

L. A. BRIGEL.
MECHANISM FOR FORMING SHEET METAL OBJECTS.
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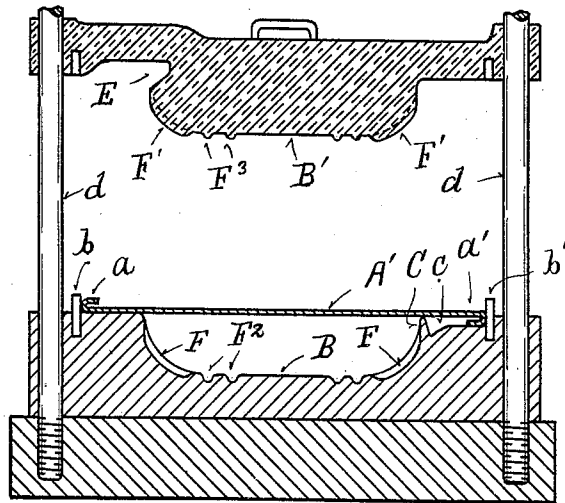
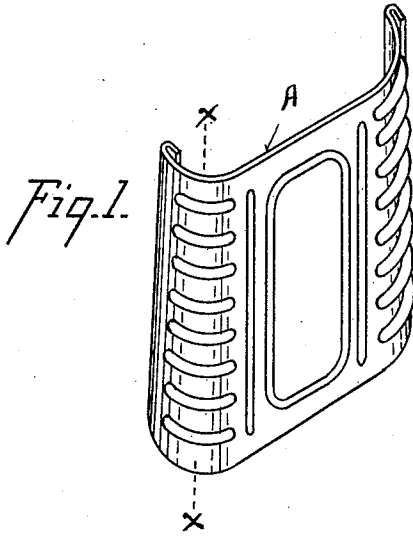


Fig. 2.

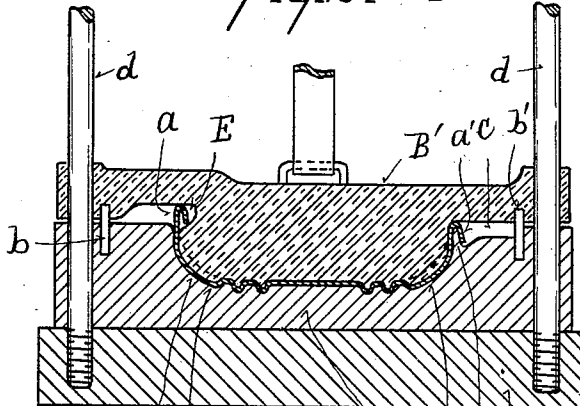


Fig. 3.

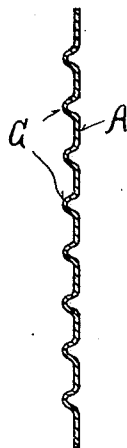


Fig. 4.

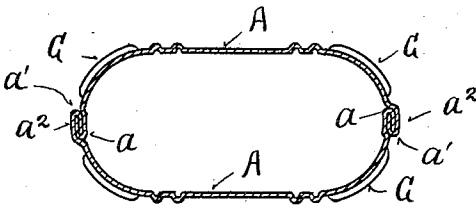


Fig. 5.

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MECHANISM FOR FORMING SHEET-METAL OBJECTS.

1,050,516.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LEO A. BRIGEL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Mechanism for Forming Sheet-Metal Objects, of which the following is a specification.

My invention relates to improvements in mechanism for forming sheet metal tubular objects from semi-tubular stampings or segmental stampings.

One of its objects is to provide mechanism to produce stamped segmental sections adapted to be united to form tubular sheet metal objects.

Another object is to provide improved dies for forming uniform symmetrical segmental sections.

It further consists in certain details of form, combination, and arrangement, all of which will be more fully set forth in the description of the accompanying drawings in which;

Figure 1 is a perspective view of one form of stamped section from which to form a tubular sheet metal object. Fig. 2 is a central vertical section through a set of dies adapted to form the section Fig. 1, in the open position and showing a sheet metal blank in position upon the lower die. Fig. 3 is a similar view showing the dies closed and the position of the stamped section therein. Fig. 4 is a section through the stamped section on dotted line xx of Fig. 1. Fig. 5 is a section through a pair of sections united.

In the accompanying drawings A represents a stamped segmental section adapted to be united with a like part to form a tubular sheet metal article. The section illustrated is designed for use in forming a pump box or housing, but my improvements may be employed to advantage in forming from segments a variety of sheet metal articles usually of tubular form.

The blank from which a segment A is to be formed, is preferably first operated upon to turn over its side edges $a a'$ as indicated in Fig. 2 to provide for uniting the edges of the sections by lock seams a^2 as indicated in Fig. 5. The flat blank with its edges turned is then placed upon the lower die B of a hydraulic or drop press composed usually of the bed D lower die B, upper die

B' and guides for the upper die d . Pins $b b'$ serve to center the blank upon the lower die B. The lower die B has a lip C at one edge and a channel c to receive the downwardly turned edge a' . At the opposite side the upper die has a channel E to receive the upwardly turned edge a of the blank. The lower die B has radial grooves F in the curved portions and the upper die B' has corresponding projecting ribs F' to fit the grooves F. Other grooves F² and ribs F³ may be employed or not in flat portions of the dies as desired. After the flat blank has been placed in position upon the lower die B, the upper die is brought down upon the blank as indicated in Fig. 3, causing the body of the blank to take the impression of the dies. The downwardly turned edge a' fits over the lip C, while the upwardly turned edge a fits into the channel E of the upper die. The grooves F and ribs F' of the dies form preferably outwardly projecting ribs G in the segment A, which ribs being formed by drawing the metal of the blank, serve to hold the segment to the position or form given it by the dies so that upon lifting the upper die there is no change in the shape of the stamped section. The accuracy with which the sections retain the shape impressed thereon by the dies thus enables the sections to be assembled to form a tubular object of accurate proportions, and produces a rigid structure. Two or more stamped sections may now be assembled together with their respective edges $a a'$ interlocked, whereupon said interlocked edges are seamed or pressed together to unite the sections to form a finished object.

The mechanism herein illustrated and described is capable of considerable modification without departing from the principle of my invention.

Having described my invention, what I claim is:

1. Mechanism for forming segmental sheet metal sections for use in tubular sheet metal articles, which comprises die members having counterpart central sections adapted to stamp a sheet metal blank to semi-tubular outline, and a wide shallow recess in each of said die members, said recesses being at opposite sides of said central die sections and adapted to receive previously formed seam members of the blanks and to permit said seam members to travel without injury

across said recesses toward said central die sections during the stamping operation of said central die sections.

2. In a mechanism of the character described, a stationary die member having guides to center a sheet metal blank, and a reciprocating die member, said die members having counterpart central sections to shape the blank to semi-tubular outline, and each of said dies having a wide shallow recess at one side of said central die sections to receive and act as guides for previously

formed seam members of the blank and to permit said seam members to travel across said recesses toward said central die sections without injury during the stamping operation of said central die sections. 15

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

LEO A. BRIGEL.

Witnesses:

C. W. MILES,

WALTER I. MURRAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."