

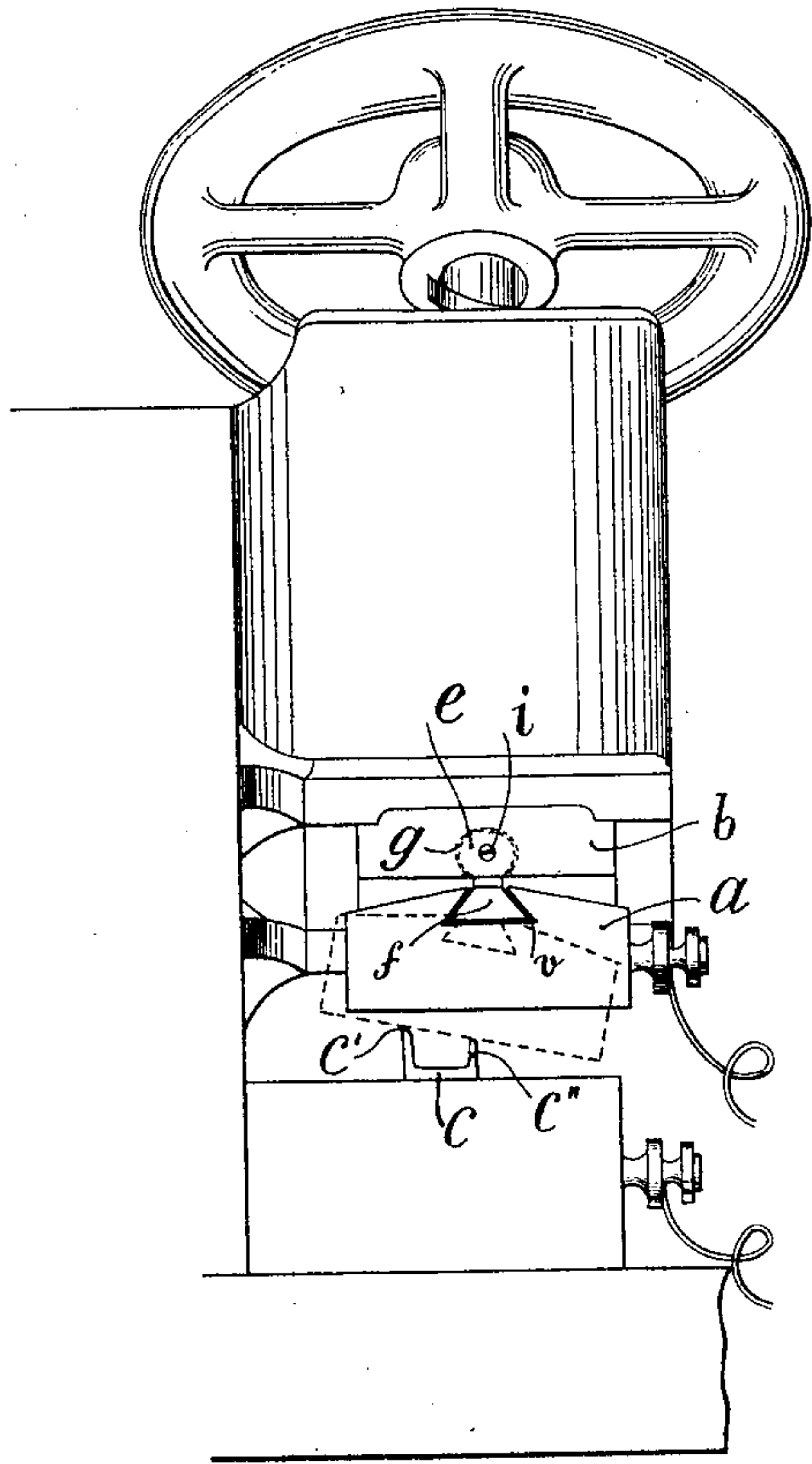
(No Model.)

C. NIELSON.  
ELECTRIC WELDING MACHINE.

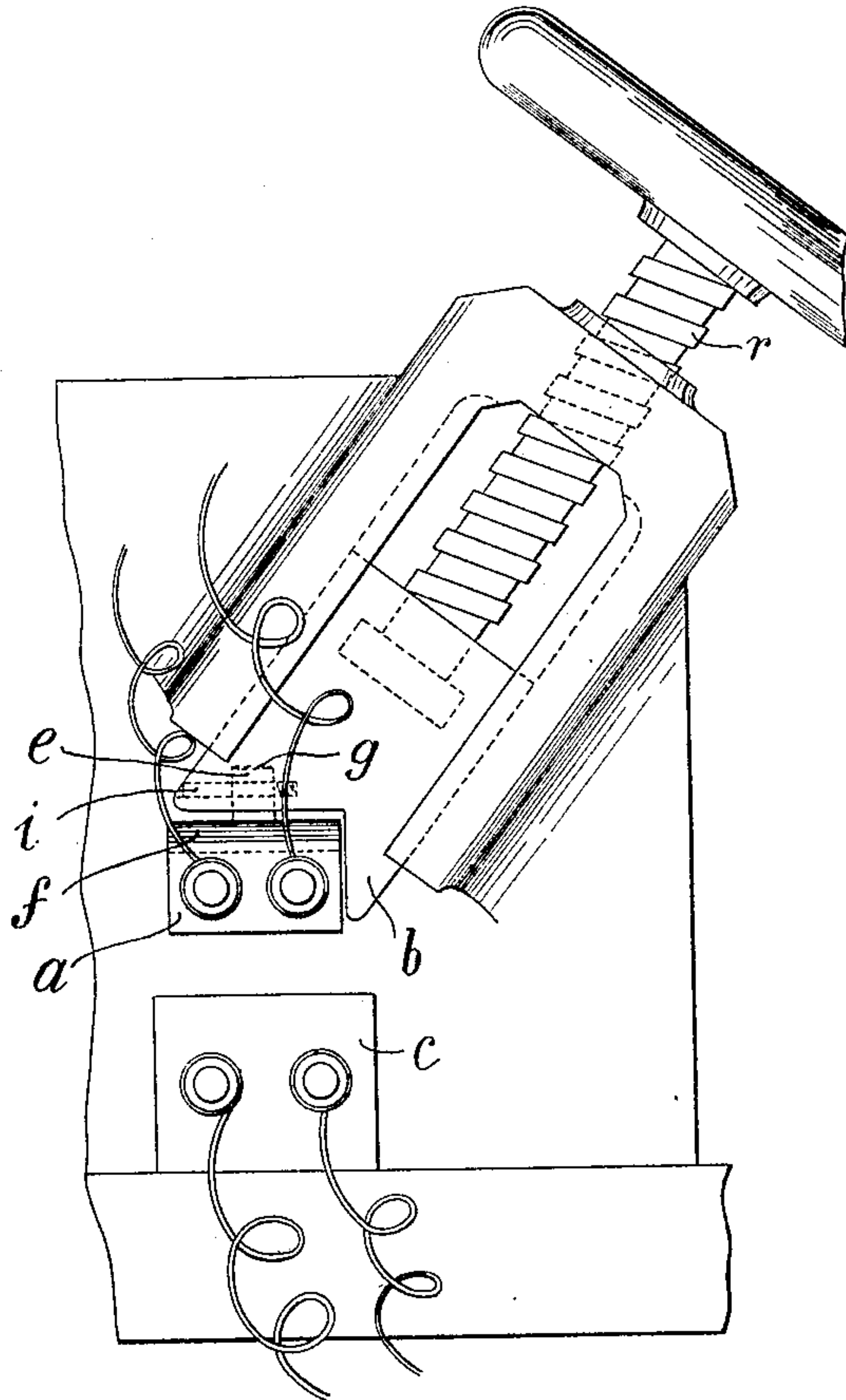
No. 601,979.

Patented Apr. 5, 1898.

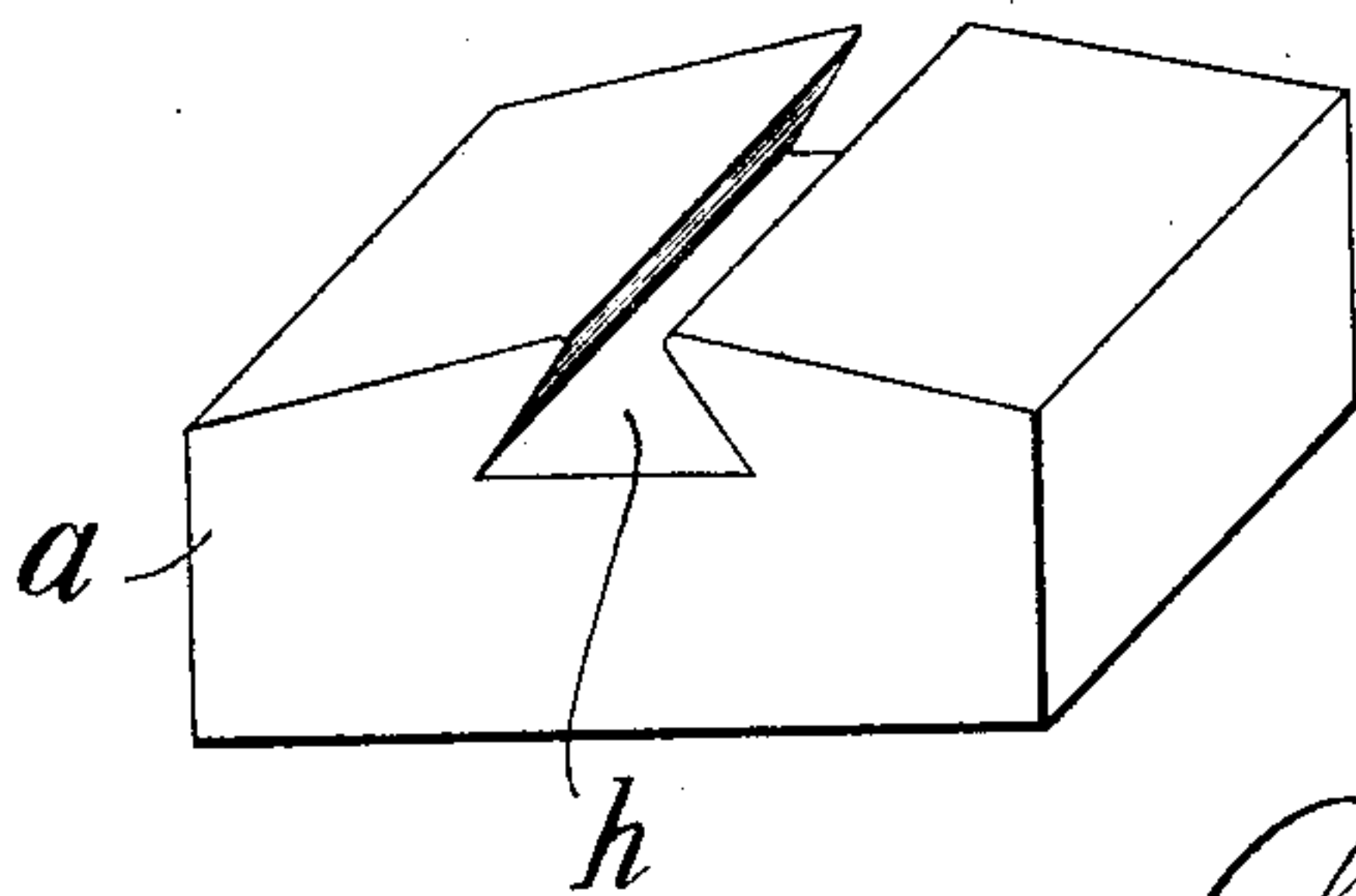
*Fig. 1.*



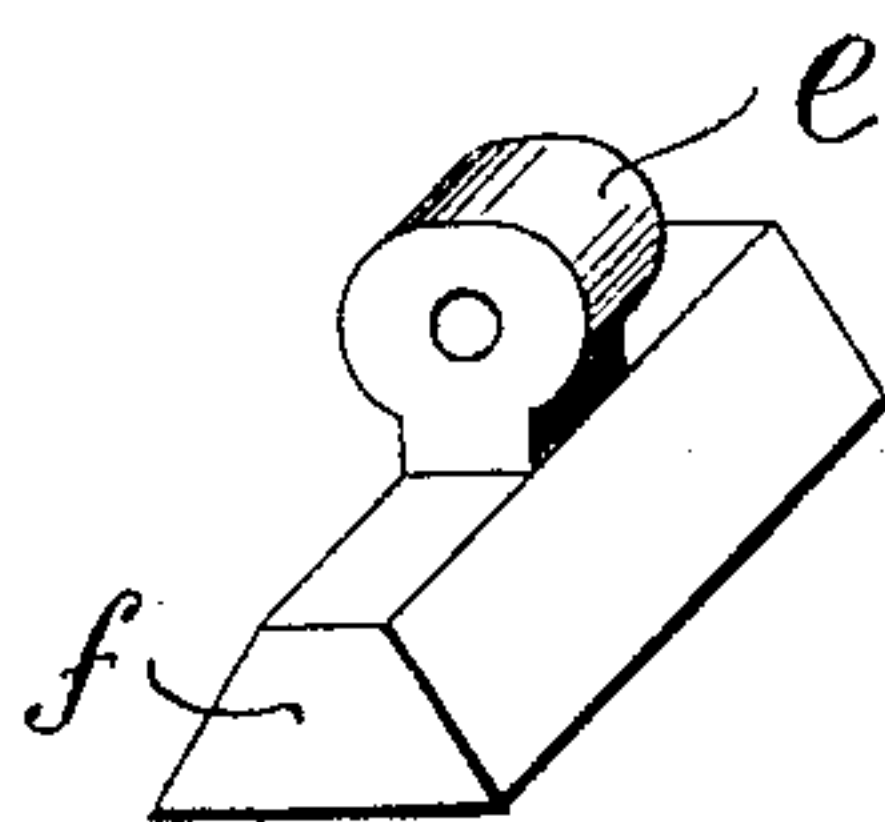
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses

John A. Paulson.  
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# UNITED STATES PATENT OFFICE.

CHRISTEN NIELSON, OF BROOKLYN, NEW YORK.

## ELECTRIC WELDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 601,979, dated April 5, 1898.

Application filed June 15, 1897. Serial No. 640,851. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTEN NIELSON, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Electric Welding-Machines, of which the following is a full, clear, and exact specification.

My invention relates to electric welding-machines; and it consists of an improvement in the construction of the clamping-jaws and in the manner of their connection with the vise.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a front elevation of one of the vises provided with my improved clamping-jaw. Fig. 2 is a side elevation thereof. Fig. 3 is a perspective view of my improved clamping-jaw, and Fig. 4 is a perspective view of the hinging device used for connecting it with the block of the vise.

Heretofore the clamping-jaws of electric welding-machines were rigidly secured to the vise, and therefore when pieces not rectangular in section were clamped the clamping-jaws pressed only upon the most projecting edge.

It is well known that the passing of electric current from one conductor into another depends not only on the force of the current itself, but also upon the area of the contact-surface between the two conductors. The larger the area of contact the less time will be required for a certain quantity of electricity to pass, and consequently with a smaller area of contact between an object to be welded and the clamping-jaws the slower will the electric current pass, the more of it will be dispersed, and the longer it will take to produce the required degree of heat. This will be especially manifest in welding of bars of such sectional shape as shown in Fig. 2 of the drawings. If in this instance the clamping-jaw *a* be of such shape and connected to the block *b* of the vise as used heretofore, the contact-surface between the bar *c* and the jaw or clamping-block *a* would be only equal to the narrow strip *c'*. In that case it would not only take longer time to produce a weld, but the heating of the bars would also be so unequal that while on one side rib *c'* the ma-

terial might be overheated the other side of the bar (rib *c''*) might not be welded at all.

The purpose of my invention is to provide a jaw capable of adjustment to the shape of the object to be welded, and to attain this object I have produced a clamping-block having an arched or sloped top and connect it to sliding block *b* of the vise by a pivotal connection.

The clamping-jaw is shown in Fig. 3 and the connecting device in Fig. 4 in perspective view. The latter consists of a prismatic base *f*, fitted into the dovetail groove *h* in the jaw *a*, and of a head *e*, fitted into circular recess *g*, provided in block *b* of the vise.

The prismatic base *f* of the connecting device is of smaller size than the groove to permit the insertion of insulating material *v* on all contact-surfaces.

The block or cross-head *b* of the vise is provided with a circular groove comprising about three-fifths of the circle, into which the head *e* is inserted. For greater security and stability screw *i* is provided.

The operation of my improved clamping-jaw when used to clamp an irregularly-shaped object is shown in dotted lines in Fig. 1. It will be seen that the jaw *a* when pressed upon such object by the screw *r* of the vise will deviate from its normal suspended position until it obtains as broad contact with the clamped object as its surface presents, whereby the surface of contact will be greatly increased.

The connection between the jaw *a* and the block *b* of the vise can be made in any other manner when only the rocking facility of the clamping-block is preserved.

Instead of sloping jaw *a* block *b* may be sloped and the pivotal connection reversed, or both the jaw *a* and block *b* may be shaped to permit rocking of the jaw in both ways. The top of jaw *a* may also be sloped toward all four of its sides and connected to the block *b* by a cross-pivot.

I claim as my invention and desire to secure by Letters Patent—

In an electric welding-machine the combination with the vise comprising a frame, a screw and a sliding block, provided with a circular recess in its center, set in the frame and connected to the screw, of a clamping-jaw, having its top beveled from center to its

sides, a dovetail groove in its apex, a pivoting device having a dovetail-shaped base, and a circular head, and of a screw passing through the head of the pivoting device and  
5 through the sliding block, and connecting the clamping-jaw to the sliding block of the vise.

In witness that I claim the improvements

described in the foregoing specification I have signed my name in the presence of two subscribing witnesses.

CHRISTEN NIELSON.

Witnesses:

HENRY SCHREITER,  
ROBERT VAN IDERSTINE.