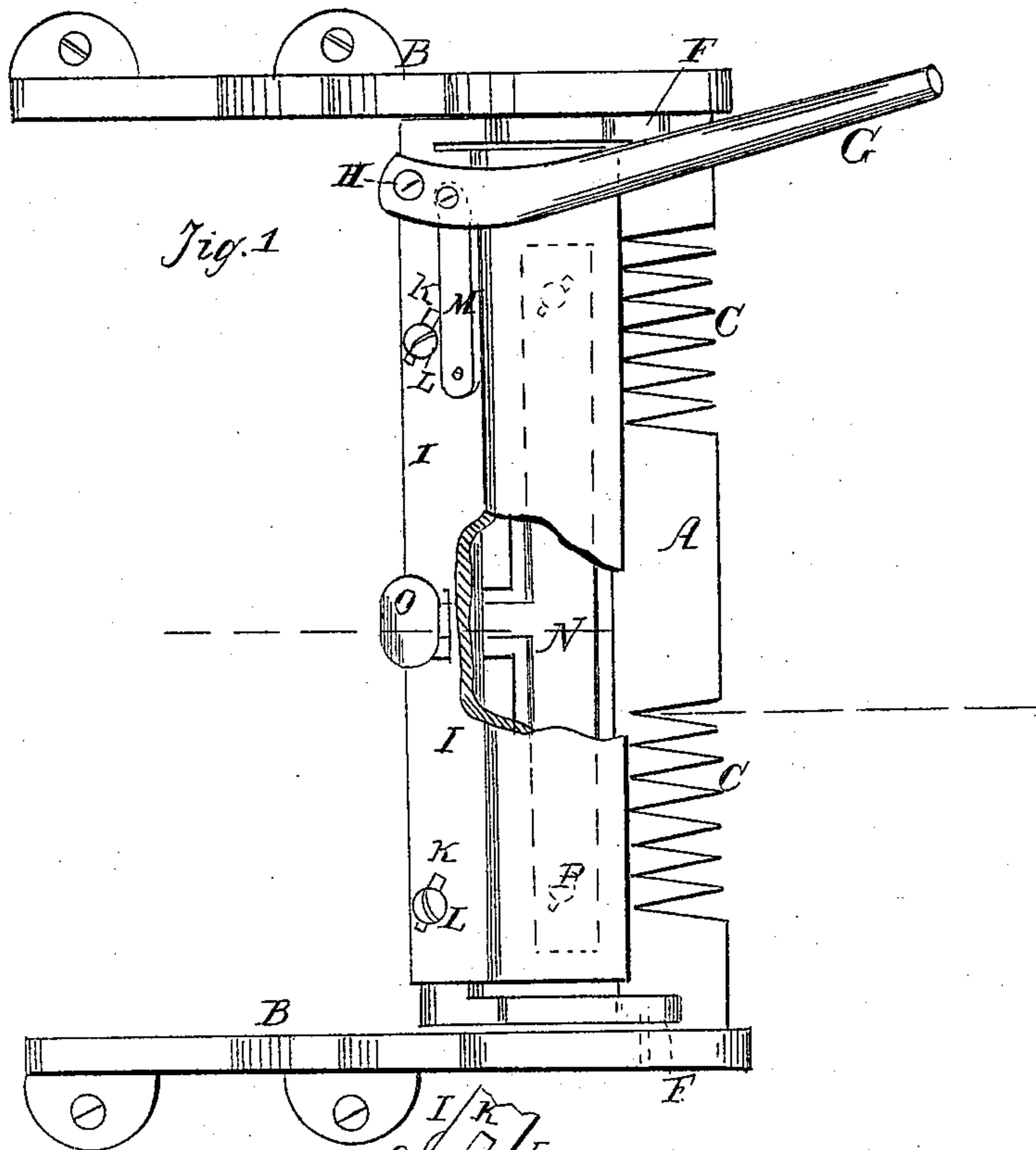


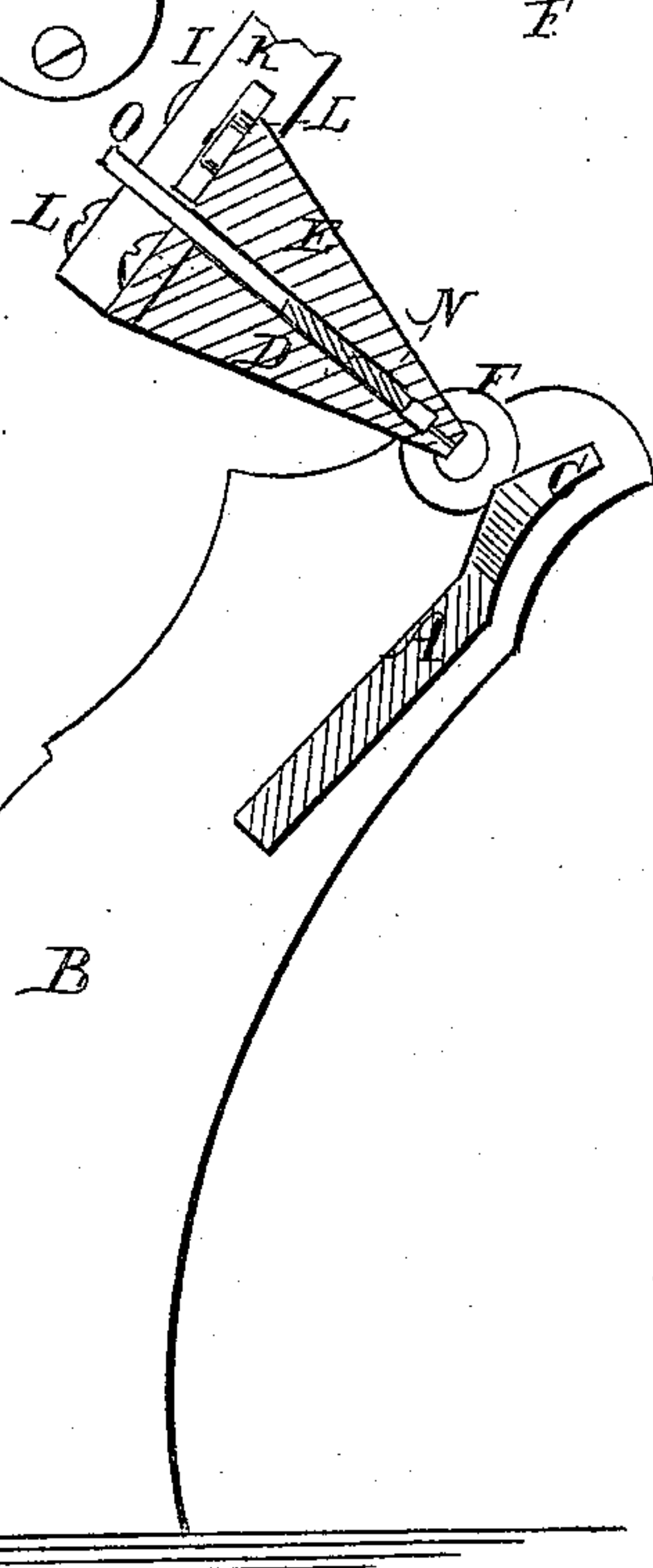
*I. Grim,*  
*Bending Metals.*

*No. 93,194.*

*Patented Aug 3, 1869.*



*Fig. 1*



*Fig. 2*

*Witnesses*  
*John F. Brooks*  
*Alex. L. Roberts*

*Inventor.*  
*I. Grim.*

*per* *Wm. H. [Signature]*  
*Attorneys*

# United States Patent Office.

ISAAC GRIM, OF POLO, ILLINOIS, ASSIGNOR TO HIMSELF AND  
WILLIAM GREGORY, OF SAME PLACE.

*Letters Patent No. 93,194, dated August 3, 1869.*

## IMPROVEMENT IN TINNERS' BENDING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ISAAC GRIM, of Polo, in the county of Ogle, in the State of Illinois, have invented a new and improved Tinnerns' Bending-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to improvements in machines for bending the edges of square sheet-metal pans for wiring them, and the object is to provide a simple and cheap machine adapted for pans of various sizes.

Figure 1 represents a plan view of my improved machine, with a part broken out, showing the jaws partly turned, as when the bending-operation is being performed.

Figure 2 represents a transverse sectional elevation of the same.

Similar letters of reference indicate corresponding parts.

A represents a forming-block or bar, suitably supported between the end supports B. It is provided with deep notches, C, near the ends, for the admission of the two sides of the pan at right angles from that side which is to be bent, to admit the latter to be presented to the gripping and bending-jaws D E, the former of which is supported on journals, F at each end, and provided with a handle, G, pivoted to it at H, and arranged to afford a means of turning the jaws over the former for bending the sheet. The several notches are intended for pans of various sizes.

The jaw E lies upon the face of the jaw D, and is provided with a right-angled flange, I, lapping behind the broad rear edge of the said jaw D.

This flange is provided with slots K, arranged obliquely to the longitudinal direction of the jaws, and these slots take on to pins or studs L projecting from the jaw D. The said flange I is connected by a link, M, to the handle-lever, whereby the jaw E may be moved longitudinally on the other to open and close, the inclined slots K and studs L causing it to rise or fall, according to the direction in which it is moved.

N represents a gauge, arranged between the jaws, having a handle, O, projecting through a slot in the flange I, for moving it. It is caused to move to or from the edges of the jaws by inclined grooves and pins, shown in dotted lines at P, when moved longitudinally by the handle O.

The side of the pan to be bent is engaged with the jaws to the depth required, the inner face of the said side resting upon the upper face of the former, and the jaws, after clamping the edge of the said side, are turned over the former, to effect the bending in a manner common to such machines, and, in this case, by the same lever which effects the clamping of the jaws together.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

The lever G, link M, flange I, slots K, studs L, jaws D and E, gauge N, handle O, former A, having teeth C at each end, and the end supports B, all constructed, arranged, and operating as herein shown and described, for the purpose specified.

ISAAC GRIM.

Witnesses:

D. H. WATERBURY,  
RICHARD SPENCER.