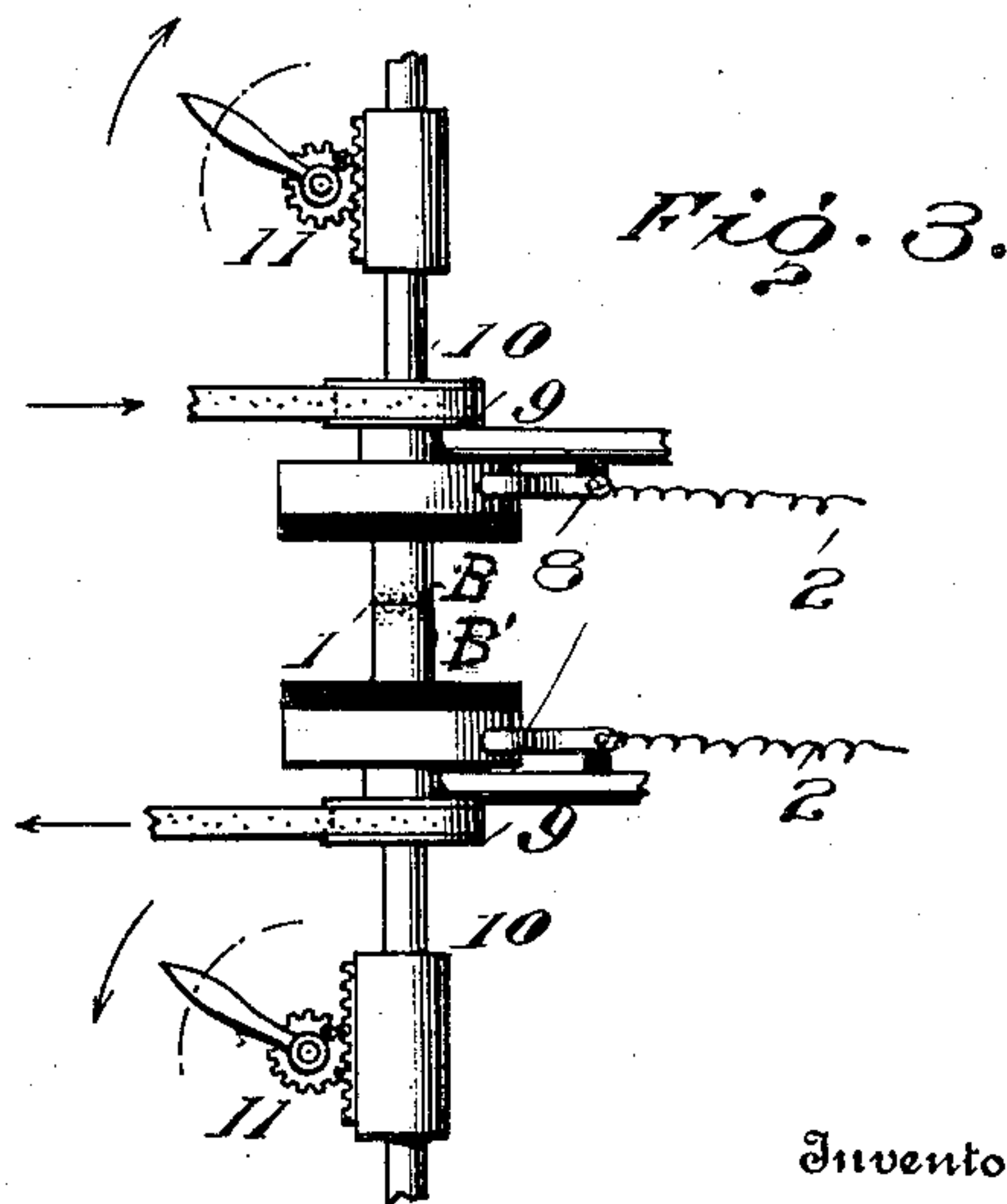
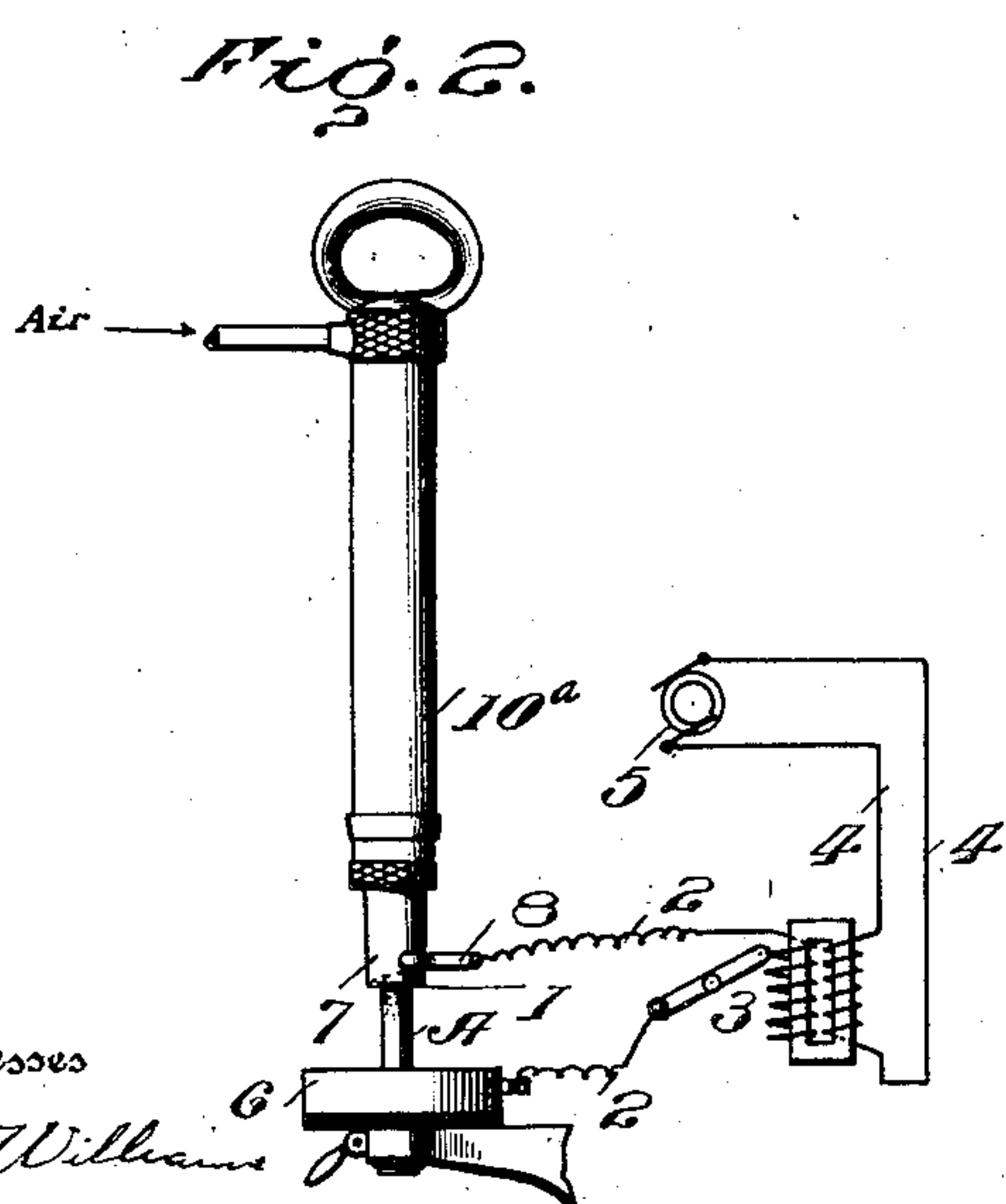
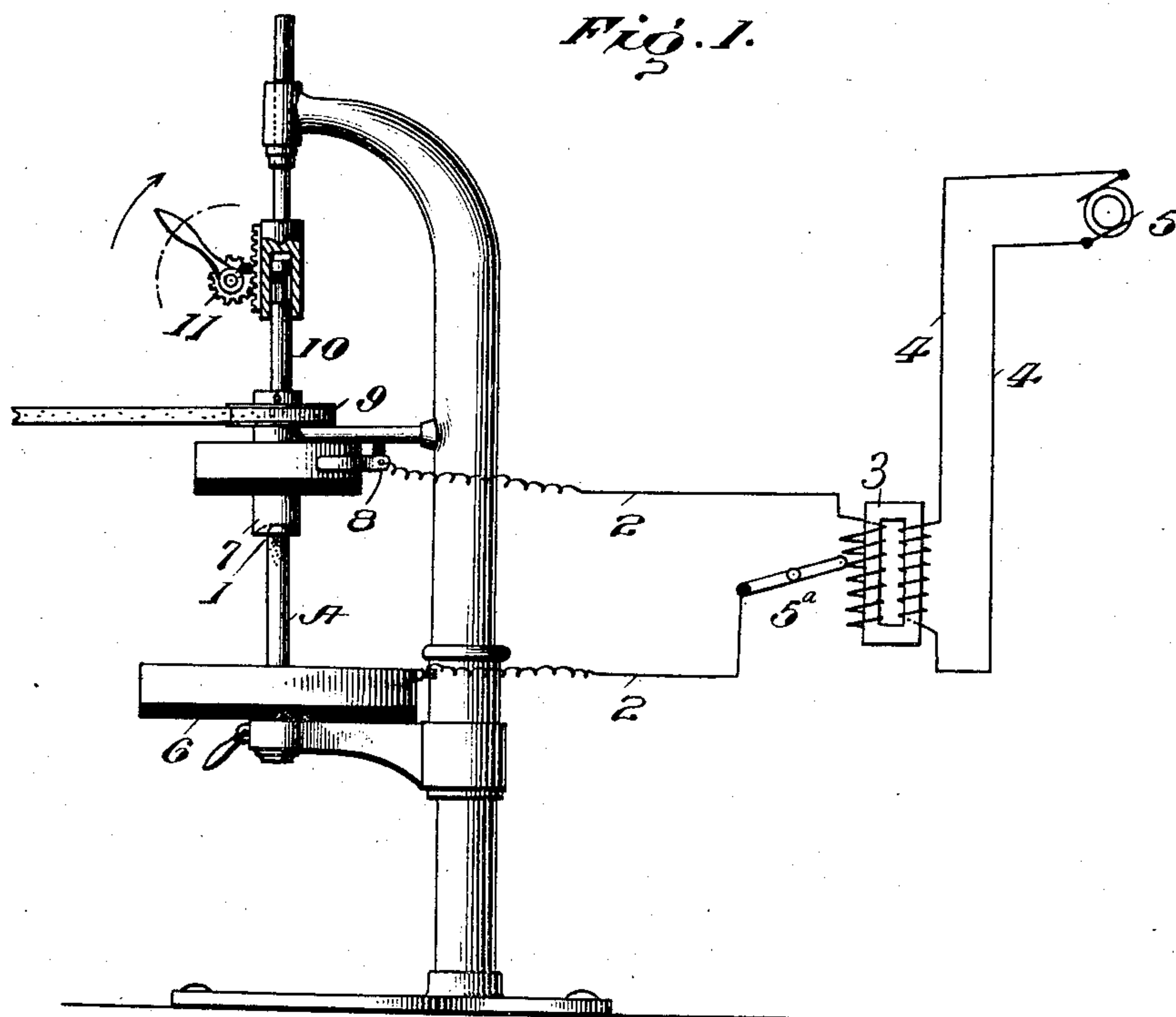


No. 848,163.

PATENTED MAR. 26, 1907.

S. S. EVELAND.
ELECTRIC HEATING.
APPLICATION FILED SEPT. 13, 1904.



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SAMUEL S. EVELAND, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC HEATING.

No. 848,163.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed September 13, 1904. Serial No. 224,342.

To all whom it may concern:

Be it known that I, SAMUEL S. EVELAND, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric Heating, of which the following is a specification.

The principal object of the present invention is to provide for localizing the incandescent heating effect of a heating-circuit in such a way that the heat engendered is applied in the locality where it is required for any metal-working operation.

The invention also comprises the improvements to be presently described and finally claimed.

The nature, characteristic features, and scope of the invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a diagrammatic view of apparatus capable of use in practicing the invention, and Figs. 2 and 3 are respectively similar views illustrating other types of apparatus.

In the drawings, 1 is an electrical contact having current-carrying abutting surfaces capable of movement, so that when the surfaces are moved the resistance is increased and the heating effect localized adjacent to the contact. The heating effect may of course be availed of for any useful purpose in metal-working.

As shown in the drawings, 2 are the conductors of the heating-circuit, and they constitute the secondary of the transformer 3, whose primary circuit 4 is shown as including a generator 5. Suitable provisions, as 5^a, are shown for regulating the primary circuit. The primary circuit is or may be a usual heating-circuit—that is to say, one carrying current of comparatively large quantity and low voltage.

As shown in Figs. 1 and 2, 6 is a conducting-support connected with one of the conductors 2, and 7 is a part connected electrically, but so as to be capable of movement with the other conductor 2—as, for example, by means of the contact-brush 8. The part 7 is shown as capable of rotation. This is accomplished in Fig. 1 by means of the pulley and band 9 and in Fig. 2 by means of the pneumatic tool 10^a. The effect of rotating the part 7 is to move the surfaces of the elec-

trical contact 1, and thus increase the resistance. The part 7 may be moved endwise, as by means of the rack and pinion 11, Fig. 1, or by adjusting or positioning the pneumatic tool 10^a, Fig. 2. The effect of moving this part endwise would be to spin a head on the upper end of the work A, Figs. 1 and 2.

As shown in Fig. 3, the contact 1 is located between two pieces of work B and B', which are respectively held in chucks mounted so as to rotate, as has been described in connection with the part 7 of Fig. 1, and, if desired, so as to be endwise movable, as has been described in connection with that figure. In this instance the heating effect will be localized in the neighborhood of the contact 1, and the pieces of work become highly heated at their abutting surfaces, so that they may be readily welded together—for example, by interrupting their rotation after they have been properly heated and then pressing them toward each other.

From the foregoing description it appears that the work A or B B' constitutes the resistance-body of the heating-circuit.

The invention is not limited to the apparatus described, which does not embody all types of means for moving the current-carrying surfaces of the electrical contact, and it will be obvious to those skilled in the art to which my invention appertains that modifications may be made in detail without departing from the spirit thereof; nor is the invention limited otherwise than may be required by the prior state of the art; but,

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

Electric heating apparatus which consists in means for establishing electrical contact between substantially coextensive surfaces including a surface of the object to be heated, devices for passing current through said contact, and provisions for rubbing the same coextensive surfaces of contact together to localize the incandescent heating effect, substantially as described.

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

SAMUEL S. EVELAND.

Witnesses:

K. M. GILLIGAN,

JAS. A. RICHMOND.