

(No Model.)

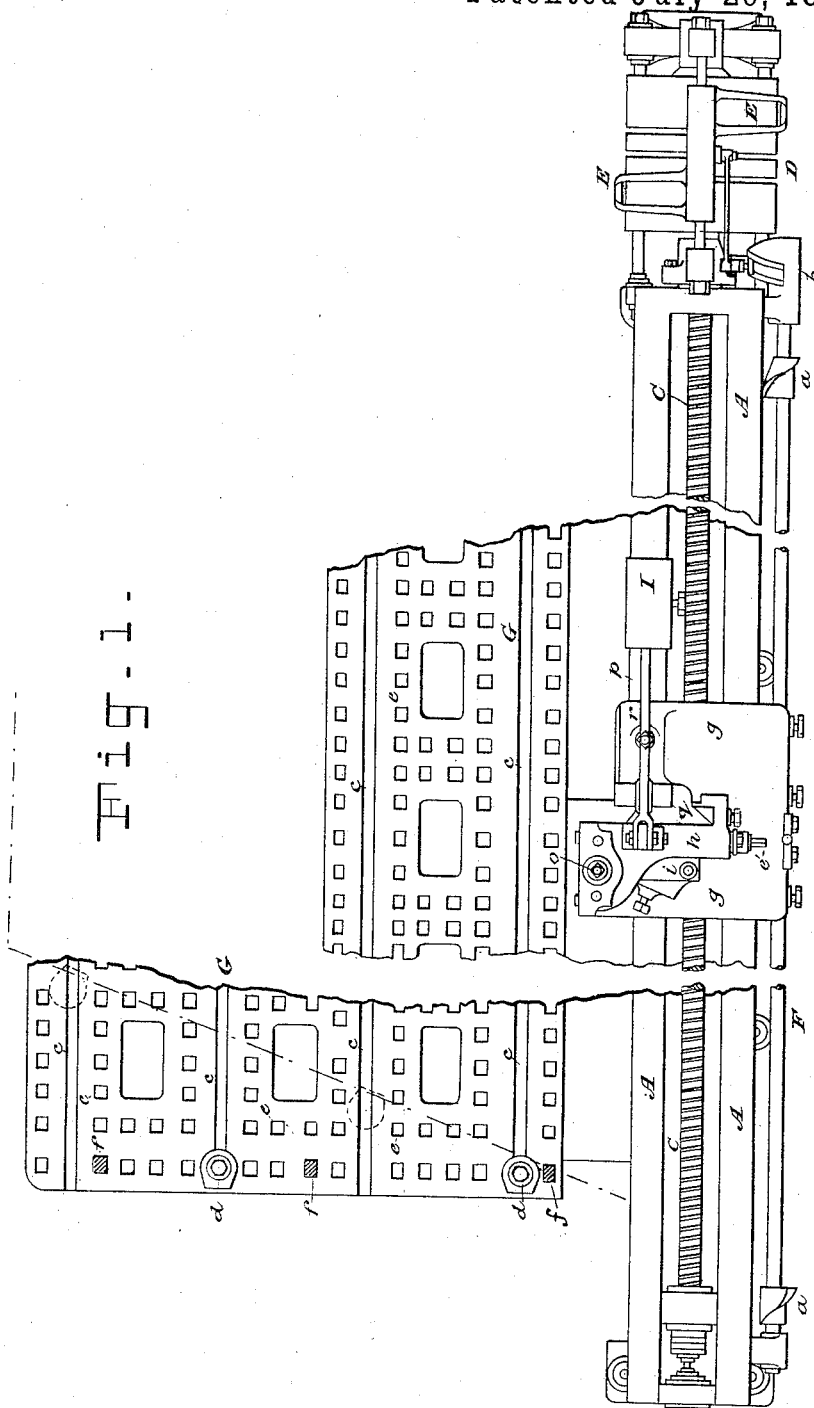
8 Sheets—Sheet 1.

E. BOUHEY.

MACHINE FOR CHAMFERING METAL PLATES.

No. 302,647.

Patented July 29, 1884.



WITNESSES:

*E. B. Rolton*  
*Geo. Bainion*

INVENTOR:

*Edienne Bouhey*  
By his Attorneys,  
*Burke, Fraser & Connors*

(No Model.)

8 Sheets—Sheet 2.

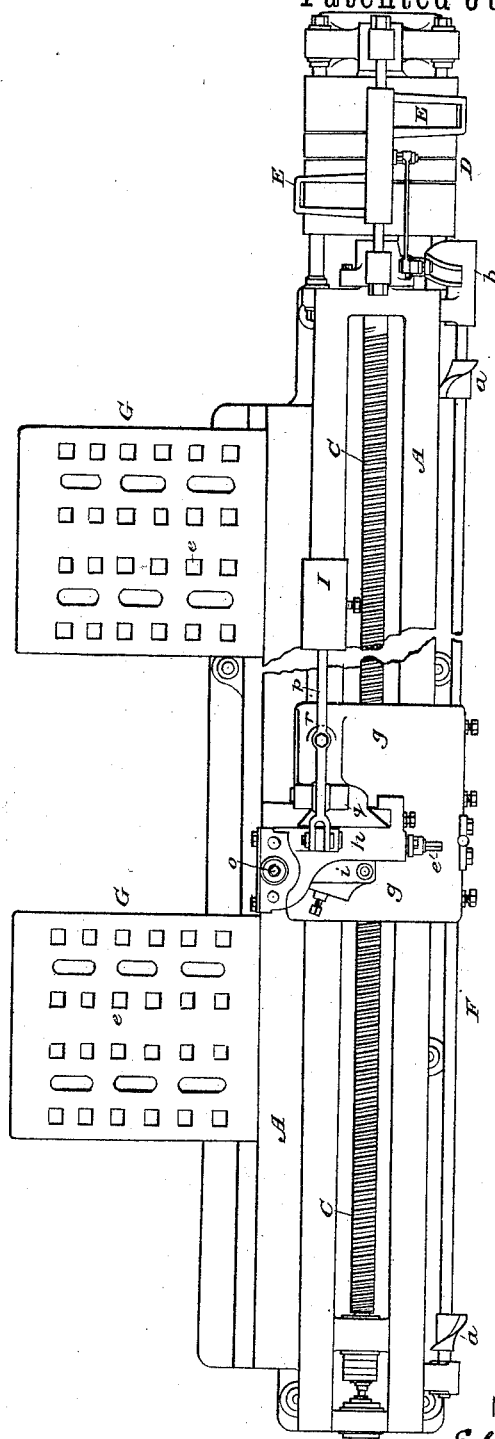
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Fig. 2.



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(No Model.)

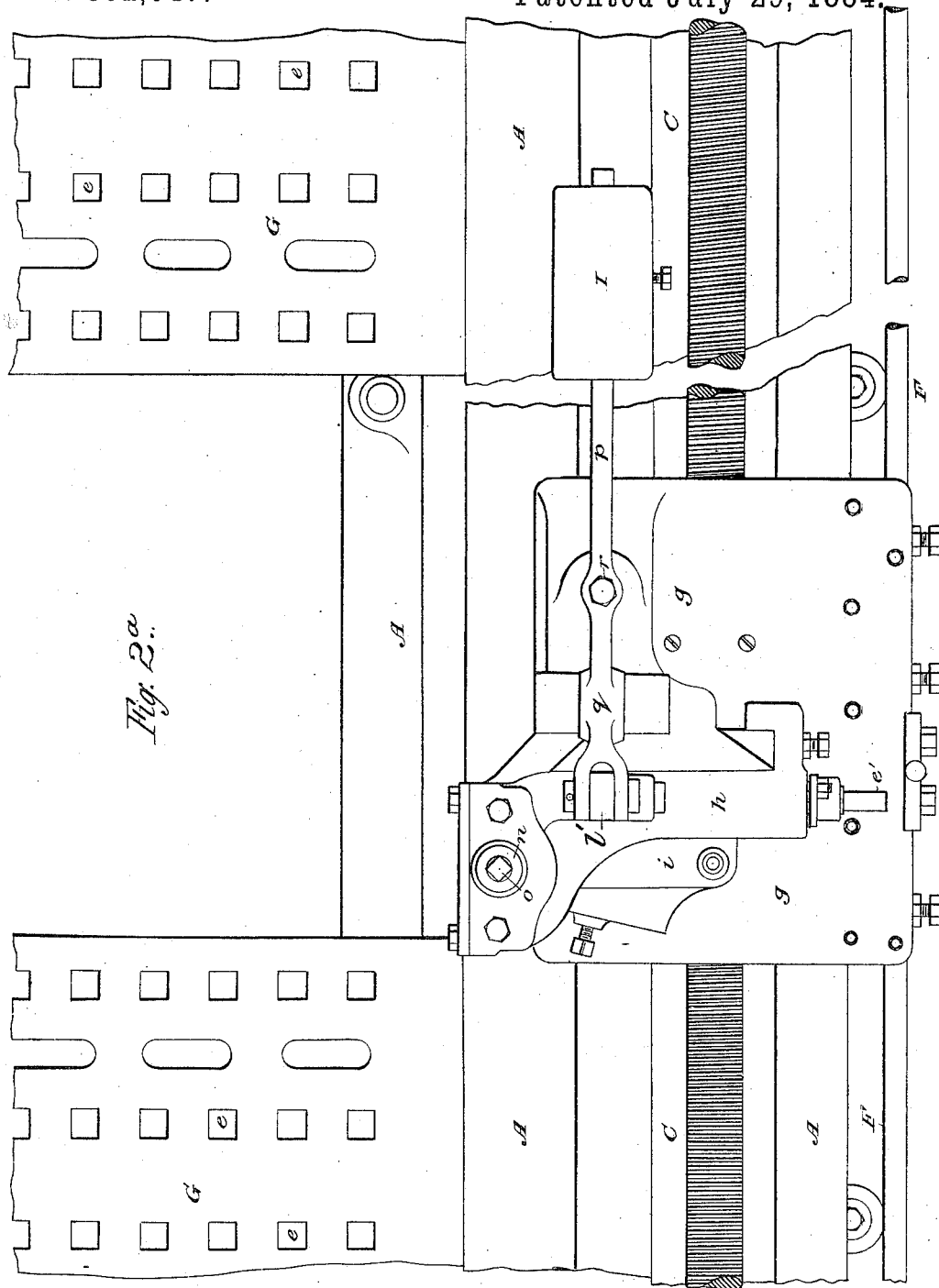
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E. BOUHEY.

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Patented July 29, 1884.



WITNESSES:

*E. B. Bolton*  
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8 Sheets—Sheet 4.

E. BOUHEY.

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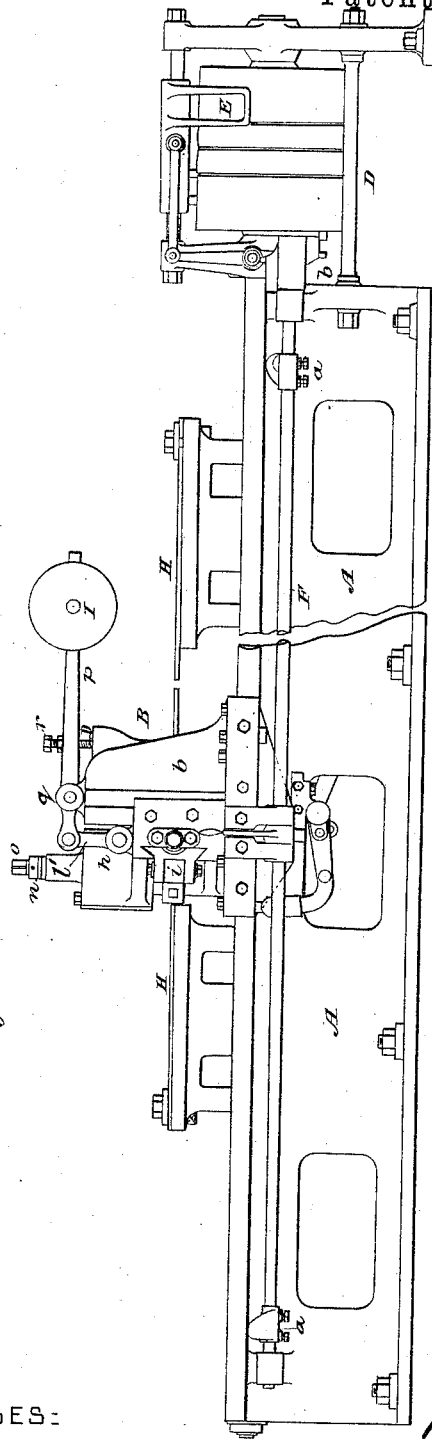


Fig. 3.

WITNESSES:

E. B. Bolton  
Geo. Bainton

INVENTOR:

Etienne Douhey  
By his Atty -

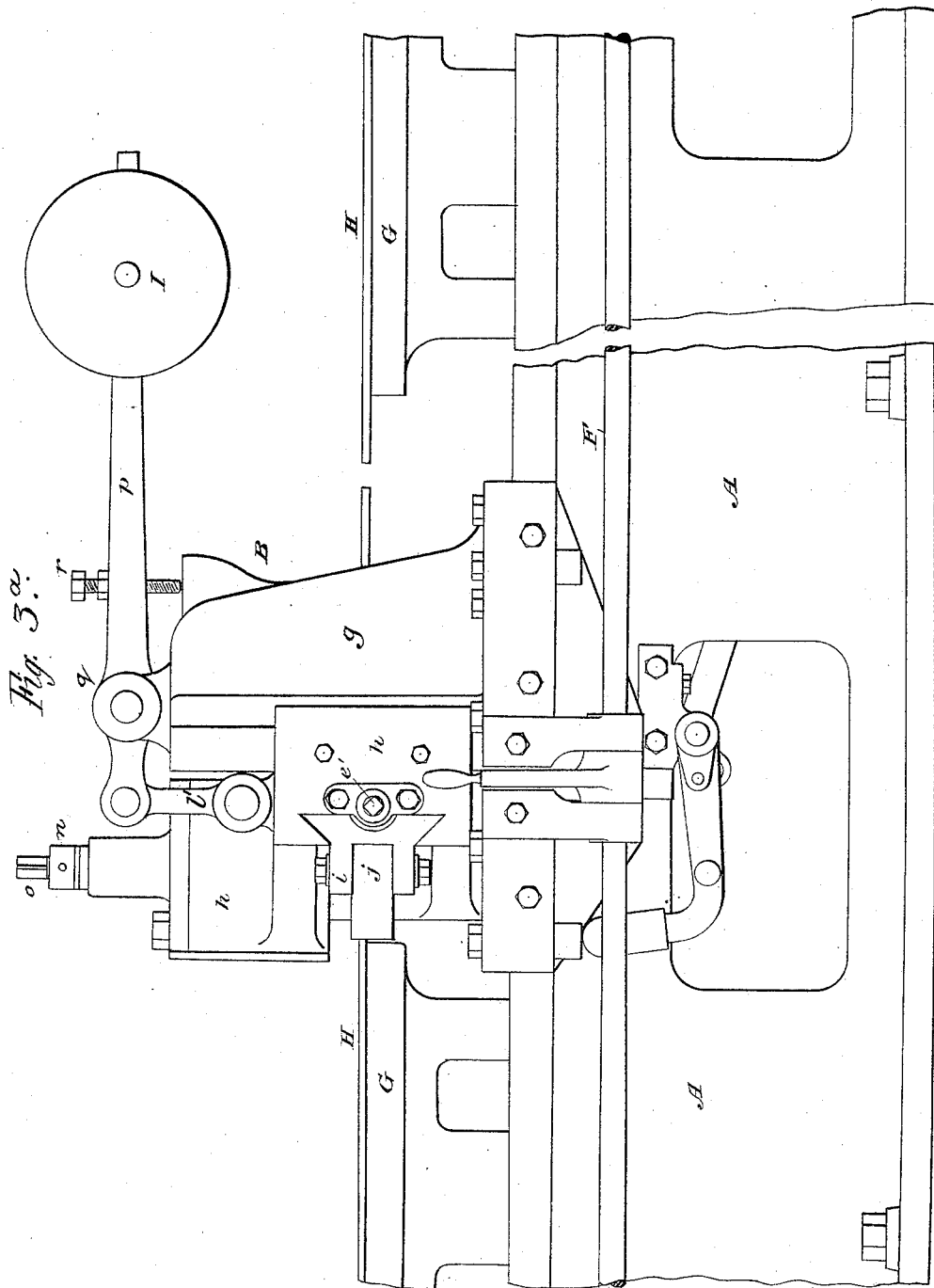
Burke, Fraser & Co. Ltd.

E. BOUHEY.

MACHINE FOR CHAMFERING METAL PLATES.

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Patented July 29, 1884.



WITNESSES:

*E. B. Bolton*  
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INVENTOR:

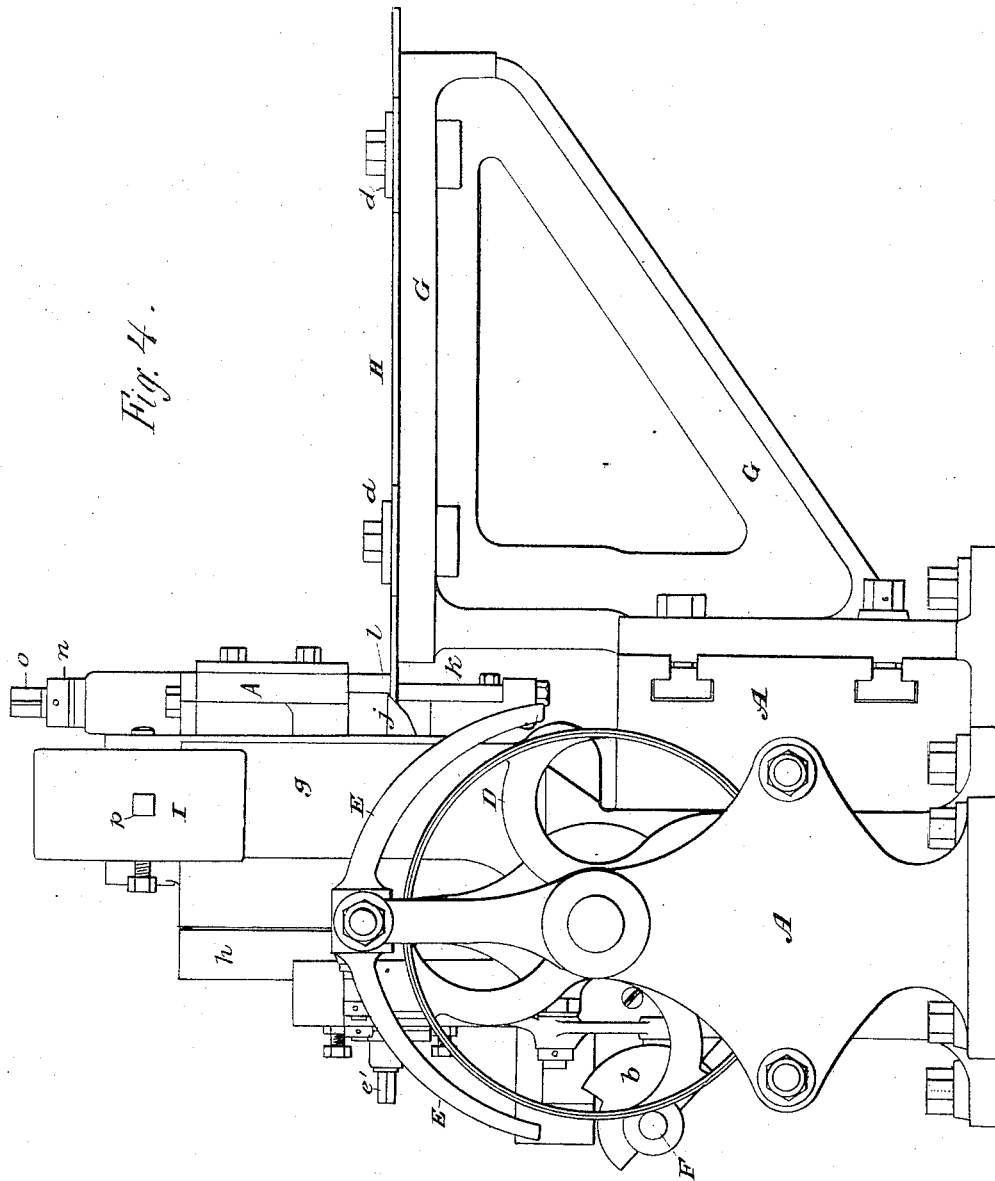
*Etienne Bouhey*  
*By his Attys -*  
*Bank, Fraser & Co.*

E. BOUHEY.

MACHINE FOR CHAMFERING METAL PLATES.

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Patented July 29, 1884.



INVENTOR:

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WITNESSES:

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*Geo. Wainson*

(No Model.)

8 Sheets—Sheet 7.

E. BOUHEY.

MACHINE FOR CHAMFERING METAL PLATES.

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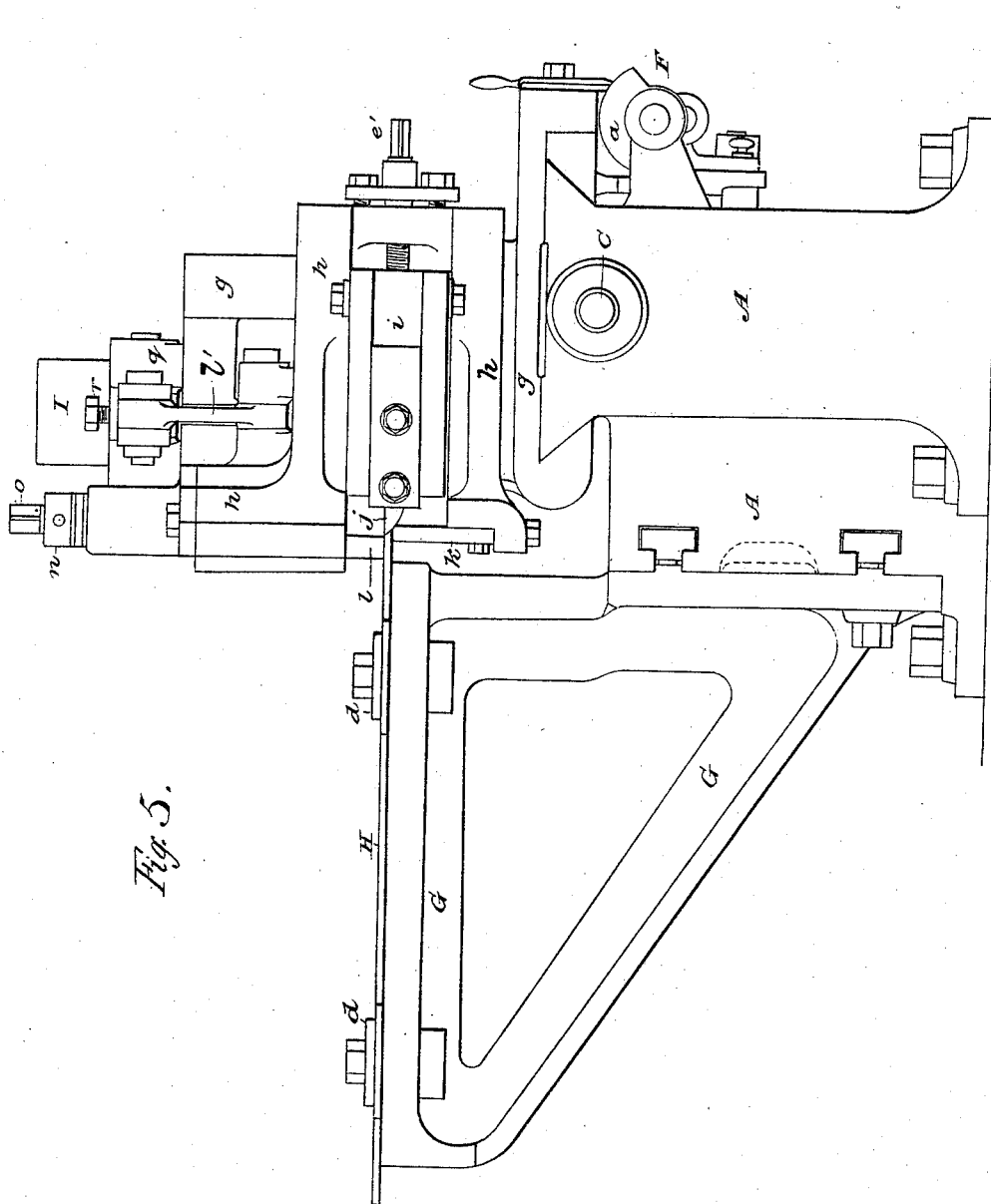


Fig. 5.

WITNESSES:

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Geo Baindon

INVENTOR:

Etienne Bonheur

By his Attorney: 

1 Burke, Francis Connors

(No Model.)

8 Sheets—Sheet 8.

E. BOUHEY.

# MACHINE FOR CHAMFERING METAL PLATES.

No. 302,647.

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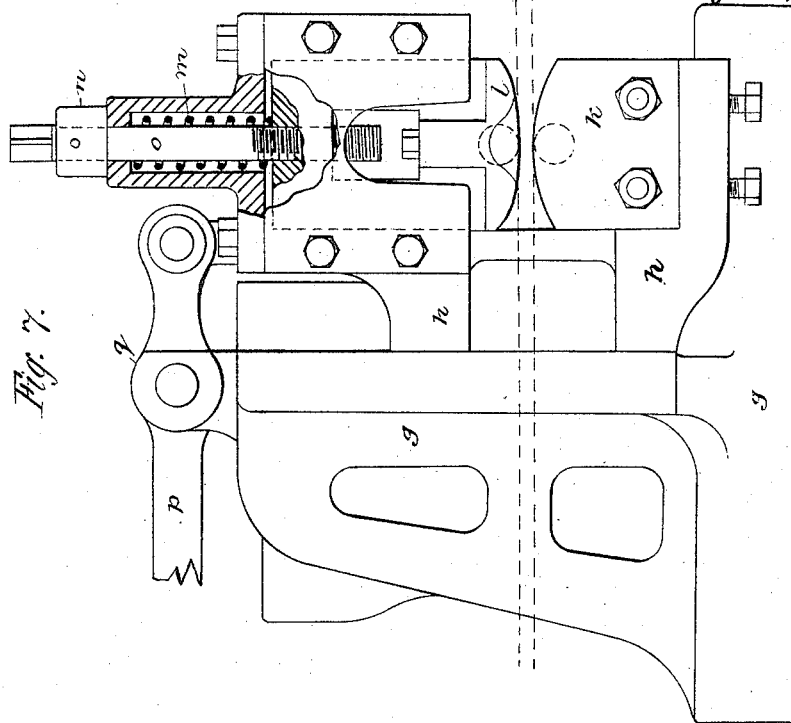


Fig. 2.

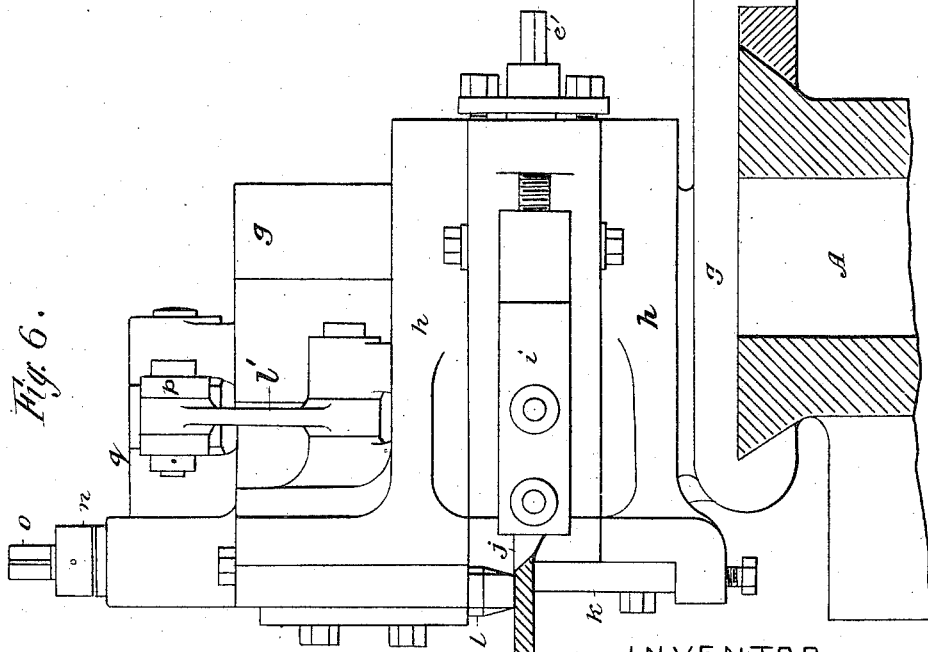


Fig. 6.

WITNESSES:

E. B. Bolton

Geo. Bainton.

INVENTOR:

Etienne Bouhey  
By his Atty.  
Bonke, Fraser & Connors

# UNITED STATES PATENT OFFICE.

ETIENNE BOUHEY, OF PARIS, FRANCE.

## MACHINE FOR CHAMFERING METAL PLATES.

SPECIFICATION forming part of Letters Patent No. 302,647, dated July 29, 1884.

Application filed December 8, 1883. (No model.) Patented in France June 2, 1883, No. 155,825; in England June 26, 1883, No. 3,159, and in Germany June 29, 1883, No. 4,191.

*To all whom it may concern:*

Be it known that I, ETIENNE BOUHEY, a citizen of the French Republic, and a resident of Paris, France, have invented certain Improvements in Machines for Chamfering Metal Plates, of which the following is a specification.

The object of my invention is to provide a machine that will chamfer or bevel the edges of sheets or plates with accuracy without the necessity of primarily flattening said sheets or plates, and without the necessity of clamping the same down on a bed or table.

In the drawings which serve to illustrate my invention, Figure 1 is a plan of the machine, showing it provided with a fixed table or bed to support the sheet or plate. The remaining figures show the machine provided with two shifting or adjustable beds. Fig. 2 is a plan of the machine; and Fig. 2<sup>a</sup> is a plan of the central portion only, on a larger scale. Fig. 3 is a front elevation of the machine; and Fig. 3<sup>a</sup> is a front elevation of the central portion only, on a larger scale. Fig. 4 is an elevation of the right-hand end of the machine, and Fig. 5 is an elevation of the left-hand end of same. Fig. 6 is a side view of the tool-carrier on a larger scale, and Fig. 7 is a front view of same.

In the machines ordinarily used for chamfering plates or sheets of metal, the latter are previously straightened and then placed on a smooth level table and pressed down flat by means of a screw. The plates thus held are never perfectly flat and level, but present an undulating surface to the tool, which, by reason of its perfectly-rectilinear movement, produces an irregular chamfer. Indeed, with such machines it is very difficult to chamfer thin sheets at all—at least with any near approach to regularity. My present invention is intended to obviate these difficulties and inconveniences; and in my machine the tool is made to follow all the undulations in the plate, which I do not previously straighten, and which I do not flatten by pressure on a table or bed. I provide a special bed for the sheet or plate to rest on, and arrange it to abut against pins or cleats fixed to said bed in the proper position to square the sheet properly. The plate simply abuts against these cleats, in

order to resist the force exerted by the cutting-tool; but it may take under claws or clamps at its ends, to prevent it from lifting.

Referring to the drawings, A is a substantial bed-plate, upon which is mounted to slide the tool-carrier, (represented as a whole by the letter B.) I employ, in the main, the usual means for giving to the tool-carrier its proper reciprocating motion on the bed-plate, and this mechanism, being well known, will only require a brief reference here.

C is the screw that feeds or moves the carrier B to and fro, and D are the pulleys by which the screw is rotated.

E E are the belt-shifters, and F is the tappet-rod, bearing tappets *a a* and a cam, *b*, for actuating the belt-shifters. The pulleys are driven at different speeds, in order that the return movement of the tool may be more rapid than its advance.

Referring to Fig. 1, G is the table which bears the plate to be chamfered, and this is provided with undercut slots or grooves *c* to receive claws or clamps *d*, to take over the edge of the plate H to be chamfered, and also numerous mortises, *e*, to receive pins *f* for the plate to abut against. The dotted lines in Fig. 1 illustrate the mode of adjusting these pins and clamps to a plate having a sloped end. The table G may be fixed to the bed-plate A, as in Fig. 1; or it may be mounted to be adjusted along on the bed-plate, as indicated in Figs. 2, 4, and 5. In these latter figures two of these beds are shown, capable of being adjusted and secured to the bed-plate at any desired point.

I will now describe the tool-carrier with especial reference to Figs. 3<sup>a</sup>, 5, 6, and 7. The frame *g* of the carrier slides along on the bed-plate A, and the holder *h* is constructed to slide vertically on *g*. The tool-stock *i*, bearing the tool *j*, slides longitudinally on the vertically-sliding holder *h*. The holder *h* (as I designate the part, as a whole, which plays vertically) bears two jaws, *k* and *l*, which clamp or embrace the edge of the sheet H in the same vertical plane as the tool *j*. The lower jaw, *k*, is normally fixed with respect to the holder *h*; but it is capable of being set up or down. I will, however, consider it as fixed to *h*. The upper jaw, *l*, (see Fig. 7,) plays in

a bearing or socket in *h*, and is depressed by a spring, *m*. The extent to which it is to be depressed is limited by a collar, *n*, on a screw, *o*. The entire holder *h*, with all its attachments, is counterbalanced by a weight, *I*, on the end of a lever, *p*, coupled to *h* at its one end and fulcrumed on *g* at *q*.

So far as described, the operation is as follows: The plate *H*, with an undulating surface common to such plates, is placed on the table *G* and abutted against the pins *f* or clamps *d*, as the case may be, these latter having been properly set, so as to bring the edge of the plate in line with the travel of the tool. The edge of the plate is entered between the jaws *k* and *l*, and the spring-pressure on jaw *l* serves to keep the plate always in contact with the lower jaw, *k*. Motion being now imparted to the tool-carrier, the counterpoised holder *h* will rise and fall with the undulations in the plate or sheet, owing to the guide formed by the contact of the jaws *k* and *l* with its upper and lower faces, and the tool *j*, rising and falling with the holder *h*, will always present itself to the edge of the plate properly, as will be understood. If the plate be quite thin and easily flexed, the spring-pressure on the upper jaw, *l*, will be sufficient to smooth out the bends in the sheet; but this will not be the case with stiff sheets or plates.

In order that the holder *h* may not lift too high, means are provided for limiting its movement, and in order that this limit may be varied I prefer to employ a set-screw, *r*, in the lever *p* of the counterpoise, arranged to impinge on some part of *g*. This is clearly shown in Fig. 3<sup>a</sup>. The jaws *k* and *l* are shown as rounded where they impinge upon the plate, and this will serve; but I may mount ordinary anti-friction rollers or balls in said jaws, as indicated by dotted lines in Fig. 7.

I employ a counterpoise for the tool-holder *h*, in order that the latter may play freely up and down; but I do not limit myself to this. If the holder be light and the plate thick, this might be dispensed with; or, as the movement is not excessive, a spring might be placed under the holder *h* in lieu of a counterpoise. The plate might also be moved, instead of the frame or carriage *g*, and the latter be stationary, and the whole machine might be turned on its side, so that the sheet would stand on its edge and the holder *h* would move or play horizontally. I do not wish to limit myself to the precise construction and arrangement shown, as they are susceptible of considerable modification without departing from my invention—as, for example, the upper jaw, *l*, might be unprovided with any spring, and be made adjustable to or from the jaw *k*—by a screw, for example—so as to adapt the machine to plates of different thicknesses; or a weight might be used in lieu of the spring *m*. I prefer the construction shown, however, as it is best that one of the jaws should yield elastically. Where

this is the upper jaw, the counterpoise I should slightly overbalance the holder *h*.

I may say that my machine is especially adapted for chamfering or beveling the edges of boiler and other plates, in order that they may be soldered, brazed, or welded. The tool may have any desired bevel or shape.

Having thus described my invention, I claim—

1. In a machine for chamfering the edges of sheets or plates, the combination of a bed-plate for the tool-holder, a support for the sheet or plate, a tool-holder carrier mounted in the bed-plate and adapted to be moved to and fro thereon, a tool-holder mounted on said carrier, and adapted to move freely up and down, so that it may follow the undulations in the sheet or plate, a chamfering-tool borne by said holder, and two jaws borne by said carrier, adapted to embrace the edge of the sheet, all constructed and arranged to operate substantially as set forth.

2. In a machine for chamfering the edges of sheets or plates, the combination of a tool-holder constructed to adjust itself automatically in a plane at right angles to the bed or table upon which the sheet or plate rests, a chamfering-tool borne by said holder, a fixed lower jaw borne by said holder adapted to take under the edge of the sheet or plate, and an upper jaw borne by said holder adapted to press on said sheet or plate with a yielding pressure, substantially as and for the purposes set forth.

3. The combination, in a machine for chamfering sheets or plates, of a frame or carriage, *g*, mounted to slide or travel on a bed-plate, the said bed-plate, and the means, substantially as described, for imparting motion to said carriage, a table or tables to support the plates to be chamfered, a holder, *h*, mounted on the carriage *g*, and arranged to play freely up and down thereon, the jaws *k* and *l*, mounted on the holder *h*, and the tool *j*, provided with the means, substantially as described, for adjusting it up to the plate, substantially as and for the purposes set forth.

4. The combination, in a machine for chamfering plates or sheets, of the carriage *g*, the holder *h*, arranged to slide or play vertically on the carriage, and provided with a counterpoise, the jaw *k*, secured to the holder *h*, the jaw *l*, mounted in the holder *h* and acted on by a spring, substantially as set forth, said spring *m*, the tool *j*, and its stock, and the means, substantially as shown, for adjusting said tool up to the work, all arranged substantially as set forth.

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

ETIENNE BOUHEY.

Witnesses:

CHARLES MARDELET,  
AMAND RITTER.