

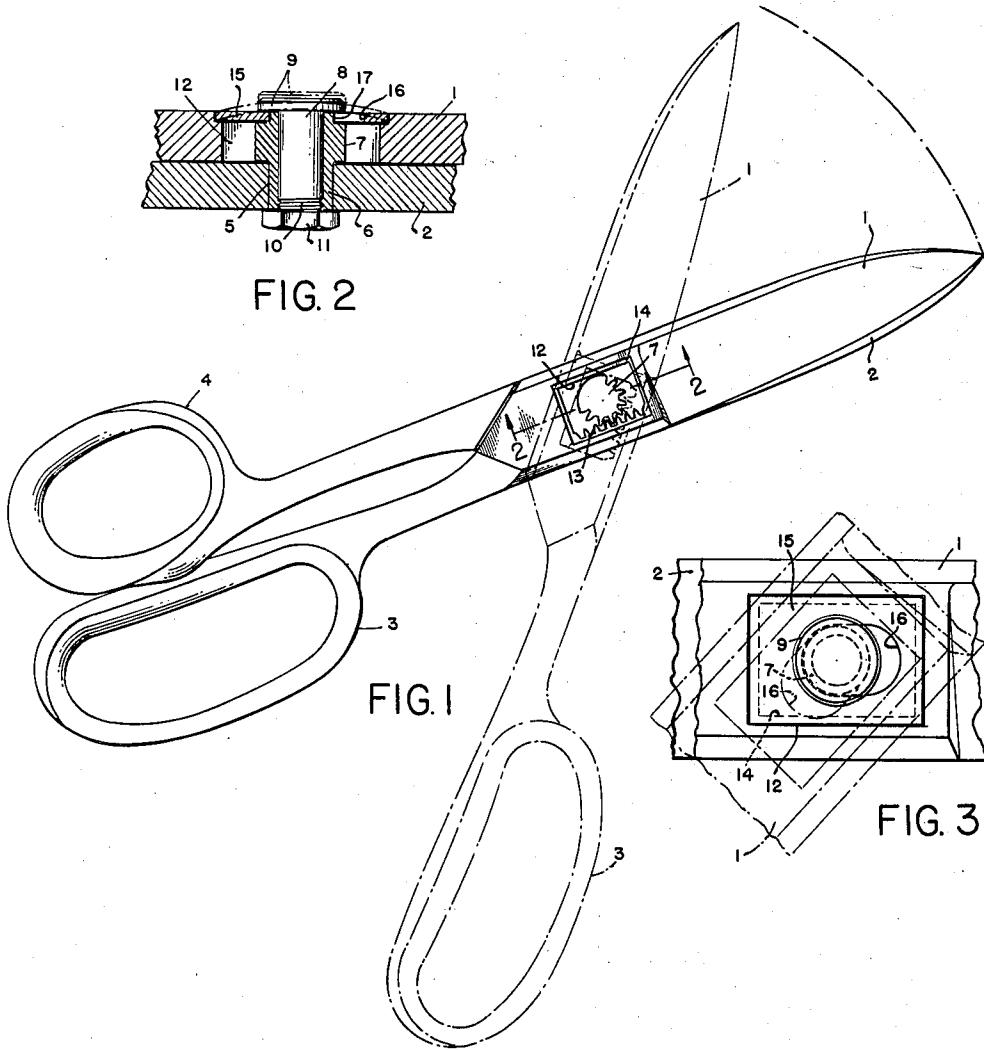
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G. E. WARD

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SCISSORS

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GEORGE E. WARD
INVENTOR.

BY *James L. Livman*
ATTY

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2,831,248

SCISSORS

George E. Ward, Portland, Oreg.

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1 Claim. (Cl. 30—239)

This invention relates to improvements in co-acting cutting blades and more especially to scissors and the like.

It is one of the principal objects of the present invention to interconnect two cutting blades in such a manner that they will be pivotal and slidable with respect to each other during cutting operations whereby the material being dealt with will be cut by a slicing action as well as a cutting action.

A further object is the provision of means for permanently locking the set adjustment of one blade in relation to the other at the pivotal and slidable connection between the two blades.

The foregoing and other objects will appear as my invention is more fully hereinafter described in the following specification, illustrated in the accompanying drawing and finally pointed out in the appended claim.

In the accompanying drawing:

Figure 1 is a plan view of a pair of scissors wherein the cutting blades thereof are pivotally and slidably interconnected in accordance with my invention and showing by broken lines the relation of one blade to the other when the scissors are open.

Figure 2 is a sectional view on an enlarged scale taken along the line 2—2 of Figure 1 and with a closure plate added thereto.

Figure 3 is a top plan view of Figure 2 showing in full and broken lines the relationship of the two cutting blades at their intersection in closed and open positions, respectively.

Referring now more particularly to the drawing:

In Figure 1 reference numerals 1 and 2 indicate a pair of cutting blades which may be of any desired length and provided with suitable handles 3 and 4, respectively, in the conventional manner.

The blade 2 is provided with an opening 5 within which is secured by a forced fit a hollow shaft 6 formed integral with a gear segment 7 near one of its ends. Extending through the hollow shaft is a pivot pin in the form of a bolt 8 provided with a head 9 at one of its ends, threaded as at 10 at its opposite end and provided with a nut 11. Thus the hollow shaft and gear segment 7 are secured against rotation with respect to the blade 2.

The blade 1 is provided with a rectangular opening 12 surrounding the gear segment 7 which is at all times enmeshed with a gear rack 13 formed integral with one wall of the opening 12, or if desired the gear rack may be made as a separate unit and secured within the opening along said one wall thereof by any suitable means.

The top rim of the opening 12 is shouldered as at 14 entirely about its perimeter to receive by a forced fit a closure plate 15 made of spring steel sufficiently flexible, as illustrated in broken and full lines in Fig. 2, to exert variable degrees of pressure to the blade 1 and hence

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regulate the frictional relationship between both blades 1 and 2 upon advancing or retracting the nut 11 on the threaded end of the bolt 8.

The flexibility of the plate 15 is such that it will prevent the blades 1 and 2 from becoming interlocked when the nut 11 is advanced to its limit on the threads of the bolt 8 for the reason that the compressive forces of the nut and the head of the bolt will be applied to the ends of the hollow shaft 6 and not directly to the blades.

The closure plate is provided with an elongated opening 16 which slidably embraces the top end 17 of the hollow shaft 6 to enable the blade 1 to slide forwardly and rearwardly with respect to the blade 2 during cutting operations as shown respectively in full and broken lines in Fig. 1. As the gear rack 13 reaches the end of its rearward travel relative to the gear segment 7, one end wall and one side wall of the opening 12 serve as a limit stop for the pivotal and sliding movement of the blade 1 to a full open position, as shown in broken lines in Figure 1, by coming into abutment with the gear segment at two points on the peripheral surface thereof.

While I have shown a particular form of embodiment of my invention, I am aware that many minor changes therein will readily suggest themselves to others skilled in the art without departing from the spirit and scope of the invention. Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

A cutting implement comprising a pair of co-acting cutting blades movable from a closed to an open position about a pivot, one of said blades having a rectangular opening therein, a gear rack provided along one wall of said opening throughout the length thereof, a hollow shaft fixedly secured to the other of said cutting blades and enlarged circumferentially near one of its ends into a gear element disposed within said rectangular opening and enmeshed at all times with said gear rack, a flexible closure plate for said opening biased outwardly relative thereto and having an elongated opening therein, a bolt extending through said hollow shaft threaded at one of its ends and provided with a nut in engagement with the opposite end of the hollow shaft and the corresponding outer face of the other of said blades, said bolt having a head at its opposite end normally in engagement with only said closure plate, whereby pivotal movement of one blade relative to the other to an open position will cause both of said blades to slide relative to each other, and whereby said pivotal and sliding movement will be limited by abutment of one end wall and one side wall of said rectangular opening with said gear element and whereby frictional relationship between both of said blades under variable degrees of compression can be regulated by said flexible closure plate by advancing or retracting the nut on the threads of said bolt and interlocking of the blades will be prevented when said nut is advanced to its limit on the threads of the bolt by the head of the bolt reacting against said hollow shaft at said one of its ends.

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