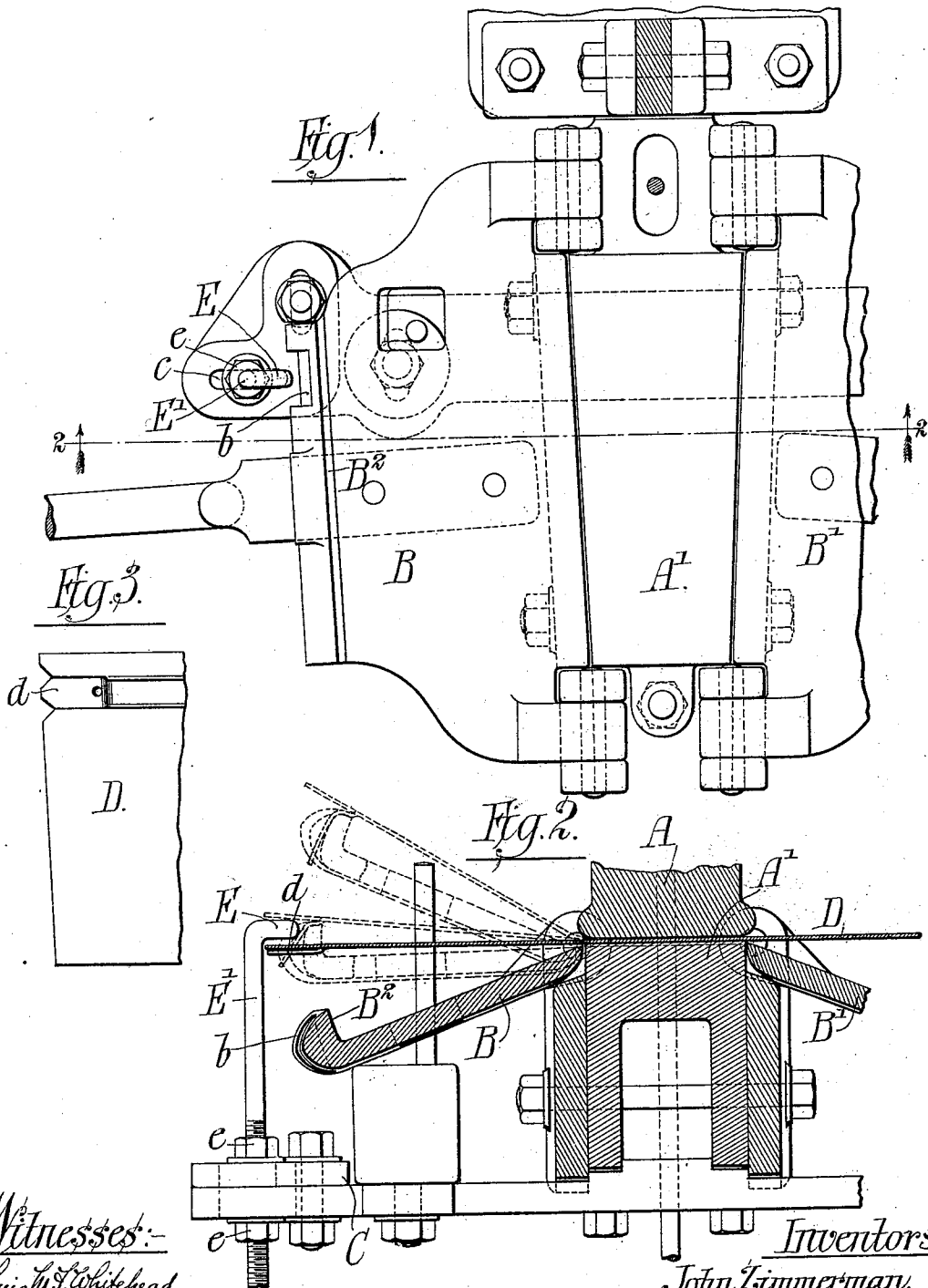


(No Model.)

J. ZIMMERMAN & J. K. UNDERDOWN.
MACHINE FOR FORMING POLYGONAL CAN BODIES.

No. 511,486.

Patented Dec. 26, 1893.



Witnesses:-
Christ M. S. Whitehead.
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Inventors.
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UNITED STATES PATENT OFFICE.

JOHN ZIMMERMAN AND JOHN K. UNDERDOWN, OF CHICAGO, ILLINOIS,
ASSIGNORS TO THE NATIONAL KEY-OPENING CAN COMPANY, OF
SAME PLACE.

MACHINE FOR FORMING POLYGONAL CAN-BODIES.

SPECIFICATION forming part of Letters Patent No. 511,486, dated December 26, 1893.

Application filed December 16, 1892. Serial No. 455,355. (No model.)

To all whom it may concern:

Be it known that we, JOHN ZIMMERMAN and JOHN K. UNDERDOWN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Forming Polygonal Can-Bodies; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to machinery for forming polygonal lapped seamed key-opening can bodies of the character set forth in Letters Patent Nos. 486,522 and 486,523, dated November 22, 1892, that is to say, can bodies having detachable circumferential strips with integral free tongues formed by a slit or slits cut inwardly from one of the lapping edges of the body blank. In this construction the unslitted edge of the blank is to rest upon the opposite edge but beneath the tongue formed in the latter. It is therefore necessary to provide in a machine for forming polygonal cans of this class, means for bending back the tongue so that it may not be covered by the opposite edge of the can body in making the lap preparatory to soldering. As is well known, square or polygonal sheet metal can bodies are formed about a polygonal mandrel or former by movable jaws which rise at opposite sides of the former and extend over its top, the jaw which carries the underlapping edge of the blank being constructed or moved in such manner as to bring that edge first down upon the top of the mandrel in position to lie beneath the opposite edge of the blank when, immediately afterward, it is brought downwardly toward the mandrel.

In the accompanying drawings which illustrate our invention, Figure 1 is a plan view of the essential parts of the ordinary machine for forming polygonal and pyramidal can bodies having our improvement applied thereto. Fig. 2 is a transverse section of those portions shown in Fig. 1, in the line 2—2 of Fig. 1. Fig. 3 illustrates the margin of a can body blank having the tongue formed therein by

parallel slits, as set forth in said prior Letters Patent.

It will be a sufficient description of the machine exclusive of our improvement to say that A represents the usual polygonal mandrel, B B' the hinged forming jaws and C the table or bed of the machine. Each of the forming jaws has, on its upper or inner face and at its outer margin, a lateral projection B² which presses the adjacent margin of the blank over the top of the mandrel A and into horizontal position thereon.

D (Figs. 2 and 3) represents the blank having the lateral, detached tongue *d*. This blank is inserted in the machine in the usual manner with its middle portion beneath the former A and over the arm A', and the jaws B B', upon being raised (as indicated in dotted lines of Fig. 2) bend the blank about the former and bring its upper edges into lapped relation upon the upper surface of the latter.

In order to provide for the bending of the tongue *d* backwardly, as proposed by our invention for the purpose stated and as indicated in dotted lines of said Fig. 2, the outer edge of the jaw B is notched at *b* at a point beneath the tongue *d* of the blank when the latter is in position to be formed. To bend the tongue a bender, as E, is provided, being arranged in the path of the said notch *b* and above the tongue of the blank D when the latter is in place to be formed. In this case said bender E is, in form, the laterally deflected end of a standard E' which is both vertically and laterally secured to the bed C; but, while this is a desirable construction, the bender may be otherwise held in place, either adjustably or fixedly. The lateral adjustment referred to is indicated in Fig. 1 by the slot *c* in the bed through which the standard E' passes and in any portion of which it may be secured by the nuts *e e*, these nuts serving also to effect the vertical adjustment in the obvious manner shown.

By means of the bender it is manifest that when the jaw B rises beneath the slitted or tongue-bearing margin of the blank D and raises the latter against the bender, said bender will strike the top of the tongue *d* and, in

the further upward movement of the blank, will deflect the latter downwardly in the notch *b* of the jaw B, giving it substantially the position and direction indicated in the dotted lines which represent the blank and tongue elevated entirely above said bender in Fig. 2. The tongue being thus retracted, the adjacent edge of the blank may be brought to the top of the former in the usual manner in advance of the opposite edge of the blank, so that when the latter descends upon it the tongue will not be covered.

Before applying the solder, and preferably before bringing the usual holding clamp down upon the overlapping edge of the blank, the tongue should be bent down upon the latter, and this may be conveniently done by the operator who will usually strike the tongue with his soldering iron on its way to the end of the seam at which he starts in applying the solder.

While usually the jaw B will have its lateral projection B² of such thickness as to require the notch *b*, as shown, in some cases it may be of such less thickness as to escape the end of the bender E without being notched for this purpose.

We claim as our invention—

1. In a machine for forming a can body from a metal sheet having a tongue at one of its lapping margins, the combination, with a forming horn and a pair of folding jaws which

wrap the sheet about the horn, of a stationary part arranged in the path of the tongue upon the sheet and serving to bend said tongue backwardly in the advancing movement of the margin of the sheet to which said tongue belongs.

2. In a machine for forming a can body from a metal sheet having a tongue at one of its lapping margins, the combination, with a forming horn and a pair of folding jaws which wrap the sheet about the horn, of an adjustable, stationary tongue bender arranged in the path of the horn, substantially as and for the purpose set forth.

3. In a machine for forming a can body from a metal sheet having a tongue at one of its lapping margins, the combination, with a horizontal forming horn and a pair of folding jaws which wrap the sheet upwardly about the horn, of a tongue bender arranged in the path of the tongue and adapted to be both laterally and vertically adjusted, substantially as described.

In testimony that we claim the foregoing as our invention we affix our signatures in presence of two witnesses.

JOHN ZIMMERMAN.
JOHN K. UNDERDOWN.

Witnesses:

C. CLARENCE POOLE,
M. E. DAYTON.