

(Model.)

J. C. BACH.

SHAFT PRESS.

No. 290,834

Patented Dec. 25, 1883.

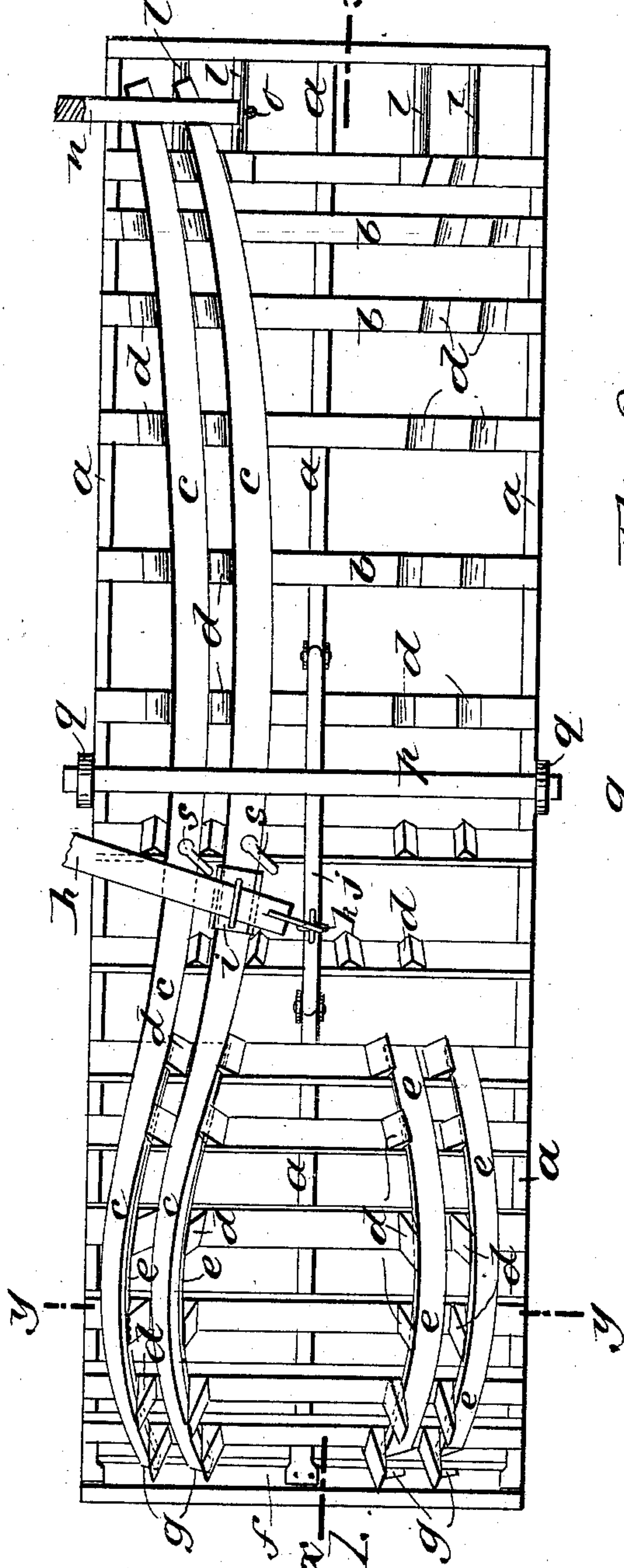


Fig. 2.

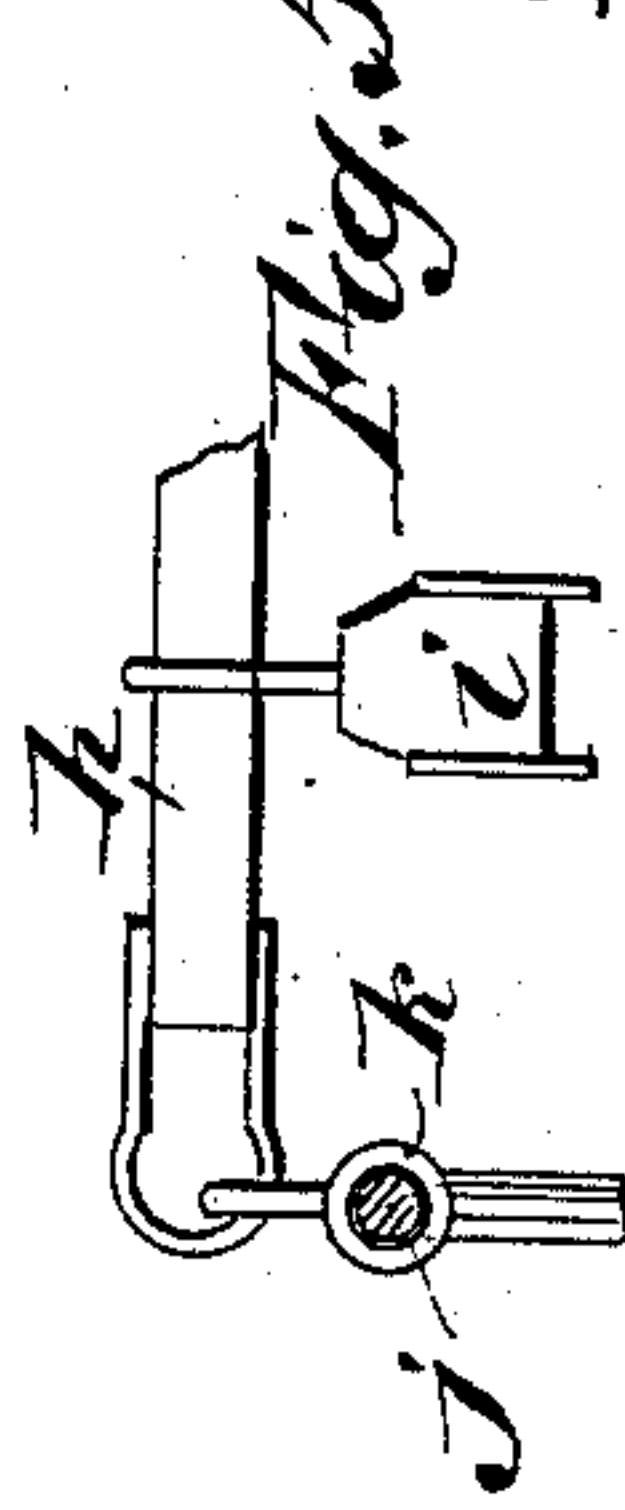
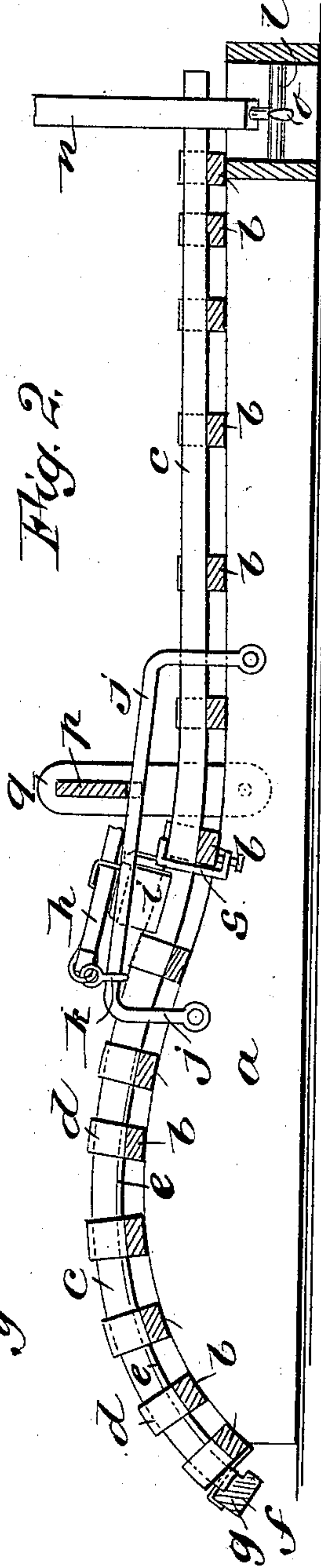


Fig. 4.

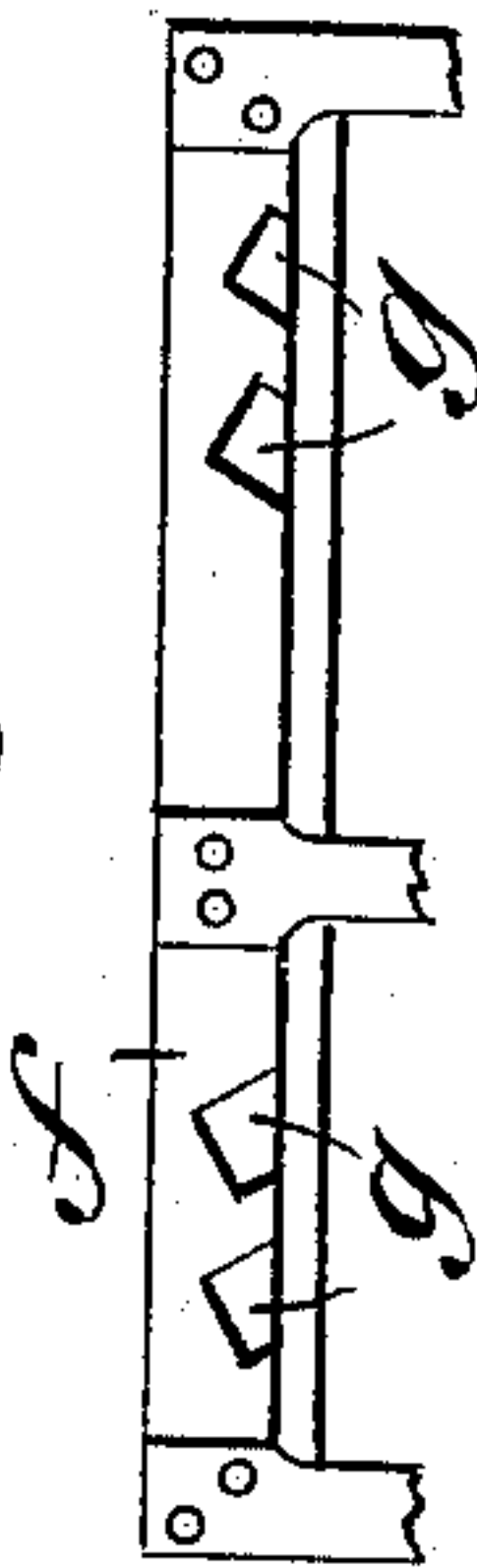
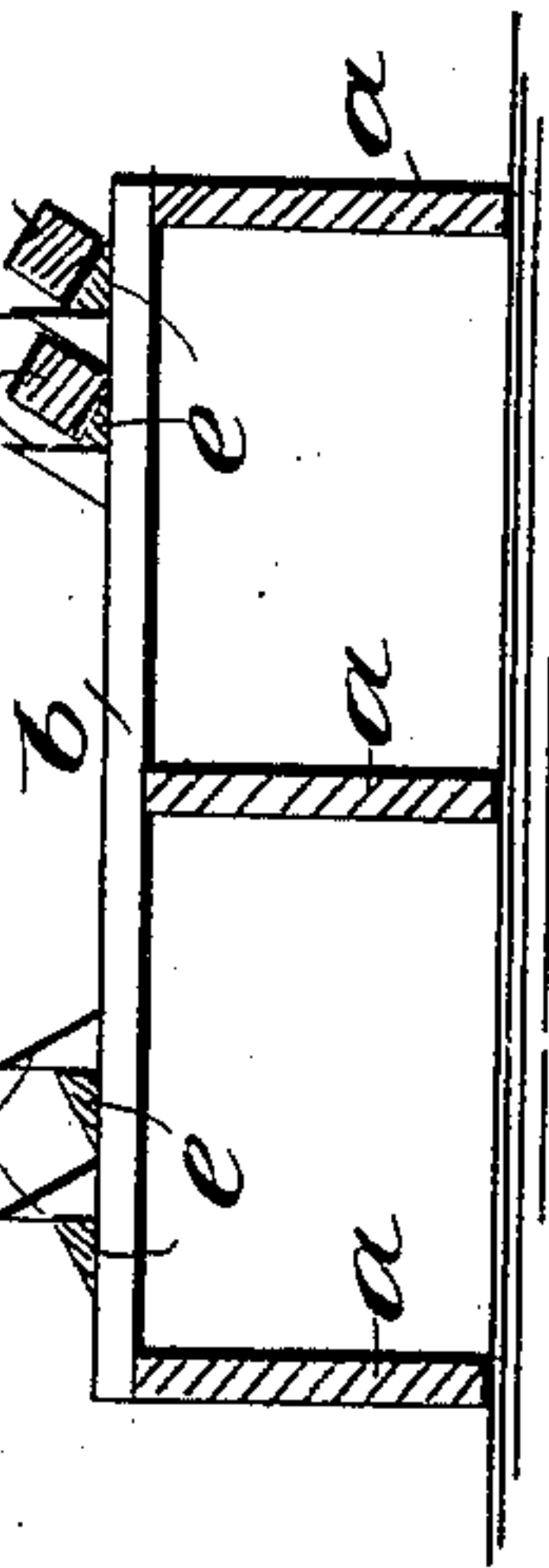


Fig. 5.



WITNESSES:

Wm. Beyer
C. Sedgwick

INVENTOR:

J. C. Bach
BY *mm*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN C. BACH, OF HILLSDALE, MICHIGAN.

SHAFT-PRESS.

SPECIFICATION forming part of Letters Patent No. 290,834, dated December 25, 1883.

Application filed November 6, 1883. (Model.)

To all whom it may concern:

Be it known that I, JOHN C. BACH, of Hillsdale, in the county of Hillsdale and State of Michigan, have invented a new and Improved Shaft-Press, of which the following is a full, clear, and exact description.

My invention consists of a bed-frame, the upper surface of which is curved in conformity with the required curves of a carriage-shaft in one plane, on which frame I have arranged retaining-studs in accordance with the required lateral curves at right angles to the first curves, with oblique bearer-pieces corresponding to the oblique sides of the shafts in places where they twist, together with levers for binding the shafts to their positions on the bed-frame, and clamps for holding the shafts thereto when bent, the whole being contrived for quickly bending and setting carriage-shafts to be retained, after being steamed and softened, until dry and fixed in their shape, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improved shaft-press. Fig. 2 is a longitudinal sectional elevation of the same on the line *x x* of Fig. 1. Fig. 3 is a transverse section on the line *y y* of Fig. 1. Fig. 4 is a detail of the clamp employed for securing the shafts at one end, and Fig. 5 is a detail of one of the pressing-lever devices.

I make a bed-frame consisting of side and middle planks, *a*, set on edge, with cross-bars *b* on the top, the planks being shaped on the upper edges in conformity with the curves required in one direction for the shafts *c*, as represented in the side elevation, Fig. 2, and on these cross-bars *b*, I arrange as many rows of retaining-studs *d* as may conveniently be employed in other curved lines, as represented in Fig. 1, and corresponding to the required lateral curvatures of the shafts, with oblique resting-blocks *e* at the bases of the retaining-studs in the places where the shafts twist or are required to twist in the bending.

At one end of the bed-frame where the

shafts are to be bent most, I attach a clamping or retaining bar, *f*, having notches *g* in the lower edge, in which the ends of the shafts *c* are to be inserted for holding them when being bent down on the frame. Along that part of the bed near the middle, where the shafts are to be forced down in the curve between the high and the low part of the frame, I employ a lever, *h*, with a presser-block, *i*, to bear on and press the shafts down, the lever having a fulcrum on the rod *j*, along which it can be shifted by a ring, *k*, connecting said lever to the rod, for applying the presser to the shafts in the different positions required. At the other end of the form I have arranged a series of rods, *l*, for the fulcrum of a lever, *n*, having a hook, *o*, to engage with one or the other of said rods *l*, as required for pressing the shafts *c* to the position against the retaining-studs *d*, where they are to be secured by clamps of any kind, or by pins, as may be preferred. The bar *p*, fixed removably in the holders *q* over the shafts, to be applied after they are bent down to the form, is to be used for clamping the shafts down and retaining them in place by wedges or other keys placed under it. Said bar also serves as a re-enforcing support to the fulcrum-rod *j* of the lever *h*. The shafts may also be retained by clamps *s*, which embrace the shafts and the cross-bars *b* of the bed-frame.

The notches *g* in the clamp-bar *f* are arranged obliquely in conformity with the required twist of the ends of the shafts and with the rests *e*.

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

1. The combination, with the curved forming-bed having the retaining-studs and oblique rests, of the lever pivoted to the fulcrum-rod, the presser, and the clamp-bar having oblique notches, substantially as and for the purpose set forth.

2. In a shaft-bending press, the curved forming-bed having the retaining-studs, the oblique rests, and the fulcrum-rods, one arranged about at its middle and the others at one end thereof, in combination with the lever

pivoted to the middle fulcrum-rod and connected to the presser, the clamp-bar having oblique notches, and the lever hooked to the end fulcrum-rods of the bed, substantially as
5 and for the purpose set forth.

3. The clamp-bar *f*, having oblique notches *g*, in combination with the curved forming-bed, retaining-studs *d*, and the oblique rests *e*, substantially as described.

4. The lever *h*, presser *i*, and the fulcrum-rod *j*, whereon said lever is adjustable, as described, in combination with the curved forming-bed and the retaining-studs *d*, substantially as specified.

JOHN C. BACH.

Witnesses:

GEO. A. KNICKERBOCKER,
M. MCINTYRE.