No. 744,672. PATENTED NOV. 17, 1903.

J. BAEUMLE.

DEVICE FOR CRIMPING SHEET METAL ELBOWS AND PIPE.

APPLICATION FILED NOV. 3, 1902.

NO MODEL.

Fig. 1

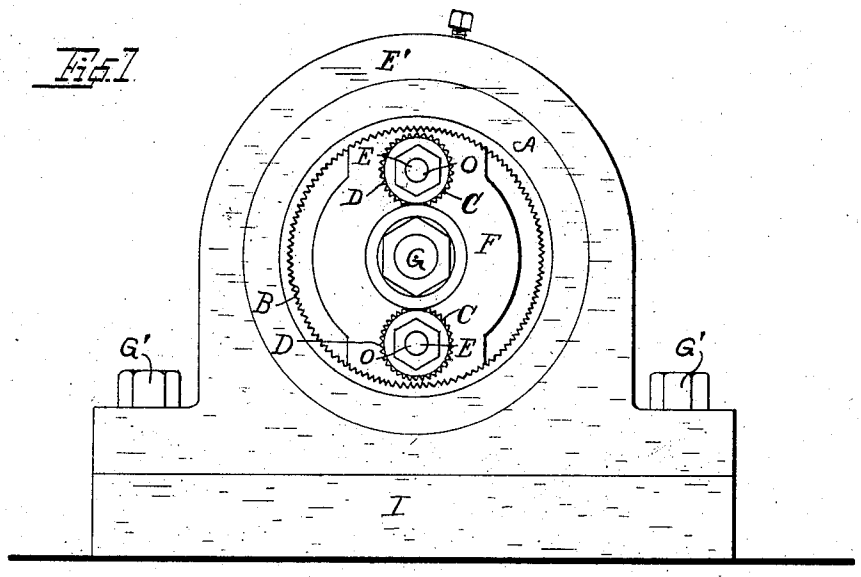


Fig. 2.

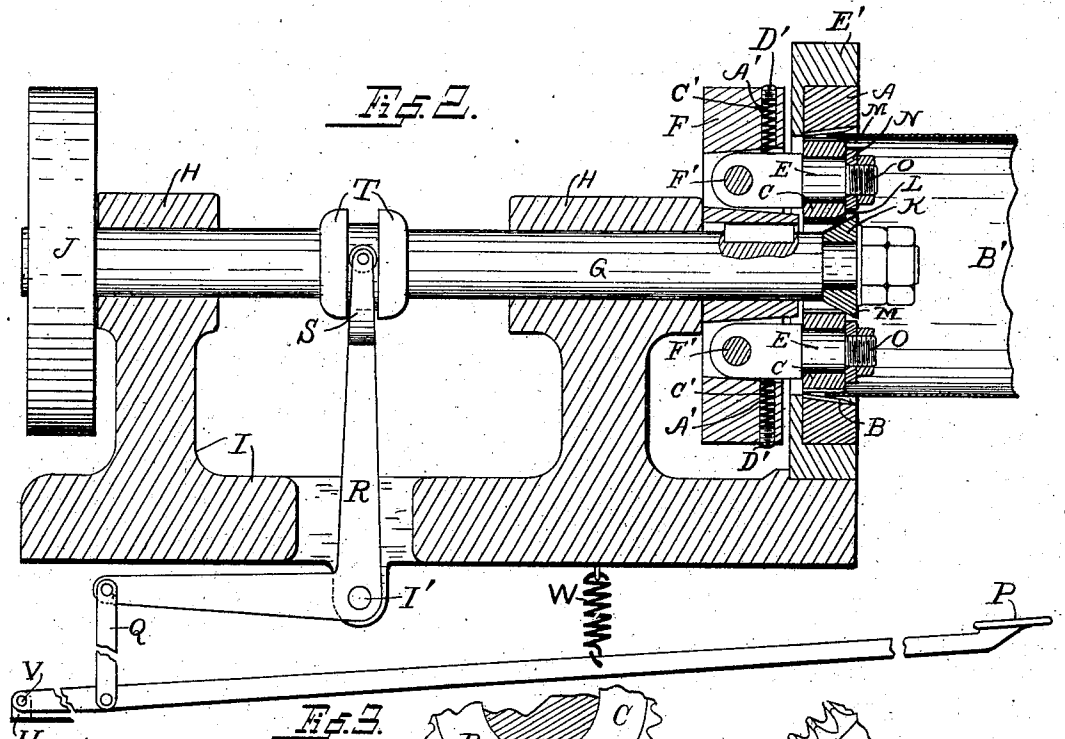
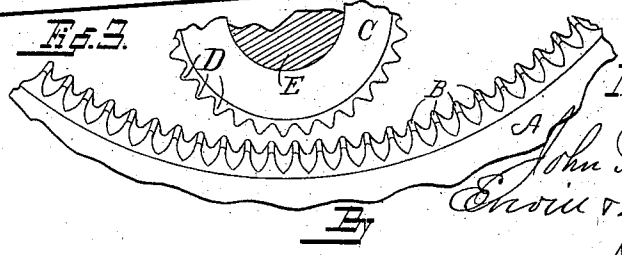


Fig. 3.



Witnesses:
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No. 744,672. Patented November 17, 1903.

UNITED STATES PATENT OFFICE.

JOHN BAEUMLE, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO J. P. LINDEMANN & SONS, A CORPORATION OF WISCONSIN.

DEVICE FOR CRIMPING SHEET-METAL ELBOWS AND PIPE.

SPECIFICATION forming part of Letters Patent No. 744,672, dated November 17, 1903.

Application filed November 3, 1902. Serial No. 129,829. (No model.)

To all whom it may concern:

Be it known that I, JOHN BAEUMLE, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Devices for Crimping Sheet-Metal Elbows and Pipe, of which the following is a specification.

My invention relates to improvements in machines for crimping and contracting the ends of sheet-metal elbows and pipes.

The construction of my invention is explained by reference to the accompanying drawings, in which—

Figure 1 represents a front view. Fig. 2 is a longitudinal vertical section, and Fig. 3 is a detail representing an enlarged view of a portion of the crimping mechanism.

Like parts are identified by the same reference-letters throughout the several views.

The crimping mechanism of my device comprises a stationary annular collar A, provided with a series of inwardly-projecting crimping-teeth B and one or more pinions C, provided with crimping-teeth D, which mesh in the series of teeth B. The pinions C are supported upon the trunnions E, which trunnions are pivotally connected with the revoluble block F by the pins F'. The block F is feathered to the shaft G and revolves with it, said shaft being supported at its respective ends in the journal-bearings H H of the frame I. Motion is communicated to the shaft G from the motive power in the ordinary way through the pulley J. One end of the shaft G is provided with a revoluble collar K, the angular surface L of which bears against the angular bearing-surface M of the revoluble pinions C, which pinions are revolubly supported upon the ends of the trunnions E. The shaft G is adapted to be reciprocated in its journal-bearings through and without moving the block F as it is being revolved, such reciprocating motion being communicated thereto from the pedal P through the link Q, elbow crank-lever R, bifurcated arms S, and collars T.

The elbow crank-lever R is pivotally supported from the frame I near its center upon the bolt I', while its bifurcated arms S have bearings between the collars T, which collars are in turn rigidly secured to the shaft G. One end of the treadle P is pivotally supported at a fixed point beneath the frame of the machine by the bracket U and pivotal bolt V, while the opposite end of said treadle is connected with the frame I of the machine by the spiral spring W. Thus it will be obvious that by the downward pressure of the treadle P motion will be communicated therefrom through the link Q, elbow crank-lever R, and collars T to said shaft G, whereby said shaft will be thrown toward the left and the collars K will be drawn between the opposing pinions C of the trunnions E, thereby causing said trunnions E, with the pinions C, to be thrown apart and the teeth of said pinions C to be brought into mesh with the teeth B of the stationary collar A. When the treadle P is relieved from pressure, the same will be drawn upwardly by the recoil of the spring W, whereby the movement of said shaft G will be reversed, and the trunnions E will be thrown toward each other and said central shaft G by the recoil of the spiral spring A.'

B' represents the end of an elbow as it is being inserted between the crimping-teeth of the machine preparatory to being crimped.

The spiral springs A' are retained in place in the recesses C' by the threaded bearings D', which have screw-threaded bearings in said recess C', and the tension of said springs A' is increased or diminished by turning said bearings D' forward or backward in their bearings.

The frame I of the machine is usually placed upon a bench, while the bracket U, to which the treadle P is attached, is usually secured to the floor of the building in the ordinary manner. It will be understood that the teeth of the annular collar A are formed at an angle to the shaft G, diverging outwardly slightly, corresponding with the angle to be given to the end of the elbow of length of pipe, and that the trunnions E when thrown apart in the act of crimping the elbow will be brought to such an angle to said shaft G as to cause the teeth on the pinions C to correspond with the angle of the teeth B of the collar A.

The annular collar A is removably supported from the head-block E', which head-block

E′ is in turn secured to the frame I by the bolts G′. The collar A may be substituted by other collars of greater or less internal diameter to correspond with the different sizes of elbows or pipes which it may be desirous to crimp.

It will of course be understood that when operating the machine the shaft G and the pulley J are kept in constant motion, so that when the pedal is relieved from pressure the pinions C revolve free from contact with the teeth of the stationary collar A. When, however, the operator inserts the end of the elbow or length of pipe to be crimped between the opposing teeth of the collar A and the pinions C, he simultaneously places his foot upon the treadle P, whereby said teeth are brought together upon the respective sides of the metal forming the elbow, when the front edge of the metal forming such elbow will be gradually crimped and contracted to conform to the angular shape of the teeth on the collar A and pinions C as the elbow or length of pipe is gradually forced between them. It will also be understood that when crimping and contracting the ends of the elbow or length of pipe with this machine they are all made of uniform size and describe at their ends an exact circle corresponding in size and shape with the annular collar A, in which they are crimped.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A machine for crimping and contracting the ends of sheet-metal pipe-elbows and pipe, comprising the combination of a stationary annular collar provided with a series of crimping-teeth; a revoluble shaft supported within said collar; a plurality of pinions provided with crimping-teeth, revolubly supported from said shaft within said stationary collar; means for revolving said pinions around said shaft within said stationary collar; and means for separating said pinions and forcing them outwardly toward said stationary collar as they are being revolved.

2. In a machine of the class described, the combination of a stationary supporting-frame; a stationary annular collar supported from said frame, provided with a series of crimping-teeth; a revoluble shaft; a pinion-supporting block feathered to said shaft; a plurality of trunnions pivotally supported from said block; a plurality of crimping-pinions, revolubly supported from said trunnions; means for simultaneously revolving said crimping-pinions and forcing them outwardly against the crimping-teeth of said stationary collar.

3. In a machine of the described class, the combination with the supporting-trunnions of the crimping-pinions of beveled-faced bearing-collars and with the opposing surface of the trunnion-supporting shaft of a central collar having its periphery beveled; and means for moving said central collar toward the right and left against the bearing on said pinions, whereby said trunnions and their supporting-pinions may be moved toward and from the central shaft as they are being revolved.

4. In a machine of the described class, the combination of a supporting-frame; a central driving-shaft having journal-bearings in said frame; means for communicating a longitudinal reciprocating movement to said shaft as it is being revolved; a driving-pulley secured to one end of said shaft, and a revoluble block feathered to its opposite end; a plurality of trunnions supported from said revoluble block; an elastic bearing for automatically forcing the free ends of said trunnions toward each other when relieved from pressure; revoluble crimping-pinions supported from said trunnions; a beveled bearing-collar secured to said central shaft, and adapted to bear at its periphery against the bearing-surface of the pinions supported on said trunnions; a stationary head-block rigidly secured to the supporting-frame; an annular collar removably secured in said head-block, provided with inwardly-projecting crimping-teeth adapted to mesh with the crimping-teeth of said crimping-pinions, all substantially as and for the purpose specified.

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

JOHN BAEUMLE.

Witnesses:
JAS. B. ERWIN,
C. L. ROESCH.