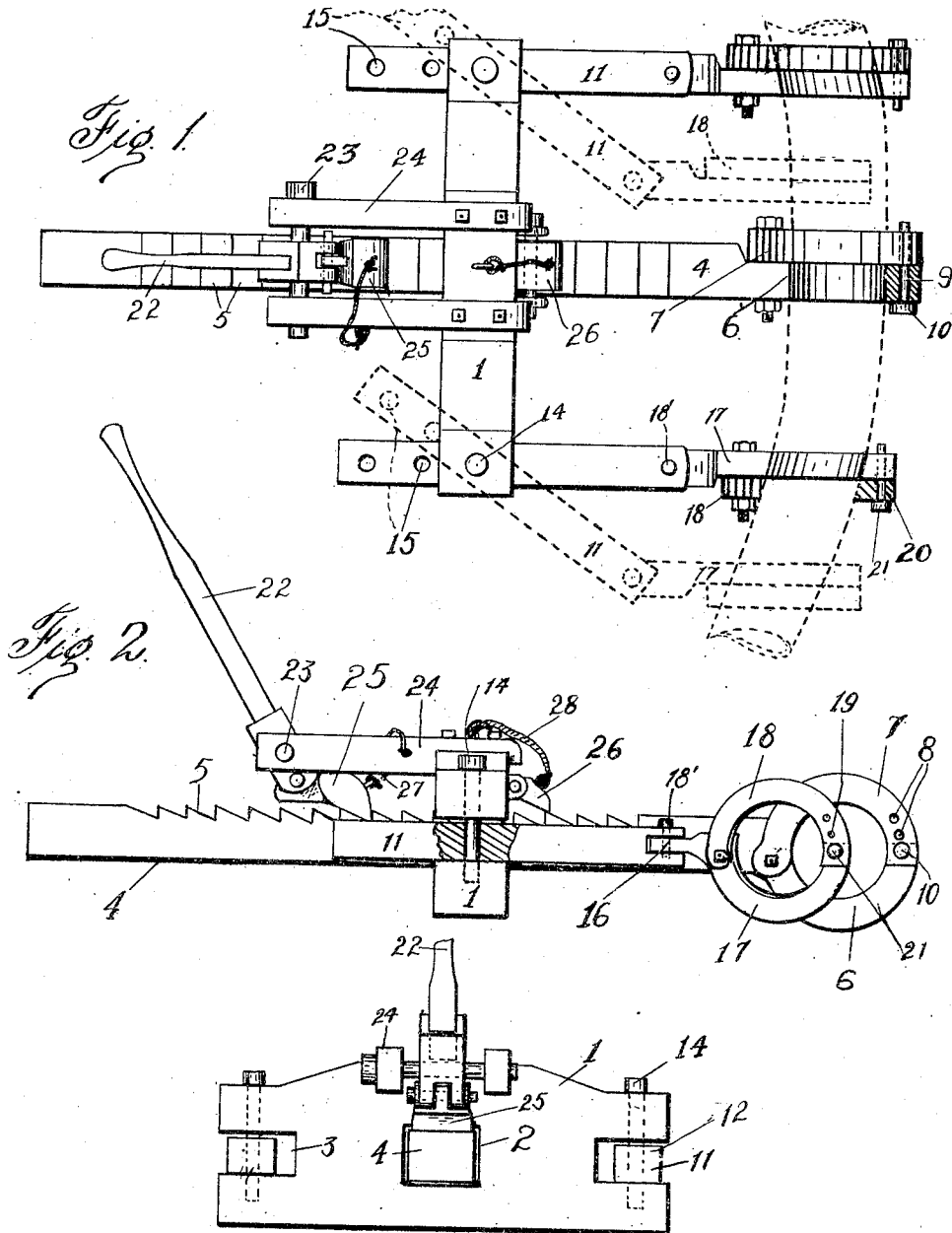


C. C. RUTLEDGE.
PIPE BENDING MACHINE.
APPLICATION FILED JAN. 17, 1913.

1,079,442.

Patented Nov. 25, 1913.



WITNESSES:

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Fig. 3.

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CALEB C. RUTLEDGE, OF ALVORD, TEXAS.

PIPE-BENDING MACHINE.

1,079,442.

Specification of Letters Patent.

Patented Nov. 25, 1913.

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To all whom it may concern.

Be it known that I, CALEB C. RUTLEDGE, a citizen of the United States, residing at Alvord, in the county of Wise and State of Texas, have invented certain new and useful Improvements in Pipe-Bending Machines, of which the following is a specification.

This invention relates to new and useful improvements in pipe bending machines.

The objects of the invention are; the provision of a base shaped to receive a reciprocatory rack bar having a pipe engaging member at its forward end, said base also pivotally and adjustably supporting pipe fulcrum members disposed laterally of the rack bar and having particularly constructed pipe engaging devices in which the pipe is fulcrumed during the bending or shaping operation; the provision of an operating lever carried by the base and provided with a dog engaging the teeth of the rack bar, together with a pawl mounted on the base and engaging the teeth of the rack bar; and the provision of readily removable fastenings and pivot supports whereby the machine may be expeditiously taken apart in conveniently transported elements and readily and easily assembled without loss of time.

A still further object of the invention is to provide a device of the character described that will be strong, durable, efficient and simple and comparatively inexpensive to construct, also one in which the several parts will not be likely to get out of working order.

With these and various other objects in view the invention has relation to certain novel features of construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view of the machine, also indicating in dotted lines, positions to which the fulcrum members may be swung. Fig. 2 is a side elevation of the same, and Fig. 3 is a rear elevation of the machine.

In the drawings the numeral 1 designates a transverse base of heavy construction having a central rectangular opening 2 and at each side inwardly extending bearing recesses 3. An elongated rack bar 4 passes through the opening 2 and is provided with teeth 5 upon its upper side.

The forward end of the rack bar is reduced

in thickness and provided with a segmental jaw 6 to which is hinged a segmental keeper 7. The keeper has a plurality of apertures 8 arranged to register with an aperture 9 in the outer end of the jaw. Any of the apertures 8 may be brought into register with the aperture 9 and a pin 10 passed therethrough thus fastening the jaw and keeper together. Pipes of various diameters may thus be held.

In each recess 3 a fulcrum member 11 is pivoted. Each fulcrum member comprises a bar pivoted in the recess on a vertical headed pin 14 inserted in the base 1 and passing through one of a series of apertures 15 in the bar—the latter serving to adjust the bar longitudinally. The forward end of each bar is bifurcated and receives the ear 16 of a segmental jaw 17, said ear being pivoted on a headed pin 18 passing vertically through the furcations of the bar. Each jaw may be swung laterally. To each jaw a segmental keeper 18 is pivoted similar to the keeper 7 and likewise apertures 19 and 20 and a pin 21 are provided, whereby said keeper 18 may be adjustably fastened to its corresponding jaw. It will be noted that each jaw 17 and its keeper 18 are beveled as shown in Figs. 1 and 2, which beveled portions extend relatively away from the jaw 6 of the rack bar which is disposed centrally of the fulcrum members. These beveled or inclined faces serve to better grip the pipe and conform to the contour thereof as the same is shaped.

It will be noted that the fulcrum members, owing to their hinged joints and supports, may be swung into various positions relative to the rack bar as indicated in Fig. 1, thereby permitting various shapes to be formed. Also by adjusting one fulcrum member in advance of the other the pipe may be irregularly bent or a compound curve produced.

It is to be understood that in operating the machine the pipe in some instances must be fastened against longitudinal displacement by any suitable means (not shown) and it may also be necessary to fix the machine in place by any suitable means (not shown). When the fulcrum members are in the position shown in dotted lines in Fig. 1 and the rack bar is moved outward, said members will tend to straighten but their jaws will bind on the pipe and the relative positions with regard to the jaw 6 will not

change sufficiently to defeat the bending of the pipe in an irregular curve. It is apparent that by adjusting the members 11 one in advance of the other through the agency of the pins 14 and the apertures 15, bends of various curvature may be had.

For propelling the rack bar 4 and shaping or bending the pipe, a hand lever 22 is pivoted on a headed pin 23 passed transversely therethrough and supported in the rear ends of arms 24 extending from the top of the base 1 to which they are bolted. The lower end of the lever is bifurcated and pivotally receives a dog 25 engaging the teeth 5 of the rack bar. By swinging the lever the rack bar is driven forward and retained by a pawl 26 pivoted on the forward side of the base and engaging the rack teeth. Flexible connections 27 and 28 respectively are attached to the dog and the pawl and secured as shown. The dog and pawl may be conveniently raised by these connections when it is desired to move the rack bar rearward.

When it is desired to shape a pipe the fulcrum members 11 are swung and adjusted to the position deemed necessary to produce the desired shape and the keepers 17 and 18 swung so that the pipe may be placed in the jaws 6 and 17, the rack bar 4 having previously been moved to the proper position. After the keepers are adjusted and fastened, the hand lever 22 is swung whereby the rack bar 4 is moved forward. The jaws 17 form fixed fulcrum points on which the pipe is fulcrumed as it is bent by the forward movement of the bar 4. In this way the desired shape is produced.

This machine is more especially adapted for shaping pipes of large diameters such as are used for oil and water wells, but it may be used for bending various sizes of pipes and other objects.

The parts of the machine are made comparatively heavy to stand the strain and rough usage.

Headed pins and removable fastenings as specified are employed so that the machine

may be expeditiously and easily taken apart and assembled incidental to its transportation from place to place.

What I claim is:

1. In a pipe shaping machine, a base, a shaping member movable longitudinally on the base, a pipe receiving member mounted on the forward end of the said member, fulcrum members pivoted on the base, fulcrum jaws hinged on the forward ends of the fulcrum members, and keepers hinged and fastened to the fulcrum jaws, said jaws and keepers having beveled pipe receiving faces.

2. In a pipe shaping machine, a base, a rack bar slidable longitudinally, a hand operating lever having a dog engaging in the teeth of the rack bar, a jaw fixed on the forward end of the rack bar, a keeper hinged to the jaw, fulcrum bars pivoted at each side of the base and between which the rack bar is disposed, fulcrum jaws having ears hinged in the forward ends of the fulcrum bars, and keepers hinged on the fulcrum jaws.

3. In a pipe shaping machine, a base, a rack bar slidable longitudinally, a hand operating lever having a dog engaging in the teeth of the rack bar, a jaw fixed on the forward end of the rack bar, a keeper hinged to the jaw, fulcrum bars pivoted at each side of the base and between which the rack bar is disposed, fulcrum jaws having ears hinged in the forward ends of the fulcrum bars, and keepers hinged on the fulcrum jaws, the fulcrum jaws and keepers having beveled pipe receiving faces and the beveled face of one jaw being inclined relatively away from the beveled face of the other jaw and the beveled faces of the keepers of said jaws being correspondingly oppositely inclined.

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

CALEB C. RUTLEDGE.

Witnesses:

TAYLOR GAULT,
OSCAR PHILLIP.