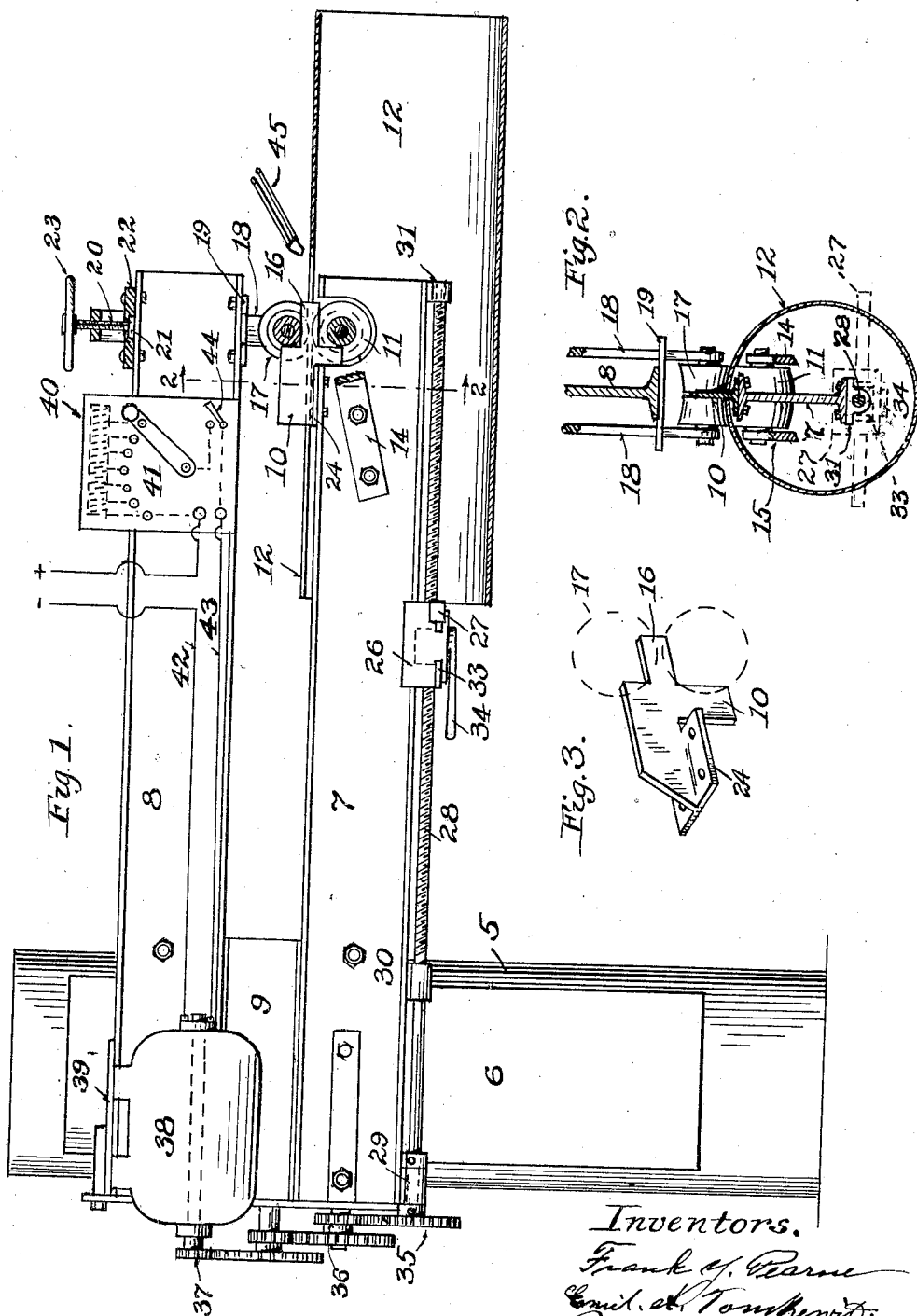


F. Y. PEARNE, E. A. TOMKEWITZ AND P. M. HANSEN.
PIPE WELDING MACHINE.
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1,330,765.

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FRANK Y. PEARNE, EMIL A. TOMKEWITZ, AND PETER M. HANSEN, OF LOS ANGELES, CALIFORNIA, ASSIGNORS TO LACY MANUFACTURING COMPANY, OF LOS ANGELES, CALIFORNIA.

PIPE-WELDING MACHINE.

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To all whom it may concern:

Be it known that we, FRANK Y. PEARNE, EMIL A. TOMKEWITZ, citizens of the United States, and PETER M. HANSEN, a subject of the King of Denmark, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Pipe-Welding Machine, of which the following is a specification.

This invention relates to pipe making machinery, and more especially to means to weld sheet metal pipe longitudinally, and the principal object is to provide a pipe machine to maintain the seam at the proper spacing for welding.

It is also an object to provide a machine to reduce the number of men to operate the same, and correct any flattening of the rolled sheet-metal adjacent the open seam.

In carrying out the above objects, it is essential that the pipe be fed at varying speeds, depending to some extent on the efficiency of the welding device and the operator, so readily operated electric means are provided to vary the feed.

In the accompanying drawings—

Figure 1 shows side elevation of a machine for carrying out the spirit of the invention, parts being broken away to clearly show the separator.

Fig. 2 is a section of the line 2—2 viewed in the direction of the arrows, showing clearly the rolls and the contact with the rolled blank.

Fig. 3 is a detailed view of the separator alone.

In our invention, one operator can wield the torch and at the same time regulate the speed of feed, the distance of the seam parts remaining constant and in exact position, so that a maximum speed may be maintained. In practice, the blank being first rolled to as near a correct form as possible, then one end tacked by the welder, the blank then being placed on the stake and with the slide drawn back, the upper roller is run down to proper contact and the motor started.

More particularly in the drawing, numeral 5 represents a support, preferably a large metal post cemented into a base and having a channel beam 6 welded thereto to form a flat face to receive the other main portions of the machine, these being formed of eye beams bolted to the pipe 5 against beam 6, so as to lie in a horizontal position;

beam 7 extending outwardly a sufficient distance to form a stake to accommodate the longest pipe blanks, this being preferably spaced from the upper beam 8 by a spacer beam 9, all the beams preferably cut even to form a face for the train of gears on the end away from the welding.

The stake 7 is cut out at its other end to form a recess in the top web and upright web into which the lower portion of the separator 10 projects, the lower portion of this being straddled by the groove formed in the convex roller 11 on which the pipe section 12 rests and rides, this roller having a bearing in a pair of yoke arms 14 and 15, secured by bolts to the beam 7, so that a larger or smaller roller may readily be placed therein to accommodate different diameters of pipe.

The separator also has a tail portion 16, that is embraced by the roller 11 and the groove in the concave roller 17 carried on a yoke 18 vertically movable and guided in guides 19 secured to the beam 8, directly over the roller 11.

The yoke 18 is U-shaped, the upper and joining portion of the inverted U is centrally threaded and is engaged by the threaded shaft 20, provided with a flanged lower end 21, which is engaged by a recessed plate 22 that is secured to the beam 8, so that when the shaft is turned by the hand wheel 23 the yoke 18 will be lowered, or elevated, as desired.

The separator 10 is also provided with a base plate 24 that is secured to the beam 7 so that this is fixed in relation to the pipe blank 12 moved by the slide 26, the arms 27, of which contact with the inner end of the pipe blank and move the same outward, according to the speed of the feed shaft 28.

The feed shaft is mounted in bearings 29, 30 and 31 secured preferably to the lower side of the beam 7, and in the slide 26 is a divided nut 33, the parts of which may be separated to disengage the screw, so that the slide may be readily moved in either direction on the shaft without moving the latter. As such a divided nut is well known and forms *per se* no part of the present invention illustration thereof is deemed unnecessary.

This shaft 28 is driven by a gear 35 outside the end adjacent the support 5, this gear meshing into a gear 36, one of a chain

of gears actuated by a gear 37 on the end of a shunt motor 38, secured to the lower portion of a shelf 39 on the upper beam 8.

The upper beam also supports the board 5 40 on which is preferably mounted the rheostat 41, placed in convenient position for operation by the welder; this rheostat being placed in the circuit supplying current to the motor, the connectors 42 and 43 being 10 preferably controlled by a switch 44.

By throwing in the switch and varying the intensity of the field, the motor may be varied to "pull" the pipe to the welder operating the torch 45, just far enough away 15 from the rollers so that they will not be affected, and as one pipe is completed and taken off the stake, a new blank is placed on the stake, straddling the separator, after the slide has been returned to the proper 20 position and the roller 18 lifted to allow the pipe blank to slide by, the blank being supported in a chain sling in the usual manner, then the screw 20 is turned until the roller 17 is forced into contact with the pipe 25 blank, eliminating any tendency to flatness near the seam margin, the motor started, the speed adjusted by the rheostat and the welding begun at the proper point, and continued until the seam is closed and a pipe 30 completed.

What we claim is:

1. In a machine for welding metal pipe, a vertical support, a stake or arm projecting horizontally therefrom and supported 35 wholly thereby, and adapted to have a tubular pipe blank slid thereon from the outer end, means at the outer end of said arm to guide the proximate edges of the pipe blank, feed mechanism adapted to feed said 40 blank toward the outer end of said arm, and means for varying the speed of said feed mechanism at the will of the operator.

2. In a machine for welding metal pipe, a vertical support, a stake or arm projecting horizontally therefrom and supported 45 wholly thereby, and adapted to have a tubular pipe blank slid thereon from the outer end, means at the outer end of said arm to guide the proximate edges of the pipe blank, feed mechanism adapted to feed said blank 50 toward the outer end of said arm, a variable speed prime mover for operating said feed mechanism, and a controlling device for said prime mover located in proximity to the 55 outer end of said arm in convenient reach of the welder.

3. In a machine for welding metal pipe, a support, a stake or arm projecting horizontally therefrom, a lower convex roll and 60 an upper concave roll at the outer end of

said arm adapted to grip the pipe therebetween adjacent its edges, said rolls having central channels in line with the space between the pipe edges, a thin separator blade supported by said arm and lying between 65 said rollers in said channels.

4. In a pipe seam welding machine, a support, an arm projecting horizontally therefrom having lateral flanges at its lower edge, means at the outer end of said arm 70 for guiding the edges of the pipe blank, a slide engaging said flanges and adapted to abut against the inner edge of the pipe blank, a longitudinal feed screw rotatably supported by said arm and engaging said 75 slide, and means for rotating said feed screw.

5. In a pipe seam welding machine, a support, an arm projecting horizontally therefrom having lateral flanges at its lower 80 edge, means at the outer end of said arm for guiding the edges of the pipe blank, a slide engaging said flanges and adapted to abut against the inner edge of the pipe blank, a longitudinal feed screw rotatably 85 supported by said arm and engaging said slide, an electric motor for rotating said screw, and means located adjacent the outer end of said arm in convenient reach of the 90 welder for controlling the speed of the motor.

6. In a pipe seam welding machine, a vertical support, a horizontal arm projecting therefrom, a second horizontal arm above said first named arm, a pipe blank 95 engaging roller carried at the outer end of the lower arm, a vertically movable coacting roller carried by the upper arm above said first named roller, a slide movably carried 100 by the lower arm, and adapted to abut the inner end of the pipe blank, and means for moving said slide.

7. In a pipe seam welding machine, a vertical support, a horizontal arm projecting therefrom, a second horizontal arm above 105 said first named arm, a pipe blank engaging roller carried at the outer end of the lower arm, a vertically movable coacting roller carried by the upper arm above said first 110 named roller, a slide movably carried by the lower arm, and adapted to abut the inner end of the pipe blank, an electric motor having connections for moving said slide, and a rheostat carried by said upper arm 115 near the outer end thereof for varying the speed of the motor.

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