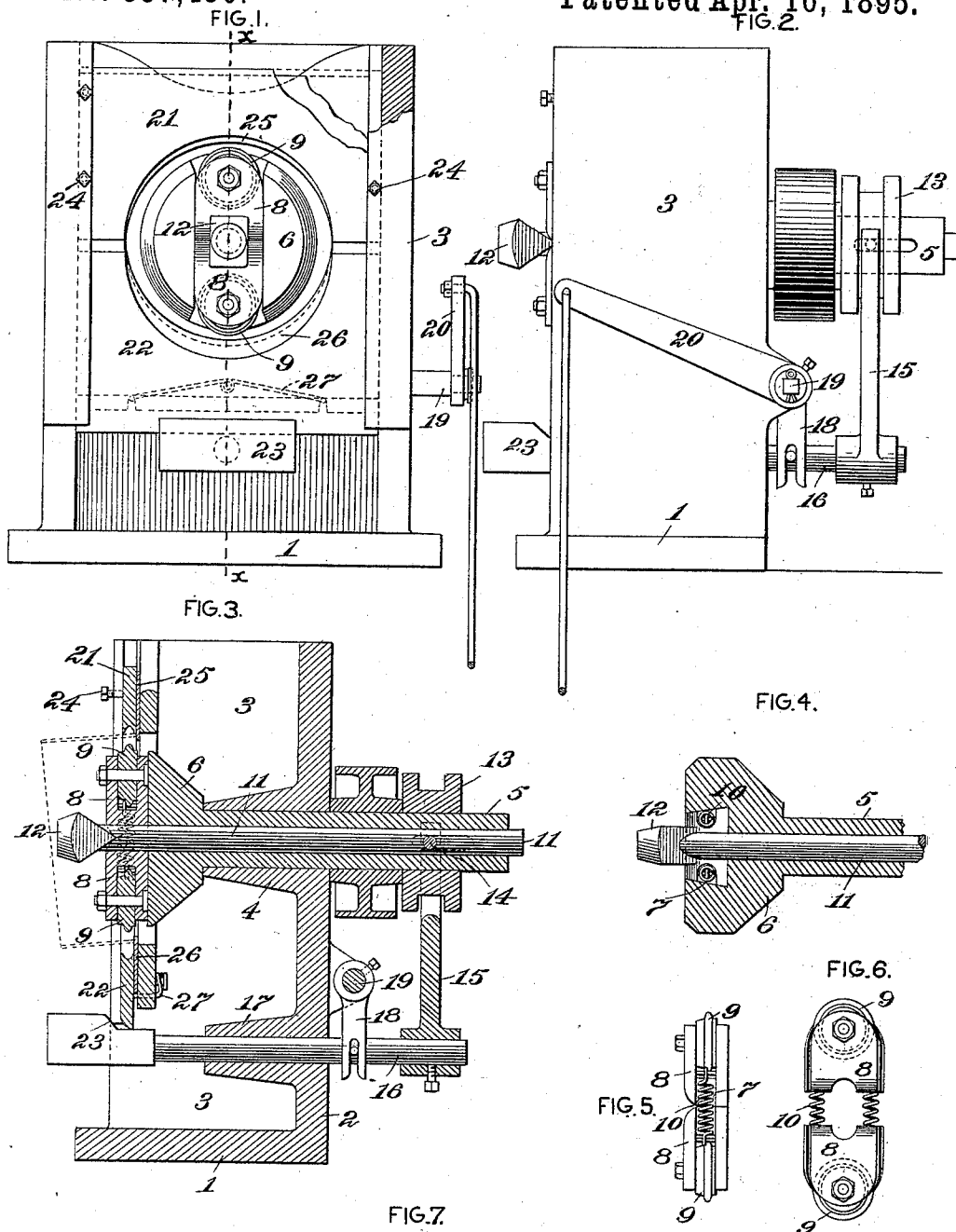


(No Model.)

U. D. ALEXANDER.
MACHINE FOR SEAMING PIPE ELBOWS.

No. 537,430.

Patented Apr. 16, 1895.



WITNESSES:

Chas F. Miller.
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Att'y.

UNITED STATES PATENT OFFICE.

URBANA D. ALEXANDER, OF CANNONSBURG, PENNSYLVANIA.

MACHINE FOR SEAMING PIPE-ELBOWS.

SPECIFICATION forming part of Letters Patent No. 537,430, dated April 16, 1895.

Application filed September 17, 1894. Serial No. 523,239. (No model.)

To all whom it may concern:

Be it known that I, URBANA D. ALEXANDER, a citizen of the United States, residing at Cannonsburg, in the county of Washington and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Machines for Seaming Pipe-Elbows, of which improvements the following is a specification.

The invention described herein relates to certain improvements in machines for seaming together the sections of a pipe elbow, and has for its object a construction whereby a groove may be formed at or near the end of one section, and a portion of metal near the end of another section forced into said groove, thereby locking the sections firmly together.

In general terms, the invention consists in the construction and combination, substantially as hereinafter more fully described and particularly claimed.

In the accompanying drawings forming a part of this specification, Figure 1 is a front elevation of my improved machine. Fig. 2 is a side elevation. Fig. 3 is a sectional elevation, the plane of section being indicated by the line x, x , Fig. 1. Fig. 4 is a sectional view of the revolving head. Figs. 5 and 6 are side and front elevations of the expanding rollers, and Fig. 7 is a sectional view illustrative of the manner of connecting the sections of an elbow.

The frame of my improved machine consists of the base plate 1, back piece 2 and the sides 3. The back is provided with an inwardly projecting hollow boss 4, through which passes the hollow shaft 5, provided at its inner end with a head 6. A dovetail groove 7 is formed diametrically across the front face of the head, and in said groove the carrier blocks 8 having correspondingly shaped projections on the rear faces, are arranged. Grooving rollers 9 are mounted in the outer ends of the carrier blocks which are normally drawn toward the center of the head by springs 10, as shown in Figs. 1, 3, 5 and 6.

A rod 11 provided at its outer end with a conical or wedge shaped head 12, is passed through the hollow shaft and between the inner ends of the carrier blocks. This rod with its head is shifted longitudinally to force the

carrier blocks outwardly, by means of a sleeve 13 surrounding the shaft 5, and connected to the rod by a pin 14, the shaft being slotted, as shown in Figs. 2 and 3, to permit of the independent movement of the sleeve, pin and rod. The sleeve 13 is exteriorly grooved for the reception of the forked ends of the arm 15, which is adjustably secured upon the sliding bar 16. This bar, which is mounted in a hollow boss 17 formed on the back 2, is shifted back and forth by a forked arm 18 on the rock shaft 19, the fork on the arm engaging a pin on the bar. The rock shaft is provided with a second arm 20, which may be connected to a treadle or handle, so that the sliding bar 16 and rod 11 may be operated by the hand or foot of the operator.

The side pieces of the frame are provided with grooves on the inner faces for the reception of the slides 21 and 22, arranged on opposite sides of the rotating head 6. These slides which are arranged in the plane of rotation of the grooving rollers 9, have circular recesses cut in the inner or adjacent faces; and in the walls of said recesses are formed grooves corresponding to the beads on the peripheries of the grooving rollers. The lower slide 22 is raised and held in operative relation to the grooving rollers by an inclined shoulder 23 on the sliding bar 16, as shown in Fig. 3, while the upper slide 21 is held in proper relation to the grooving rollers by set screws 24. The diameter of the circle formed by the recesses in the slides when closed together is approximately the external diameter of the section of pipe used in forming the elbow.

Gage plates 25 and 26 are arranged in auxiliary grooves in the side pieces 3, behind the slides 21 and 22. The lower gage plate is normally held by a spring 27 so that its inner end will project a short distance above the edge of the slide 22, and the upper gage plate 26 is supported by the lower gage plate, so that its inner edge projects a short distance beyond the inner end of the upper slide.

In operating my improved machine the end of a section of pipe is inserted between the slides until it abuts against the gage plates. The operator then shifts the rod 11 and bar 16 inwardly, thereby raising the slide 22 until

the pipe is grasped by said slides. The further inward movement of the bar 16 will not affect the slide as the upper face of the shoulder 23 is made straight, but the continued movement of the rod 11 forces the head 12 between the carriers 8, pressing them outwardly, so that the bead on the rollers 9 forces the metal into the grooves in the slides. The pipe section is then removed and the end of the next section is inserted into the grooved end of the first section. The gage plates are then moved out of the way, and the sections inserted between the slides until the previously formed groove is in line with the slides, when the rod 11 and bar 16 are again shifted, to clamp the sections and to force the rollers outward until the metal of the second section is forced into the groove formed in the first section, thus firmly uniting the two sections. These alternate operations of grooving of one section and then forcing the metal of the second section into said groove are continued until the elbow is completed.

It will be readily understood by those skilled in the art, that only one roller may be employed for forcing the metal into the groove in the slides 21 and 22, and the modifications

or changes which the use of one roller would necessitate will readily suggest themselves.

I claim herein as my invention—

1. In a machine for grooving and seaming the combination of two clamping slides provided with grooves in their inner or adjacent ends, a rotating head provided with one or more radially movable rollers provided with beads, and gage plates arranged in the rear of the slides, and movable toward and from the rotating head substantially as set forth.

2. In a machine for grooving and seaming, the combination of a stationary clamping slide and movable clamping slide provided with grooves in their adjacent edges, a rotating head, movable carriers provided with beading rollers mounted on said head and yieldingly held together, and connecting mechanism for simultaneously shifting the movable clamping slide and forcing the carriers outwardly, substantially as set forth.

In testimony whereof I have hereunto set my hand.

URBANA D. ALEXANDER.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GAITHER.