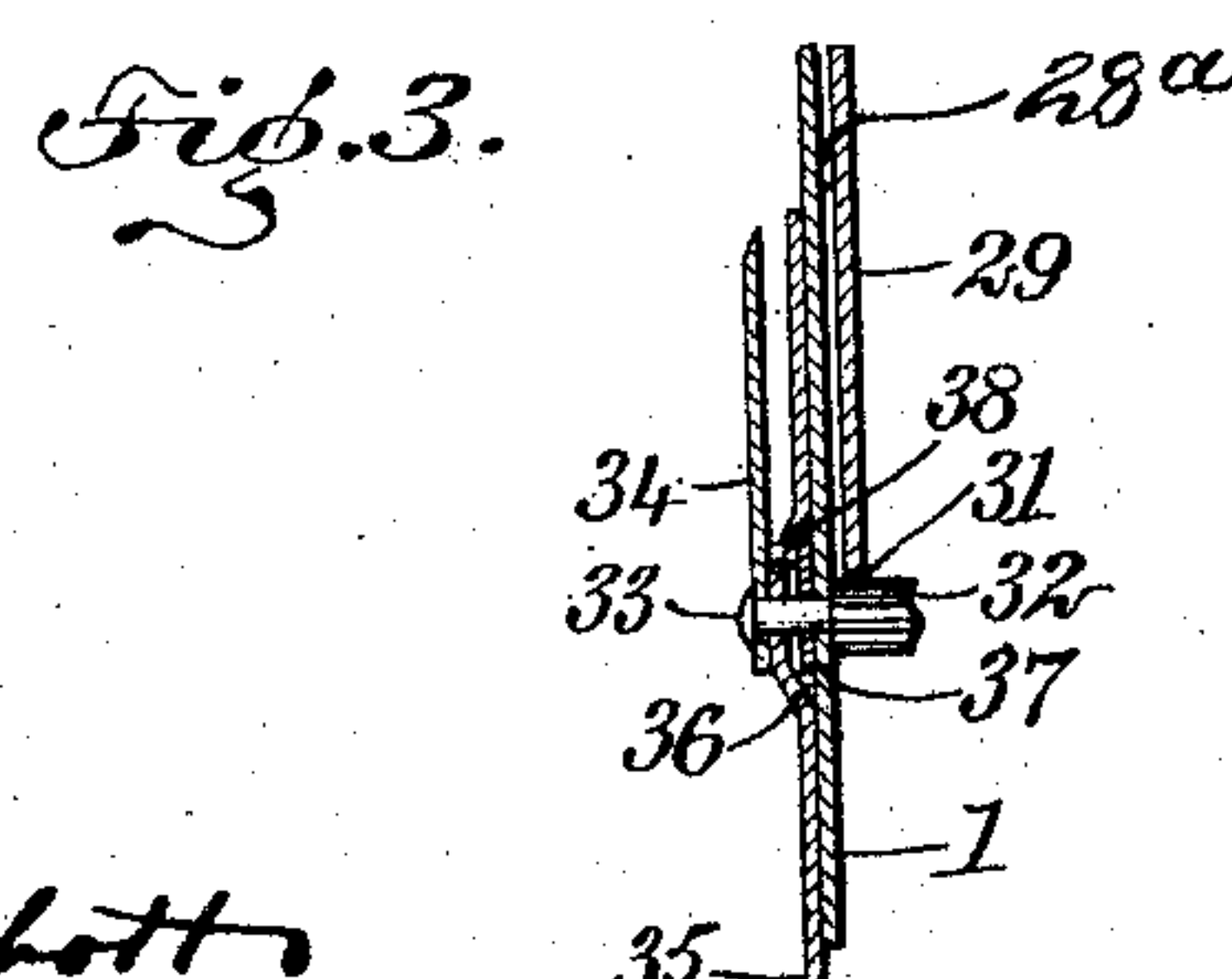
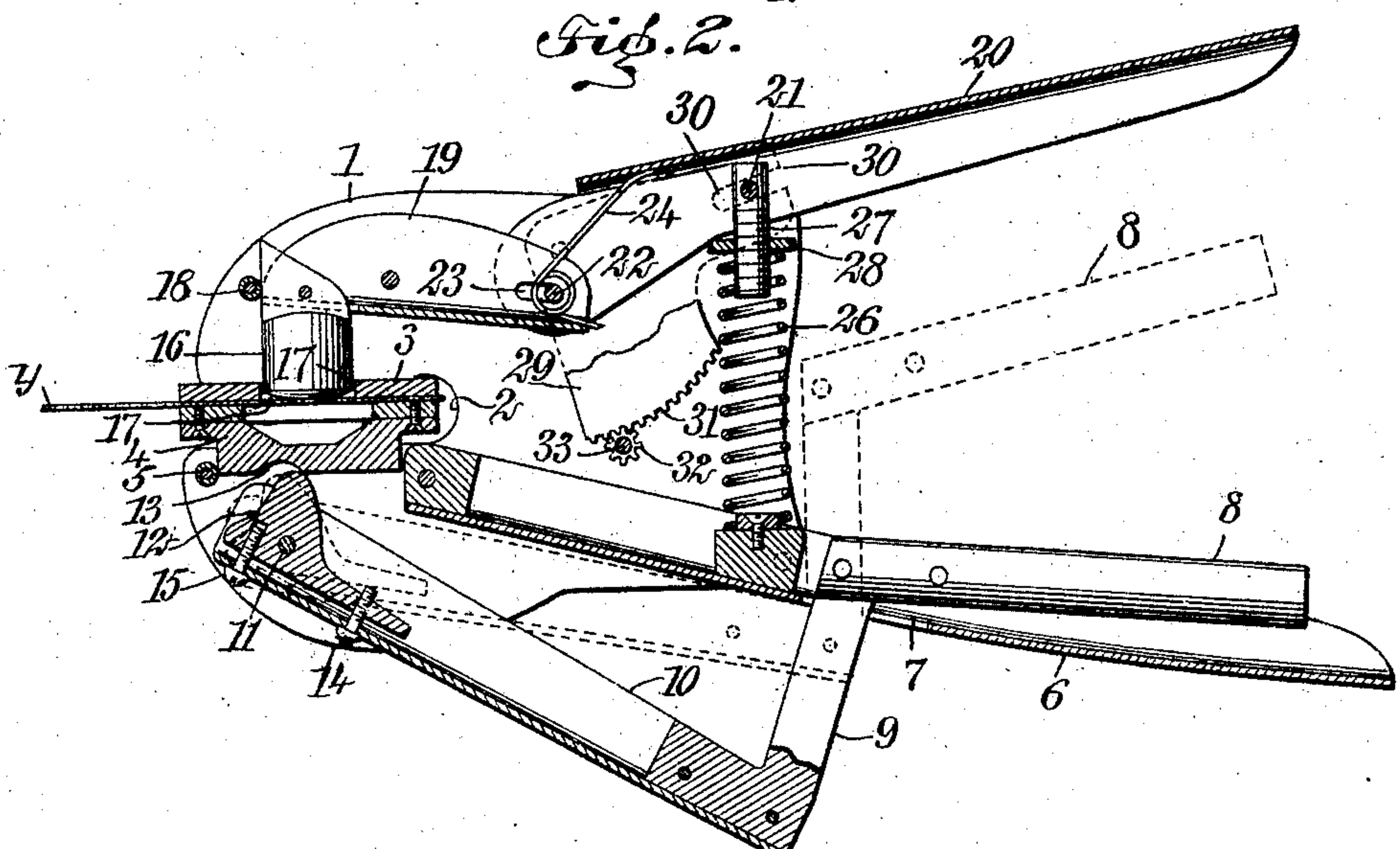
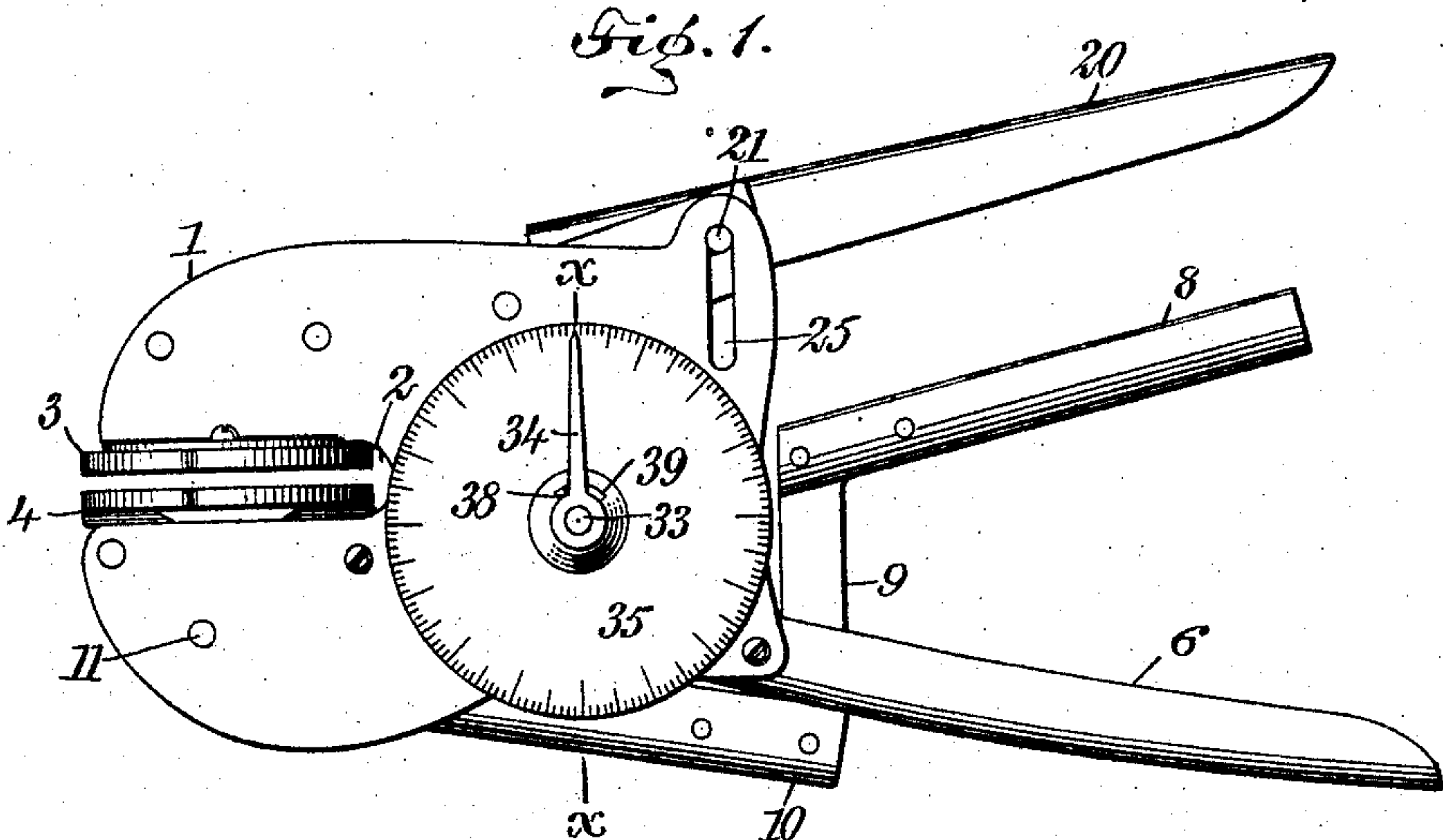


No. 850,832.

PATENTED APR. 16, 1907.

R. C. HARRIS.
FABRIC TESTER.
APPLICATION FILED JUNE 8, 1906.



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RICHARD C. HARRIS, OF ROSELLE, NEW JERSEY.

FABRIC-TESTER.

No. 850,832.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed June 8, 1906. Serial No. 320,745.

To all whom it may concern:

Be it known that I, RICHARD C. HARRIS, a citizen of the United States, and a resident of Roselle, in the county of Union and State of New Jersey, have invented a new and Improved Fabric-Tester, of which the following is a full, clear, and exact description.

This invention relates to improvements in devices particularly designed for testing the strength of paper, the object being to provide an instrument of this character that will be of comparatively small and compact form, so that it may be carried in a person's pocket and operated by hand-pressure.

I will describe a fabric-tester embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of a fabric-tester embodying my invention. Fig. 2 is a longitudinal section thereof, and Fig. 3 is a detail section on the line *xx* of Fig. 1.

The frame of the machine comprises side plates 1, which at the front have outward openings 2, and secured to the upper walls of the openings is a ring 3, which forms practically the upper jaw of a clamping device for the paper to be tested, and movable toward and from the ring 3 is a concave disk 4, which forms the lower jaw of the clamping device. This disk 4 is movable against an antifriction-roller 5, mounted on a shaft extended between the two side plates, and is guided at the inner side against the inner end of a handle 6, rigidly extended from the side plates or frame. The lower wall of the handle 6 is provided with an opening 7, and this trough-shaped to receive a lever 8 for actuating the disk 4. This lever has an arm 9 extended through the opening 7, and projecting at a forward and upward angle from the arm 9 is an extension 10, which is mounted to swing on a pivot 11, connecting with the side plates of the frame. The pivot 11 also passes through a block 12, rounded at its upper end and designed to engage with the under side of the disk 4 to raise the same for clamping material between the said disk and the ring 3. The under side of the disk 4, however, is provided with a notch 13 for receiving the rounded end of the block when the said disk is lowered for the purpose of in-

serting a piece of paper. The block may be rocked on the pivot 11 for adjustment by means of screws 14 15. A plunger 16 is movable through an opening 17 in the upper ring 3, and it is guided against a roller 18. This plunger has pivotal connection with an actuating-lever 19, pivoted between the side plates of the frame, and this lever 19 has pivotal or swinging connection with a handle member 20, mounted to slide in a slot in the frame. As here shown, the handle member 20 swings on a pin 21, and at its inner end it is provided with a cross-pin 22, engaging in a slot 23, formed in the lever 19. A spring 24 is coiled around the pin 22 and engages at one end with the lever 19 and at the other end with the handle 20, so that when said handle 20 is released the lever 19 will be moved upward, and consequently the plunger 16 will be moved upward.

The pin 21, on which the swinging handle is mounted, is movable in slots 25, formed vertically in the side plates of the frame, and arranged between said movable handle and the fixed handle is a coiled spring 26, the lower end of which is attached to the fixed handle, and the upper end receives a bolt 27, on which is a nut 28, and by means of this nut 28 the tension of the spring may be regulated.

Pivotally connected, as at 28^a, Fig. 3, to one of the side members of the frame is an angle-lever 29, the upper or outwardly-extended portion of which is provided with a slot (indicated by dotted lines 30 in Fig. 2) which receives the pin 21. The downwardly-extended portion of this angle-lever has a segmental rack 31, which engages with a pinion 32 on a stud 33, which passes through one of the side plates or members of the frame. Rigidly connected to the outer end of the stud 33 is a pointer 34, and mounted loosely on said stud is a graduated disk 35. At its center the disk 35 is concaved at its inner side, as indicated at 36 in Fig. 3, to receive a disk 37, loosely mounted on the stud and carrying a pin 38, which passes through an arc-slot 39, formed in the central portion of said graduated disk 35, as appears in Fig. 1.

The operation is as follows: Upon moving the lever 8 upward, as indicated in full lines in Fig. 1 and in dotted lines in Fig. 2, the disk 4 will fall by gravity, so that a strip of paper (indicated at *y*) may be inserted between the two jaws or between said disk and ring. Then the lever 8 is to be moved toward the handle 6 and held firmly clamping the mate-

rial between the jaws. By pressing the handle 20 toward the handle 6 the plunger 16 will be forced against the paper and cause a breaking of the same. During this movement of the handle 20 the angle-lever 29 will be rocked, causing a rotary movement of the pointer 34 and also causing a rotary movement of the graduated disk, because the pin 38, carried by the smaller disk 37, will engage with an end wall of the slot 39. Upon the breaking or puncturing of the paper pressure on the handle 20 is to be released, and said handle will then, under the influence of the spring 26, return to its normal position, carrying the pointer back to its normal position. The disk 35 will remain stationary, and the number thereon adjacent to the pointer will indicate the strength of the paper. The object of the pin 38 is not only to cause a rotary movement of the graduated disk as the said pin engages with the pointer, but will prevent any back movement of the pointer relatively to the disk as said pointer passes to its normal position. Of course in using the device the disk is to be turned to bring zero adjacent to the pointer.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

30 1. A fabric-testing device comprising a frame, a handle extended rigidly from the frame, a ring attached to the frame, a concaved disk movable with relation to the said ring, a plunger movable through the opening 35 in the ring, a hand-lever having sliding connection with the frame, a pivotally-sliding connection between the lever and plunger, a spring for moving the hand-lever in one direction and a pressure-indicating device operated by said swinging hand-lever.

40 2. A fabric-testing device comprising a frame, a ring rigidly mounted in the frame, a disk movable relatively to said ring, a lever for causing a movement of said disk toward

the ring, a handle rigidly fixed to the frame, 45 a plunger movable through the ring, a lever carrying the said plunger, a handle having sliding connection with the frame and sliding pivotal connection with said plunger-carrying lever, a rack operated by said swinging 50 handle, a pinion engaged by said rack, a pointer carried on the stub of said pinion, a graduated disk loosely mounted on the stub and having an arc-slot, a small disk arranged inward of the graduated disk, a pin extended 55 from said small disk through said slot and into line of movement of the pointer, and a spring for moving the swinging handle in one direction.

3. A fabric-tester comprising a frame, a 60 ring rigidly supported in said frame, a disk movable toward and from said ring, a lever having sliding connection with the frame, a block adjustable on said lever for engaging 65 with said disk, a plunger movable through the opening of said ring, a swinging and sliding handle for operating said plunger in one direction, and pressure-indicating means controlled by said swinging handle.

4. A fabric-testing device comprising a 70 frame, a ring supported in said frame, a disk in the frame and movable with relation to said ring, means for causing a clamping movement of said disk toward the ring, a 75 plunger movable in the opening of the ring, a swinging and sliding handle, a lever connected with said handle for operating the plunger, an adjustable spring for moving said handle in one direction, a rack operated by the handle, and pressure-indicating means 80 operated by said rack.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RICHARD C. HARRIS.

Witnesses:

JNO. M. RITTER,
C. R. FERGUSON