

No. 674,036.

Patented May 14, 1901.

A. S. E. METCALF.
FOLDING SHEARS AND KNIFE.

(Application filed May 31, 1900.)

(No Model.)

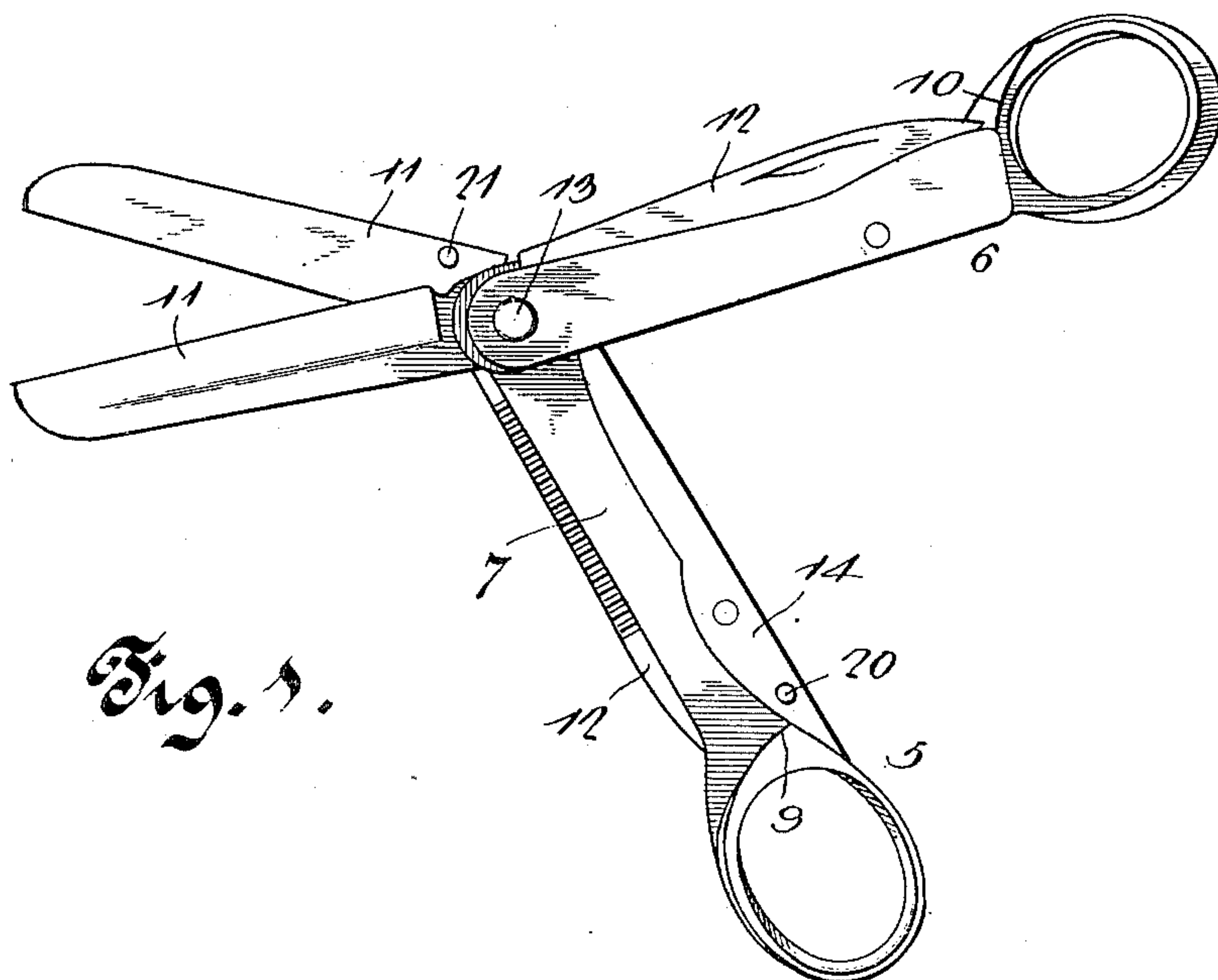


Fig. 1.

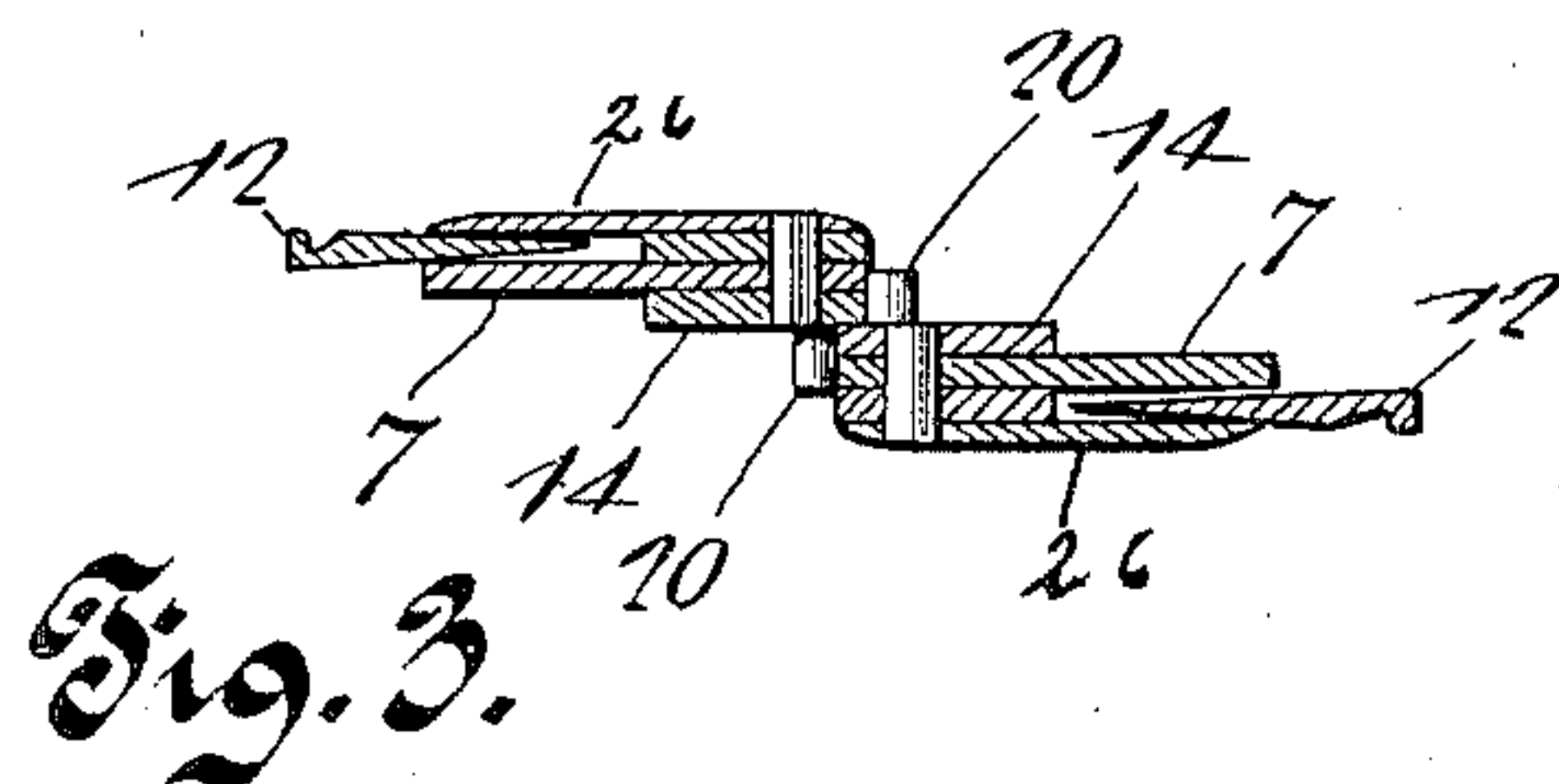


Fig. 3.

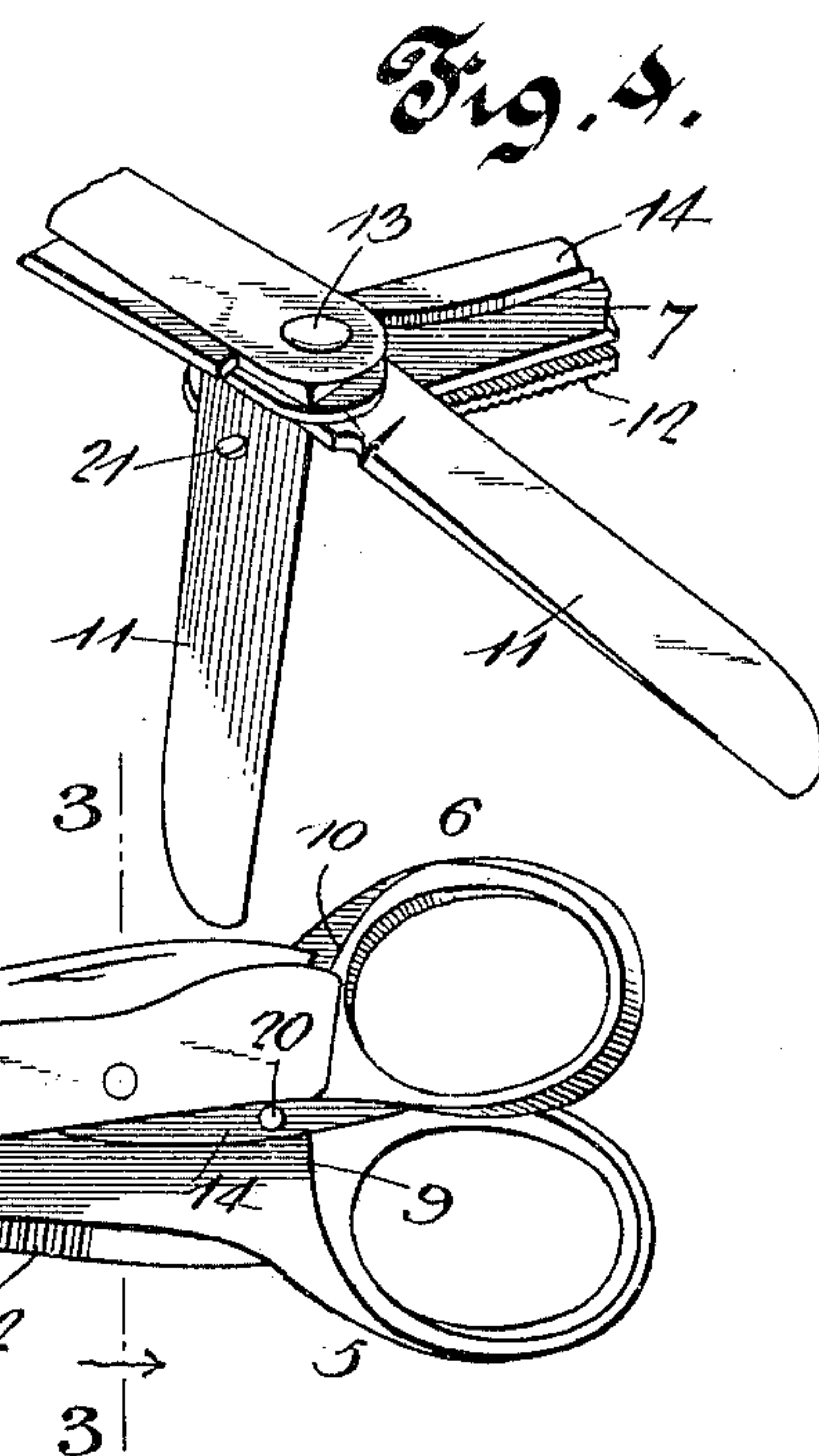


Fig. 4.

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR S. E. METCALF, OF AMBERG, WISCONSIN.

FOLDING SHEARS OR KNIFE.

SPECIFICATION forming part of Letters Patent No. 674,036, dated May 14, 1901.

Application filed May 31, 1900. Serial No. 18,634. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR S. E. METCALF, a citizen of the United States, residing at Amberg, in the county of Marinette and State of Wisconsin, have invented a new and useful Folding Shears or Knife, of which the following is a specification.

This invention relates to combined knives and shears in general, and more particularly to that class wherein the shear and knife blades are adapted to be folded into common handles, which when the shear-blades are unfolded form the handles for the shears.

One object of the invention is to provide a simple and efficient construction wherein the knife-blades will be held snugly in their folded positions and in which the shear-blades will be automatically folded and unfolded when the handles are correspondingly operated.

Further objects and advantages of the invention will be evident from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a plan view of the implement and showing the parts in the act of unfolding the shears, one of the blades having reached its unfolded position and the other blade being about to engage the unfolded blade to be itself unfolded. Fig. 2 is a plan view showing the shear-blades unfolded and the knife-blades folded. Fig. 3 is a section on line 3 3 of Fig. 2 and illustrating the formation of the handles to receive the knife-blades. Fig. 4 is a detail view showing in perspective the unfolded shear-blade of one of the handles and the partly-unfolded shear-blade of the other handle.

Referring now to the drawings, the present invention comprises two similar elements, each including a handle portion, which are the same in structure and are shown generally at 5 and 6. Each handle portion comprises a back or rib 7, which is in the form of a central plate having a perforation at one end to receive a pivot and having a finger-loop of usual shape formed at the opposite end, the loop portion being somewhat thicker than the remaining part of the plate to form shoulders 9 and 10 at opposite sides of the plate and adjacent the loop.

At the perforated end of the plate 7 are disposed two blades, a shear-blade 11 and a knife-blade 12, mounted upon a common pivot 13, passed through the plate, and which blades are held in their folded and unfolded positions by means of the usual back-springs 14. These springs 14 each rest with one end against a shoulder 9 and 10 and are pivoted adjacent thereto, the opposite or free ends of the springs being disposed against the butts of the blades in the usual manner. The springs 14 lie flush with the side faces of the finger-loops of the handles. The shear-blades when folded lie against the faces of the plates 7, so that said blades are covered at one side by said plates, but not at the other sides. In assembling these two elements of the structure—that is, the handles with the shear-blades pivoted thereon—they are brought together, so that the free or uncovered faces of the shear-blades will lie against each other, and are pivoted in this position by the pivot-pin 13. It will be thus seen that the blades may be moved individually upon the pivot 13 to fold them against their respective plates 7 or may be individually unfolded. In the abstract, however, after the blades are unfolded the handles may be pivotally moved round and round without effecting a folding of the shear-blades, and to prevent this action pins 20 are engaged with the springs 14 and project into the paths of the shear-blades in this pivotal movement, and thus if the handles be moved pivotally to carry the shear-blades backwardly their backs will strike against these pins, and continued movement of the handles will move the blades to fold them against the plates 7 of the handles. On the other hand, in the unfolding of the shear-blades by pivotal movement of the handles there must be some provision made for preventing one shear-blade from passing beyond the other in such cases as illustrated in Figs. 1 and 4, where one blade is in alinement with its handle and the other blade is only partly unfolded. An inspection of these figures will show that continued movement of the handles to bring the finger-loops toward each other would pass one of the blades beyond the other. To prevent this, a pin 21 is engaged with one of the blades and lies in the path of movement of the other blade, and

thus instead of the blades passing the pin of the partly-unfolded blade strikes the unfolded blade, and the partly-unfolded blade being thus arrested in its movement continued movement of the handle brings it into alignment with its blade, and thus unfolds the latter. Thus it will be seen that by merely grasping the finger-loops and moving the handles pivotally in one direction or the other the handles will be brought to their operative positions or inoperative positions and the blades will be unfolded or folded. Each of the handles also carries a blade 12, which is pivoted on the pin 13 and has a back-spring of usual construction and arrangement, and these blades when folded lie between the plates 7 and parallel side plates 26, which latter are of spring material and have their rear ends disposed freely upon the adjacent faces of the thickened portions of the plates 7 for movement therefrom, and thus when the knife-blades are folded they find snug seats between the plates as they are wedged into place therebetween. Furthermore, the pins 20 act as stops in the movement of the handles toward each other during the operation of the shears.

It will be understood that in practice various modifications of the construction shown may be made and that any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

1. A device of the class described comprising handles pivotally connected, shear-blades pivoted to the handles and having limited movement with respect thereto, and a stop upon one of the blades in the path of movement of the other blade to move it to its limit.

2. A device of the class described comprising handles pivotally connected, shear-blades pivoted to the handles and adapted to fold

thereagainst, and a stop 20 on each handle for engagement with the blade of the opposite handle when in its unfolded position to fold the blade.

3. A device of the class described comprising handles pivotally connected and comprising each a central plate having a thickened finger-loop, a blade pivoted to each of the central plates, and a spring-plate connected with the central plate at the opposite side of the blade and having its free end resting upon the thickened loop, whereby the spring-plate may yield at its free edge in a direction away from the central plate to permit wedging of the blades therebetween.

4. A device of the class described comprising two handle members pivotally connected, each of the handle members including a central plate having a thickened finger-loop, a spring-plate attached to the central plate and having one end disposed upon the thickened finger-loop and lying with its body portion over the central plate and a back-spring on the opposite face of the central plate, a blade pivoted between the spring-plate and the central plate of each handle member and adapted to wedge therebetween, an additional blade pivoted to the side of the central plate opposite to the first blade, the handle members being connected pivotally through the medium of the common pivot of the blades, with the last-named blades in mutual contact, said last-named blades being adapted to fold against the back-springs, and a pin carried by one of the last-named blades for engagement with the adjacent blade to move it to its operative position.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ARTHUR S. E. METCALF.

Witnesses:

JOHN KAMPS,

A. H. BUCKMAN.