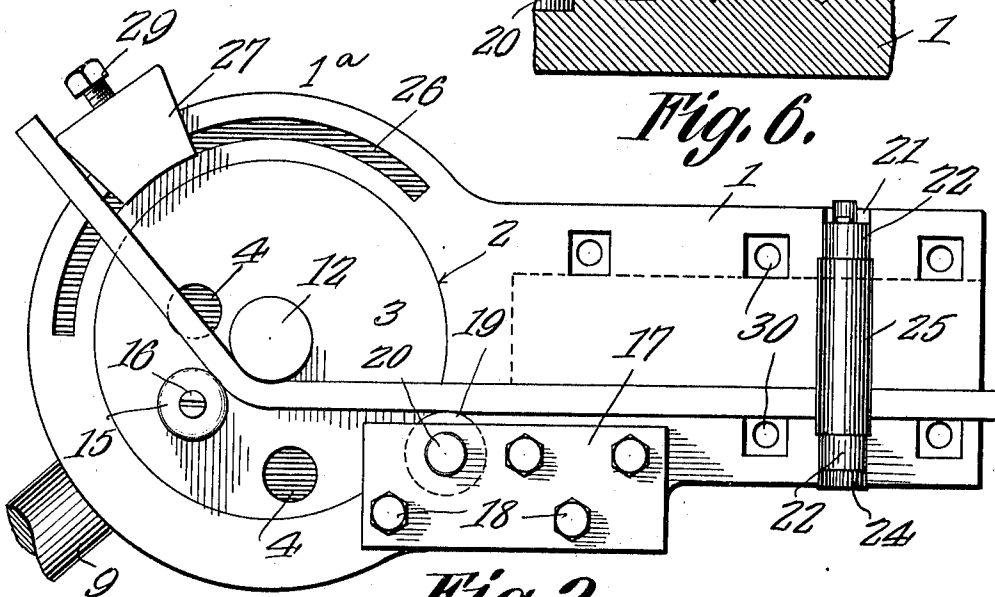
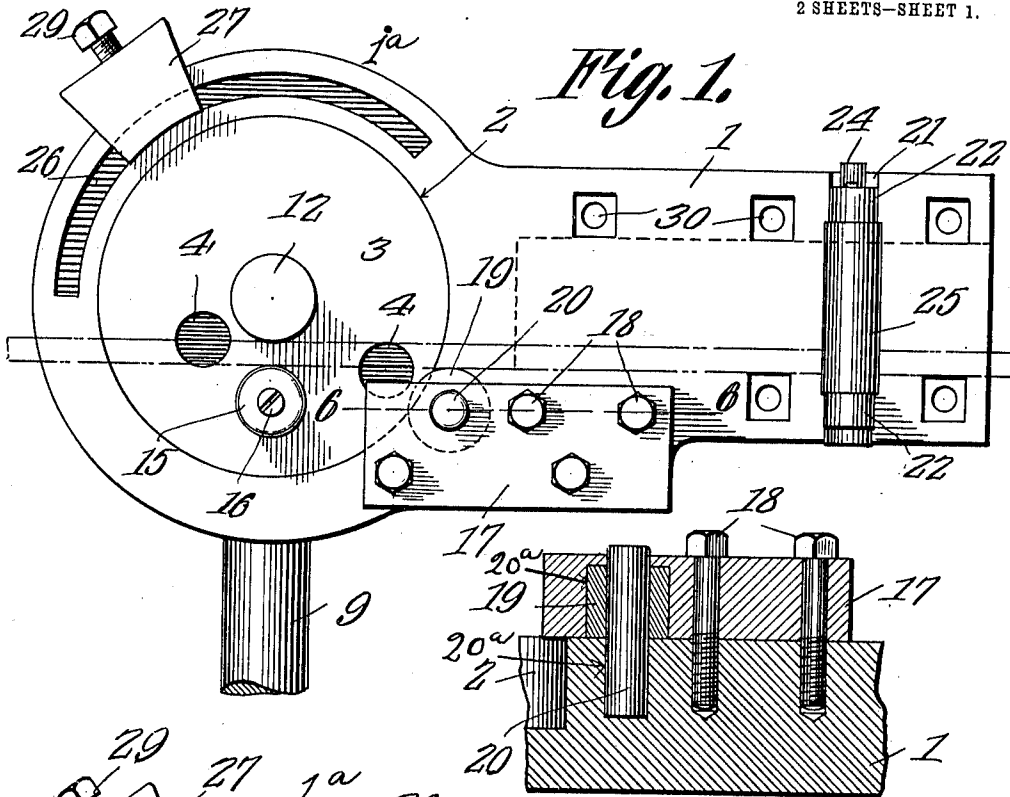


J. H. STRAUS, JR.
WIRE BENDING TOOL.
APPLICATION FILED DEC. 5, 1911.

1,020,582.

Patented Mar. 19, 1912.

2 SHEETS—SHEET 1.



WITNESSES

Frank B. Wooders.
E. Walton Brewington.

INVENTOR

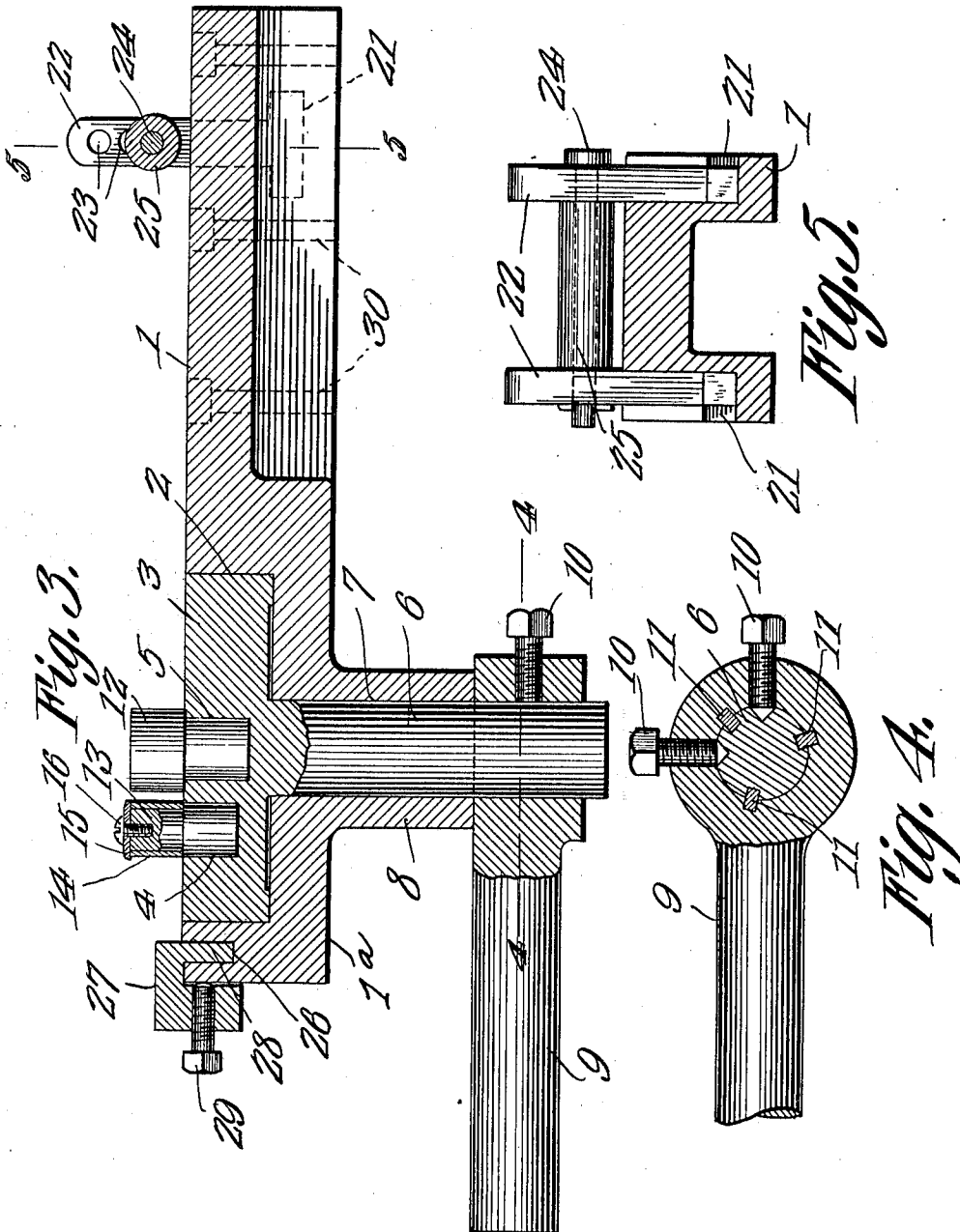
Joseph H. Straus, Jr.
By Henry F. Brewington, Attorney

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UNITED STATES PATENT OFFICE.

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RAYMOND H. WILLIAMS, OF BALTIMORE, MARYLAND.

WIRE-BENDING TOOL.

1,020,582.

Specification of Letters Patent.

Patented Mar. 19, 1912.

Application filed December 5, 1911. Serial No. 663,996.

To all whom it may concern:

Be it known that I, JOSEPH H. STRAUS, Jr., a citizen of the United States, residing at Baltimore city, State of Maryland, have invented certain new and useful Improvements in Wire-Bending Tools, of which the following is a specification.

This invention relates to bending machines and particularly to machines for bending metal rods or pipes. In machines for such purposes difficulty has been encountered, owing to the tendency of the article being bent to become misplaced in various ways during the operation, whereby it may be wrongly, insufficiently or excessively bent, thus spoiling or injuring the material. It is desirable in such operations that the mechanism be so constructed and arranged that the exact direction, extent and position of the bend be positively insured.

The object of the present invention is to provide a machine of this character with improved means whereby a pipe or rod may be securely held against displacement during bending.

A further object is to provide such a machine with improved means whereby the bend may be accurately located in advance of the operation.

A further object is to provide such a machine with improved means whereby the exact angle or extent of the bend may be determined in advance of the operation.

A further object of the invention is to provide a machine of this character of a compact form and generally improved construction, of sufficient strength to withstand all possible strains for bending material within the known capacity of the machine and in which all of the parts are readily removable and renewable in the event of injury or loss of any of the parts.

With these and other objects in view, the invention consists in the improved construction, arrangement and combination of the parts of a machine of this character which will now be fully described and afterward specifically claimed.

In order that the invention may be readily comprehended, it will now be specifically described, in connection with the accompany-

ing drawings in which is illustrated a preferred embodiment of the invention, and in which—

Figure 1 represents a plan view of the machine, the article to be bent being indicated in dotted lines in position to be operated upon; Fig. 2 represents a view similar to Fig. 1, with the article shown in full lines, the parts of the machine, and the article operated upon being shown in the positions they assume at the completion of the operation; Fig. 3 represents a longitudinal, sectional view of the machine; Fig. 4 indicates a sectional view on the plane indicated by the broken line 4—4 of Fig. 3; Fig. 5 represents a sectional view on the plane indicated by the broken line 5—5 of Fig. 3, the standards and roller being shown in elevation; and Fig. 6 represents a sectional view on the plane indicated by the broken line 6—6 of Fig. 1.

Like reference characters indicate the same parts wherever they appear in any of the figures of the drawings.

Referring specifically to the drawings, 1 indicates the base or main body of the tool or machine of any suitable material having at one end a rounded head 1^a, in which head is provided a circular recess or seat 2 into which is fitted rotatably a disk 3, a series of sockets or recesses 4 being provided in the face of the disk in line with different radii of the disk and at different distances from the center thereof, at which point is formed a central socket or recess 5. A spindle or stem 6 projects from the underside of the disk 3 through a bore 7 in a boss 8 projecting from the underside of the head 1^a of the main body 1 and preferably made integral therewith. A handle 9 is fixed, by means of set screws 10 and keys 11 to a portion of the stem 6 which protrudes beyond the end of the boss 8, which handle, in order to afford greater leverage, may be lengthened by affixing thereto a section of pipe (not shown), or in any other suitable manner. A pin 12 is inserted in the central socket 5 of the disk 3, having a portion, which is preferably enlarged as shown, projecting beyond the face of the disk, and a pin 13 may be inserted in either of the sockets 4, having also

a projecting portion beyond the face of the disk, said projecting portion carrying a roller 14 having a cap 15 and held in place by suitable means, such as a screw 16.

5 The object of the provision of a plurality of sockets 4 at different distances from the central socket 5 is to position the pin 13, with its roller 14, at different distances from the central pin 12 for a purpose hereinafter explained.

10 A block 17, preferably rectangular in form, is fixed upon the face of the main body 1, adjacent to the head 1^a and the rotatable disk 3, by means of bolts 18, and a roller 19 is journaled on a pin 20, which is seated in a socket or recess 20^a partly in the under face of the block 17 and the face of the main body 1, whereby the fixing of the block 17 to the main body 1, firmly secures said roller 19 and pin 20 against loss or displacement. That part of the recess 20^a in the block 17 opens through the inner edge of the block and one side of the roller projects beyond said inner edge for a purpose 25 to be explained.

In the opposite edges of the main body 1 are formed inverted T-shaped or under-cut grooves 21 in which are positioned correspondingly shaped standards 22, which project above the main body and are provided with pluralities of holes 23, in vertical series, for the reception of a pin or bolt 24, which carries a roller 25, which may thereby be positioned at different distances from the 35 face of the body 1.

A concentric curved groove 26 is formed in the head 1^a outside of the socket or seat 2 which receives the disk 3, and an adjustable block 27 is provided with a lug 28 which fits slidably in said groove and is secured 40 therein at any desired adjustment, by means of a set-screw 29.

Holes 30 are provided in the body 1 to receive bolts or other means for securing the 45 body to a work bench or other suitable support.

In operation, the roller 25 is adjusted at a proper distance from the face of the body 1, by adjusting the bolt or spindle 24 in 50 higher or lower holes 23 in the standards 22, to suit the thickness of the bar or other article to be bent. The pin 13 is placed in the proper socket 4 to bring the roller 14 to a position at a distance from the central pin 12 to correspond with the width of the bar or article to be bent. The rod or other article to be bent is slipped under the roller 25, and passed along the roller 19 on one side, and between the pin 12 and roller 14 60 on the other, until it projects far enough to bring the point at which it is to be bent, against the central pin 12 and to permit the end to project to or beyond the groove 26, as shown in Fig. 1. By manipulating the 65 handle 9, the stem 6 and disk 3 are now

turned until the projecting end of the rod contacts with the block 27, which has been previously adjusted to the proper position, as shown in Fig. 2. The roller 25 prevents the buckling, or the raising of the rod from the face of the body out of the plane of the rollers 19 and 14 and the pin 12, and the roller 19 gives an easy sliding bearing to the outer edge of the rod and prevents it bending or bowing out at any point in advance of the central pin.

The general utility and advantages of the invention will be evident from the foregoing description, and it will be obvious to those skilled in the art to which the invention appertains that slight changes in the size form and positions of the parts may be made, without departing from the spirit and scope of the invention, as hereinafter claimed.

Having thus fully described the invention, what is claimed as new is:

1. In a bending machine, the combination of a body having a circular recess near one end, a disk rotatably seated in said recess, means for turning the disk, means on the disk for engaging the sides of the article to be bent, means on the body to prevent the article rising therefrom, and a block adjustable in a path concentric with the recess and disk to determine the extent of rotation of the disk.

2. In a bending machine, the combination with a body provided with a circular recess near one end and with a curved groove outside of and concentric with said recess, of a disk seated in the recess, means for rotating the disk, means on the disk for engaging the sides of the article to be bent, means on the body for holding the article in position projecting over and beyond the disk, a block provided with a lug slidably engaged in the curved concentric groove, and means for securing the block at any desired adjustment in the groove.

3. In a bending machine, the combination with a body having a circular recess near one end, means on the body for holding an article to be bent, a disk seated in said recess provided with a central socket and a series of eccentrically positioned sockets at varying distances from the central socket, a pin in the central socket, a pin adapted to be placed in one of the eccentrically positioned sockets, whereby an article held on the body may pass between the pins, means for rotating the disk, and means for limiting the extent of the rotation.

4. In a bending machine, the combination of a body having a circular recess near one end, a roller adjustably mounted on the body to vary its distance from the face thereof, a roller on the body on an axis at a right angle to that of the first named roller, a disk seated in the recess, a central 130

pin projecting beyond the face of the disk,
a second pin, means for securing the second
pin to the disk at eccentrically located points
at varying distances from the center pin,
5 means for rotating the disk, and a block ad-
justable around the disk in a path concentric
therewith.

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

JOSEPH H. STRAUS, JR.

Witnesses:

E. WALTON BREWINGTON,
BROWN M. ALLEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
