

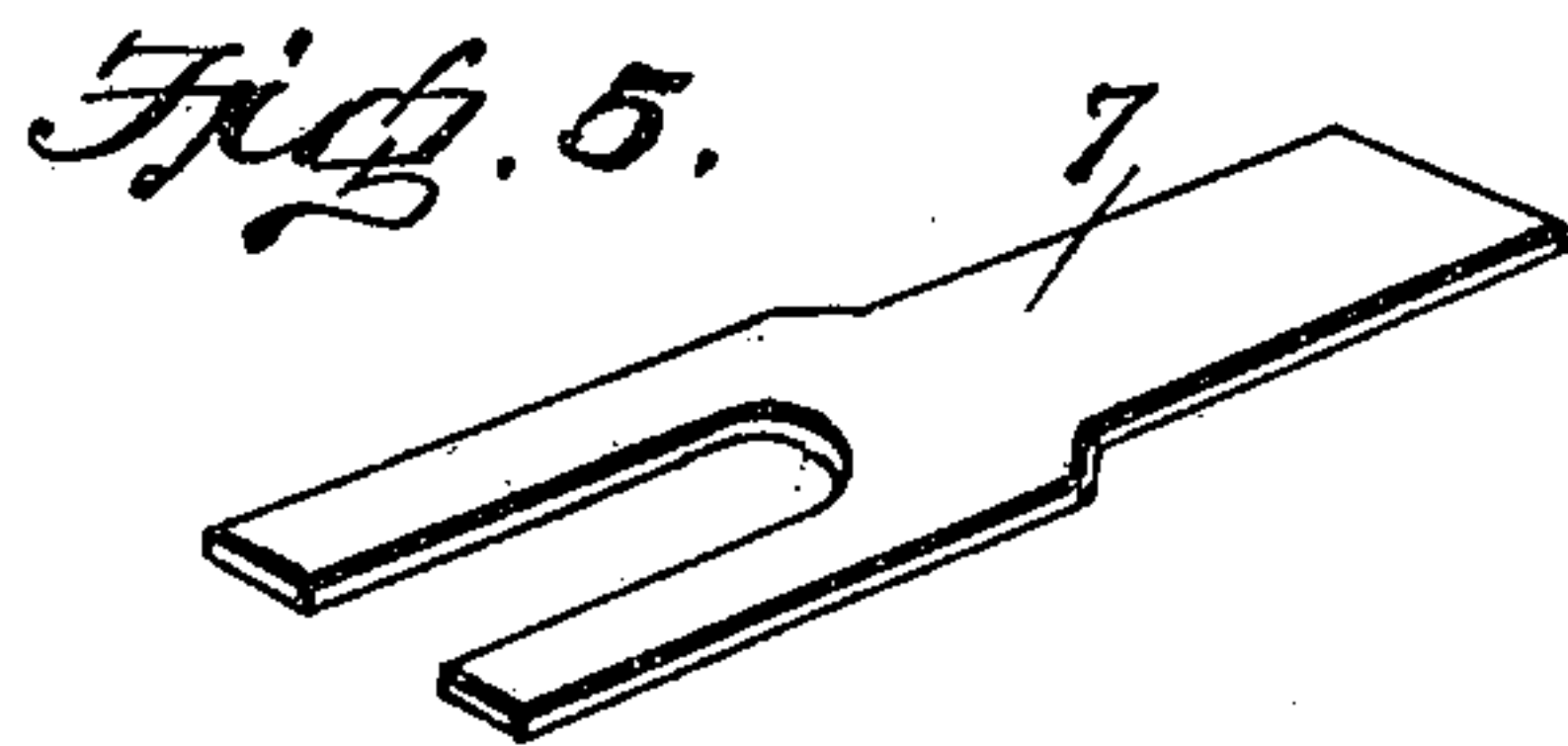
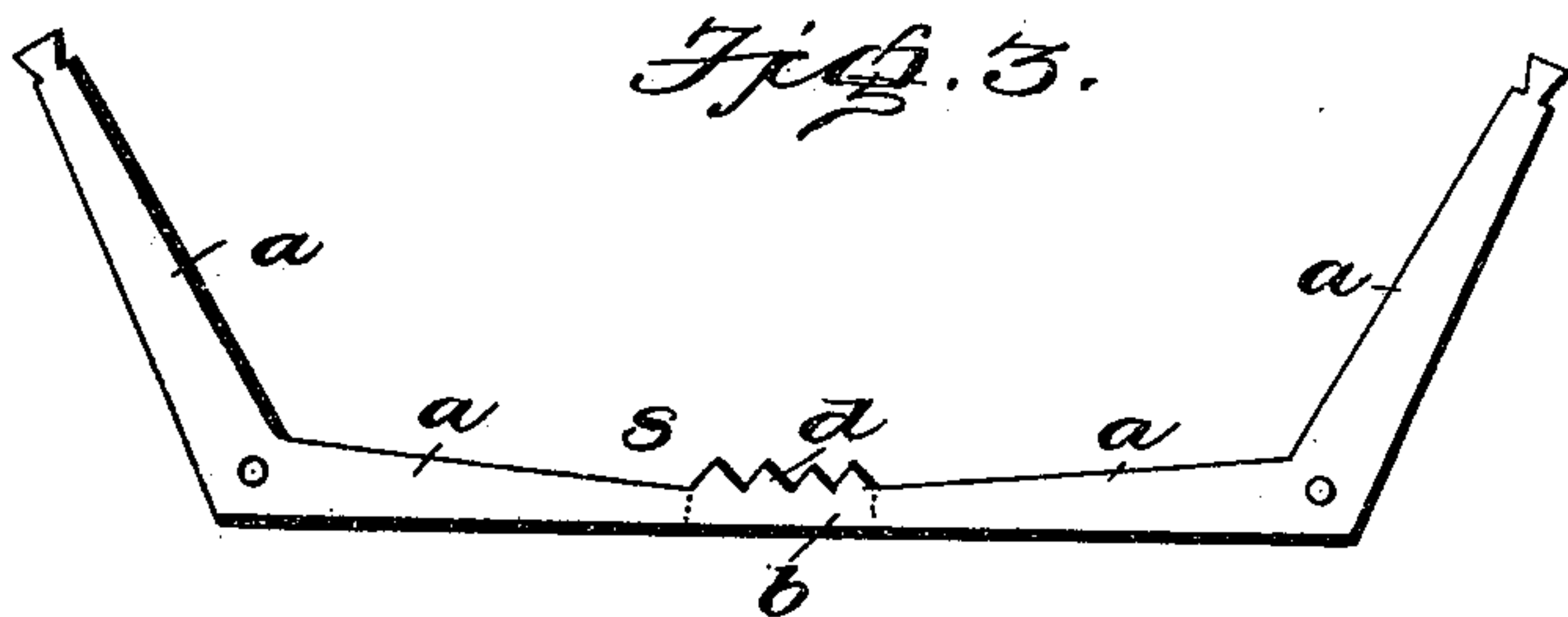
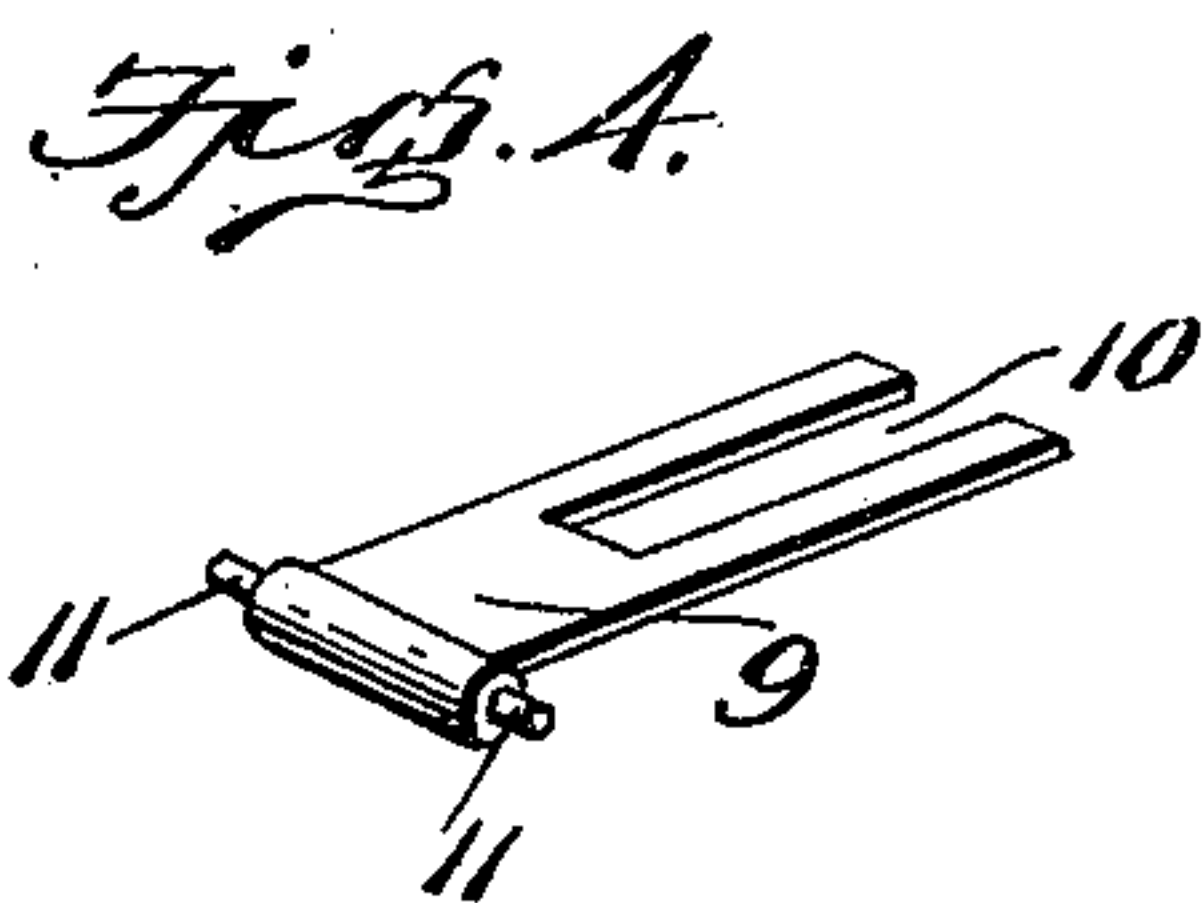
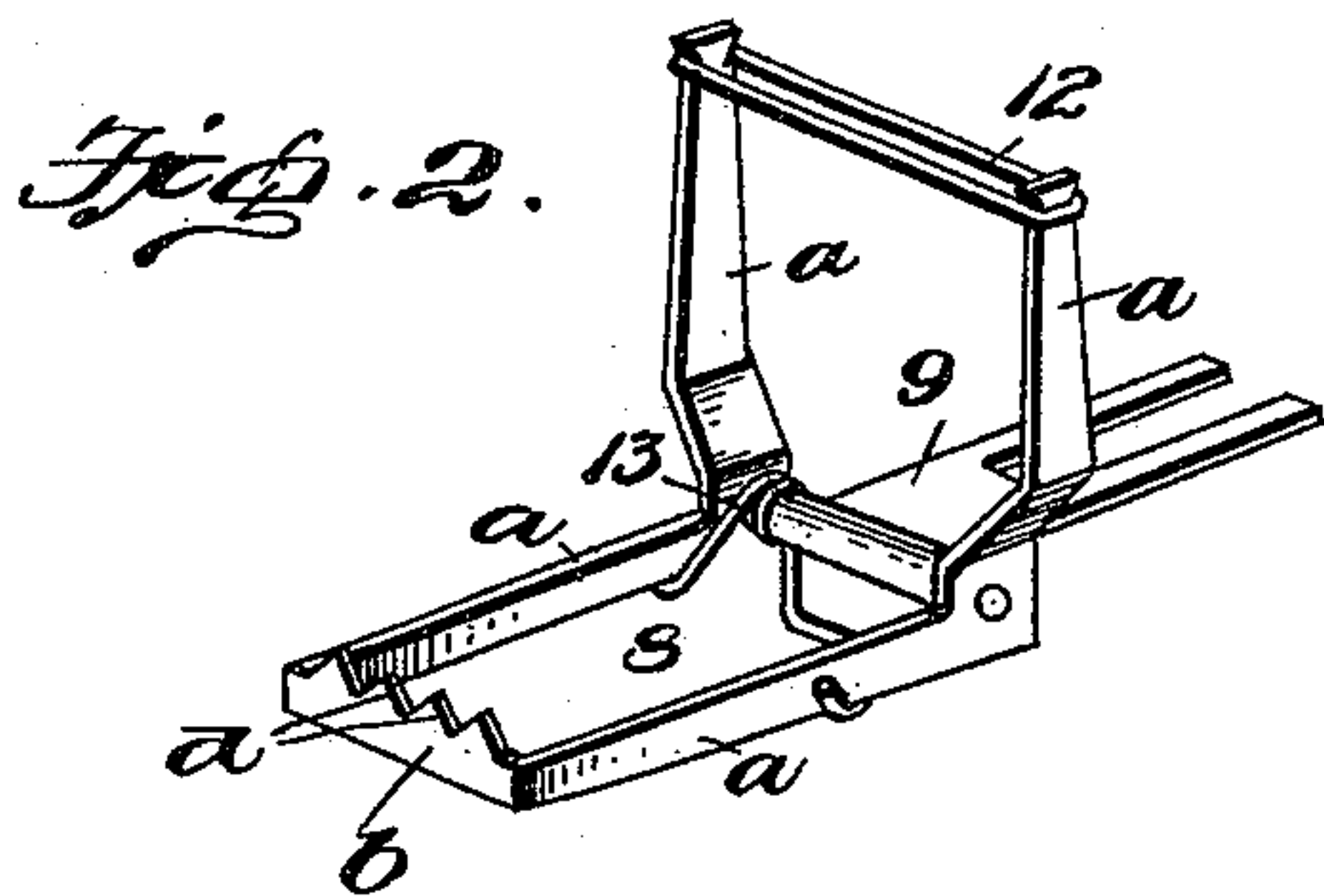
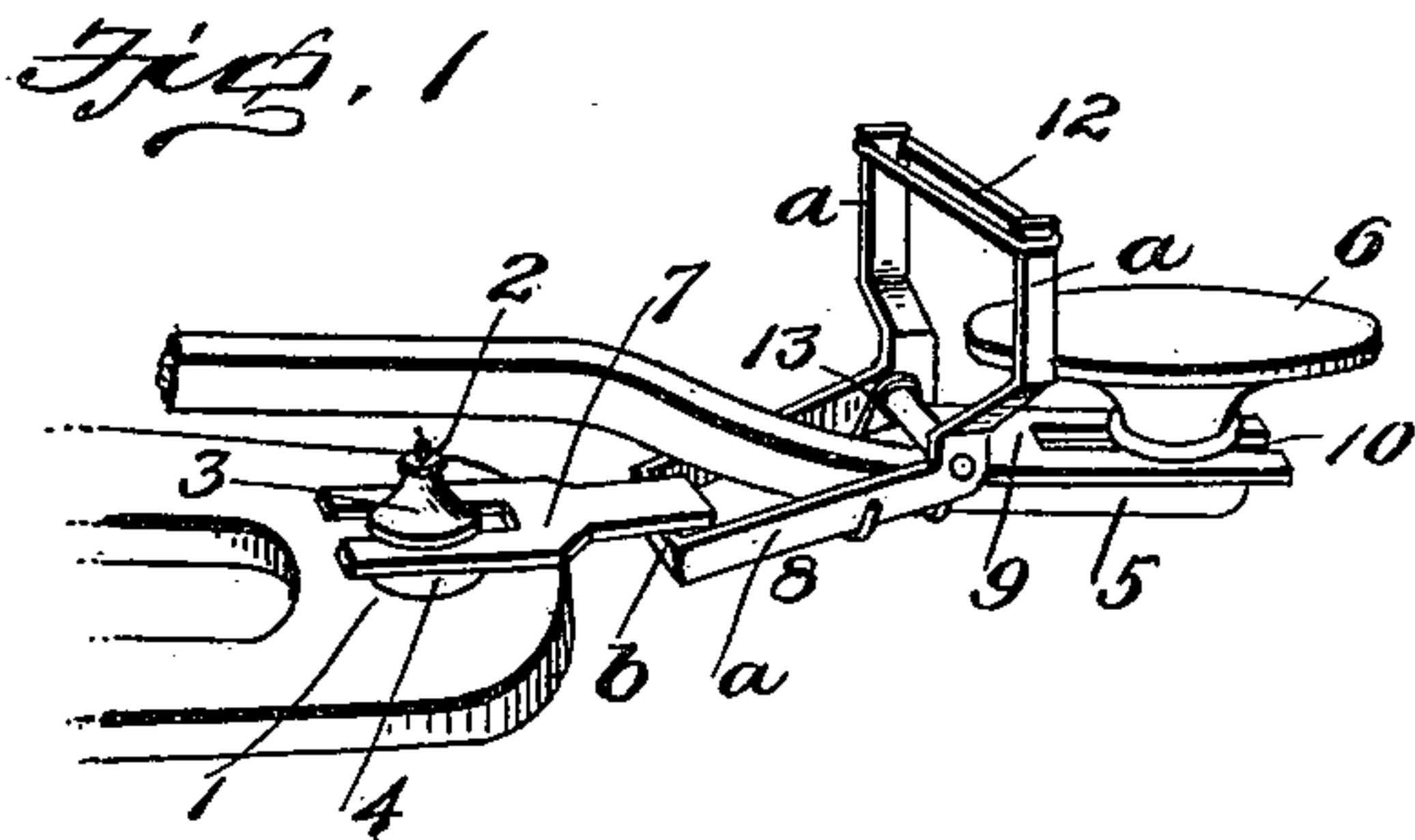
No. 644,448.

Patented Feb. 27, 1900.

E. E. NYE & L. C. MCINTOSH.  
CIRCUIT CLOSER FOR TELEGRAPH KEYS.

(No Model.)

(Application filed Oct. 28, 1899.)



Witnesses

*E. E. Nye*  
*L. C. McIntosh*

Inventors  
by *A. B. Wilson*  
Attorneys

# UNITED STATES PATENT OFFICE.

ELMER E. NYE AND LOUIS C. MCINTOSH, OF LOS ANGELES, CALIFORNIA.

## CIRCUIT-CLOSER FOR TELEGRAPH-KEYS.

SPECIFICATION forming part of Letters Patent No. 644,448, dated February 27, 1900.

Application filed October 28, 1899. Serial No. 735,069. (No model.)

*To all whom it may concern:*

Be it known that we, ELMER E. NYE and LOUIS C. MCINTOSH, citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Circuit-Closers for Telegraph-Keys; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to circuit-closers for telegraph-keys.

The object of the invention is to provide a device of this character which shall be simple of construction, durable in use, comparatively inexpensive of production, which may be easily and quickly attached to the telegraph-keys now in use, and which will automatically close the circuit instantly upon the removal of the operator's fingers from the key.

It is a well-known fact among operators who have worked heavy circuits that it is impossible to get signals to the end of a long circuit firm and clear unless the fingers are kept on the key—that is, lifted slightly in making dots—while sending. The employment of our device aids in the accomplishment of this purpose.

In the construction of the device we employ a rubber band, which is so arranged that whether the first or second finger is used (in the particular position designated by it on the key-knob) the rubber band will assist in holding that finger on the key. It does not require a downward pressure to open the circuit, which would cause an extra and harder effort to manipulate the key. The rubber band rests lightly against the upper surface of the finger and allows plenty of movement in any direction, but still aids the operator in keeping his finger upon the key and keeping the circuit open as long as that finger is within reasonable distance.

To these ends the invention consists in certain features of construction and combination of parts, which will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of as much of a telegraph-key as is necessary to illustrate the application of our invention. Fig. 2 is a detail per-

spective view of the circuit-closer removed. Fig. 3 is a view of the main frame of the circuit-closer stamped from a single piece of metal and illustrating its shape before it is bent into the form shown in Fig. 2. Fig. 4 is a view of the circuit-closer holder. Fig. 5 is a view of the contact-plate adapted to be attached to the platinum holder of the front leg of the key.

In the drawings the same reference characters indicate the same parts of the invention.

1 denotes the front leg of a telegraph-key, 2 the platinum point, 3 its holder, and 4 the insulating-washer. 5 denotes the key-lever, and 6 the key-knob. These parts may be of any well-known or approved construction, and a further description of the same is therefore thought to be unnecessary.

The circuit-closer consists of the contact-plate 7, the angular frame 8, and the frame-holder 9. The contact-plate is forked and is engaged with the front leg of the key immediately under the point-holder and above the insulating-washer, between which parts it is clamped by the ordinary screw that holds the point-holder in position. This construction admits of the longitudinal adjustment of the plate.

The angular-frame holder 9 has a forked end 10, which engages the screw-threaded shank of the key-knob and by this means is clamped to the forward end of the key-lever. The rear end of the holder is formed with transverse trunnions 11, upon which is journaled the angular frame 8. This frame consists of the side pieces *a a a a* and the end piece *b*, which is formed with saw teeth or points *d* to obviate any possible failure of the contact of the frame 8 with the plate 7 from collection of dust. The upper arms or members of the angular frame are connected by a yielding strip 12, preferably of rubber.

In operation the finger is placed upon the key-knob in the usual manner, with the upper surface thereof in contact with the elastic strip. The angular frame is necessarily tilted and its contact-points *d* moved from connection with the plate 7, thus opening the circuit and permitting of the sending of a message. The very instant that the key-knob is released, the finger being withdrawn from engagement therewith, the angular frame



will swing in a direction to bring its contact points or teeth *d* into contact with the plate 7, thus automatically closing the circuit and obviating the necessity of the operator closing it by the usual switch-lever, which through inadvertence or other cause is very often left open, to the detriment of the service.

The upper members of the frame 8 may be of sufficient weight to effect the swinging of the frame in the proper direction to close the circuit, or, if desired, we may employ a spring 13 for this purpose.

It will be noticed that by the provision of the slotted plate 7 and the slotted holder 9 the device may be applied to keys of different proportions, and it will of course be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent of the United States, is—

1. An automatic circuit-closer for telegraph-keys comprising a frame adapted to be pivoted to the key-lever and having arms which project upwardly above the key-knob of said lever and connected by an elastic strip, said frame normally closing the said circuit through said key, substantially as and for the purpose set forth.

2. An automatic circuit-closer for telegraph-keys comprising the angular frame

composed of angular side pieces, the lower ends of which are connected by a metallic piece, and the upper ends of which are connected by a rubber strip which is arranged in close proximity to the knob of the key-lever, a holder to which the frame is pivoted, said holder adapted to be secured to the free end of the key-lever, and a contact-plate adapted to be secured to the front leg of the key and contact with the angular frame, substantially as and for the purpose set forth.

3. An automatic circuit-closer for telegraph-keys comprising the angular frame composed of angular side pieces, the lower ends of which are connected by a metallic piece, and the upper ends of which are connected by a rubber strip which is arranged in close proximity to the knob of the key-lever, a holder to which the frame is pivoted, said holder adapted to be secured to the free end of the key-lever and having a forked end, and a contact-plate also having a forked end and adapted to be secured to the front leg of the key and contact with the angular frame, substantially as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

ELMER E. NYE.  
LOUIS C. McINTOSH.

Witnesses:

GEORGE E. FRANKLIN,  
B. J. MCCracken.