point or front end of the spring-bar to rest on the mid-line of the blade, as on a point formed by the tip of the spring-bar, so that the front end of the bar is capable of tilting laterally, and the loose fit of the pivot in the hole b'' allows a slight lateral tilting of the spring-bar, so that the pivot when screwed down into place to rest on the bar will adjust itself very accurately to the bevel of the head, so that there will be only two slight bearing-points of the pivot-head on the spring on the opposite sides of the stem of the pivot, such bearing-points being where the bevel of the pivot rests upon the crown of the arch, and the bearing of the front end of the spring will remain constant at one point of the blade, so that the blade will not be tilted thereby, but will apply the pressure constantly to hold the blade edges together as the blades are opened and closed. By this means the friction upon the pivot-screw to turn it is practically nil and is much less than the friction required to turn the screw in the screw-threaded hole of the blade, so that the movement of the shear-blades does not tend to unscrew the screw. When the blades are opened fully, the parts are per-

fectly loose and free, as indicated in Fig. 5. The spring-bar is of such construction that it is never bent out of shape, but always remains in the arched form, the long straight portion of the bar being depended upon for the required resiliency.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a shears, or scissors blade with screw-threaded hole to receive the screw-threaded end of a pivot; a shears, or scissors, blade provided with a smooth circular hole to loosely fit the pivot; a stiff strong spring-bar straight at one end and throughout its greater length, and having its other end provided with a rounded point and being curved to form an arch near the rounded point and to bring the lower edges of such point and the straight end of the spring to bear on the blade, and said spring being provided through said curve with a pivot-hole slightly larger than the pivot-hole of the blade; means for fastening the rear end of the bar to the blade behind the pivot; and a pivot, screw-threaded at one end and inserted through the hole in the bar and through the smooth pivot-hole in the blade and being loose in said hole, and screwed into the screw-threaded hole in the other blade and provided with a head having a beveled bearing-face around the stem to bear on the crown of the arch of the spring-bar substantially as set forth.

2. The combination with the shears-blade of the arched spring, having the rounded point at the front end and being straight throughout its rear portion and main length and bearing upon the shears-blade at the lower edge of the rounded point and rear end; and a pivot passing through the curve of the spring and through one of the shears-blades and screwed into the other shears-blade and having its head slightly beveled around its stem to rest upon the crown of the arch of the spring-bar, substantially as set forth.

3. In a shears or scissors an arched spring with rear end fastened to the blade and with front end bearing at a single point on the blade at the mid-line thereof, and a pivot with tapering head and passed through the arch and the upper blade and screwed into the lower blade, with the taper-head in contact with the crown of the arch substantially as set forth.

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