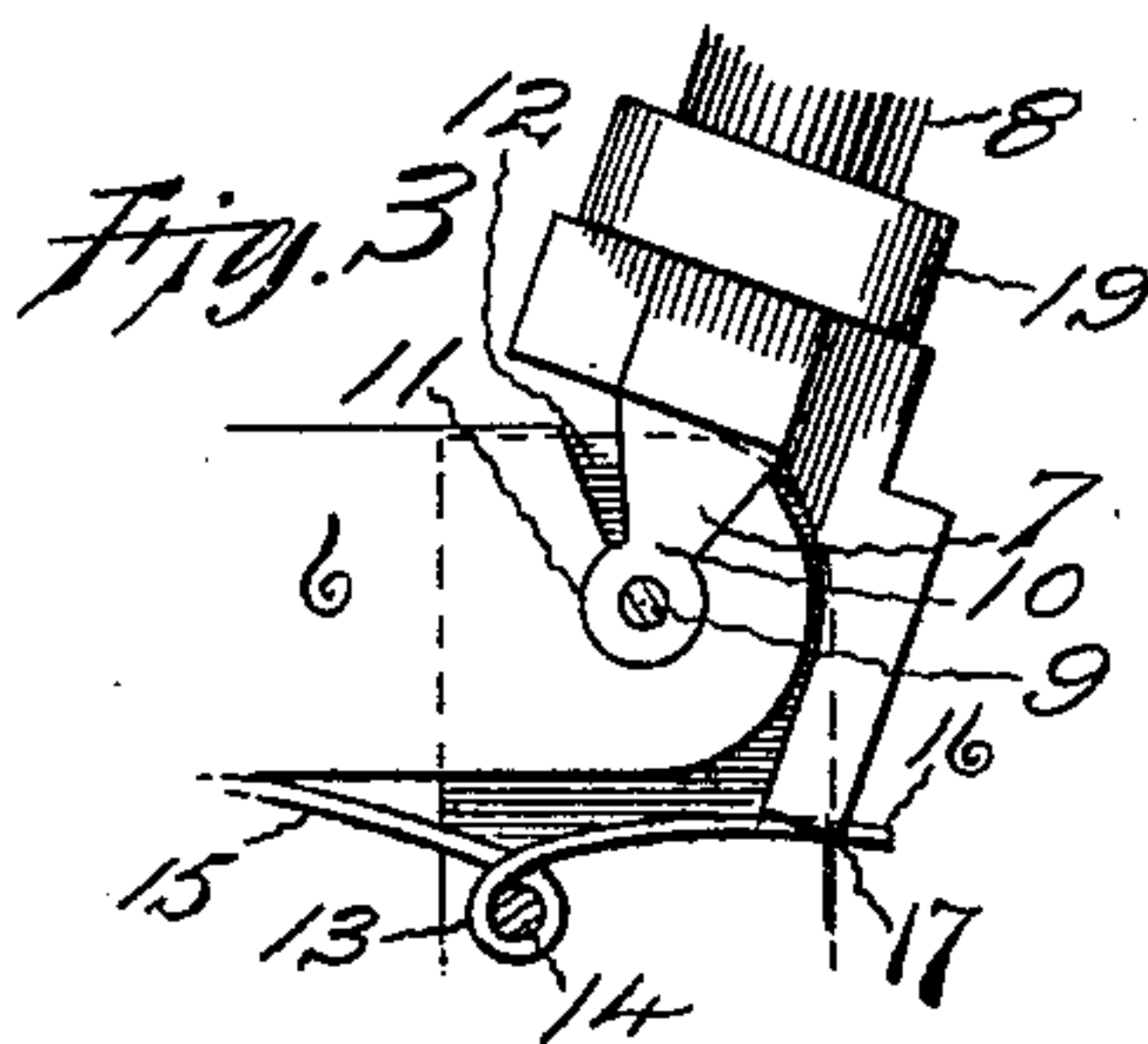
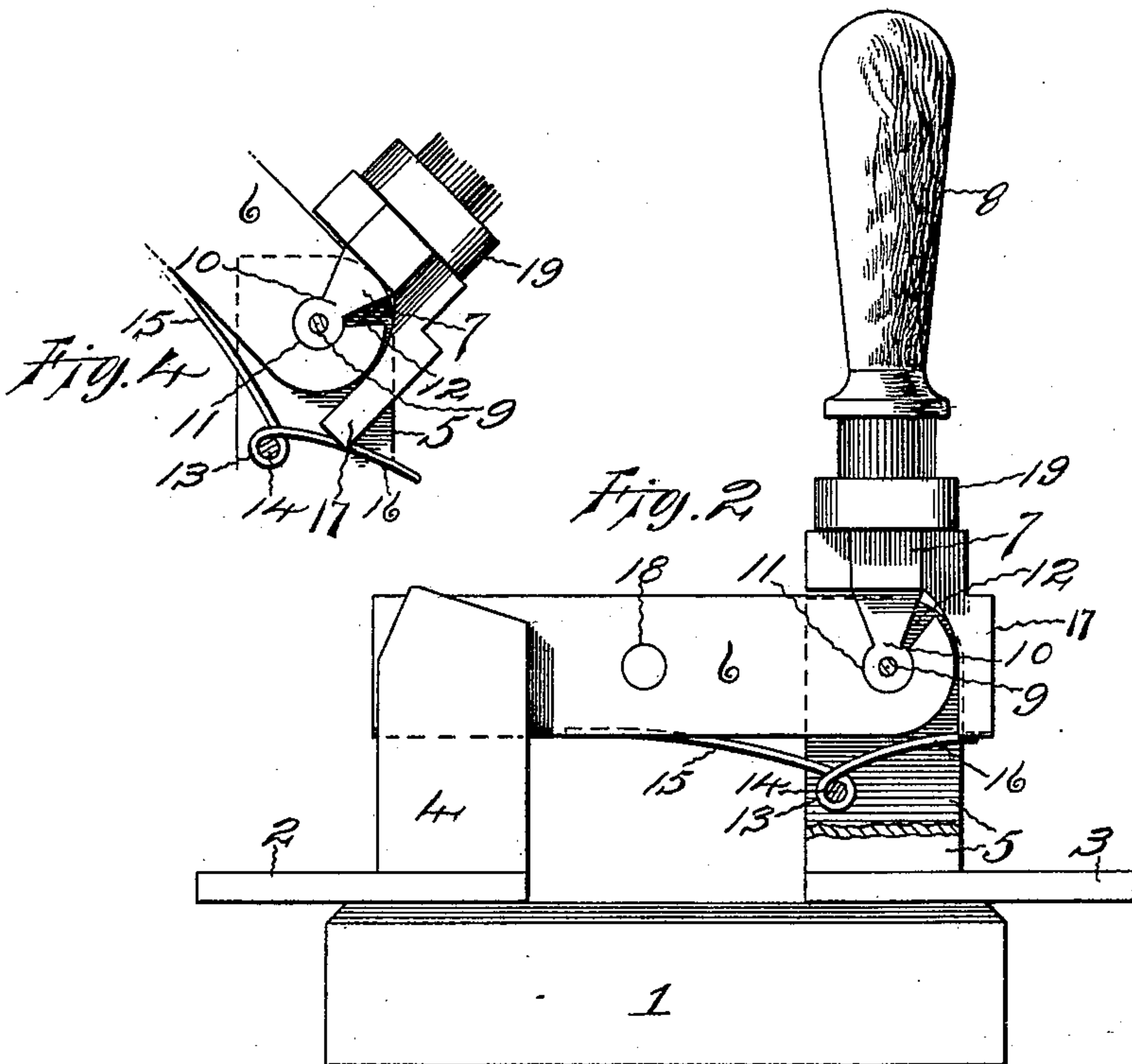
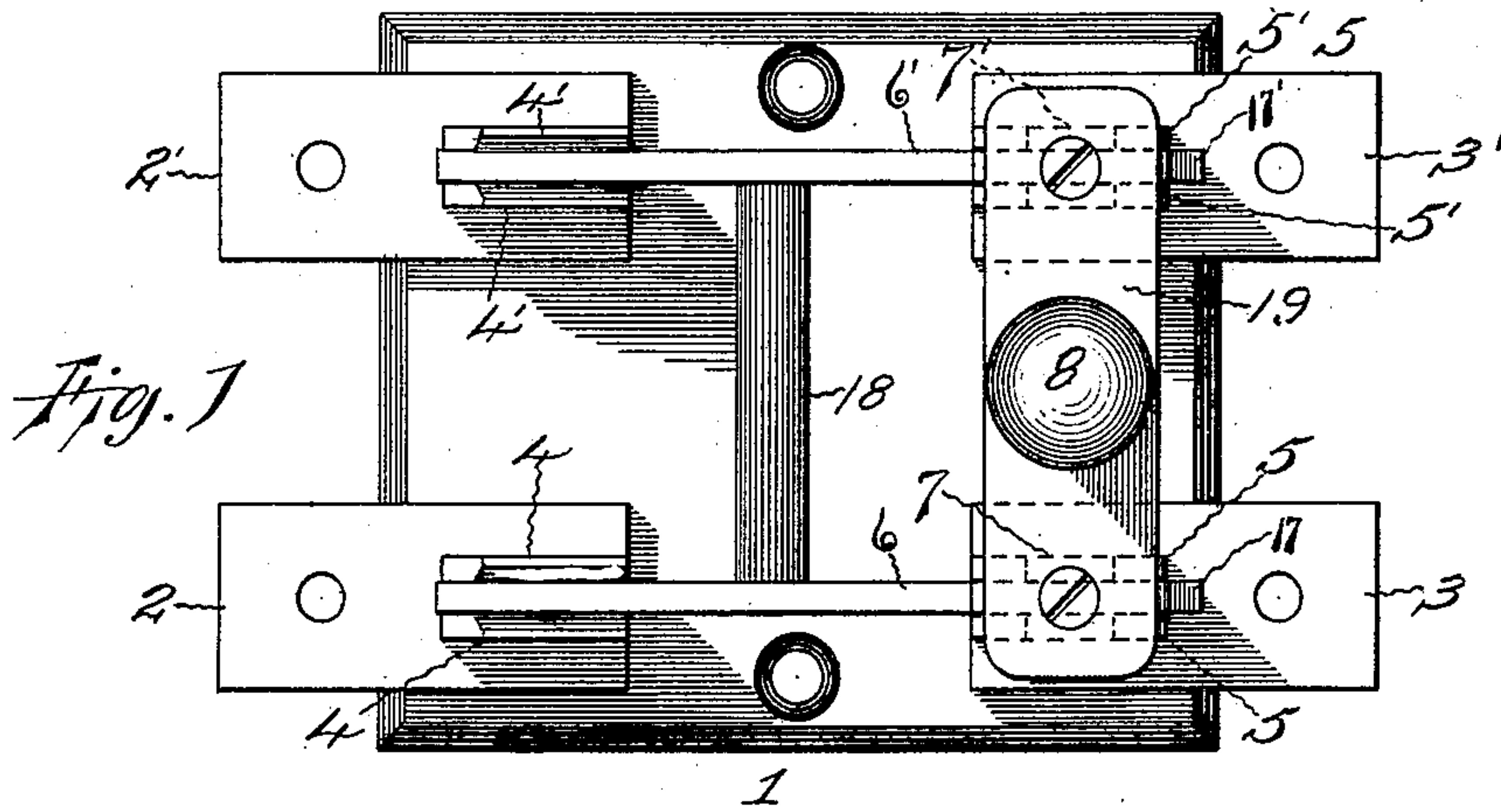


(No Model.)

T. H. BRADY.
ELECTRIC SWITCH

No. 583,452.

Patented June 1, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

THOMAS H. BRADY, OF NEW BRITAIN, CONNECTICUT.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 583,452, dated June 1, 1897.

Application filed February 1, 1897. Serial No. 621,400. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. BRADY, of New Britain, in Hartford county, Connecticut, have invented certain new and useful
5 Improvements in Electric Switches, which improvements are described in the following specification and are illustrated by the accompanying drawings.

My invention relates in general to those
10 quick-moving electric switches and circuit-breakers, commonly called "snap-switches," that are designed to be used in connection with circuits carrying heavy electric currents—such, for instance, as street-railway circuits—
15 and relates in particular to that class of such switches in which a circuit-closing blade and a lever-handle are independently pivoted about a common axis and are connected by a spring.

20 It is the object of my invention to reduce the number of parts in switches of the specified class and to promote simplicity and cheapness in their construction. To accomplish these objects, I employ a switch-blade and a
25 lever-handle that are concentrically pivoted one upon the other and are connected by a spring-lever.

30 The best mode in which I have contemplated applying the principles of my invention is indicated by the said drawings, in which—

Figure 1 is a plan view of a double-pole switch that is constructed in accordance with those principles. Fig. 2 is a side view of the
35 same switch, excepting a part of one terminal, which is broken away for the purpose of showing the construction. This figure is also a side view of a single-pole switch that is constructed upon the same principles, with the
40 same exception of a part broken away. Figs. 3 and 4 are like side views of parts of Fig. 2 in different positions.

In Figs. 1 and 2 the numeral 1 denotes the insulating base, on which are mounted in the
45 usual manner the circuit-terminals 2 and 3 and also in Fig. 1 the duplicate circuit-terminals 2' and 3'. The terminal 2 includes two parallel spring-plates 4 and 4', and the terminal 2' is provided with like spring-plates
50 4' and 4'. All these terminals are split in the usual manner. Terminal 2 accordingly

has two parallel spring-plates 4 and 4', terminal 2' has like spring-plates 4' and 4', terminal 3 has two parallel plates or cheeks 5 and 5', and terminal 3' has like cheeks 5' and 55 5'. Between the cheeks 5 and 5 are pivoted the circuit-closing blade 6 and an extension 7 of the lever-handle 9 in the peculiar manner that remains to be described. Between plates 5 and 5, which are just so far apart as
60 the thickness of blade 6, the handle extension 7, which is of the same thickness, is pivoted upon pin 9, as shown in Figs. 2, 3, and 4. This handle extension, being narrowed to a
65 neck 10 near the pivot-pin 9, has a terminal disk 11, which serves as a pivot for blade 6. That blade is provided with a slot 12, fitting around disk 11 and wide enough at its mouth to allow a partial rotation of the blade upon
70 that disk. In this manner the blade and the handle are pivoted one upon the other about a common axis, which is represented by pin 9, and are capable of a limited movement about that axis independently of each other.

The numeral 13 denotes a coiled spring
75 which is pivoted between plates 5 and 5 on pin 14, and, being provided with two arms 15 and 16, constitutes a lever of the first class. Arm 15 has a sliding engagement with blade
80 6 by means of a shallow groove in the contiguous edge of that blade, as shown in Fig. 2, while arm 16 has a like engagement with an extension 17 of the handle 8.

In the double-pole switch that is shown in Fig. 1 the described parts of the single switch
85 (shown in Fig. 2) are duplicated. The blades 6 and 6' are mechanically connected and electrically separated by the insulating-brace 18 as well as by the insulating cross-piece 19, which is a part of the handle 8. By means
90 of that cross-piece the handle 8 is bifurcated or divided into two branches—namely, the extensions 7 and 7'.

Such being the construction of my improved switch its general mode of operation resembles
95 that of other switches of the specified class. With the parts in the relative positions that are shown in Figs. 1 and 2 the circuit is closed through the blades, and when it is desired to interrupt the circuit so closed the
100 handle is turned by hand in the usual manner. The immediate result of such move-

ment of the handle is the turning of the handle extension 7 in slot 12 and on pin 11, the simultaneous movement of spring-arm 16 by the pressure of handle extension 17, and an increase of tension of the spring 13. As the movement of the handle continues the parts assume the positions shown in Fig. 2, where handle extension 7 has reached the limit of slot 12 without any movement of blade 6, but as the movement of the handle is further continued in the same direction the blade is started from its original position by the pressure of the handle extension 7 against the side of the slot 12. At the same moment the spring-lever 14 is at its highest tension, so that the movement of the blade, begun as described, is forthwith completed by the action of the spring and the parts are brought to the positions indicated in Fig. 4 and the switch stands open. By reversing the movement of the handle from the position last indicated the parts return successively to the positions shown in Figs. 3 and 2, respectively, and the switch is closed.

Such being the construction and operation of my improved switch, I claim as my invention—

1. A pair of circuit-terminals, and a lever-handle, which is provided with a terminal disk, and is pivoted thereby between the parallel cheeks of one of said terminals, said disk being of uniform thickness equal to the distance between those cheeks, in combination with a circuit-closing blade, which is of the same uniform thickness between those cheeks, and is adapted to turn on said disk as a pivot, substantially as and for the purpose specified.
2. A pair of split terminals, a lever-handle, which is provided with a terminal disk, having a uniform thickness equal to the distance between the cheeks of one of those terminals, and is pivoted thereby between said cheeks, and a circuit-closing blade, which is of the same uniform thickness between those cheeks and is adapted to turn on said disk as a pivot, in combination with a spring, connecting said handle and said blade, substantially as and for the purpose specified.
3. In an electric switch, a split terminal, and a lever-handle, which is provided with a terminal disk, of uniform thickness, and is pivoted thereby between the cheeks of that terminal, in combination with a circuit-closing blade, which is of the same uniform thickness between those cheeks, and is adapted to

turn on said disk, substantially as and for the purpose specified.

4. In an electric switch, a split terminal, a circuit-closing blade, which is pivoted in that terminal, and a lever-handle, which is independently pivoted in the same terminal, in combination with a spring, which is also pivoted in said terminal, and is provided with lever-arms, having sliding engagements with said blade and with said handle respectively, substantially as and for the purpose specified.

5. In an electric switch, a terminal, a circuit-closing blade, which is pivoted to that terminal, and a handle, which is independently pivoted to the same terminal, in combination with a spring, which is also pivoted to said terminal, and is provided with two lever-arms, having sliding engagements with said blades and with said handle respectively, substantially as and for the purpose specified.

6. In a two-pole switch, two split terminals, a bifurcated handle, whose branches are provided with terminal disks, of uniform thickness, equal to the distance between the cheeks of those terminals respectively, and are pivoted thereby in said terminals respectively, two circuit-closing blades, which are of the same uniform thickness between the cheeks of those terminals respectively, and are adapted to turn pivotally on said disks respectively, and two springs, connecting said handle and said blades, in combination with two other terminals, which are adapted to cooperate with said circuit-closing blades, substantially as and for the purpose specified.

7. In a two-pole switch, two circuit-terminals, two circuit-closing blades, which are pivotally connected with said terminals respectively, and are rigidly connected together, but are insulated from each other, a handle, common to said circuit-closing blades, and pivoted to the same terminals, but movable independently of said blades, and two springs, which are also pivoted to said terminals respectively, and are provided with lever-arms having sliding engagements with such blades and handle, in combination with two other circuit-terminals, which are adapted to cooperate with said circuit-closing blades, substantially as and for the purpose specified.

In testimony whereof I hereunto set my name in the presence of two witnesses.

THOMAS H. BRADY.

Witnesses:

WILLARD EDDY,
HARRY S. NEWSHAFFER.