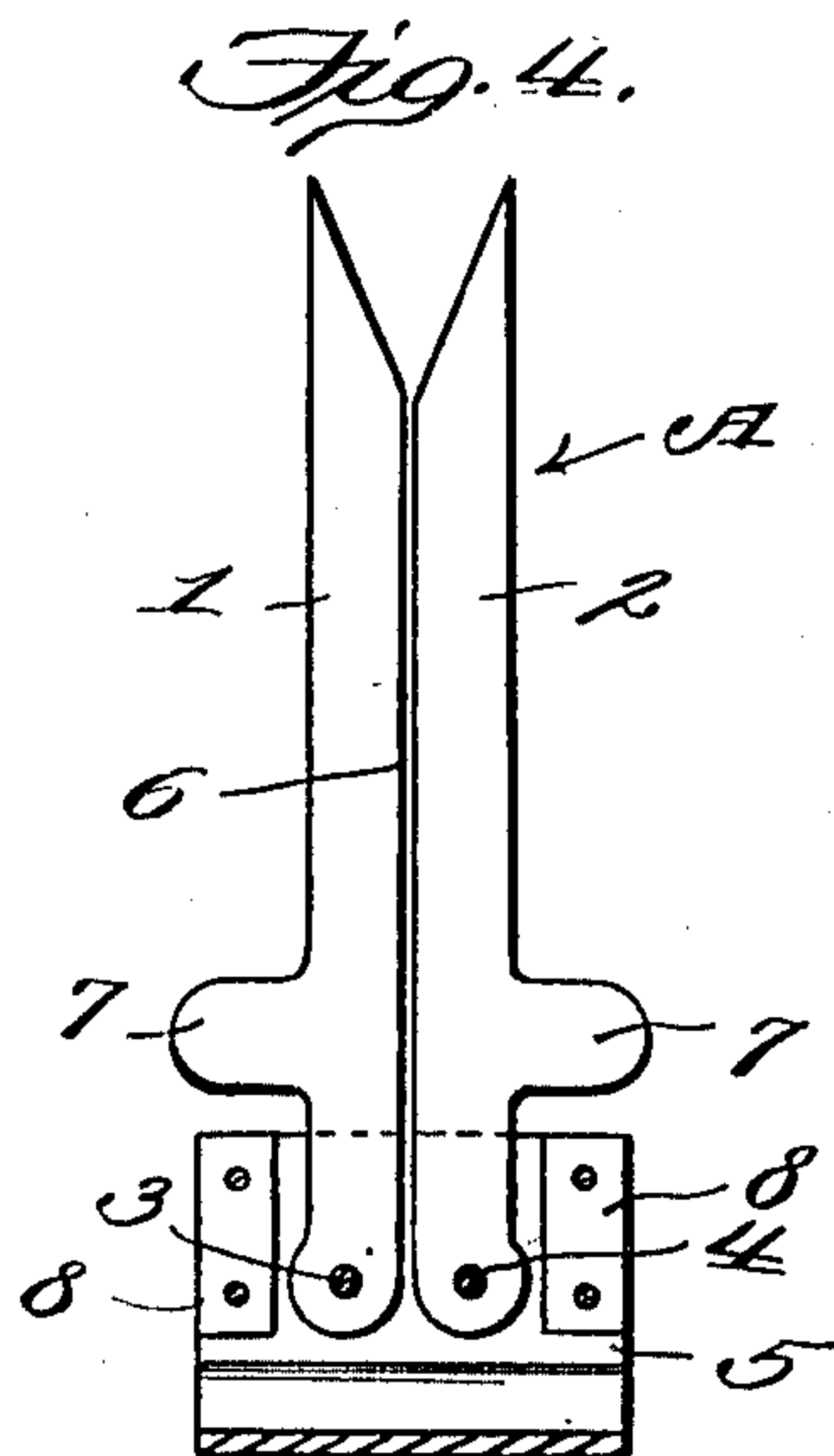
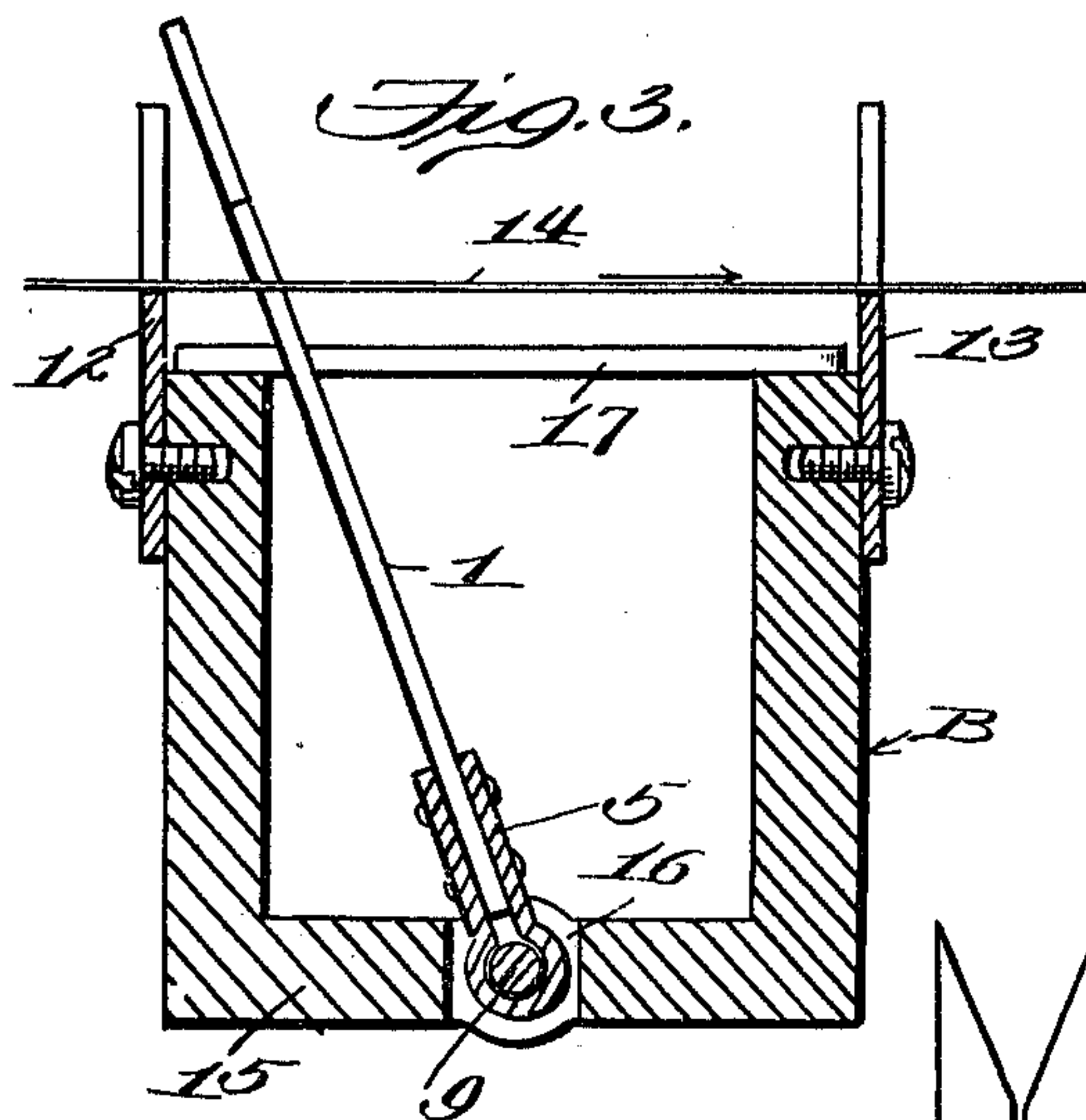
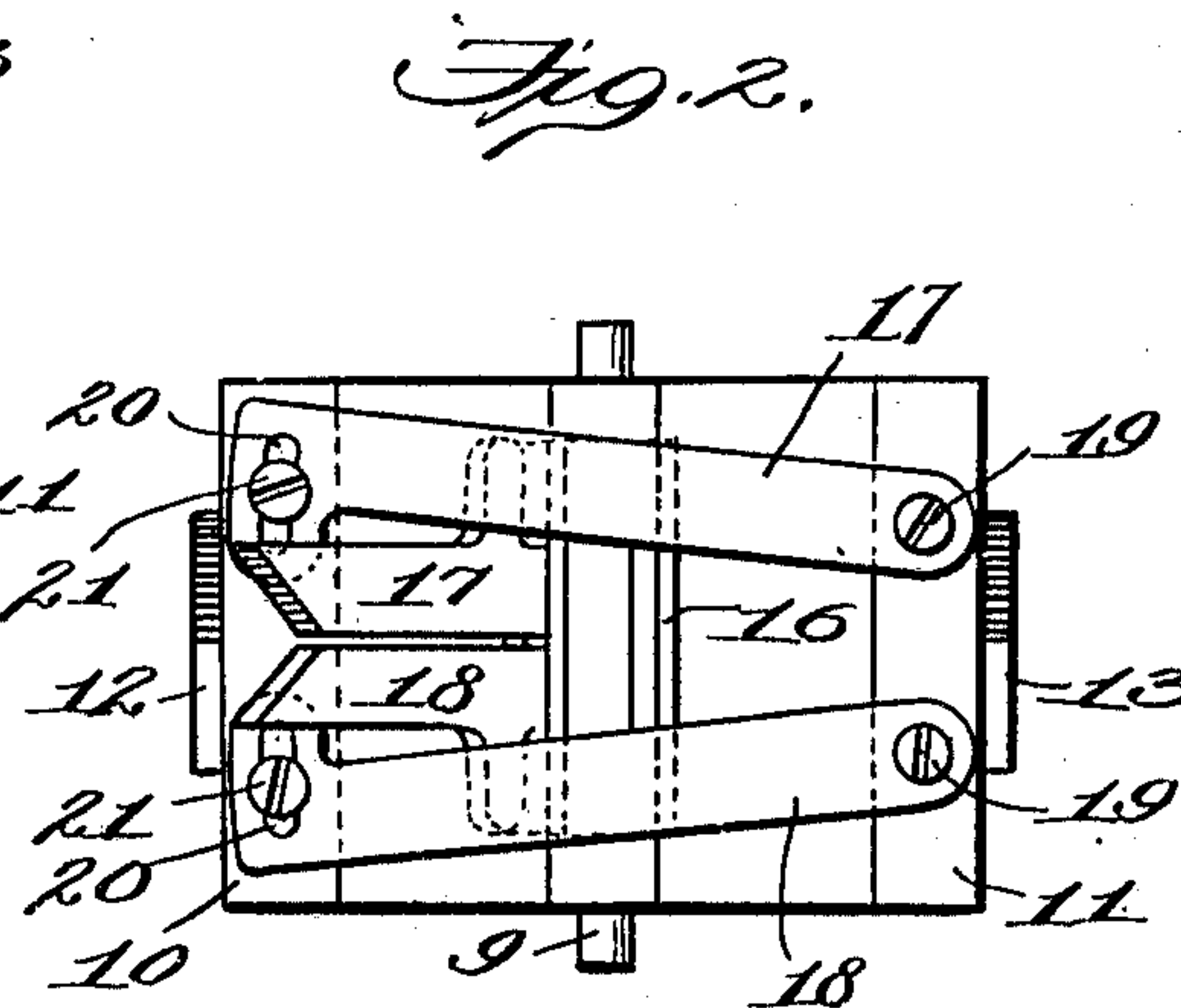
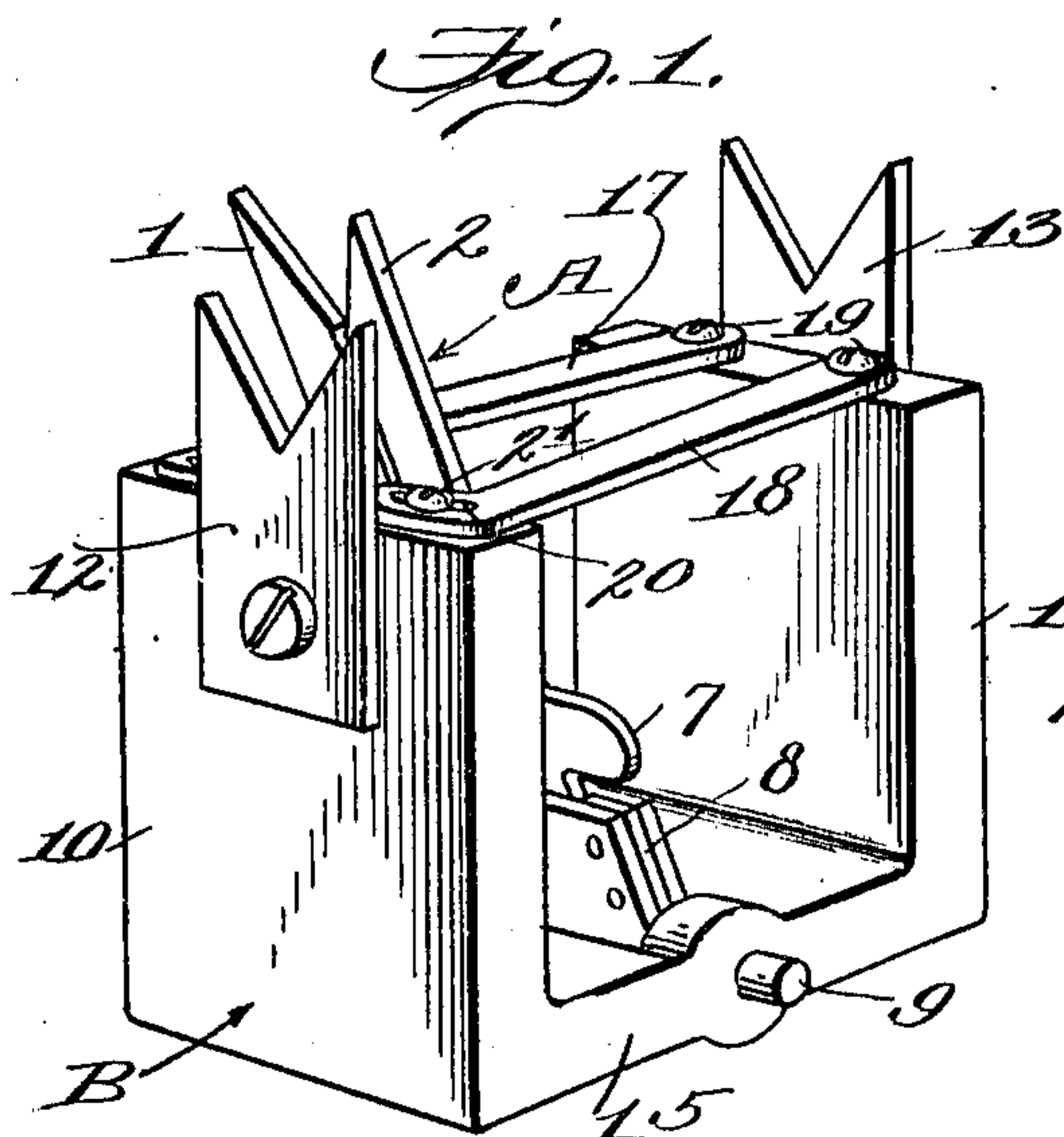


J. F. SCHENCK.  
 THREAD GUIDE AND CLEANER.  
 APPLICATION FILED AUG. 3, 1910.

991,899.

Patented May 9, 1911.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOHN F. SCHENCK, OF LAWNDALE, NORTH CAROLINA.

## THREAD GUIDE AND CLEANER.

991,899.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed August 3, 1910. Serial No. 575,334.

*To all whom it may concern:*

Be it known that I, JOHN F. SCHENCK, a citizen of the United States, residing at Lawndale, in the county of Cleveland and State of North Carolina, have invented new and useful Improvements in Thread Guides and Cleaners, of which the following is a specification.

The present invention has reference to improvements in thread guides and cleaners, and it comprehends primarily the production of a device of that general type wherein the cleaning means is so constructed as to admit of its ready adjustment to suit any size and kind of thread, and also of its automatic actuation by the thread itself when any slub or the like is present therein.

A structural embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figures 1 and 2 are, respectively, perspective and plan views of the improved device; Fig. 3 is a longitudinal vertical sectional view; Fig. 4 is a front elevation of the preferred form of cleaner and its socket, the latter being shown partly in section; Figs. 5 and 6 are, respectively, a front elevation and a plan view of a modified form of cleaner.

The invention resides essentially in the production of a cleaner comprising a pair of spaced blades between which the thread passes, one or both of these blades being arranged for lateral movement to close the thread space or slot and thus clamp and subsequently break the thread. To effect this operation automatically, there is provided a closing device consisting of either a single member or a pair of members, according as one blade only, or both blades, are designed for movement, the cleaner being mounted in a rocking support, whereby its movable blade or blades will be forced into contact with the corresponding member of the closing device.

In the preferred construction, shown in Figs. 1 to 4, the cleaner, which is designated in a general manner by the letter A, comprises a pair of counterpart blades 1 and 2, cut away at their upper inner corners, and mounted at their lower ends on pivots 3 and 4 passed transversely through the members of a strap-like socket 5. The arrangement of these blades is such that a space

exists between their inner longitudinal edges, which space constitutes the thread slot and is indicated by the numeral 6. Means is provided for imparting to the blades a tendency toward movement away from each other, in order to maintain slot 6 normally open, such means consisting in the present instance of lateral lugs 7, or the like, located adjacent the lower ends of the blades but exteriorly of socket 5, the front and rear members of which socket are held sufficiently far apart by spacers 8 to insure free movement of the blades. The socket itself is carried by a horizontal rod or shaft 9 and is designed for rocking movement, as hereinafter described, carrying with it the cleaner blades at such time.

The cleaner is mounted within a U-shaped frame B, the front and rear vertical walls 10 and 11 of which have notched guides 12 and 13 suitably attached thereto, the bottoms of the notches alining with the slot 6, so as to permit the thread 14 passing from the bobbin to the reel, (not shown) to be led through the device in the manner illustrated in Fig. 3. The bottom wall 15 of frame B is formed with a transverse slot 16 and with bearing openings through which the ends of shaft 9 pass, that portion of socket 5 which directly embraces said shaft being located in said slot, as shown in Fig. 3, so as to provide for the requisite rocking movement of the cleaner.

The cleaner as a whole is normally inclined toward the front of the frame, and its two blades are caused to tilt or move slightly away from each other, as above stated, to maintain slot 6 normally open. This separation or outward movement of said blades is, however, limited by means of a device which also serves to effect the closing of the blades under certain conditions hereinafter referred to. Said device, in its preferred form, comprises a pair of converging bars or rails 17 and 18 disposed upon opposite sides of the cleaner and longitudinally of the frame, the arrangement being such that when said cleaner is forced backward in the frame the outer edges of its blades will move along the adjacent rails, with the result that the blades are caused to move inward or toward each other, thereby clamping the thread.



The closing device just described is preferably adjustable, in order to control the normal width of the thread slot, this effect being obtained by pivoting the rails at their rear ends to screws 19, or the like, set into the top of the rear frame wall 11, the front ends of said rails being enlarged laterally and formed with slots 20 wherein similar adjusting screws 21 work. These screws 21 may be readily tightened in their openings in the front wall 10 of frame B so as to cause their heads to bind upon the rails and thus clamp the latter in adjusted position.

In the modified construction of cleaner illustrated in Figs. 5 and 6, two blades are employed, as in the first form, but only one of these blades, namely, the blade 2', is movable, the other blade 1' being rigidly secured in the socket 5. Blade 1' has securely fastened to its rear face a lateral strap 22 which projects across the rear face of blade 2' and carries a pin 23 whereon the latter blade is pivoted. At the lower end of said blade 2' there is formed an arm 24 which extends laterally outward and is provided with a terminal boss 25 overlying a forwardly extending lug 26 formed upon the lower edge of strap 22 at the outer end thereof. Boss 25 is formed with a threaded opening wherein there is fitted a set screw 27, the lower end of which is arranged to impinge upon lug 26. By properly adjusting this screw, blade 2' may be caused to approach or recede from blade 1', thereby regulating the width of the thread slot. In this construction the rail 18 alone is employed, the rail 17 being unnecessary by reason of the rigid mounting of blade 1'.

The operation of the invention may be stated as follows: The cleaner having been adjusted to suit the particular size and kind of thread to be treated, the thread is dropped into the notched guides 12 and 13, and the thread slot, after which the winding mechanism is started. As the thread moves in the direction of the arrow in Fig. 3, the slubs and other protuberances will be stripped off, if loose. If, however, they are twisted into the thread, and are of such a size as to be unable to easily pass through the thread slot, they will strike against the edges of the slot and will, in consequence, rock the cleaner toward the rear of the frame. During this rearward movement the rails or rail of the closing device will coact with the movable blades or blade, according as one or the other of the forms of cleaner is employed, whereupon the thread will be clamped in the slot and broken by the tension exerted thereon. The operator then takes out the defective portion of the thread, pieces the ends together, and continues the work as before.

The constructions above described enable the cleaner to be set with absolute accu-

racy for the particular size of thread employed, and according to the degree to which the same is to be cleaned. Also, the provision of the closing device insures the clamping of the thread by reason of its positive coaction with the movable blade or blades of the cleaner, in which respect the present construction differs from many known constructions wherein spring blades are employed, for in such constructions the possibility of the slubs slipping off or between the blades without being removed from the thread and without the latter being broken, is always present to a greater or less degree. Moreover, it will be apparent that by mounting the frame at an angle to the horizontal, the normal position of the cleaner will be correspondingly changed, and the pressure required to rock said cleaner rearwardly will vary accordingly.

I claim as my invention:

1. The combination of a pair of pivotally-mounted blades adapted to rock together in a vertical plane, one of said blades being arranged for independent pivotal movement toward and from the other blade, and a rail disposed in contact with said movable blade for moving the same toward said other blade when said blades are rocked in one direction.

2. The combination of a pair of pivotally-mounted blades adapted to rock together in a vertical plane, and a pair of rails disposed upon opposite sides of and in contact with said blades for moving the same toward each other during their rocking movement in one direction.

3. In a device of the character described, the combination, with a pair of spaced uprights, of a rocking cleaner mounted between said uprights, said cleaner including a movable clamping blade, an operating member for said blade pivoted at one end to one of said uprights and having its opposite end formed with a lateral slot, and means carried by the other upright and engaged in said slot, for retaining said member in adjusted position with respect to said blade.

4. In a device of the character described, the combination of a rocking socket, a pair of blades having their lower ends pivoted therein for movement toward and from each other independent of the movement of said socket, means associated with said blades for normally holding the same away from each other, and means disposed upon opposite sides of said blades for moving them toward each other when said socket moves in one direction.

5. In a device of the character described the combination of a frame having spaced vertical end walls, a rocking cleaner mounted in said frame for movement upon contact therewith of protuberances on the thread, said cleaner including a pair of blades ar-



ranged for movement toward and from each other independently of the movement of the cleaner, and means connecting said end walls and arranged for engagement directly with  
5 said blades, for moving the latter toward each other when said cleaner moves in one direction.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN F. SCHENCK.

Witnesses:

S. A. PARKER,  
D. C. CARPENTER.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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