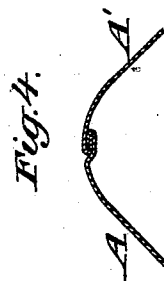
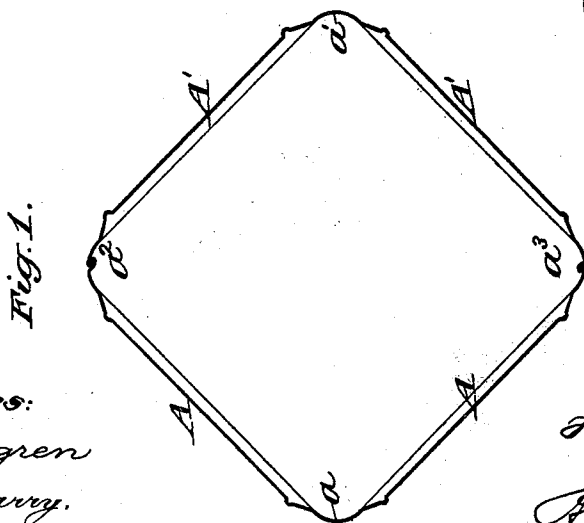
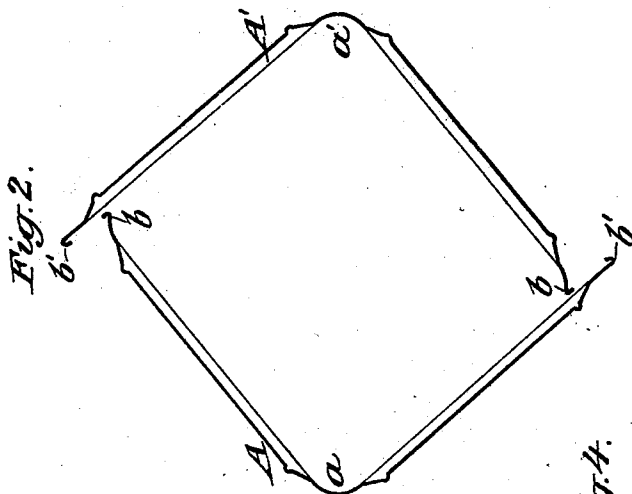
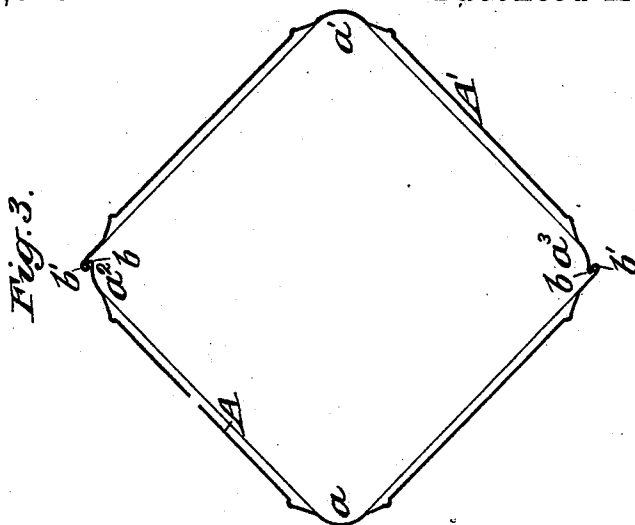


H. MILLER.

MACHINERY FOR SEAMING METAL CANS.

No. 519,088.

Patented May 1, 1894.



Witnesses:

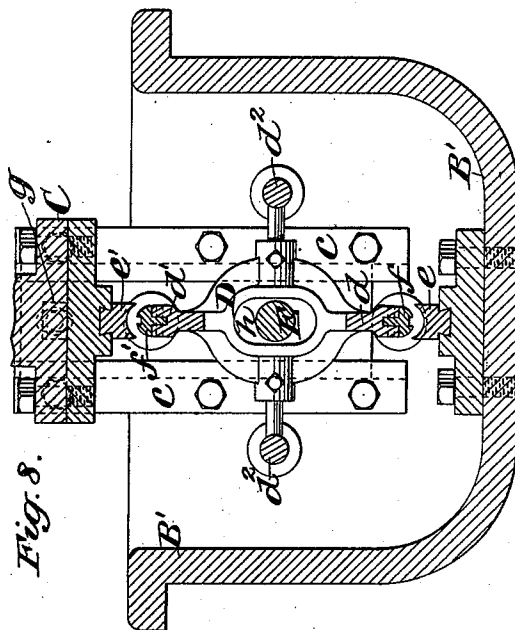
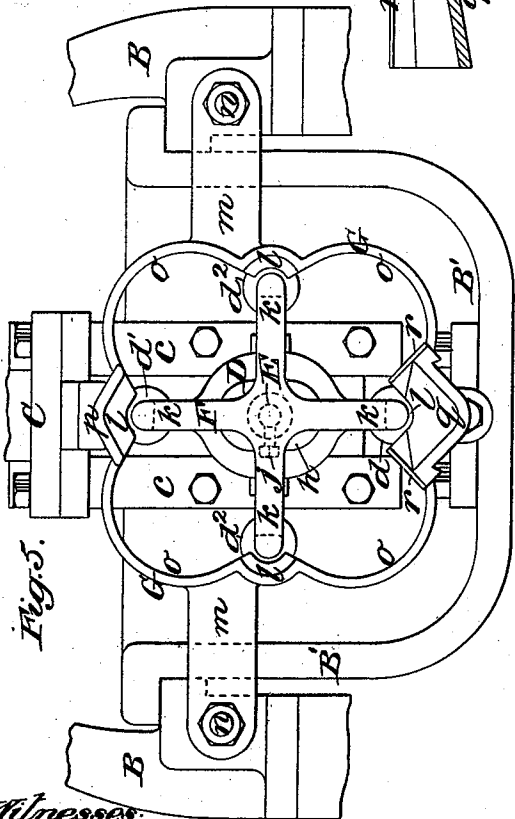
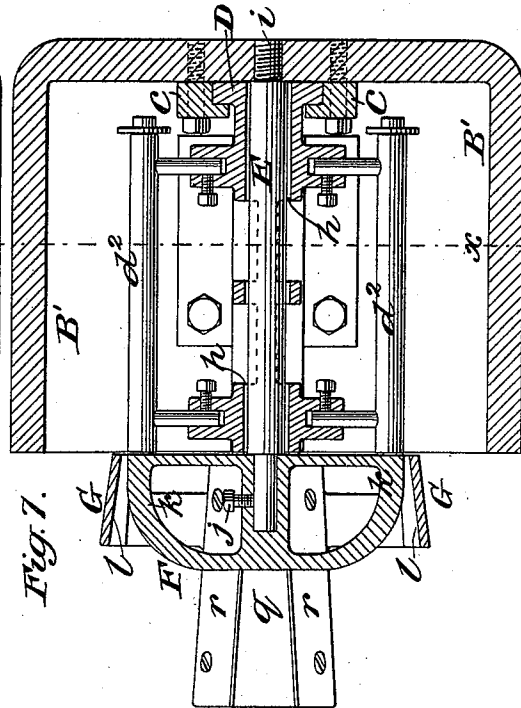
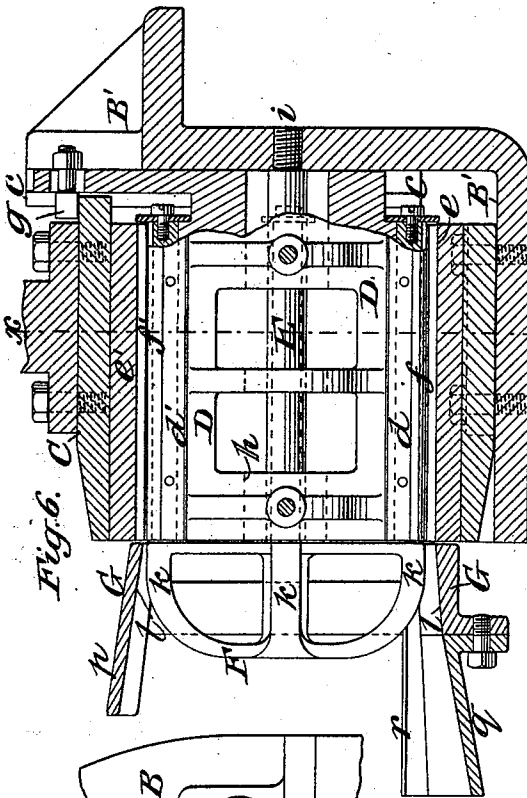
C. Sundgren
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Inventor:
Herman Miller
by attorneys
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UNITED STATES PATENT OFFICE.

HERMAN MILLER, OF NEW YORK, N. Y.

MACHINERY FOR SEAMING METAL CANS.

SPECIFICATION forming part of Letters Patent No. 519,088, dated May 1, 1894.

Application filed January 19, 1894. Serial No. 497,358. (No model.)

To all whom it may concern:

Be it known that I, HERMAN MILLER, of the city and county of New York, in the State of New York, have invented a new and useful
5 Improvement in Machinery for Seaming Metal Cans, of which the following is a specification.

This invention relates to the manufacture of square sheet metal cans, for petroleum and other liquids, the bodies or sides of which are
10 composed of two plates each bent to a right angle to form two sides and one corner of the body, the side edges of the two angular plates thus formed being united to form the other corners of and complete the body by clinched
15 hooked joints. Heretofore it has been a matter of much difficulty, owing to the large size of the sheets and the more or less varying flexibility of the metal, to properly put together the hooked edges of the two plates for
20 clinching them to produce the two side corner seams of the can. This putting together has heretofore been performed entirely by hand, and it requires considerable practice to properly accomplish it, and after that the most ex-
25 pert workman will occasionally misjoin them.

The object of the present invention is to provide for the putting of the hooked edges of the two plates together without any liability to misjoining and to enable the putting of
30 them together ready for clinching to be easily performed by workmen having little or no skill and with only an ordinary exercise of care.

I will now describe the nature of my invention with reference to the accompanying drawings and afterward point out its novelty in
35 claims.

Figure 1 represents a section taken through the sides of a can body of the kind to the
40 manufacture of which my invention is applicable. Fig. 2 represents a corresponding section of the two plates of which the body or sides of the can are composed. Fig. 3 represents a corresponding section of the two plates
45 having their hooked edges put together ready for clinching. Fig. 4 represents on a larger scale a corresponding section of one of the corner joints of the can body. Fig. 5 represents a front view of the principal parts of a
50 clinching press to which my invention is applied. Fig. 6 is a vertical sectional view taken in the center but some of the parts being

shown entire. Fig. 7 represents a horizontal section corresponding with Figs. 5 and 6, taken on a level with the center of the clinch-
55 ing horn. Fig. 8 represents a section parallel with the view shown in Fig. 5, in the line xx of Figs. 6 and 7.

Similar letters of reference designate corresponding parts in all the figures.

I will first refer to Figs. 1, 2 and 3, which represent the can body composed of the two plates A and A', the corners aa' being formed respectively by the bends of the two plates, and the corners $a^2 a^3$ being formed by the
60 turning in of the side margins of the two plates and uniting the hooked edges $b b'$ thereof. The body represented has its sides paneled as is common but that is immaterial to my invention.

Referring next to Figs. 5, 6, 7 and 8, I will first mention that as the clinching press is substantially like those in common use, I have only shown and shall only describe such portions of it as are necessary to explain my in-
75 vention.

B B' designate the stationary portions or framing of the press.

C is the follower.

D is the reciprocating horn frame fitted to
80 slide up and down in vertical guides c secured to the back of the framing and having upon it four horizontal horns $d d' d^2 d^3$ to receive the four corners of the can.

$e e'$ are the outer clinching dies, e being se-
85 cured on the bed B' below the horn frame and e' being secured to the follower above the horn frame.

$f f'$ are the inner clinching dies, f being on the lower horn d , and f' being on the upper
90 horn d' .

The horn frame D has adjustably secured in it a bolt g the head of which projects as shown in Fig. 6, over a portion of the follower C in such manner that the said frame may hang
95 upon the follower and be lifted by it but that the follower may descend independently of the said frame for performing the clinching of the seams as will be hereinafter explained.

The press as thus far described does not
100 differ from those commonly employed for clinching side seams of cans except that the horn frame D has a vertical oblong opening h (see Figs. 7 and 8) provided through it to

prevent its upward and downward movements from being interfered with by the stationary horizontal spindle E which is firmly secured at its rear end in the back of the press framing in any suitable manner as by being screwed thereinto as shown at *i* in Fig. 7. This spindle E is extended through the horn frame to form a support for the inner one F of two guides F and G which constitute the principal parts of my invention and between which the two plates A A' forming the sides of the can are conducted to the horns of the press in such manner that on their way their hooks *b b'* are made to properly engage with each other ready for clinching. The inner guide F which is firmly secured on the front end of the stationary spindle E in any suitable manner as by a set screw *j*, (see Figs. 5 and 7) consists of a casting or piece having a conical or a dome-like profile as is shown in Figs. 6 and 7, but in order to make room for the hands of the operator when necessary, instead of being made solid it is made of the form of a cross as shown in Fig. 5, the four arms *k* of the cross being of such length as to receive the plates A A' on their ends which are rounded transversely to a form corresponding with the interiors of the corners of the can body. The outer guide G has the general form of a square funnel the tapering corners *l l* of which at the inner and smaller ends correspond in form with the exteriors of the rounded corners of the can body. The said outer guide G has lugs *m m* (see Fig. 5) through which it is bolted by bolts *n n* to the fixed portion of the press in such position that its corners *l l* conform to the ends of the arms *k k* of the inner guide and to the horns of the horn frame and that the inner ends of the two guides come together close to the horns of the press as shown in Figs. 6 and 7, with only just room between them for the plates of the can body to pass between them. Between the corners *l l* the outer guide G is widened out as shown at *o o* in Fig. 5, to make room for the hands of the operator to place the two plates A A' into the said guide. The said guide G has an extended lip *p* at its upper corner and a still further extended lip *q* at its lower corner, the said lips serving to gather in any sheets that may happen to be very much out of angle and direct them to the angular space between the inner and outer guides. The lower lip *q* which serves as a rest upon which to place the two angular plates is represented as further provided at its sides with guide plates *r r* set edgewise.

In operating with a press provided with my guides F and G, the operator takes the two angular plates or sections A A' constituting the halves of the can body, one in each hand in such a way as to have the inwardly and outwardly turned hooks *b b'* in proper relation to each other but in a contracted form as shown in Fig. 2, and without any attempt to hook the edges together, and in this con-

tracted form he places the sections on the lower extended lip *q* of the outer guide and at the same time pushes both sections A A' forward and against the inner guide F which spreads out the two sections until the hooks become engaged, as shown in Fig. 3. This engagement takes place along the whole length of the sections as they pass between the inner portions of the arms *k* of the inner guide F and the corners *l* of the outer guide G, the latter preventing the disengagement of the hooked edges until they pass over the horns of the press which keeps the sections so spread as to retain the engagement until the clinching operation is performed by the descent of the follower C. In this operation, the horn frame D descends with the follower until the lower clinching die *f* which it carries comes to a bearing on the lowermost seam of the can which is presented over the corresponding stationary clinching die *e*, and after this the continued descent of the follower with the upper clinching die *e'* brings the latter die down on the upper seam of the can which is presented over the corresponding die *f'*. The follower then by its continued descent compresses the upper seam between the dies *e' f'* and at the same time by its pressure on the upper seam forces down the horn frame sufficiently to produce the compression of the lower seam between the dies *e f*, thus effecting the clinching of the two seams simultaneously.

What I claim as my invention is—

1. In combination for guiding together the angular sections of a can body, the armed inner guide having a dome-shaped or conical profile, and an outer guide having tapering corners corresponding with the arms of the inner guide, substantially as herein set forth.

2. The combination for guiding together the angular sections of a can body, of an inner guide having the form of a cross the arms of which have a dome-shaped or conical profile, and an outer guide having angular corners corresponding with the arms of the inner guide and widened out between the corners, substantially as herein set forth.

3. The combination in a clinching press, of a reciprocating horn frame, clinching dies on the horns of said frame, a stationary die and a movable die outside of said horn frame, and stationary inside and outside guides arranged in front of the horn frame and conforming to the horns thereof, substantially as and for the purpose herein set forth.

4. The combination in a clinching press, of a reciprocating horn frame, a stationary guide in front of said horn frame and a fixed spindle extended through the said horn frame for the support of said stationary guide, substantially as herein set forth.

HERMAN MILLER.

Witnesses:

FREDK. HAYNES,
LIDA M. EGBERT.