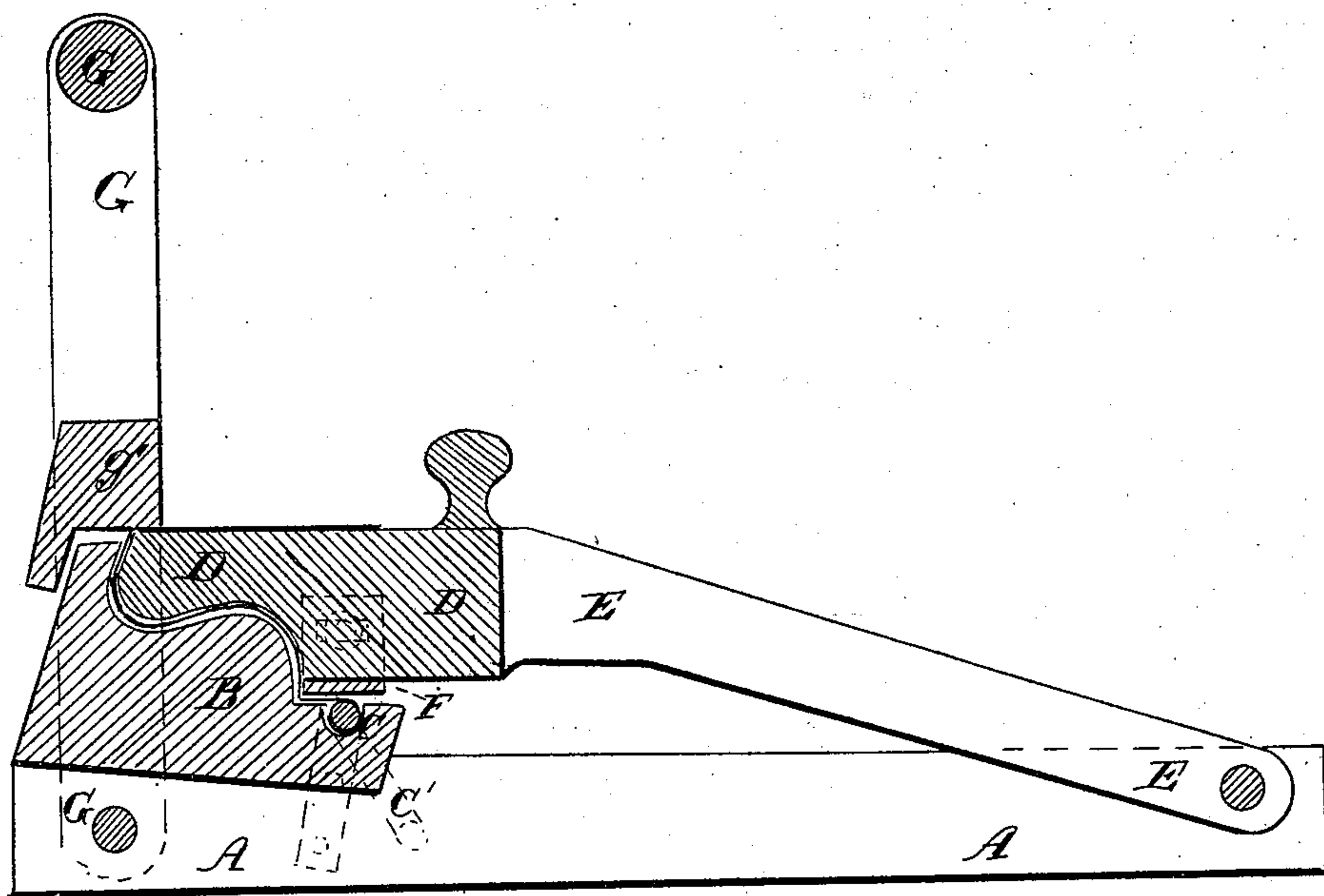


*Granger & Phillips,  
Bending Sheet Metal.*

*No. 92720.*

*Patented July 20. 1869.*



**Witnesses:**

*John Brooks  
Geo. W. Habel*

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# United States Patent Office.

LEWIS GRANGER AND LUKE PHILLIPS, OF MEMPHIS, MICHIGAN.

*Letters Patent No. 92,720, dated July 20, 1869.*

## IMPROVEMENT IN EAVES-TROUGH FORMER.

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

*To all whom it may concern :*

Be it known that we, LEWIS GRANGER and LUKE PHILLIPS, of Memphis, in the county of Macomb, and State of Michigan, have invented a new and improved Eaves-Trough Former; and we 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, in which the figure is a vertical cross-section of our improved machine.

Our invention has for its object to furnish an improved machine, by means of which eaves-troughs may be easily, quickly, conveniently, and accurately formed; and

It consists in the construction and combination of the various parts of the machine, as hereinafter more fully described.

A represents the foundation-frame or bench to which the machine is attached.

B is the lower or stationary die, which is attached to the frame, or bench A.

C is the beader, which is a small metal shaft placed in a groove in the face of the die B, and working in ears attached to the ends of the die B. The shaft C is grooved, or plowed longitudinally, to receive the edge of the plate from which the trough is to be formed.

c' is a crank formed upon the end of the shaft C, for convenience in operating said shaft.

D is the upper or movable die, which is securely fastened to the ends of the arms or frame E, the other

ends of which are pivoted to the frame or bench A, as shown in the figure.

The face of the die D is formed to fit into the die B, so that the sheet of metal may be pressed into proper form between the said dies.

To the part of the die D that forms the angle below the bead, is attached a metallic plate, or strap, F, the ends of which are turned up, and are slotted transversely, to receive the screws by which they are secured to the ends of the die D, so that the position of the said plate may be easily adjusted, as required.

G is a frame, the lower ends of the side-bars of which are pivoted to the forward parts of the frame A or die B, in such a position that when turned up into the position shown in the figure, the cross-bar g' of said frame will force the metal plate down upon the top of the die D, to form the rear side of the trough, at the same time that it forces the said die D down more closely upon the die B, forming the trough more accurately.

Having thus described our invention,

We claim as new, and desire to secure by Letters Patent—

The adjustable plate, or bar F, in combination with the dies B and D and beader C, substantially as herein shown and described, and for the purpose set forth.

LEWIS GRANGER.  
LUKE PHILLIPS.

Witnesses:

JOSIAH KINGSBURY,  
J. H. DUTTON.