

(Model.)

A. & C. SCHERB.

Machine for Wiring and Flanging Sheet-Metal.
No. 227,846.

Patented May 18, 1880.

Fig: 1.

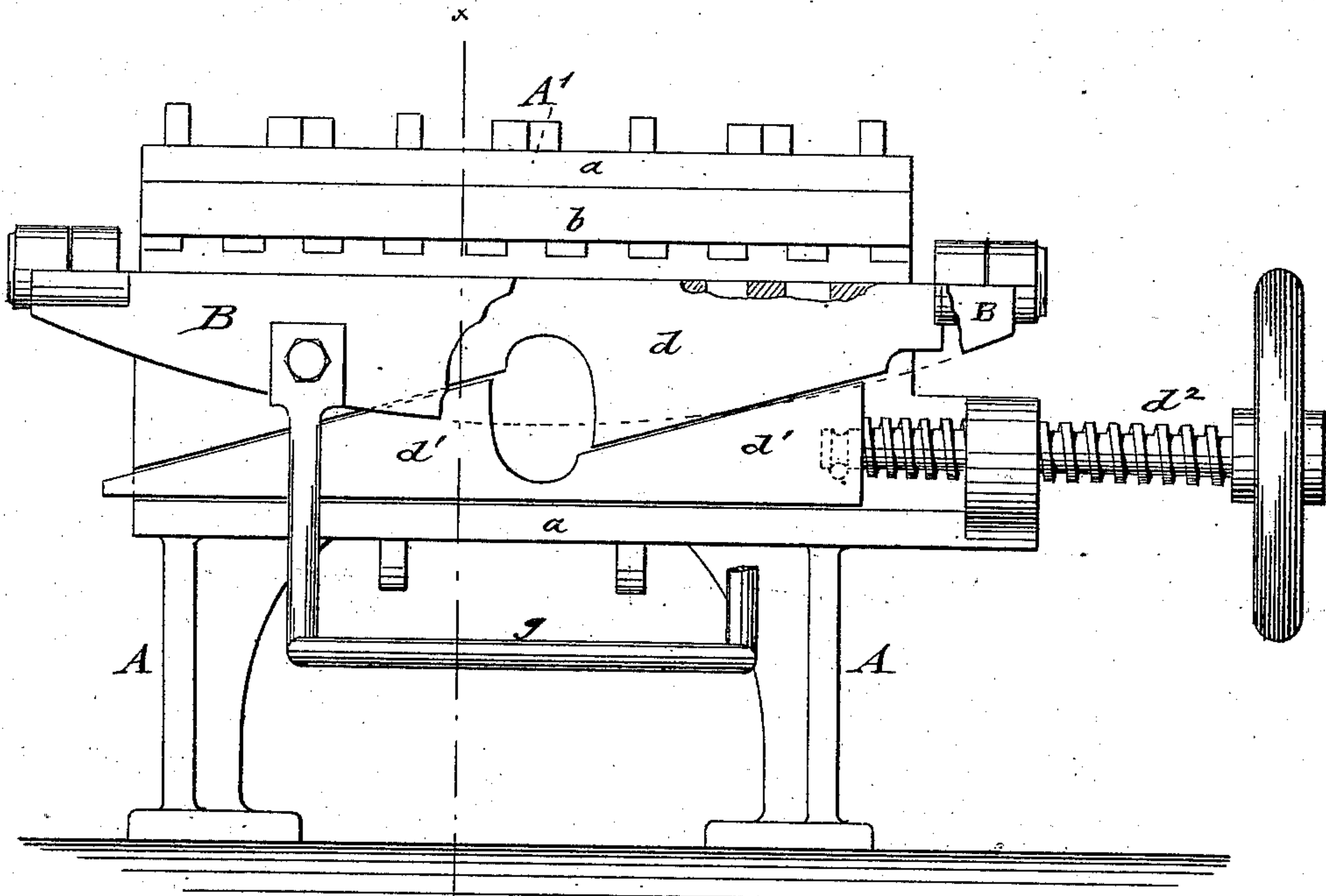


Fig: 3.



Fig: 4.

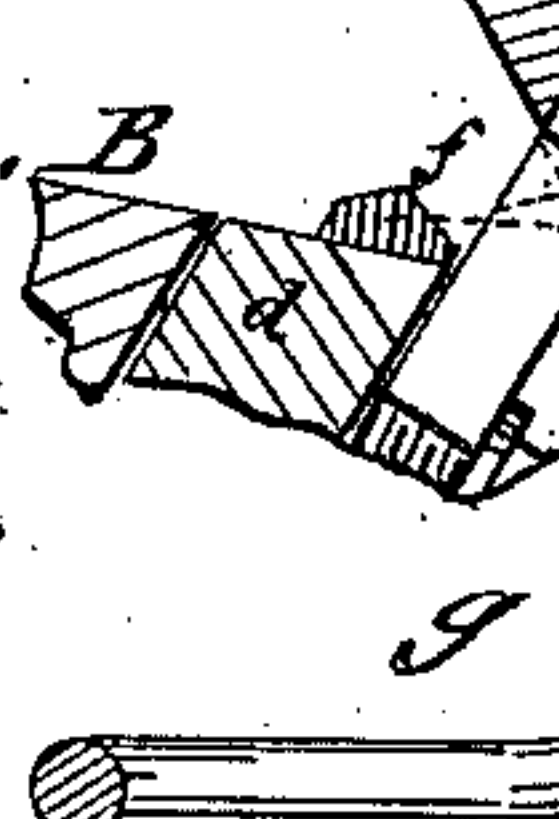


Fig: 9.

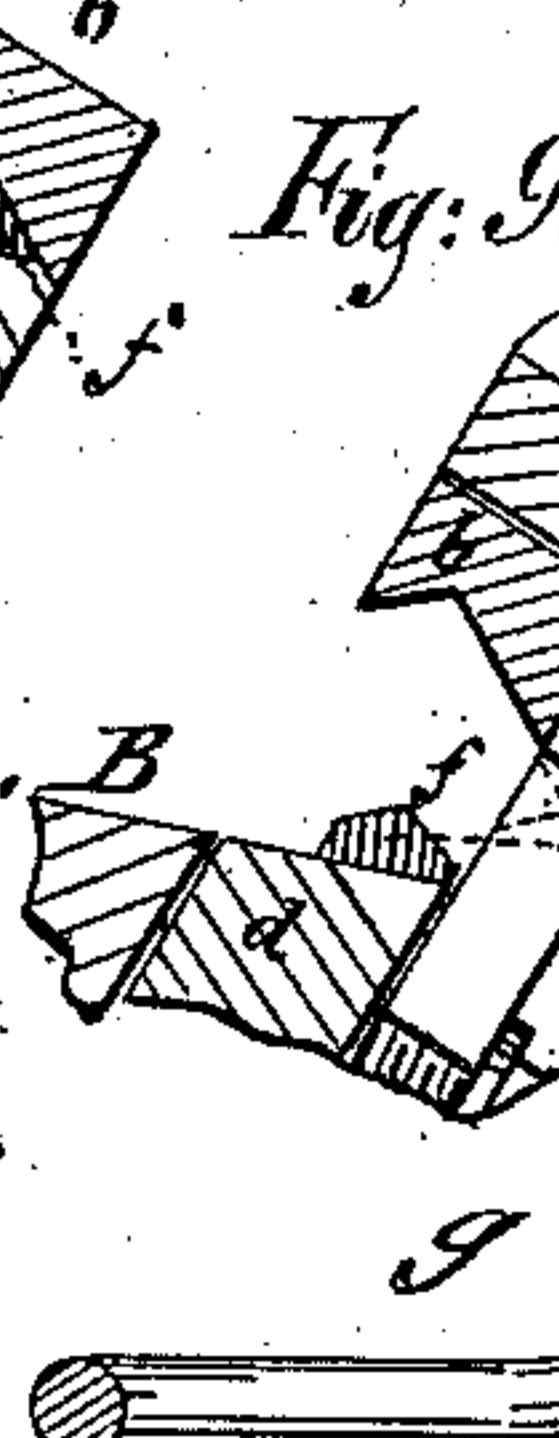


Fig: 2.

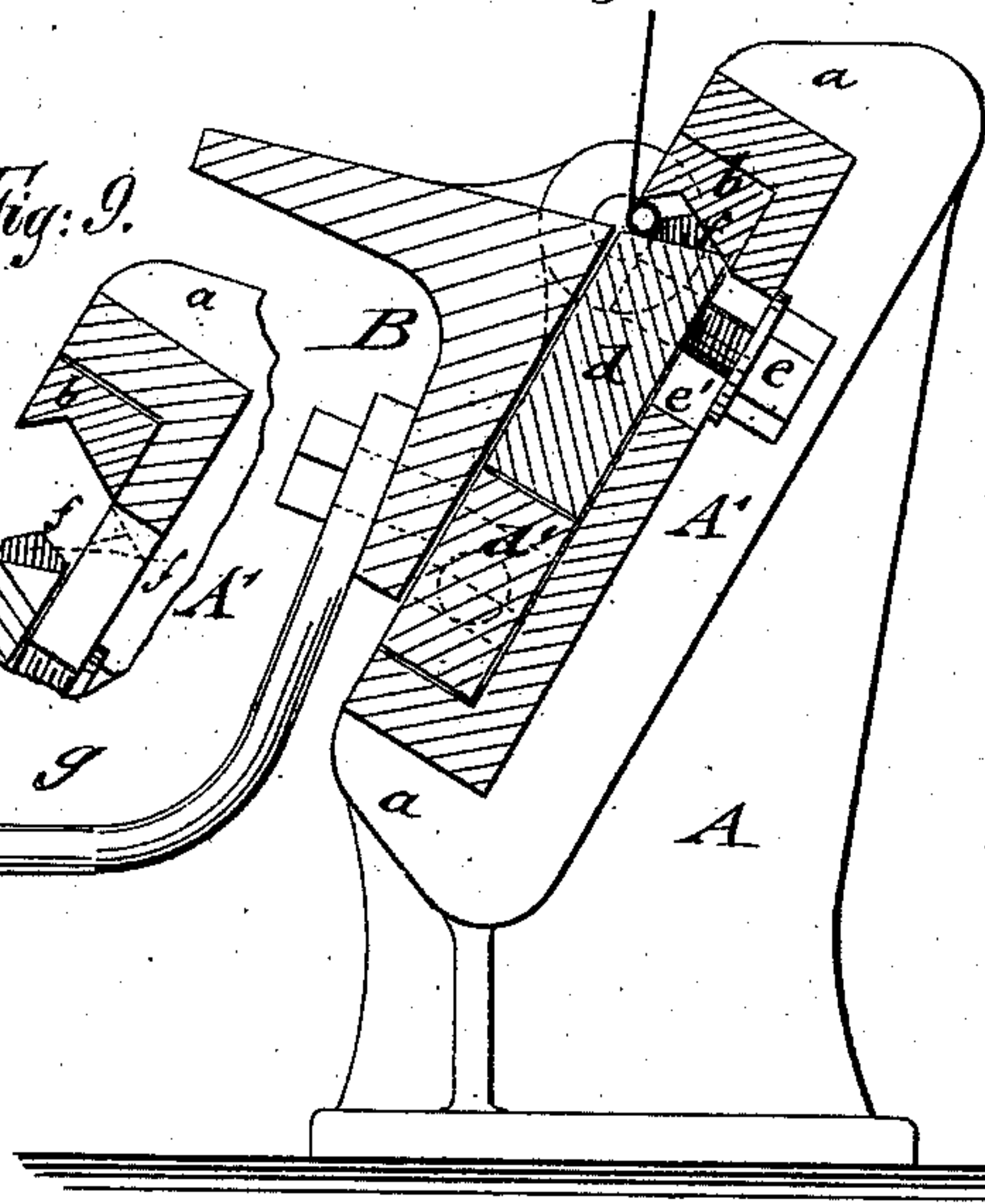


Fig: 6.

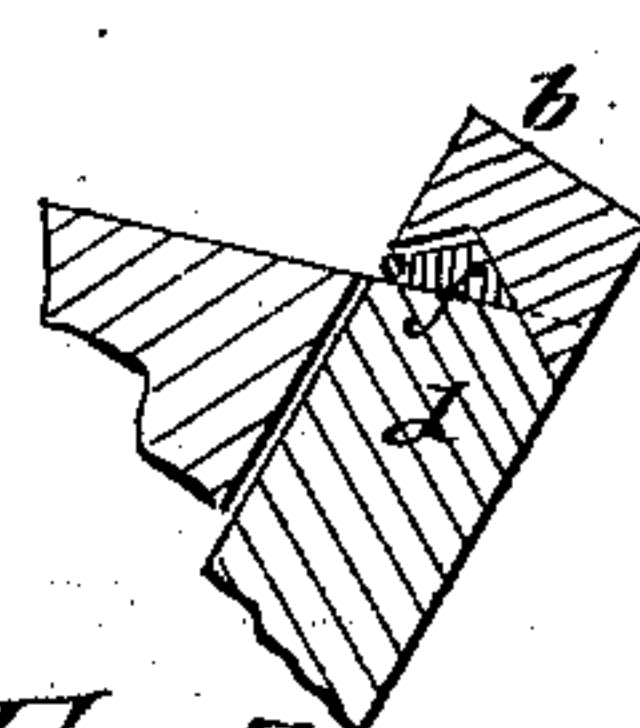


Fig: 7.

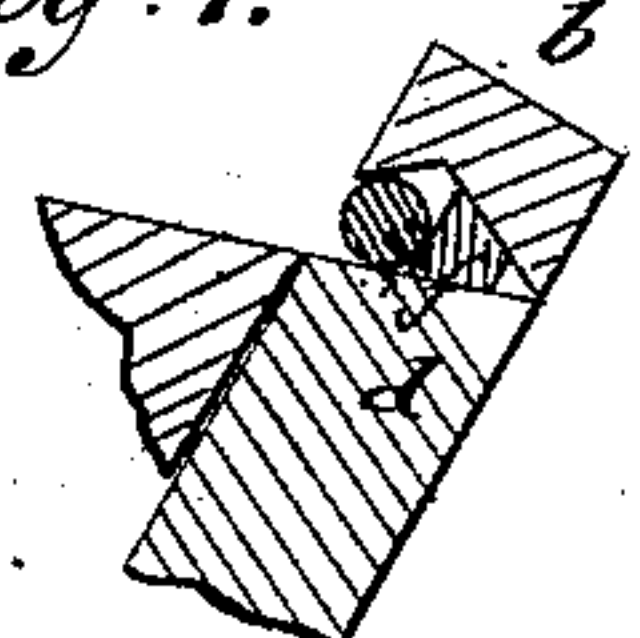
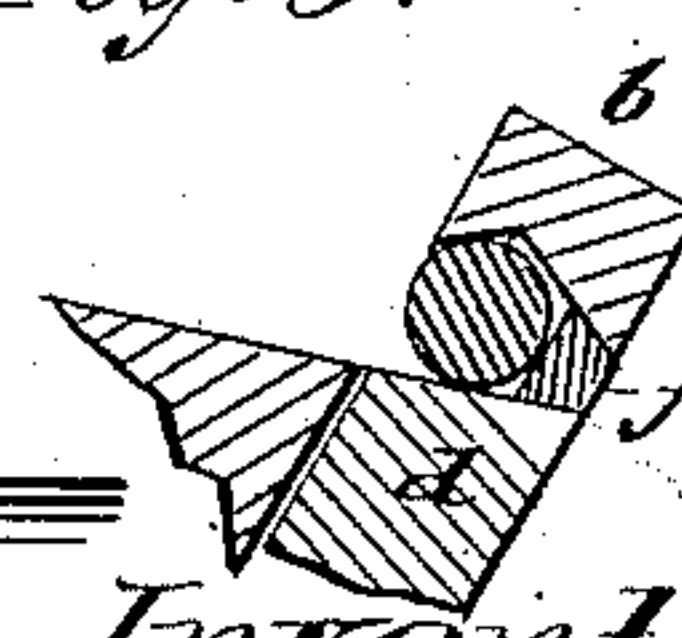


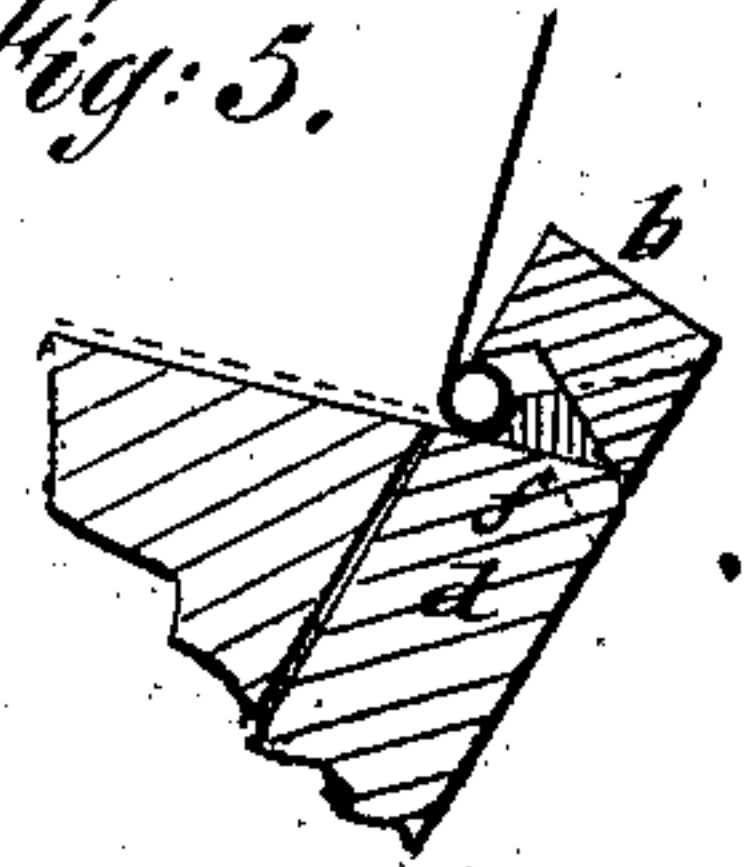
Fig: 8.



Witnesses:

Carl Karp
Otto Pisch

Fig: 5.



Inventors:

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Attorney.

UNITED STATES PATENT OFFICE.

AUGUST SCHERB AND CARL SCHERB, OF VIENNA, AUSTRIA.

MACHINE FOR WIRING AND FLANGING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 227,846, dated May 18, 1880.

Application filed March 18, 1880. (Model.) Patented in Germany March 5, 1879.

To all whom it may concern:

Be it known that we, AUGUST SCHERB and CARL SCHERB, of the city of Vienna, Austria, have invented certain new and useful Improvements in Machines for Swaging and Bending Sheet Metal, of which the following is a specification.

This invention relates to an improved machine for tin-plate workers and similar trades, by which rolls or beads of any diameter may be produced at the edges of thick or thin sheets, for inclosing a stiffening wire or rod therein, and by which also cylindrical and conical tubes may be formed from narrow strips with accuracy, rapidity, and facility.

The invention consists of a fixed obtuse-angled upper jaw in connection with a lower movable jaw and with an interposed acute-angled steel tongue.

A hinged or sliding angular front plate or table is adapted to be moved over the upper jaw, so as to bend the sheet held between the jaws.

In the accompanying drawings, Figure 1 represents a front elevation of our improved machine for swaging and bending sheet-metal plates, shown with parts broken off. Fig. 2 is a vertical transverse section of the same in line *x x*, Fig. 1. Figs. 3, 4, and 5 illustrate the method of forming a bead or roll around a wire. Figs. 6, 7, and 8 represent the jaws as used in connection with wires and tongues of different sizes and shapes; and Fig. 9 is a vertical transverse section of the jaw and tongue, showing the lower movable jaw in its lowermost position.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a cast-iron stand, which carries at the upper part a slightly-inclined frame, A', with angular projections or cheeks *a a*. To the upper projection, *a*, is permanently affixed a steel jaw, *b*, the outer face of which is parallel to the inclined frame A', while its under side has an obtuse-angled recess, as shown clearly in the different cross-sections. A second movable jaw, *d*, is arranged below the fixed jaw *b*, and guided by fixed screw-posts *e* along slots *e'* of the upper frame, A', of stand A.

The up-and-down motion of the movable

jaw *d* is obtained by the lateral motion of wedges *d'*, which are actuated by a screw-spindle and hand-wheel, *d''*. The wedges act upon the inclined lower parts of the jaw *d*, and are guided along the lower projection or cheek *a* of frame A'.

The upper and lower jaws are fitted together by dovetail joints, as shown in Fig. 1, so that the lower jaw can be moved up into the upper one until the front edges of the jaws form contact with each other. Between the jaws is placed an acute-angled steel tongue, *f*, which is pressed horizontally forward by the upward motion of the lower jaw, *d*, until a round wire, rod, or bar, of any thickness, inserted between the jaws, is firmly held between the jaws and tongue in such a manner that the plane formed by the outer face of the fixed jaw *b* is tangential to the wire or rod, as shown clearly in the different sectional views of the drawings.

To fixed pivots at the ends of the movable jaw *d* is hinged an angular front plate, B, the lower part of which rests upon the lower jaw and wedges, and is provided with an operating-handle, *g*, while the upper part or table forms an extension of the plane of the face of the movable jaw *d* when in normal position.

In machines of greater length than three feet a sliding and guided plate or table is substituted for the hinged table and moved up for bending the sheet metal by means of suitable mechanism connected to the operating screw-spindle.

The machine is operated for bending sheet metal as follows: For making a bead or roll on a sheet, a wire of proper thickness is inserted between the jaws in front of a tongue which corresponds in size therewith, and the sheet then placed upon the front plate or table and under the wire, being pressed against the face of the tongue, as shown in dotted lines in Fig. 3. The sheet is then secured rigidly between the jaws by turning the hand-wheel, after which the front plate is turned up against the outer face of the fixed jaw, so as to bend up the sheet at the same time and form one-third of the bead or roll around the wire. The front plate is then turned down again, the lower jaw loosened, and the sheet brought down again into horizontal position on the table. The sheet is then secured again by the

lower jaw and the front plate turned up, and so on, until the wire or rod is entirely inclosed by the bead or roll formed in the manner shown, respectively, in Figs. 4 and 5.

5 For thinner wires the steel tongue is more acute-angled, as shown in Figs. 6, 7, and 8.

If the sheet is to be bent again immediately behind the bead or roll, the latter is placed between the jaws upside down, and a rectangular strip or bar placed under the sheet, and the bend then produced at the desired angle by raising the front plate with the bar.

10 For producing very narrow folds or bends the loose steel tongue is removed and the sheet only held between the front edges of the fixed and movable jaws, and then bent by the front plate.

If tubes only are to be formed, the wires are drawn out after bending. By inclining the fixed jaw *b* conical tubes can be formed.

20 Thus a large variety of work of different forms and diameter can be made on the machine which cannot be produced by any machines hitherto known.

25 Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a machine for bending sheet metal, the combination of a fixed obtuse-angled upper

30 jaw with a movable lower jaw and with an angular front plate or table that is adapted to be moved up over the upper jaw, for bending the sheet held between the jaws, substantially as set forth.

2. In a machine for bending sheet metal, the combination of a fixed obtuse-angled upper jaw and of a movable lower jaw with an acute-angled interposed steel tongue and with a hinged or sliding front plate or table adapted to bend up the sheet metal, substantially as 40 specified.

3. In a machine for bending sheet metal, the combination of a supporting-frame having a fixed obtusely-angled jaw with a movable lower jaw guided along the supporting-frame, 45 with an angular front plate hinged to the movable jaw, and with a steel tongue interposed between the jaws, as set forth.

In testimony that we claim the foregoing as our invention we have signed our names, in 50 presence of two witnesses, this 5th day of January, 1880.

AUGUST SCHERB.
CARL SCHERB.

Witnesses:

JOHAN FINSTERLE,
RUDOLF STÖHR.