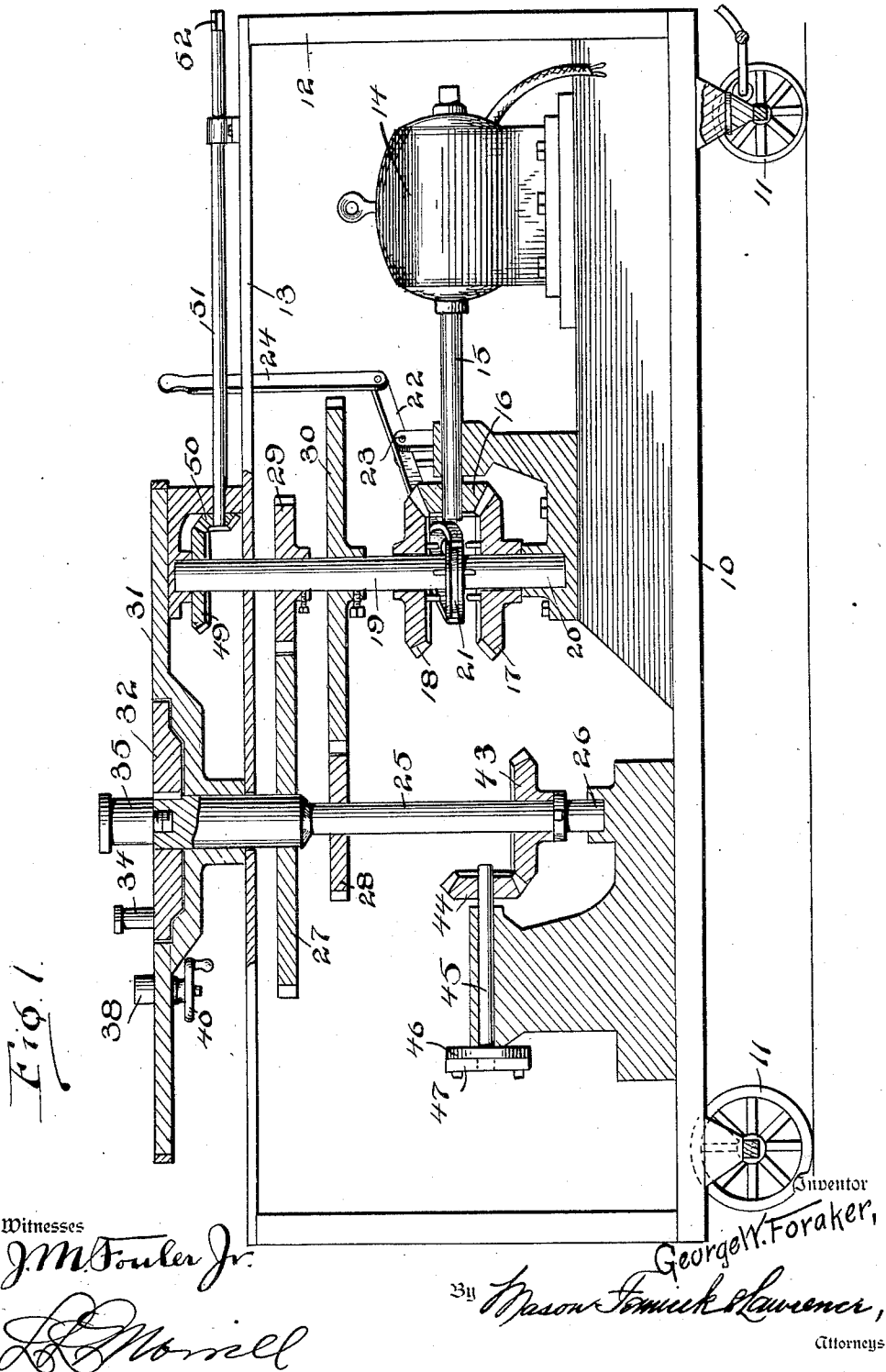


G. W. FORAKER.
MACHINE FOR BENDING RODS.
APPLICATION FILED SEPT. 18, 1911.

1,044,766.

Patented Nov. 19, 1912.

2 SHEETS—SHEET 1.

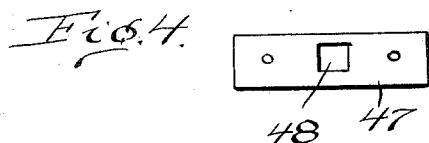
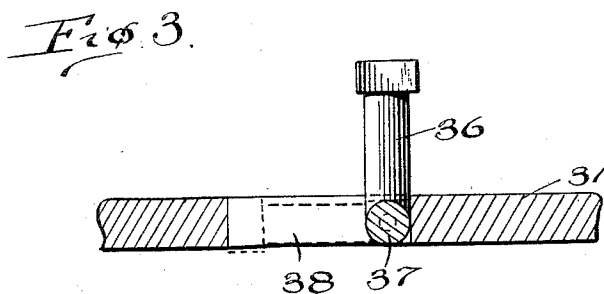
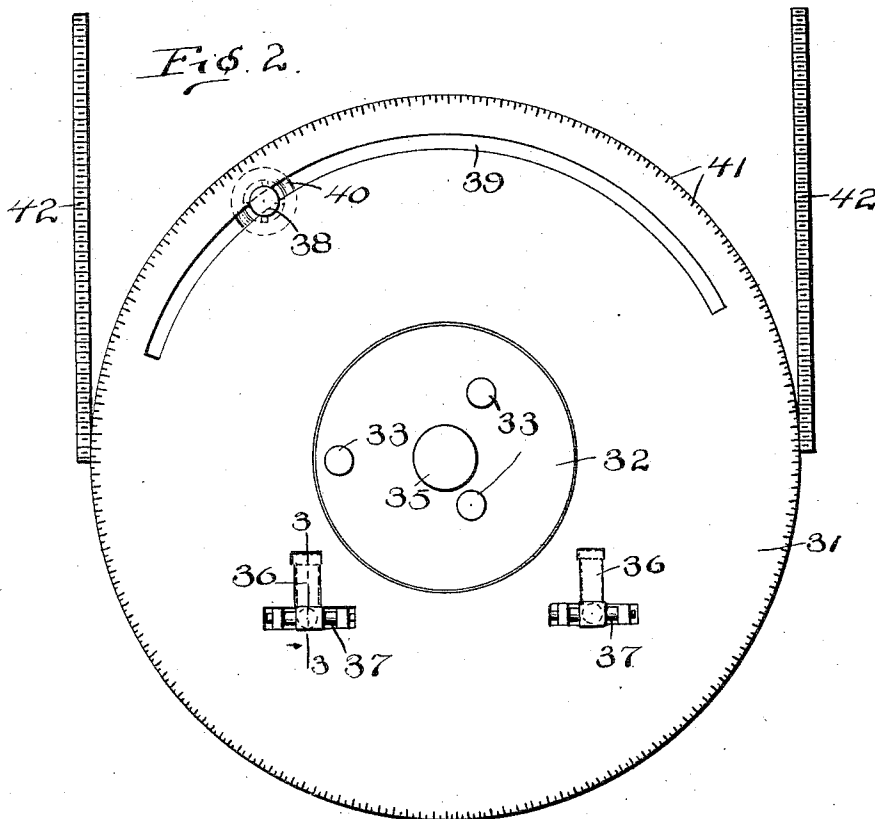


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Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. FORAKER, OF SEATTLE, WASHINGTON.

MACHINE FOR BENDING RODS.

1,044,766.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed September 18, 1911. Serial No. 650,002.

To all whom it may concern:

Be it known that I, GEORGE W. FORAKER, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Machines for Bending Rods; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a machine for bending rods and while adapted for bending rods for any purpose where bent, twisted or curved rods or bars are desirable, is especially adapted and intended for bending and twisting such bars for structural work and especially for use in cement or concrete reinforcing.

An object of the present invention is to provide improved mechanism embodying a table for receiving the rod to be bent and means for rotating a part of the table carrying therewith a part of the rod to produce the required or desired bend or curvature.

A further object of the invention is to provide improved means for determining the curvature secured or when the desired curvature has been obtained.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangements of parts as will be hereinafter more fully described and claimed.

In the drawings:—Figure 1 is a vertical sectional view of the improved machine. Fig. 2 is a top plan view of the table and gage devices. Fig. 3 is a detail view of one of the hinged pins carried by the table. Fig. 4 is a view in front elevation of one of the removable chucks employed for twisting rods.

Like characters of reference indicate corresponding parts throughout the several views.

The improved mechanism which forms the subject matter of this application is mounted upon a base 10 which may be stationary or mounted portably, as upon the wheels 11 and carries a framework 12 and deck 13.

Within the frame a prime mover 14 is mounted connected with a shaft 15 carrying a pinion 16 intergeared with the beveled gears 17 and 18. The gears 17 and

18 are mounted to move normally loosely upon a vertical shaft 19 journaled in a thrust bearing at 20 and with a clutch member 21 splined upon the shaft 19 and longitudinally movable thereon and positioned and adapted to engage with either of the gears 17 or 18. The clutch member 20 is controlled by a lever 22 fulcrumed as at 23 and provided with an arm 24 by which the same is controlled to manipulate the clutch.

Mounted adjacent the shaft 19 is a vertical shaft 25 likewise mounted in a thrust bearing 26 and intergeared with the shaft 19 by means of gears 27 and 28 carried fixedly upon the shaft 25 and gears 29 and 30 secured to the shaft 19 by set screws and either adapted to be released from rigid engagement with such shaft so that the other may operate and rotate the shaft 25.

Upon the deck 13 a stationary table 31 is mounted with the shaft 25 extending upwardly through a central opening in such table and carrying a rotating disk 32. The rotating disk 32 is provided with a plurality of holes 33 at different distances from the center into any one of which the pin 34 may be inserted as the requirement of the case may dictate. Centrally of the rotating table 32 a roller 35 is mounted so that a rod inserted between the roller 35 and the pin 34 in any one of the holes 33 will engage against both the pin and the roller when the table 32 is rotating. The stationary table 31 is provided with a plurality of pins or rollers 36 which preferably are pivoted as at 37 so that either of the said pins or both may be thrown downwardly into a recess 38 formed in the table 31. When either of the pins or rollers 36 is raised it serves as a stop to prevent a rod which is engaged by the pin 34 and the roller 35 from being rotated with the rotation of the table 32.

To act as a stop for the other end of the rod when a sufficient degree of curvature has been secured, a stop 38 is mounted in a segmental slot 39 and held adjustably in position by any approved form of lock, as the hand wheel 40.

The table 31 is further provided about its periphery with a scale, indicated at 41, so that it is not necessary to rotate the table 32 until the rod engages the stop 38 but it may be stopped at any point to be determined by the scale 41. Along the deck 13

other scales extend laterally, as indicated at 42 by which the height of the arch produced by the curvature is determined.

The shaft 25 also carries a beveled gear 43 which intergears with a gear 44 upon a shaft 45 which carries a head 46 to which is secured a chuck 47 having therein a squared or other socket as indicated at 48 in Fig. 4 so that the end of a square or other angular rod may be inserted into such chuck and the machinery operated to twist such rod. It will be apparent that by the manipulation of the clutch 21 the table 32 may be rotated in either direction to produce a bend in the rod operated upon either way desired.

For bending small rods it is not always found necessary to employ the prime mover 14 but the bending can be accomplished satisfactorily by hand power. For this purpose a gear 49 is mounted upon the shaft 19 intergeared with a pinion 50 carried upon a shaft 51 which extends along the top of the deck 13 and is provided with a squared extremity 52 to receive a crank by which the mechanism may be manually rotated when desired.

While both of the gear wheels 29 and 30 are shown in engagement with their coacting gears 27 and 28 it is to be understood that only one of such gears is normally in such engagement or if in engagement only one is rigidly secured to the shaft 25 and the other rotates freely upon such shaft, the one in use being determined by the speed at which

it is desired to drive the rotating table, it being obvious from an inspection of the drawing that the use of the different gears will produce a different speed of rotation of the table.

I claim:—

1. In a rod bending machine, a table, a segmental slot formed adjacent the edge of the table, a gage adjustably movable in the slot, a disk mounted centrally of the table, means to rotate the disk, an abutment carried centrally of the disk, means to locate an abutment at varying distances from the central abutment, and abutments carried by the table located in sockets adapted to receive either of said abutments when turned out of operative position.

2. In a rod bending machine, a table provided with a central opening, sockets disposed upon opposite sides of the central opening, abutments hinged within the sockets and adapted to be turned downwardly wholly within the sockets and to be turned upwardly to extend above the table, a disk mounted to rotate in the central opening, a central abutment carried by the disk, and an abutment carried by the disk spaced from the central abutment.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. FORAKER.

Witnesses:

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C. C. PHILLIPS.