(No Model.)

C. P. SPENCER.

MACHINE FOR BENDING HAMES, PIPES, OR RODS.

No. 385,778. Patented July 10, 1888.

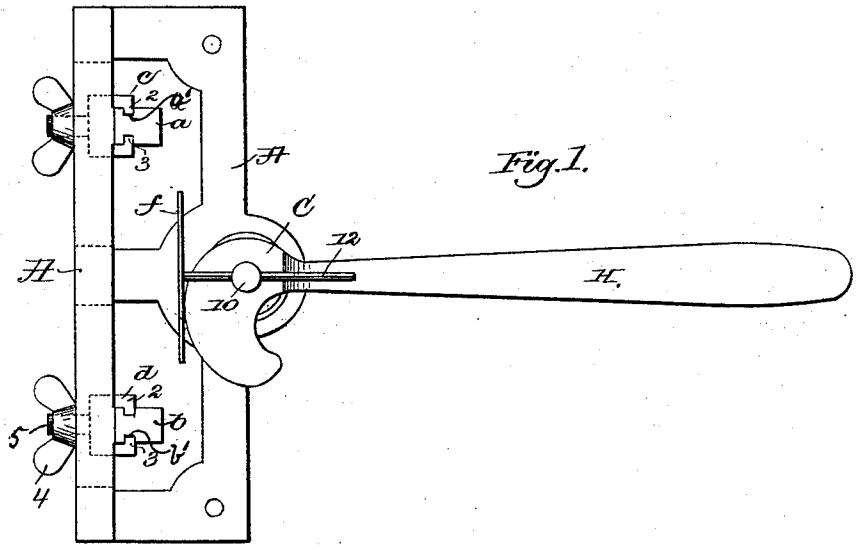


Fig. 1.

Fig. 2.

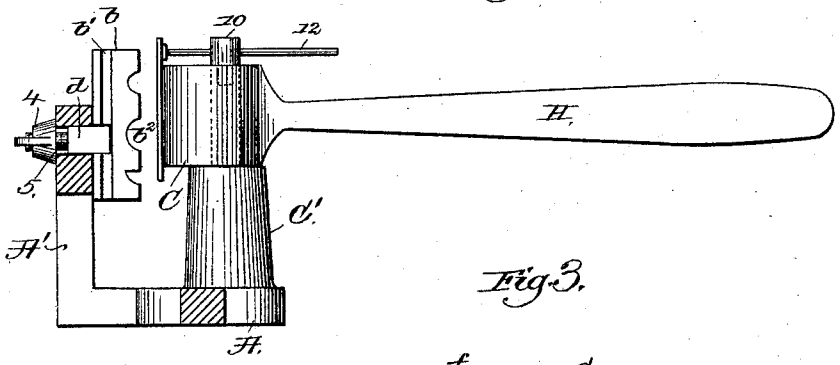
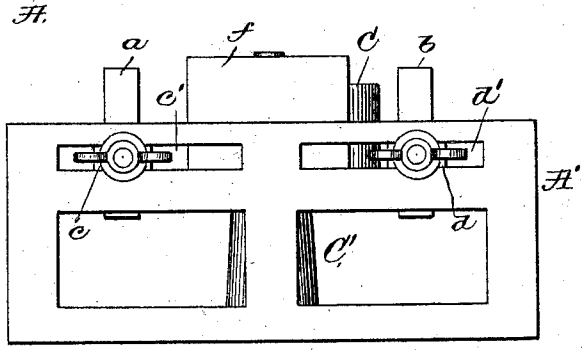


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES P. SPENCER, OF SALEM, MASSACHUSETTS.

MACHINE FOR BENDING HAMES, PIPES, OR RODS.

SPECIFICATION forming part of Letters Patent No. 385,778, dated July 10, 1888.

Application filed January 5, 1888. Serial No. 259,913. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. SPENCER, of Salem, county of Essex, and State of Massachusetts, have invented an Improvement in Machines for Bending Hames, Pipes, Rods, or other Articles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to construct a machine for bending hames, pipes, rods, or other articles; and it consists of two or more supporting-blocks adjustably connected with a frame and shaped to receive the hame, pipe, or rod to be bent, and locking devices for securing the said supporting-blocks in position, combined with a cam or eccentric mounted upon a pivot in front of and between the said supporting-blocks, and so located that when rotated by any suitable means its acting-cam face will be brought in contact with the hame or other article to be bent at a point between its supports, to thereby gradually bend the same. Each supporting-block is provided with vertical grooves or guideways, which receive the inwardly-turned ends or guides of a guide-block located in and capable of horizontal movement in a slot in the main frame, so that both a horizontal and vertical movement is given to the supporting-blocks. Each guide-block is provided with a screw-threaded stud extending rearwardly through the main frame of the machine, and a suitable thumb-nut is turned upon each screw-threaded stud, thereby drawing the guide-blocks rearwardly, firmly holding or binding the supporting-blocks against the main frame in whatever position they may be placed, thus serving as a locking device for the supporting-blocks.

Figure 1 shows in top view a hame or rod bending machine embodying this invention; Fig. 2, an end view, and Fig. 3 a rear side view of Fig. 1.

The main frame, containing a base, A, and side piece, A′, is of any suitable construction. Two supporting-blocks, *a b*, are adjustably connected with the side piece, A′, which receive the hame, pipe, or rod to be bent, each supporting-block, as *b*, consisting of a bar having grooves or guideways *a′ b′* cut in each side thereof, and having horizontal recesses b^2, of different or any desired shape, cut in the front side or face thereof, to receive a hame, pipe, rod, or other article to be bent. Two guide-blocks, *c d*, are placed in slots *c′ d′*, cast in the side piece, A′, each of said guide-blocks having inwardly-turned flanges 2 3, which enter the vertical grooves *b′*, cut in the sides of the supporting-blocks, so that said supporting-blocks *a b* may be raised and lowered within the guide-blocks *c d* at will, and as the guide-blocks are placed in the horizontal slots *c′ d′*, as described, they may be adjusted horizontally to place the supporting-blocks near together or farther apart. Each guide-block is provided with a locking device, by which it is secured in position, such locking device herein consisting of a thumb-nut, 4, turning upon a screw-threaded stud, 5, projecting rearwardly from the guide-blocks and extending through the slot in the side piece, A′, said thumb-nut upon being turned bearing against the rear side of the side piece, A′, and drawing the guide-block rearwardly until the supporting-block is brought to bear firmly against the front side of the side piece, A′.

By loosening the thumb-nut 4, the supporting-blocks may be raised or lowered in the guide-blocks according to the recess which is being used, the preferable position for such recess being in line with the guide-blocks *c d*, and, also, the said guide-blocks may be moved toward and from each other.

A cam or eccentric, C, is pivoted upon a stud, 10, rising from a post or upright, C′, secured to the base A of the frame at a point in front of and between the supporting-blocks *a b*, the acting-face of the said cam or eccentric, when the latter is turned, being brought in contact with and bearing against a hame, rod, or other article held by the supporting-blocks, to gradually bend the same.

The cam or eccentric C has attached to it a suitable handle, H, by which it is turned, to gradually bring that portion of the cam of greatest radius against the hame or rod being bent.

To prevent the acting-face of the cam from marring or abrading the surface of the article being bent, a shield, *f*, of square or other suitable shape and made of leather or equivalent flexible material, is interposed between the

face of the cam and the article being bent, said shield *f* being attached to the stud 10 by a rod or arm, 12, passing therethrough.

The article to be bent being placed in the supporting-blocks, which have previously been suitably adjusted vertically and horizontally, the cam or eccentric C is turned, so that its acting-face of greatest radius is gradually brought to bear against the article, to thus gradually bend it.

The object of bringing the recess in the supporting-blocks in line with the guide-blocks is that in such position the supporting block is best adapted to withstand the strain upon it.

I claim—

1. In a machine for bending hames, pipes, rods, or other articles, two vertically-moving supporting-blocks to receive the article to be bent, guide-blocks, and a locking device, substantially as described, for securing the same in position, combined with a cam or eccentric arranged and located to act upon the article to be bent between the supporting-blocks, as set forth.

2. In a machine for bending hames, pipes, rods, or other articles, two vertically-moving supporting-blocks to receive the article to be bent, and horizontally-moving guide-blocks carrying the supporting-blocks and locking device, substantially as described, for securing the same in position, combined with a cam or eccentric arranged and located, as described, to act upon the article to be bent between the supporting-blocks, as set forth.

3. In a machine for bending hames, pipes, rods, or other articles, two adjustable sliding supporting-blocks to receive the article to be bent, and a cam or eccentric to act upon the article between the supports, combined with a flexible shield, *f*, attached to the stud 10, and interposed between the acting-face of the cam and the article to be bent, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. P. SPENCER.

Witnesses:

BERNICE J. NOYES,

B. DEWAR.