

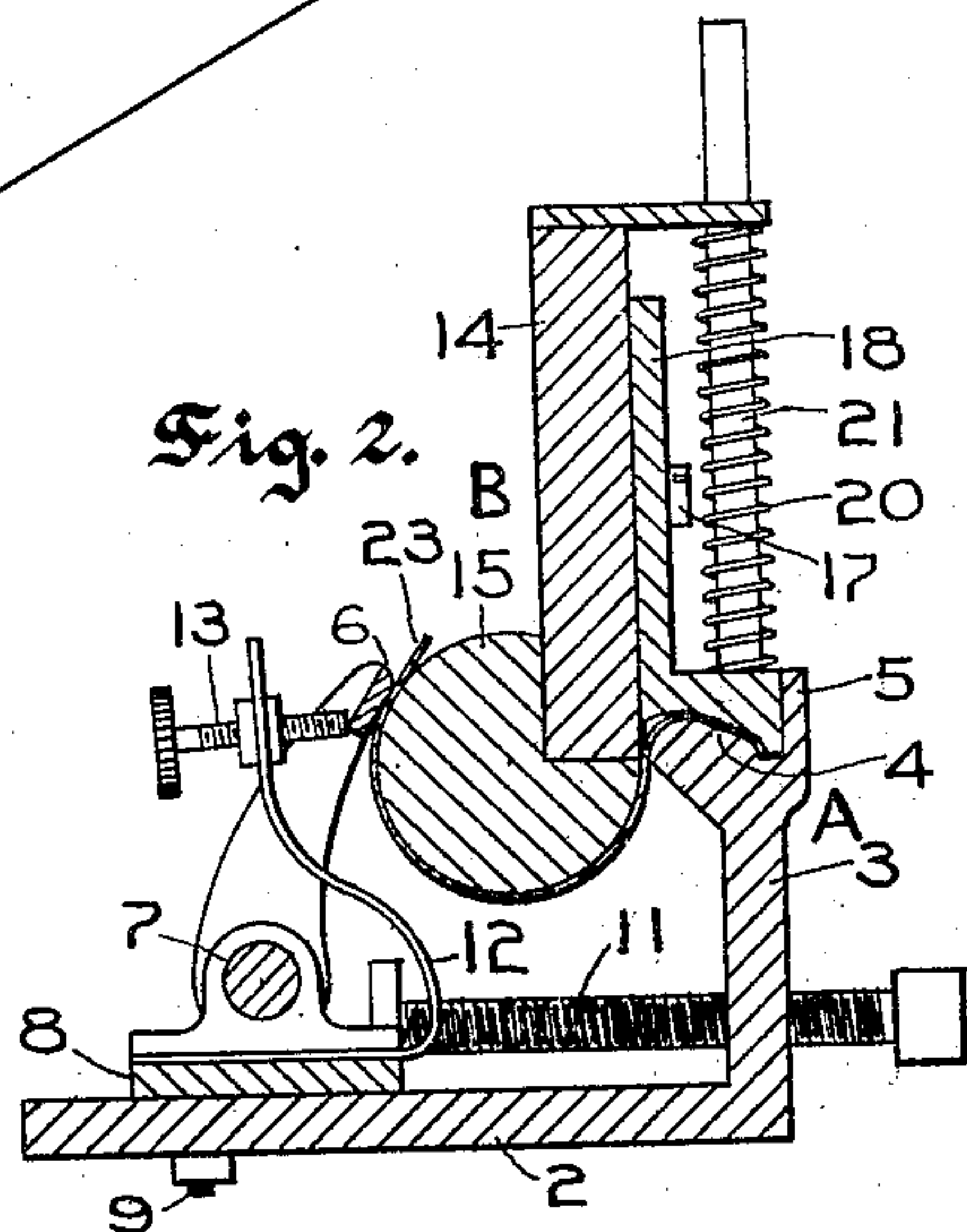
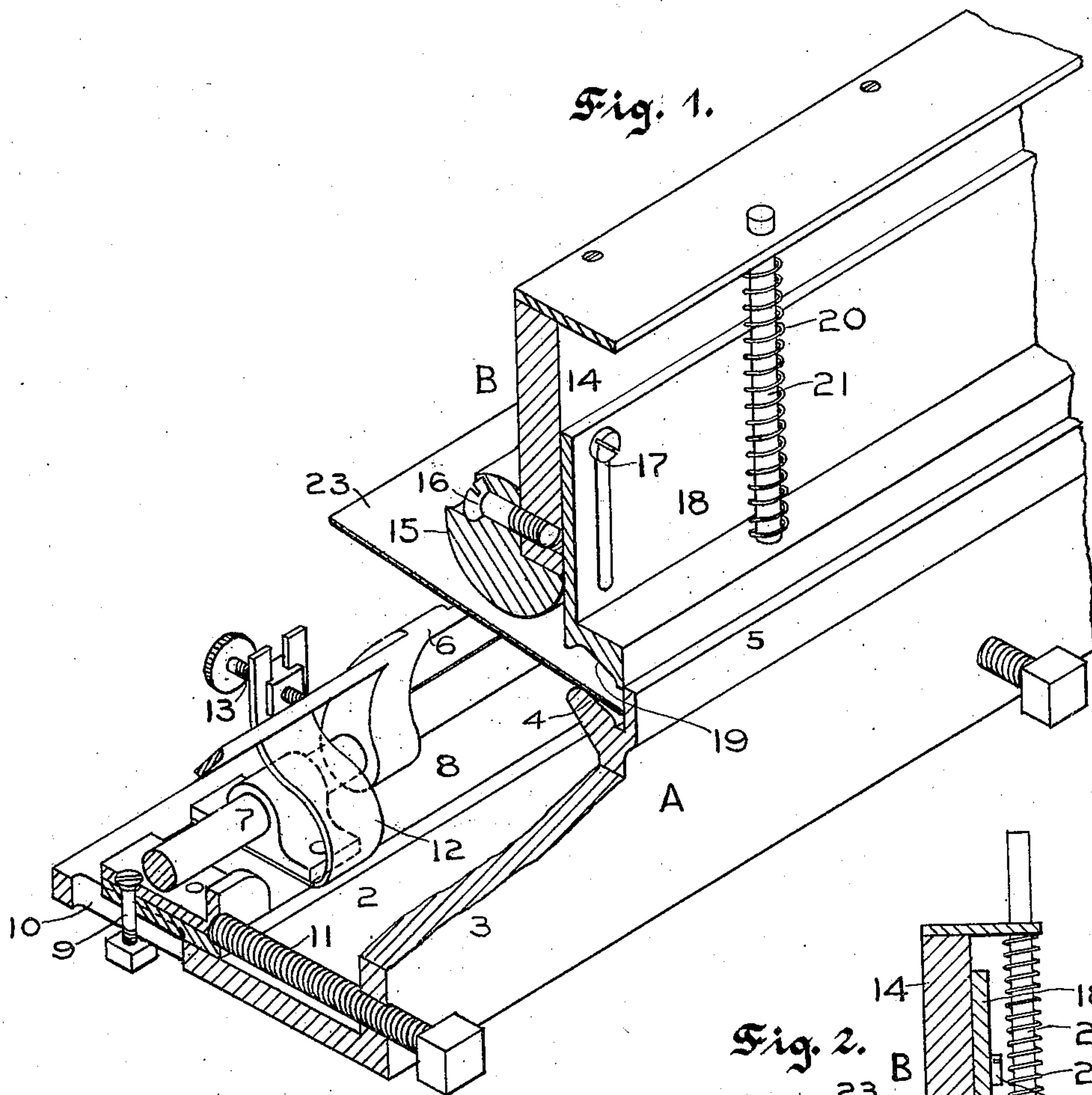
No. 861,317.

PATENTED JULY 30, 1907

A. K. PRUDEN.

MEANS FOR FORMING SHEET METAL EAVES TROUGHS.

APPLICATION FILED FEB. 27, 1906.



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UNITED STATES PATENT OFFICE.

ALLAN K. PRUDEN, OF ST. PAUL, MINNESOTA.

MEANS FOR FORMING SHEET-METAL EAVES-TROUGHS.

No. 861,317.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed February 27, 1906. Serial No. 303,157.

To all whom it may concern:

Be it known that I, ALLAN K. PRUDEN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Means for Forming Sheet-Metal Eaves-Troughs, of which the following is a specification.

My invention relates to improvements in means for forming sheet metal eaves troughs, and consists particularly in the improved features of construction and combination hereinafter particularly described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 is an isometric view of my improved mechanism partly broken away, and Fig. 2 is a vertical cross section thereof.

In the drawings A represents the lower or female die, and B the upper or male die. The lower die consists of a horizontal plate 2 provided along one side with an upwardly extending wall 3 constituting a fixed jaw. The fixed jaw 3 is formed with a substantially half-oval shaped upper edge 4 with an adjacent flange 5. Slidably supported upon the base plate 2 is an adjustable, elastically held, jaw 6 arranged parallel to the fixed jaw 3. As shown, the jaw 6 has pivotal support 7 in a carriage 8 slidably connected with the base plate 2 by means of bolts 9 extending through slots 10 in said base plate. The carriage 8 with the supported jaw 6 may be adjusted toward and from the fixed jaw 3 by means of bolts 11 connected with the carriage and extending through the fixed jaw. To form an elastic support for the jaw 6 I provide springs 12 extending upwardly from the carriage 8, adjusting screws 13 being carried by the upper ends of said springs and bearing at their inner ends against the jaw, as illustrated in the drawings.

The upper die consists of a suitably supported plunger 14 carrying at its lower end a rounded head 15 secured thereto as by screws 16. Slidably secured to the rear of the plunger 14, as by means of slot and pin connection 17, is a plunger 18, the lower face 19 of the plunger being shaped to conform to the upper face 4 of the fixed jaw 3. The slidable plunger 18 is normally held forced downward by a coil spring 20 surrounding a post 21 extending upwardly from the plunger through a horizontal flange 22 carried by the upper end of the plunger 14.

In operation, I take a flat strip of sheet metal 23 and insert it between the dies as shown in Fig. 1 with one edge of the metal resting upon the upper face of the fixed jaw 3, and the rear part of the strip standing between the convexed head of the plunger 14 and the open space between the fixed and adjustable jaw of the lower die. I then cause the two dies to be forced together whereupon the blank is clamped, formed and

held at its inner edge between the spring pressed plunger 18 and the fixed jaw 3. The lower end of the plunger 14 then carries the main part of the blank between the adjustable jaw 6 and fixed jaw 3 of the lower die, thus forming the main part of the blank closely around the head of the plunger 14, as illustrated in Fig. 2. As the plunger 14 descends between the fixed and movable jaws of the lower die, it will turn the movable jaw upon its pivot 7 away from the fixed jaw, the springs 12 holding the movable jaw tightly against the blank between it and the plunger head 15. For different widths of trough the jaw 6 may be adjusted by means of the screws 11 to or from the fixed jaw 3. With my improved mechanism I can place more than one blank between the dies to form a series of trough sections in one operation. After the trough sections have been formed, as shown in Fig. 2, the dies are forced to open position, when the blanks can be withdrawn and the formation of the bead completed in the ordinary manner.

I claim:—

1. In an apparatus of the class described the combination of a female die comprising a fixed jaw and an opposed elastically held jaw, and a male die comprising a plunger arranged to work between said fixed and elastically held jaws, and a spring pressed plunger opposed to said fixed jaw.
2. In an apparatus of the class described, the combination of a female die comprising a fixed jaw and a movable elastically held jaw, and a male die comprising a plunger arranged to work between said fixed and elastically held jaws, and an attached slidably supported spring pressed plunger opposed to the outer edge of said fixed jaw, for the purpose set forth.
3. An apparatus of the class described comprising a fixed jaw, an opposed elastically held jaw, means for adjusting said elastically held jaw toward and from said fixed jaw, a plunger arranged to pass between said fixed and elastically held jaws, and a spring pressed plunger slidably supported upon the rear side of said first mentioned plunger in opposition to the outer face of said fixed jaw.
4. An apparatus of the class described comprising in combination a fixed jaw having a half-oval shaped face, an elastically held jaw, means for adjusting said elastically held jaw toward and from said fixed jaw, a plunger arranged to pass between said jaws, and a slidably supported spring pressed plunger having a face opposed to the face of said fixed jaw.
5. An apparatus of the class described comprising in combination a pair of relatively adjustable jaws, one of said jaws being elastically held, an opposed plunger arranged to pass between said jaws, and a slidably supported spring pressed plunger arranged in opposition to one of said jaws, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALLAN K. PRUDEN.

Witnesses:

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EMILY F. OTIS.