(Model.) 2 Sheets—Sheet 1.

J. P. IOOR.

Stovepipe Elbow Flanging Machine.

No. 234,191. **Patented Nov. 9, 1880.**

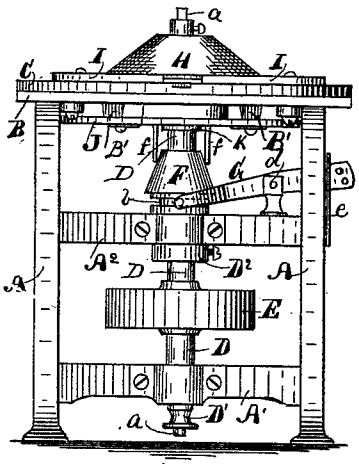


Fig. 1.

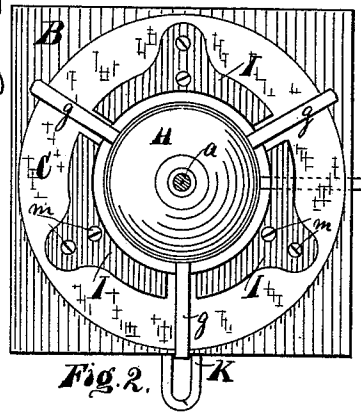


Fig. 2.

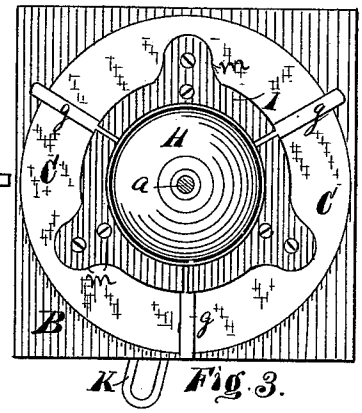


Fig. 3.

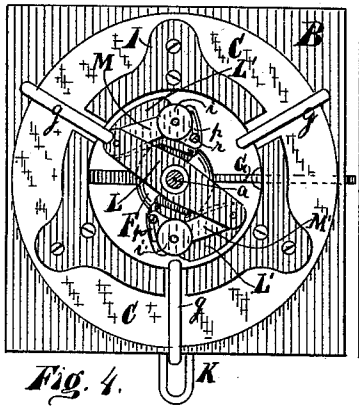


Fig. 4.

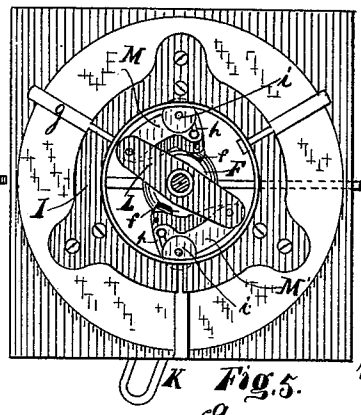


Fig. 5.

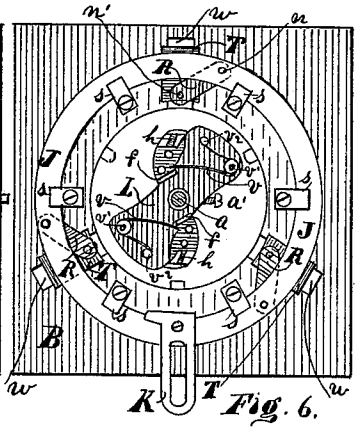


Fig. 6.

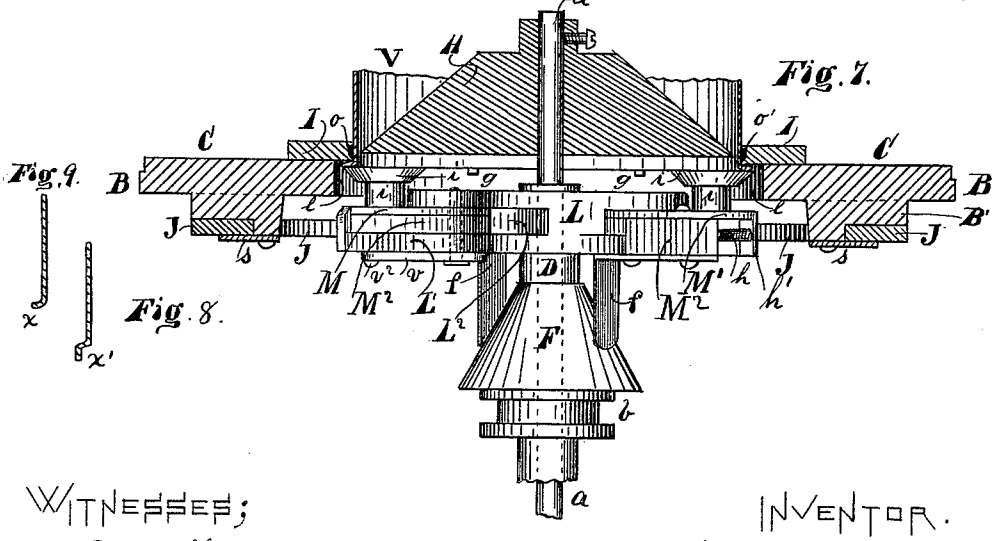


Fig. 7.

Fig. 9.

Fig. 8.

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(Model.) 2 Sheets—Sheet 2.

J. P. IOOR.

Stovepipe Elbow Flanging Machine.

No. 234,191. Patented Nov. 9, 1880.

Fig. 10.

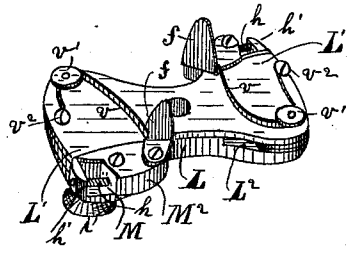


Fig. 11.

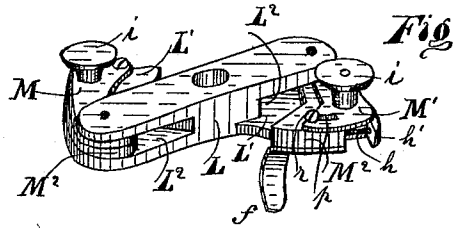
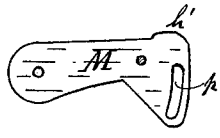


Fig. 12.



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UNITED STATES PATENT OFFICE.

JOHN P. IOOR, OF INDIANAPOLIS, INDIANA.

STOVE-PIPE-ELBOW-FLANGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 234,191, dated November 9, 1880.

Application filed August 5, 1880. (Model.)

To all whom it may concern:

Be it known that I, JOHN P. IOOR, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Stove-Pipe-Elbow-Flanging Machines, of which the following is a specification.

My invention relates to a device for forming flanges at the joints of sections of stove-pipe elbows, in which a rotary head with adjustable expansion-rollers operates, in conjunction with a set of adjustable clamps, for forming a flange on a section of stove-pipe elbow; and the objects of my invention are, first, to provide an adjustable clamping device for holding the section of pipe-elbow in position while the flange is being formed; second, to provide a rotary head with lateral adjustable rollers for forming the flange on a section of stove-pipe elbow; and, third, to afford facilities for the proper adjustment of the rollers. These objects I attain by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a front elevation of the entire device. Fig. 2 is a top view of the same with the pipe-clamping jaws open. Fig. 3 is a top view, same as Fig. 2, with the pipe-clamping jaws closed up. Fig. 4 is a top view of the machine with the pipe-clamps open and the inner clamp-cone removed, showing the top of the revolving head with the rollers adjusted close together. Fig. 5 is a view similar to that of Fig. 4, showing the pipe-clamps closed and the rollers of the revolving head adjusted apart, as in the act of forming a flange on a section of pipe-elbow. Fig. 6 is a plan view of the bottom side of the top of the machine, showing the under side of the revolving head and the movable ring for adjusting the segmental side clamps above. Fig. 7 is an enlarged sectional view of the top portion of the machine, showing the arrangement of parts more fully. Figs. 8 and 9 represent two different styles of flange formed in sections of pipe-elbows by my improved device. Fig. 10 is a perspective view of the bottom portion of the revolving head. Fig. 11 is a perspective view of the top portion of the removing head, and Fig. 12 is a plan view of one of the movable arms.

Similar letters refer to similar parts throughout the several views.

A A represent the legs of the machine; A′, a lower cross-bar, in the center of which is a step-box for the vertical shaft D. A^2 is an upper cross-bar, with a bearing-box in its center for the said shaft D. The shaft D is composed of two parts, to wit, the inner shaft, *a*, which is stationary, but made adjustable up or down by means of a screw-thread at its bottom end, which operates in a screw-threaded hole formed in the base of the cross-bar A′, and is held in position by the lock-nut D′. The outer shaft, D, consequently is hollow, and rotates on the shaft *a*, and in its bearings formed in the cross-bars A′ A^2. The collar D^2 prevents the hollow shaft D from rising up.

The shaft D is provided with a band-wheel, E, for communicating motion to the revolving head L, which is firmly secured to the upper end of the shaft. The stationary shaft *a* is provided with an adjustable cone, H, at its upper end, as shown in Figs. 1 and 7.

The top B of the machine is made preferably square, with a raised ring, C, above and a large round hole, *l*, in the center. At three or more different parts of the face of the ring C are formed radial grooves, in which are secured the gages *g g g* for supporting the lower edge of the section of pipe during the act of forming the flanges. At three other parts the top B, with its ring C, is perforated with radial oblong slots *w w w*, Fig. 6, in which the gibbed slides T T T operate. These gibbed slides are inserted in the slots *w* below, and made fast to the segmental pipe-clamps I I I by the screws *m m*, so that each segmental clamp I is free to move either toward or from the center. The gibbed slides T T T are each provided on their inner ends with a link, R, pivoted at *n′* to the gib-slides. The other end of each link R is made fast to the adjustable ring J by the pivot *n*, Fig. 6. This adjustable ring J is loosely supported on lugs B′ on the under side of the top B by the clamps *s s*. The handle K is firmly attached to the ring J, as shown in Fig. 6, so that when the handle K is in the position shown in Figs. 1, 2, 4, and 6 the segmental pipe-clamps I, by reason of the links R, are drawn back or open, as shown in Figs. 2 and 4; but when the handle K is moved to

one side, as in Figs. 3 and 5, then the segmental clamps I are pushed toward the center of the ring C and closed.

The revolving head is composed of the central part, L, with two side projecting wings or plates, L′ L′. The head L has jaws L^2 in each end, in which are pivoted the adjustable arms M M′, on which the rollers *i i* are loosely pivoted. The adjustable arms, M M′ are also attached to other adjustable arms M^2 M^2, below, which are also pivoted in the jaws L^2 of the head by the same stud pivoting the arms M M′. These arms M M′ are also made adjustable on the arms M^2 M^2 by the slot *p* and screw *r*, so that the rollers *i* may be adjusted away from or closer to the head L, and made fast to both arms, when so desired. In order to prevent the arms M M′ from slipping on the arms M^2, in addition to the screw *r* there is a screw, *h*, which passes through the flange *h*′ of the arms M M′ into the edge of the arm M^2, thus preventing the rollers *i* from being forced away from the place of adjustment.

The lower surface of the head L, Fig. 6, is provided with two springs, *v v*, one end of each being secured to their respective studs v^2 v^2, and the middle portion passing around their respective studs *v*′ *v*′, the other end of each spring being brought in contact with the downward-projecting arms *f f*, which are secured to the adjustable arms M^2 M^2. These springs *v v* cause the adjustable arms M^2 M^2 to remain in close contact with the sides of the head L until forced away by raising the cone F, which is loosely fitted on the shaft D above the bar A^2, and operated to be raised or lowered by the forked lever G, which is pivoted in the stud *d*, as shown in Fig. 1.

It will be seen from the foregoing that when the lever G is forced down at its outer end the inner end rises, carrying with it the cone-spreader F. As the cone F rises the arms *f f* of the adjustable arms M^2 are forced apart, thus causing the arms M M′, with their respective rollers *i*, also to be forced apart at the same time the head L is revolving.

A segment of a stove-pipe elbow is placed on the gages or stops *g g g*. The lever K is then moved into the position shown in Fig. 3, thus causing the segmental clamp I to clasp the pipe between them and the cone H. At the same time the lever G is depressed, causing the rollers *i i* to spread farther and farther apart while the head L is revolving, and the rollers *i* form the flanges *x* or *x*′, Figs. 8 and 9, at the lower edge of the pipe-section.

It is obvious that the flanges *x* may be formed below the segmental clamps I, as in Fig. 7, or the cone H may be raised so that its lower face is just above the clamps I, and the inner edges of the clamps I may be formed with various sizes or styles of grooves *o o*, and that the rollers *i i* may be raised and operated to form the flanges in the grooves of the segmental clamp-plates, if desired.

What I claim as new, and desire to secure by Letters Patent, is—

1. The top B, with ring C and radial slots *w w w*, combined with the segmental pipe-clamps I I I, the gibbed slides T T T, the links R R R, the movable ring J, and lever K, as and for the purpose specified.

2. In combination with the segmental pipe-clamps I I I, the cone H and shaft *a*, as and for the purpose specified.

3. The head L, with side wings, L′ L′, and jaws L^2, combined with the movable arms M^2 M^2 and adjustable movable arms M M′, the rollers *i i*, the springs *v v*, the arms *f f*, and cone-spreader F, as and for the purpose specified.

4. In combination, the head L, with lateral adjustable rollers *i i* and arms *f f*, the cone-spreader F, the adjustable segmental pipe-clamps I, and cone H, as and for the purpose specified.

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

JOHN P. IOOR.

Witnesses:
E. O. FRINK,
G. H. RENNETT.