

No. 843,667.

PATENTED FEB. 12, 1907.

F. D. DAVIES.
SHEARS OR THE LIKE.
APPLICATION FILED AUG. 28, 1905.

Fig. 1.

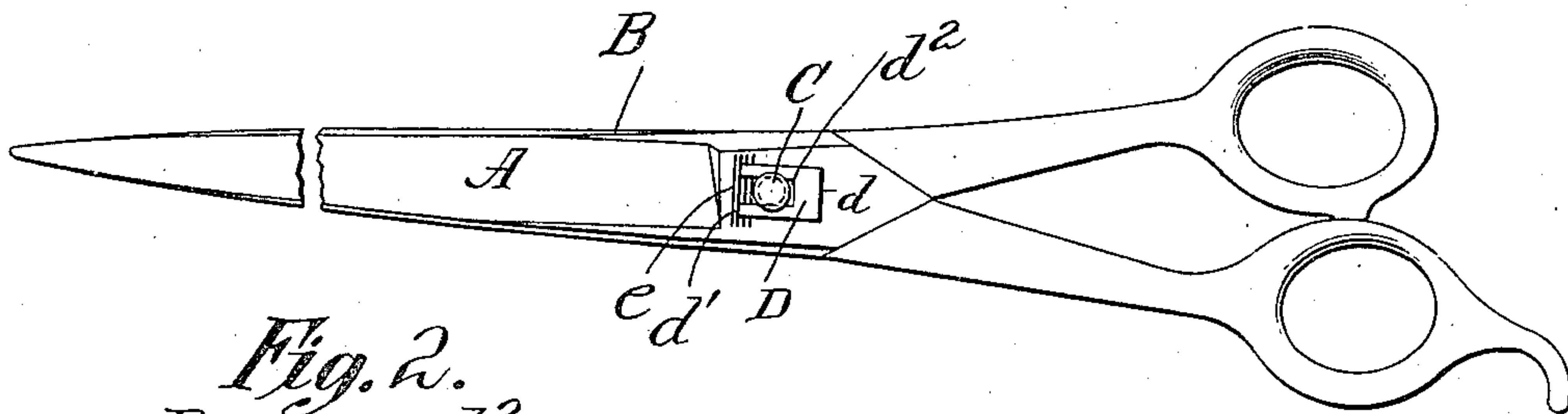


Fig. 2.

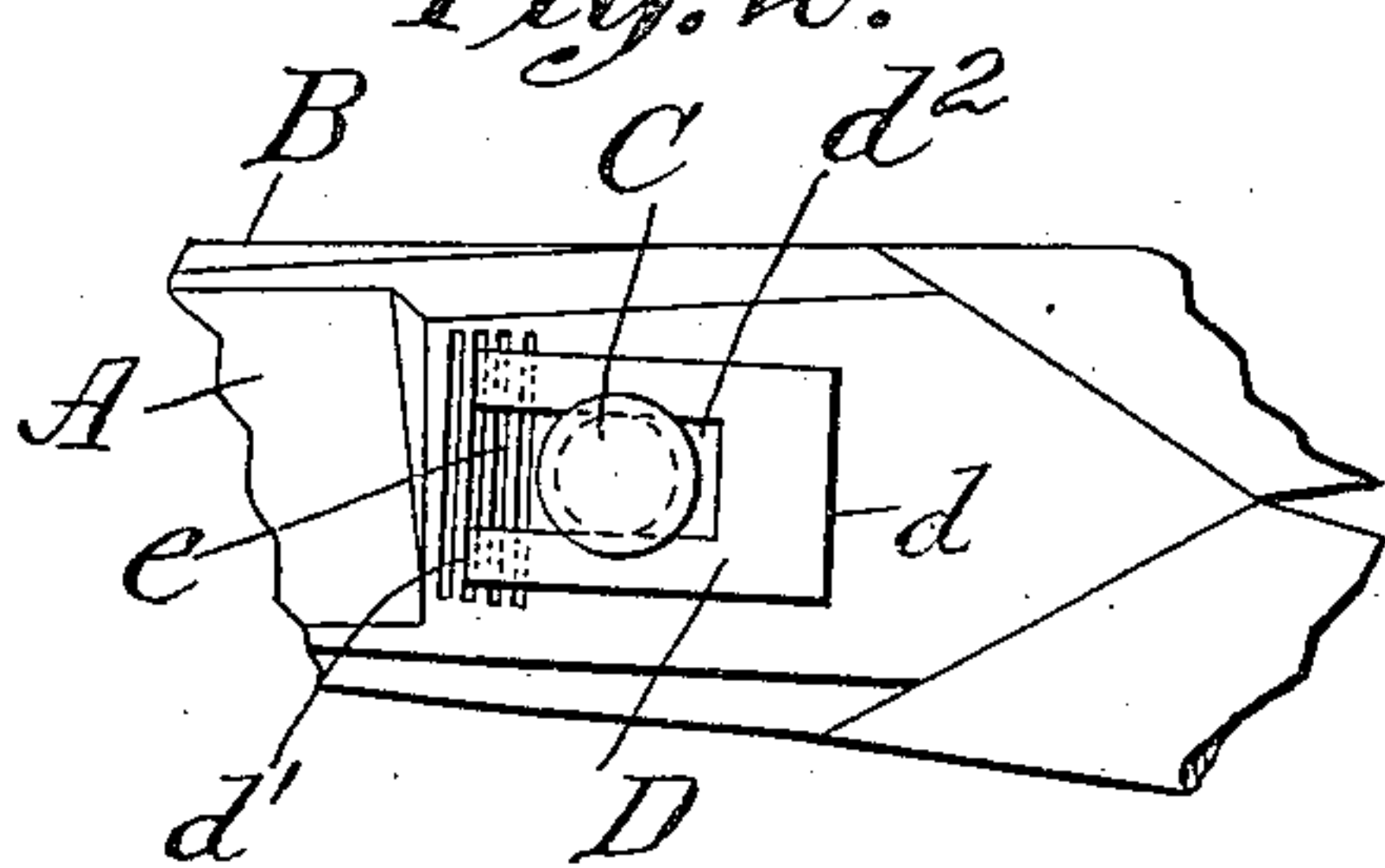


Fig. 3.

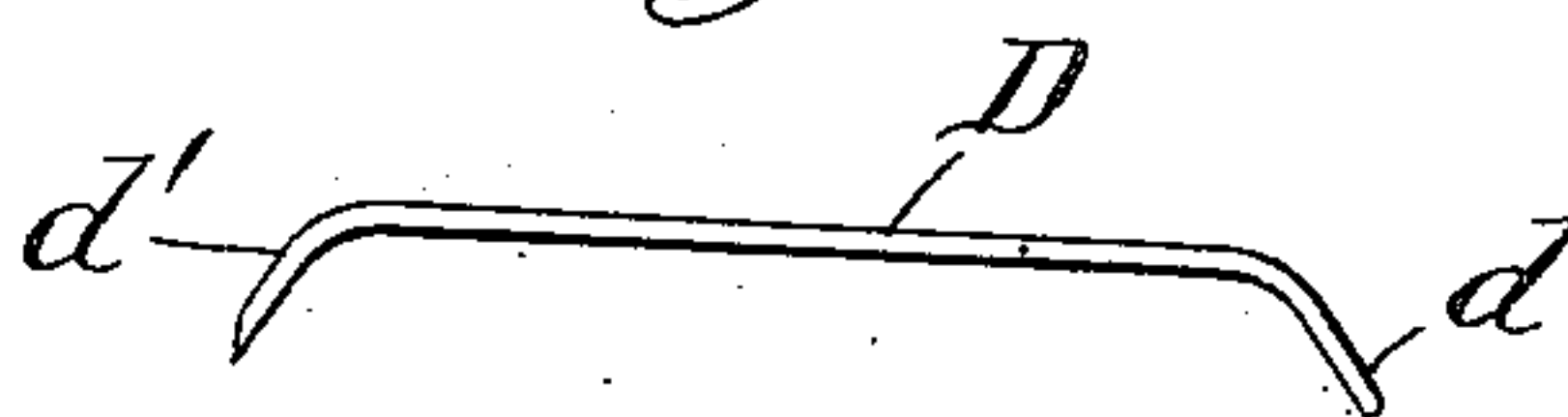


Fig. 4.

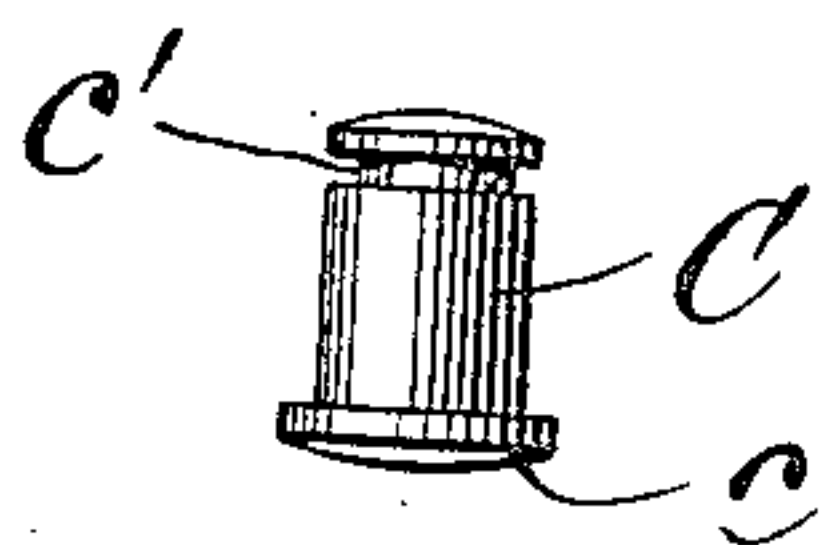


Fig. 5.

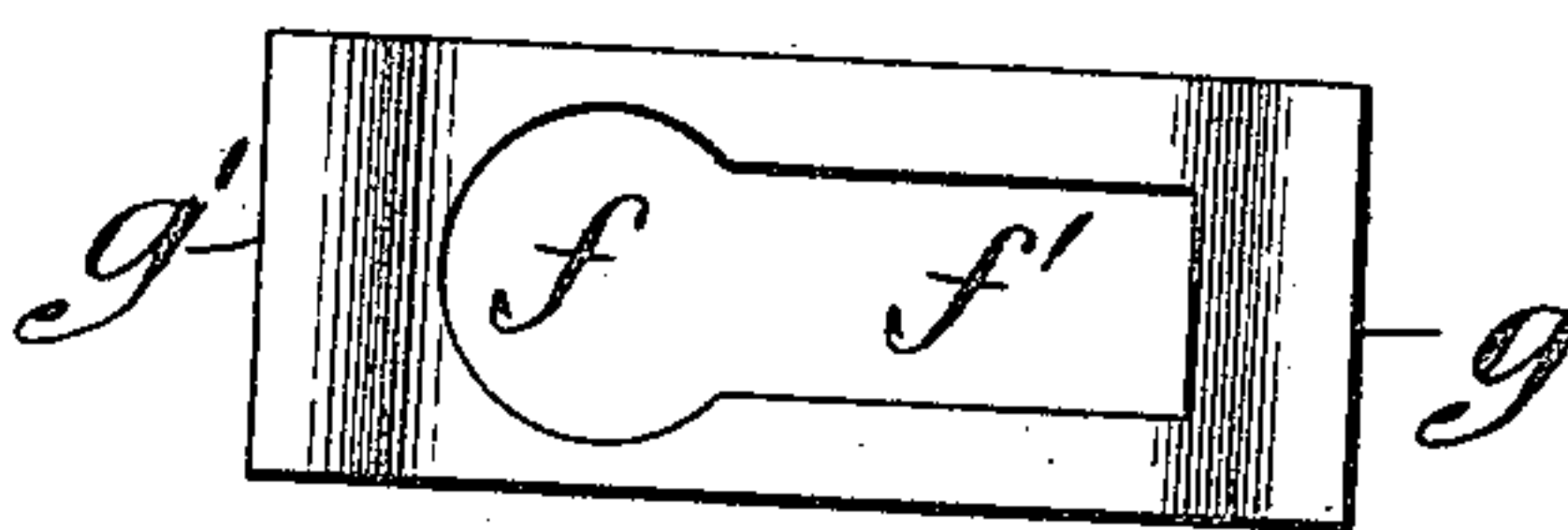


Fig. 8.

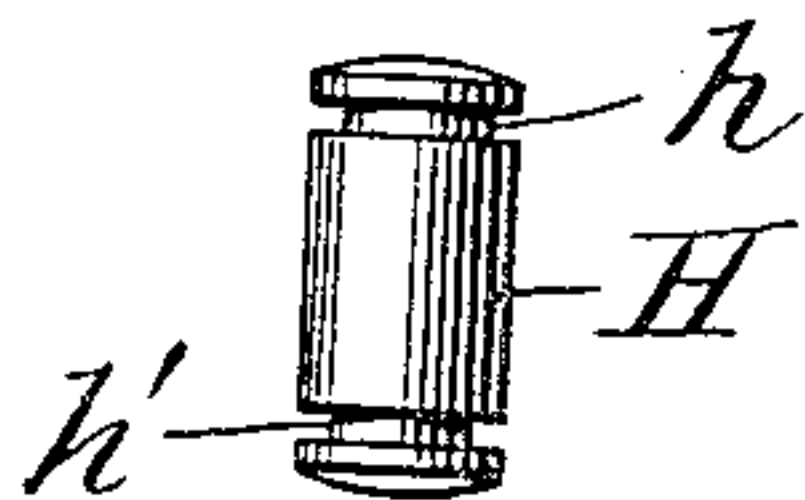


Fig. 6.

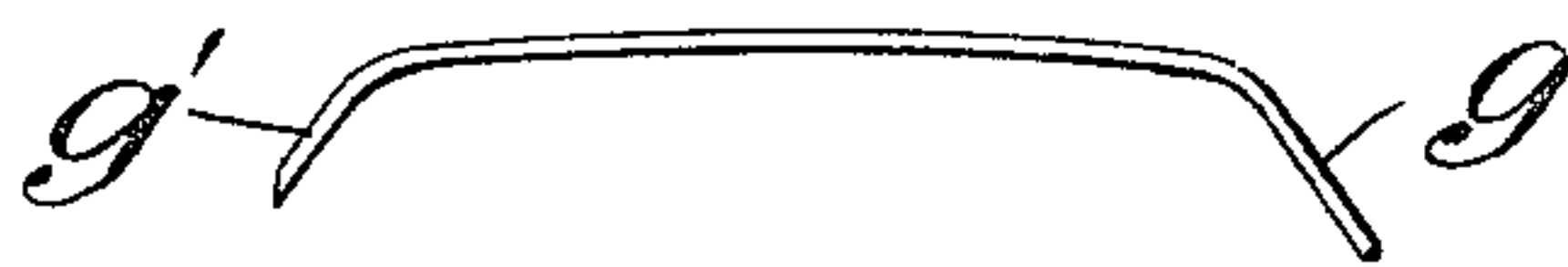


Fig. 9.

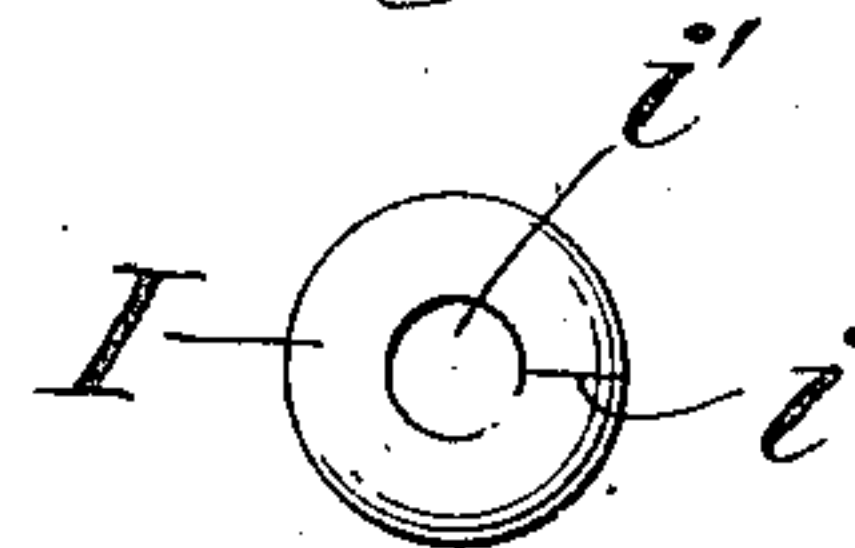
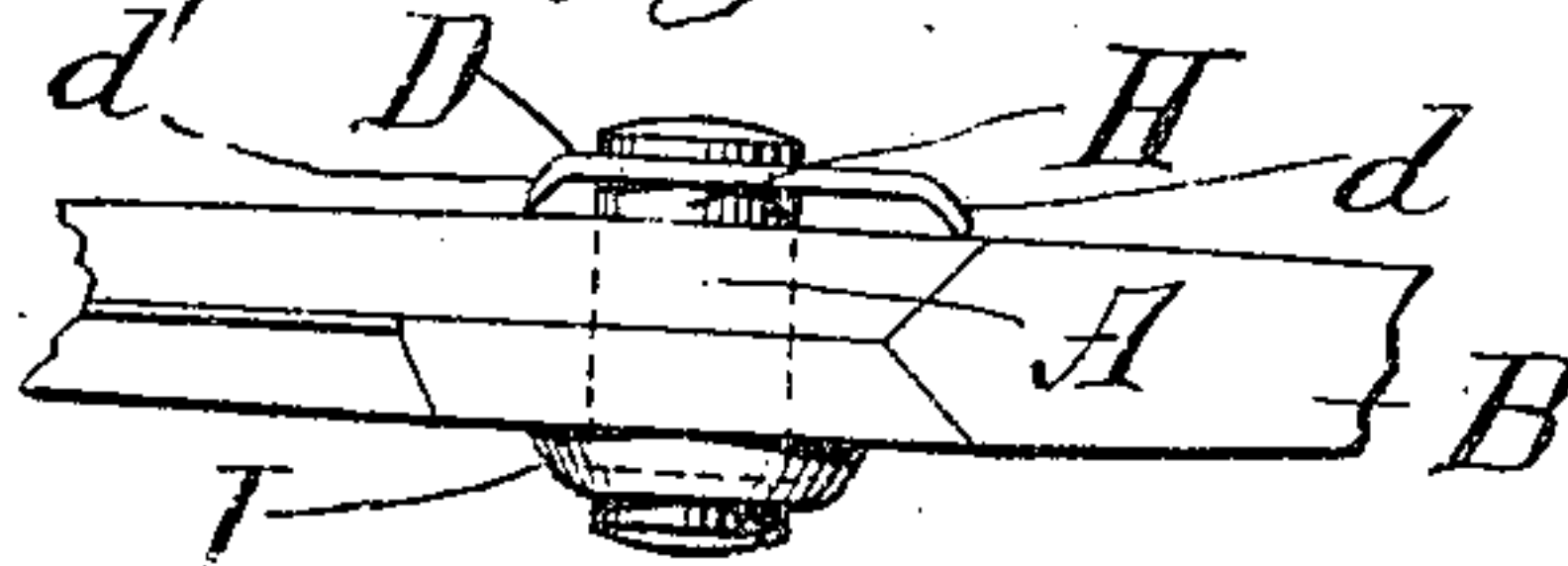


Fig. 7.



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UNITED STATES PATENT OFFICE.

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SHEARS OR THE LIKE.

No. 843,667.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed August 28, 1905. Serial No. 276,131.

To all whom it may concern:

Be it known that I, FREDERICK D. DAVIES, a citizen of the United States of America, and a resident of the borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Shears or the Like, of which the following is a specification.

This invention relates to shears and other bipart pivotal instruments, and my improvement comprises the employment of a spring-plate adapted to frictionally engage the pivot uniting the pivotal members of these instruments to draw the blade edges together in their shearing action, together with means for adjusting the degree of tension afforded by said spring-plate.

In the drawings accompanying this application, Figure 1 is a plan view of a pair of shears equipped with my improvement. Fig. 2 is a similar enlarged partial view. Fig. 3 is an enlarged side view of the spring-plate. Fig. 4 is an enlarged view of the pivot. Fig. 5 is an enlarged plan view of a modified form of spring-plate. Fig. 6 is a side view thereof. Fig. 7 is a partial side view of a pair of shears having a pivot with a tensional head. Fig. 8 is a view of the pivot used with said tensional head, and Fig. 9 is a plan view of a tensional washer.

In said figures the letters A B, respectively, indicate the shear members, which are provided with alined pivot-holes.

C indicates a uniting-pivot adapted to fit rotatably within the pivot-holes and having a head *c* at one end and an annular groove *c'* near its opposite end. When said pivot is placed within the pivot-holes, its head *c* bears against the outer surface of one of the shear members, while the opposite end of said pivot projects beyond the outer surface of the other shear member, exposing its groove *c'*. A spring-plate, as D, whose opposite ends are downwardly turned, as at *d d'*, respectively, and having a slot *d²*, rests by its ends *d d'* upon the nail-surface, the edges of its slot *d²* fitting slidably about the pivot within the groove *c'*, thus uniting the several members, while not retarding the rotatability of the pivot. The degree of tension exerted by the spring-plate D may be regulated by shifting said plate longitudinally. For example, when the bearing in the pivot is centrally of plate D or equidistant from its opposite fulcra the tension is relatively weak; but as said plate is shifted

to transfer the bearing of the pivot thereon to a point nearer one end of said plate so is the tension increased, because the spring is thus distended from a point nearer one of its fulcra.

In Figs. 5 and 6 I have shown a modified form of spring-plate having a key hole-slot comprising a circular portion *f* of sufficient diameter to receive the pivot C and a contracted extension *f'* to slidably fit about the pivot within the annular groove *c'* thereof, the side edges of said contracted extension serving to retain the pivot in its operative position. The end *g* may be turned downwardly to a greater extent than the end *g'*, or vice versa, to permit the body of plate D' to lie in tangential relation to and above the surface of the nail, whereby according to the distances separating the pivot-bearing from the opposite ends of said plate so varies the degree of tension with which the blade edges are drawn together in the shearing operation.

The end *d'* or *g'* of the spring-plate may be sharp, as seen in Figs. 3 and 6, to enable it to engage in transverse serrations or corrugations, a series of which, as *e*, are formed in the nail-surface to retain the spring-plate in operative position at a set tension.

The broad frictional bearing presented by the sharp edge at the end of the spring-plate enables said plate to retain its purchase upon the serrated portion of the nail when set thereon. When desired to vary the tension imparted by the spring-plate, the shears are expanded, thereby reducing the tension, and the plate is then shifted slightly in either direction as desired to increase or diminish the tension.

In Figs. 7 to 9, inclusive, I show a modified form of pivot having an attachable head or washer, which, in conjunction with the removable tensional device previously described, provides a substantially frictionless cushioned bearing, which permits the shears to operate very freely, while exerting an elastic pressure to draw the blade edges together. The modified pivot, as H, has the annular groove *h* to receive the slot edges of plate D and is provided near its opposite end with an annular groove *h'*, said pivot being headless and, except for the grooves *h h'*, of an even diameter throughout. This construction is economical as avoiding the waste of material which occurs in the production of a headed pivot. I indicates a

spring-washer, an attachable head, which may be in disk form, cupped, as seen, and separated, as at *i*, or otherwise adapted to be sprung or fitted over the end of the pivot, whereby its inner concentric edge *i'* is adapted to find lodgment within the groove *h'*. As applied the peripheral edge of the washer bears tensionally against the nail-surface, while its edge *i'* presses outwardly against the pivot within the groove *h'*. The pivot, which is free to rotate in its bearings in this form of my invention as in the previously-described rigid-headed form, is subject to less friction in its rotation because its support is of a yielding nature.

By the use of the aforesaid "tensional" head the operation of shifting the spring-plate D is simplified, since thumb-pressure against the spring-washer I will relax the tension with which the plate D bears against the nail and is held within the serrations thereon, and while so relaxed said plate may be conveniently adjusted.

I claim—

1. A pair of shear members or the like connected by a freely-rotatable pivot having a head at one end and an annular groove near the other end, together with a flat spring-plate having one end downturned and resting thereby upon the nail-surface to dispose its body portion in a longitudinal plane at an angle to the horizontal of the nail, said plate having a slot in slidable engagement with the groove in the pivot and having a seating portion, and said nail-surface being provided with depressions, arranged longitudinally of the nail, to adjustably seat said plate, and prevent lateral movement thereof.

2. A pair of shear members or the like connected by a freely-rotatable pivot having a

head at one end and an annular groove near the other end, said groove having a right-angular bearing-surface, together with a flat spring-plate having one end downturned and resting thereby upon the nail-surface to dispose its body portion in a longitudinal plane at an angle to the horizontal of the nail, said plate having a slot in slidable engagement with the bearing-surface in the pivot-groove, and having a seating portion, and said nail-surface being provided with depressions, arranged longitudinally of the nail, to adjustably seat said plate, and prevent lateral movement thereof.

3. A pivot for shears or the like having an annular groove near one end thereof and a retaining-shoulder near its other end, a tensional device fitting in the groove and bearing against a shear member, and a tensional head retained by the shoulder at the other end of the pivot and bearing against the other shear member.

4. In a pair of shears, a shear member provided with depressions arranged longitudinally of the nail, a pivot, an adjustable tensional device at one end of said pivot adapted to engage with said depressions, and a tensional head at the other end of said pivot whereby pressure applied against the tensional head will cause the pivot to move to relax the tension of the adjustable device permitting the latter to be more easily freed from the depression in which seated, to facilitate adjustment.

Signed at New York this 24th day of August, 1905.

FREDERICK D. DAVIES.

Witnesses:

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F. W. BARKER.