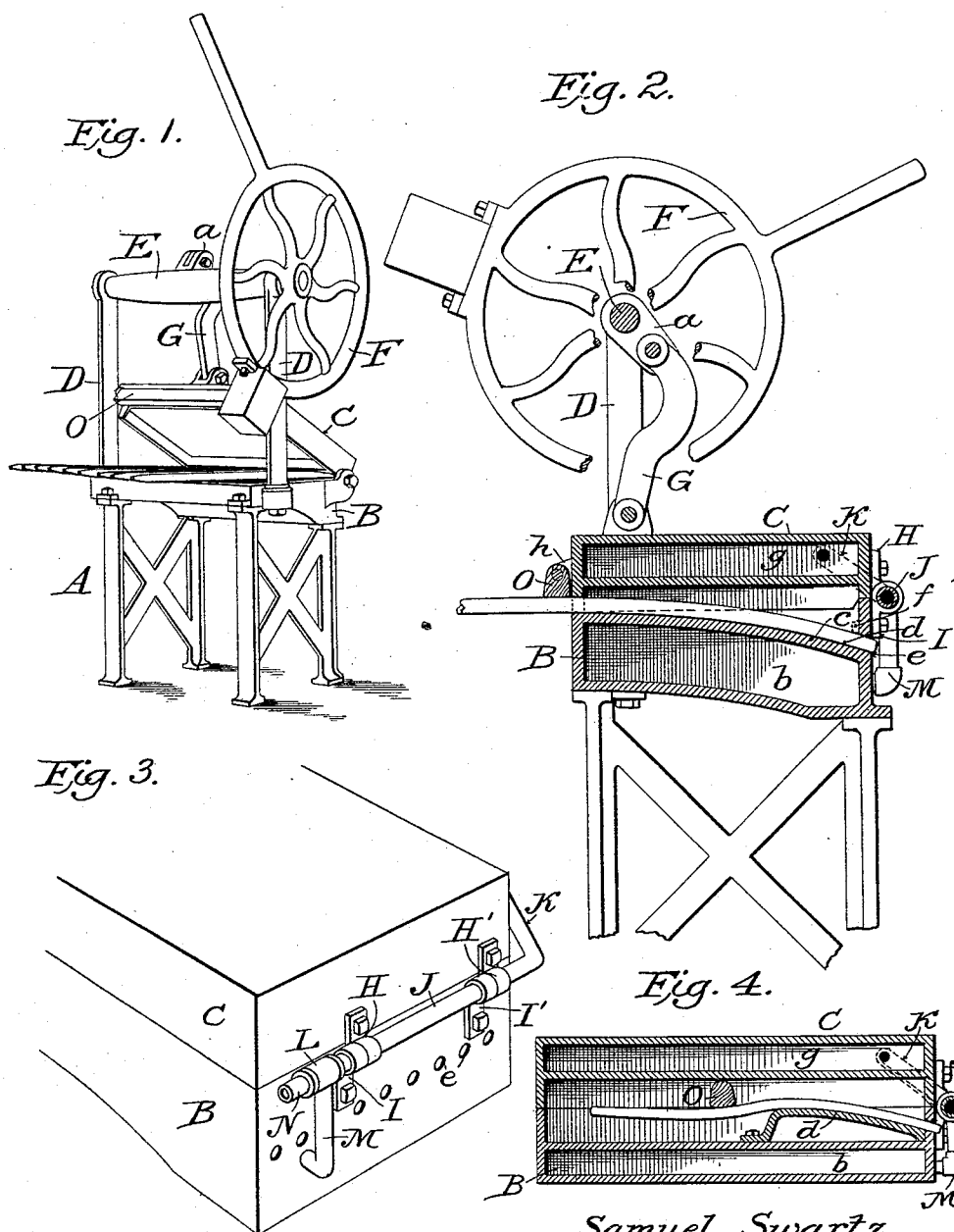


(No Model.)

S. SWARTZ.
BENDING PRESS.

No. 487,435.

Patented Dec. 6, 1892.



Witnesses

James F. Duhamel
Horace A. Dodge

Samuel Swartz,
Inventor.

by Dodge & Sons
Attys.

UNITED STATES PATENT OFFICE.

SAMUEL SWARTZ, OF DETROIT, MICHIGAN.

BENDING-PRESS.

SPECIFICATION forming part of Letters Patent No. 487,435, dated December 6, 1892.

Application filed July 1, 1892. Serial No. 438,693. (No model.)

To all whom it may concern:

Be it known, that I, SAMUEL SWARTZ a citizen of the United States residing at Detroit in the county of Wayne and State of Michigan have invented certain new and useful Improvements in Bending Presses of which the following is a specification:

My invention relates to steam bending presses, and has reference more particularly to that class of machines designed for bending turned chair posts, balusters, spindles, &c.

In the drawings,—Figure 1 is a perspective view of my improved press; Fig. 2, a vertical longitudinal sectional view; Fig. 3, a perspective view showing the combined hinge and steam supply; and Fig. 4, a vertical longitudinal sectional view of the press showing a slight modification.

A indicates the main frame which may be variously constructed. Upon the upper end of the main frame is secured the lower stationary box B which in turn is surmounted by the movable box C which is hinged at its rear end to the box B as shown.

D D indicate uprights or standards secured to a fixed part of the frame and carrying at their upper ends the rock-shaft E which latter is provided with a counterbalanced hand-wheel F.

G indicates a link connecting the hinged box C to arms *a* projecting from the shaft, the construction and arrangement being such that when the shaft is turned in one direction the box C will be lifted up off the box B, but when turned in the opposite direction the box C will be pressed down upon the material to be bent.

The lower box B has a steam chamber *b*, and has its walls extended upward above the top *c* of the steam chamber. This top *c* curves downward at its rear end, as shown in Fig. 2, so as to form a die *d* which is fashioned to give the desired curvature to the piece to be bent, the ends of the pieces being inserted through holes *e* formed in the rear wall of box B, as shown in Figs. 2, 3 and 4. A ledge *f* could be substituted for these holes as indicated by the dotted lines in Fig. 2, but not with such good results, as the holes tend to keep the pieces properly spaced. As the pieces rest upon the top *c* of the steam chamber, the front walls of

the boxes B and C will be cut away or notched (or only one may be notched,) to allow the ends to project beyond the front end of the boxes. The upper box C is also provided with a steam chamber *g*, and has its walls extended downward to rest upon the corresponding walls of box B. By having these walls extended as shown, there is formed, between the two steam chambers *b* and *g*, a hot air chamber, the front end of which is closed by the front walls of the boxes when they are in the position shown in Fig. 2. Each of the boxes is provided on the rear face with one or more eye-brackets H, H' and I, I', through which passes the steam pipe J. The brackets or bearings H, H' on the box C will advisably be secured to the pipe J by screws, but the brackets or bearings I, I' will allow the pipe to turn therein.

At one end the pipe J is provided with a branch K to admit steam to the chamber *g*, while at the other end it terminates in a coupling or joint-section L which will allow it to turn on its axis relatively to the said section when the box C is lifted or raised. A pipe M delivers steam from the stationary joint L to the steam chamber *b*, while a pipe N conveys the steam to the pipe J.

Projecting from the front of the box C are arms *h* in which is journaled a presser bar O, as shown in Figs. 1 and 2; this bar being designed to bear upon the pieces being bent and readily adjust itself or yield relatively thereto so as not to mar or injure the said pieces. Instead of arranging this bar or ledge O at the outer end of the box C as shown in Figs. 1 and 2, it may be located within the hot-air chamber, as shown in Fig. 4. So, too, instead of having the die or former *d* formed in the roof or top *c* of the steam chamber *b*, it may be made separate and removable, as also indicated in said figure.

The bar or ledge O is designed to be adjustable toward and from the die or former *d* so as to vary the curvature of the piece to be bent, and if desired, the box B may be provided with such a bar. The die or former *d* will advisably be made of brass and grooved, while the bar O will be made of basswood.

The machine represented in Figs. 1 and 2 is designed for bending only one end of the piece;

but the machine shown in Fig. 4 is designed for producing an ogee curve.

The boxes B and C will be provided with suitable means (not shown) for drawing off the water of condensation as usual.

The steam chamber may, in some cases, but not with very good results,—be omitted if desired, the boxes in such cases constituting merely frames.

Having described my invention, what I claim is:

1. In a bending press, the two boxes B and C, each having a steam chamber, and having their edges extended to meet and to form an intermediate hot-air chamber to receive the article to be bent.

2. In a bending press, the box B provided with a die *d* and the holes *e* to receive the ends of the bars to be bent.

3. In a bending press, the box B provided

with die *d* and holes *e* and having its front edge or wall notched.

4. In a bending press, the combination with the box B having a die *d*, a frame or box C having a yielding bearing bar or ledge O.

5. In a press, the combination with a fixed frame or box and a movable frame or box, of a die and a yielding presser bar interposed between the frames or boxes.

6. In a bending press, the combination with a fixed frame or box having a die or former, of a movable frame or box having a pivoted presser bar.

In witness whereof I hereunto set my hand in the presence of two witnesses.

SAMUEL SWARTZ.

Witnesses:

G. R. SWARTZ,

O. H. WILLIAMSON.