UNITED STATES PATENT OFFICE.

JAMES E. PETERS, OF LOS ANGELES, CALIFORNIA.

RIVET-FEEDING DEVICE.

942,864.


Application filed June 8, 1908. Serial No. 497,384.

To all whom it may concern:

Be it known that I, JAMES E. PETERS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Rivet-Feeding Devices, of which the following is a specification.

This invention relates to a device for riveting together sections of sheet metal pipe or tubing and especially pipe which is of such small diameter as precludes the possibility of the hand and arm of the operator, or any manipulating tool being inserted therein.

Heretofore it has been necessary to first insert a rivet into such a position as is shown in Figure 4 of the drawings and to then move the pipe onto an anvil so that the actual operation of riveting might be performed. This has involved needless waste of time and it is the prime object of my invention to provide a device where the rivets are constantly fed into a position inside the pipe to be placed in punchings at the joints thereof, and to also provide means in close proximity to the feeding means so that the pipe need only be moved a few inches to heat the rivet from the outside.

In the accompanying drawings, forming a part of this specification:—Fig. 1,—is a side elevation of my improved device. Fig. 2,—is a plan view of the same taken on line 2—2 of Fig. 1. Fig. 3,—is an enlarged cross-section taken on line 3—3 of Fig. 2. Fig. 4,—is an enlarged longitudinal sectional view of the end of the rivet arm. Fig. 5,—is an enlarged cross section through the rivet chute taken on line 5—5 of Fig. 1.

In the drawings 5 designates a supporting frame upon which is mounted a head 6. Head 6 carries a horizontally extending arm or riveting stake 7 which is of sufficient length to accommodate the longest section of sheet pipe which is designed to be riveted to another section. Riveting arm 7 is provided with a longitudinal slot 8 in its upper face and to one side of its center as clearly shown in Fig. 3, the configuration of this slot being similar to that of the rivets which it is desired to use upon the pipe. This slot is continued through head 6 as at 9 and a curved rivet chute 10 connects with a slot in the head, the sectional configuration of this chute being shown in Fig. 5. This chute has a funnel-shaped mouth 11 into which rivets 12 may be usually inserted, the rivets passing by gravity to a point adjacent the inner end of riveting arm 7. A transverse slot 13 is cut across the inner end of riveting arm 7, this slot being equal in depth to the depth of slot 8. A wedge 14 is adapted to be reciprocated in this slot and to pass between adjacent rivets therein. The rivets in slot 8 are thereupon forced out widely by the distance of the width of wedge 14, this width being equal to the diameter of a rivet head. Thus the line of rivets in slot 8 is moved out of the distance of the diameter of one rivet head upon each reciprocation of wedge 14. Wedge 14 is operated through a vertical arm 15 mounted on a horizontal shaft 16 from a foot lever 17 placed upon the floor in a convenient position below the outer end of the riveting arm, a spring 18 returning the wedge to its normal position as shown in Fig. 2.

The outer end of slot 8 is sloped upwardly toward the surface of riveting arm 7 and as the rivets are pushed up this slot by the action of wedge 14 their ends emerge above the upper surface of the arm as shown in Fig. 4. The length of the arm from wedge 14 to this slot is so arranged that when the wedge is pushed in by the operation of foot lever 17 the last one of rivets in the line of rivets in slot 8 is pushed up into this slot and its upper end pushed above the surface of the riveting arm. When the wedge is allowed to return to its normal position another rivet takes the place of the one which was immediately in front of the wedge, this rivet being pushed by gravitational action out of chute 10. Upon the re-actuation of the wedge another rivet is forced to the position shown in Fig. 4. As soon as a rivet has been placed so that its end projects above the riveting arm the pipe is moved so that one of the joint punchings therein passes over the projecting end of the rivet. The pipe is then moved to the position shown in Fig. 4 so that a rivet is placed upon anvil 18' at the end of the riveting arm, this anvil being preferably formed of hard steel. Slot 8 is sloped directly up to the edge of the anvil so that the rivet may be gradually brought up thereto by simply moving the pipe upwardly after the rivet has been engaged in one of the joint punchings. After the inner head of the rivet has been placed upon the anvil the outer end may be flattened into a head by any operative means.
For punching the holes in the joints of the pipe as the rivets are inserted a die 19 is placed in the upper surface of riveting arm 7 and provided with a punch hole 20 therein. Supported from head 6 is an operating transversely of the stake to force the rivets forwardly.

5. In a rivet feeding mechanism, a suitably mounted frame and longitudinally grooved riveting stake secured thereto, a slotted rivet carrier secured to the frame and communicating with the groove formed in the stake, said carrier adapted to feed the rivets by gravity to the groove in the stake, means mounted on said frame and operating transversely of said stake to force the rivets forwardly, and means to actuate said rivet forcing means.

3. In a rivet feeding mechanism, the combination of a channeled stake adapted to receive a row of up ended rivets and having a slot in the top through which the upper end of the rivets project, a rivet carrier communicating with said stake and adapted to feed rivets thereto by gravity, and means acting across the path of the channel formed in said stake to force the rivets forwardly.

4. In a rivet feeding mechanism, a channeled stake and a rivet carrier attached thereto, said carrier communicating with the channel in said stake, a reciprocating wedge-shaped rivet feeding arm mounted in said stake and acting transversely across the path of rivet travel, and means to reciprocate said arm.

5. In a rivet feeding mechanism, a channeled stake and a rivet carrier attached thereto, said carrier communicating with the channel in said stake, a rivet forcing means mounted on the frame and operating transversely of the stake to force the rivets forwardly, and means to actuate said rivet forcing means.

In witness that I claim the foregoing I have hereunto subscribed my name this 1st day of June, 1908.

J. E. PETERS.

Witnesses:

EDMUND A. STRAUSE,
OLLIE PALMER.