

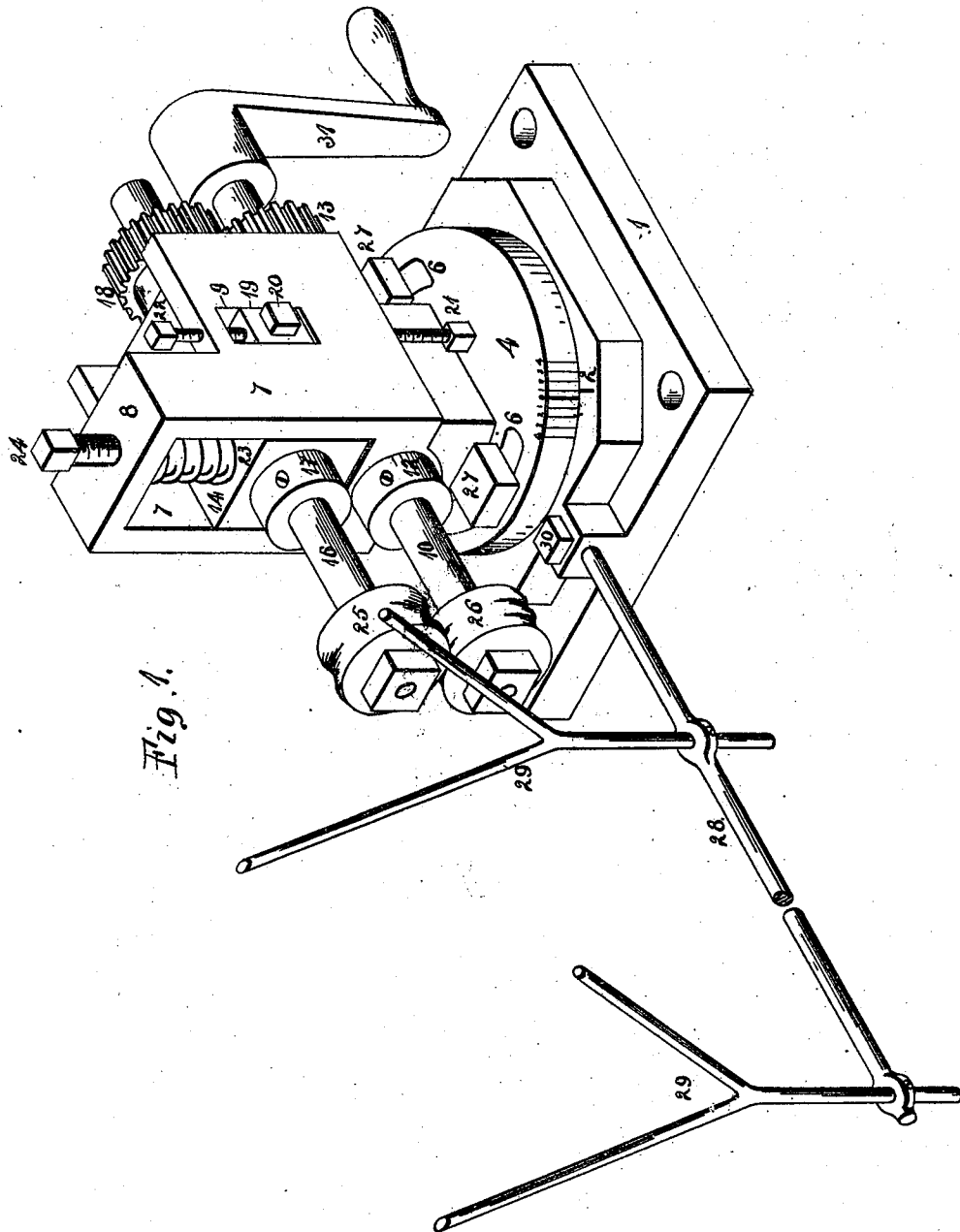
(No Model.)

2 Sheets—Sheet 1.

E. G. KING & C. H. BECKER.
MACHINE FOR FORMING SCREW THREADS.

No. 502,302.

Patented Aug. 1, 1893.



Witnesses:
S. A. Davenport
& Becker.

Inventors:
Edward G. King
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att.

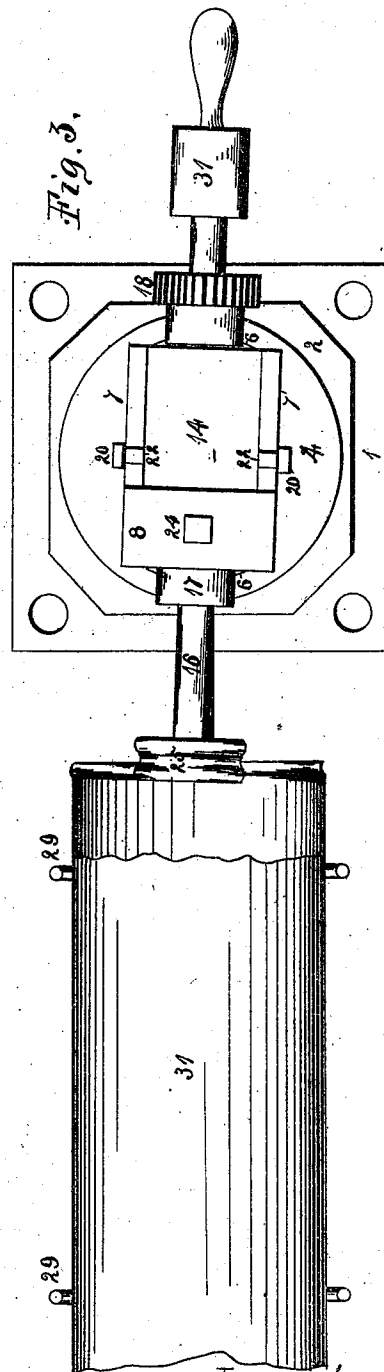
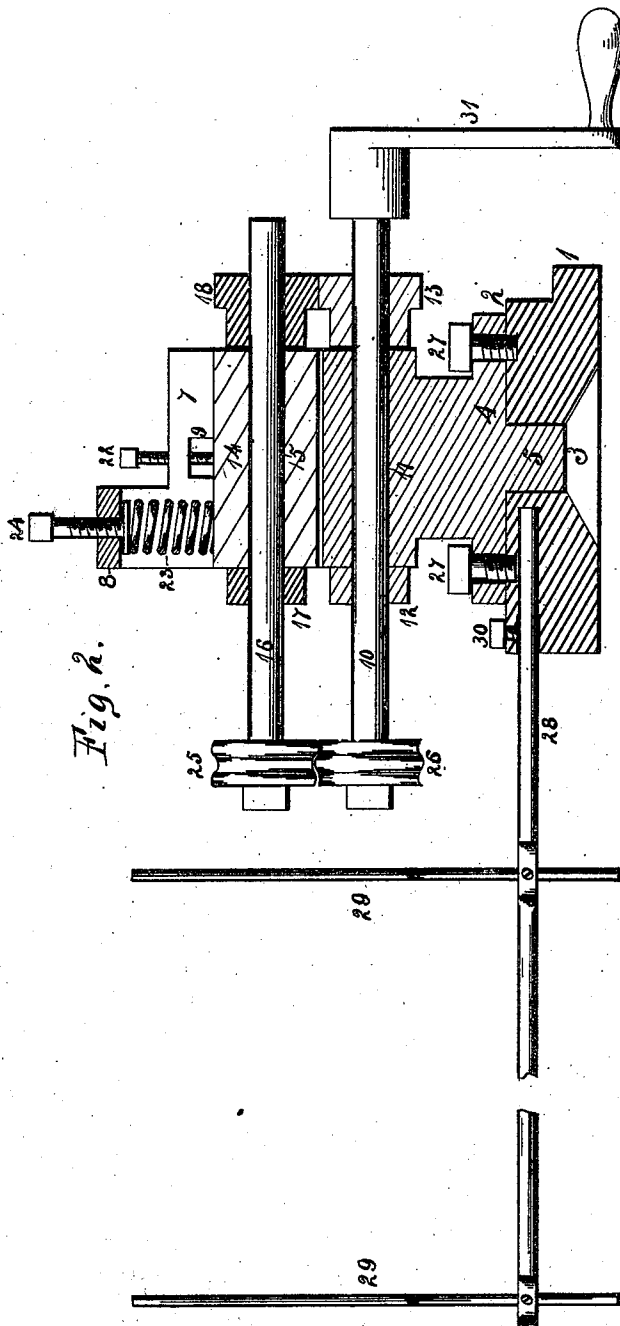
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

EDWARD G. KING AND CHRISTIAN H. BECKER, OF BELOIT, WISCONSIN.

MACHINE FOR FORMING SCREW-THREADS.

SPECIFICATION forming part of Letters Patent No. 502,302, dated August 1, 1893.

Application filed February 21, 1893. Serial No. 463,271. (No model.)

To all whom it may concern:

Be it known that we, EDWARD G. KING and CHRISTIAN H. BECKER, citizens of the United States, residing at Beloit, county of Rock, and State of Wisconsin, have invented certain new and useful Improvements in Machines for Forming Screw-Threads upon the Ends of Sheet-Metal Tubing, of which the following is a specification.

The object of this invention is to construct a machine for forming a screw-thread upon the ends of sheet metal tubing, and consists of a suitable frame, supporting two rollers and a frame for holding the tube to be operated upon so that the proper relation between the roller and tube may be attained.

In the accompanying drawings, Figure 1, is an isometrical representation of our improved machine. Fig. 2, is a vertical lengthwise central section. Fig. 3, is a plan view showing the relative position of the device and the tube upon which it operates.

Our improved machine consists of a base 1, having its upper face 2, planed and provided with a central opening 3. The upper portion consists of a cylindrical lower end 4, having a central stud 5, and two curved slots 6. From this lower portion rises a frame composed of sides 7, and top 8, the sides being provided with vertical slots 9. A horizontal opening is formed through the bottom portion of the frame. A shaft 10, is located in the opening 11, and a collar 12, holds it in proper position. A gear wheel 13, is set-screwed in the shaft at the rear end of the machine, and a handle forms means for imparting a rotary motion thereto. A square bushing or bearing 14, is located within the opening of the frame, and is provided with a lengthwise opening 15, within which is located a shaft 16. A collar 17, holds the shaft in proper position and a gear wheel 18, is set-screwed to the other end of the shaft and meshes with the teeth of the gear wheel 13. Blocks 19, are placed within the openings 9, in the sides 7, and a screw 20, forms a connection between the blocks and the bushing. Screws 21, have a connection with the frame and extend upward, and engage the under side of the blocks 19, and screws 22, have a connection with the frame and extend downward and rest upon the top of the blocks 19, by means of which the blocks

19, can be adjusted vertically and held in place when adjusted. A spring 23, rests upon the bushing and a screw 24, pressing upon the upper end of the spring holds that end of the bushing in a yielding manner. Rollers 25 and 26, are secured to the ends of the shafts 10, and 16, so that their faces will run together. The stud 5, of this upper portion is placed within the central opening 3, of the base, and screws 27, and passed through the curved slots 6 into the base, clamping the upper portion when adjusted. From the base portion extends a bar 28, from which rises two Y shaped rests 29, and a set-screw permits the vertical adjustment of the same, in order that when different sized pipe is operated upon it may be properly presented to the rollers. This bar is held in position by a set-screw 30.

In use the sheet metal tube 31, is formed up in the usual manner and is placed in the Y shaped rests, which had been adjusted to bring the lower surface between the rollers. The set-screw 27, is then loosened and the upper portion of the machine turned on its pivotal support until the required angle between the roller and pipe has been attained when they are turned down clamping the parts together. The rollers are then rotated by means of the handle 31, which will cause the pipe to feed toward the rollers and at the same time producing a spiral groove or thread around the pipe, by compressing the metal, and with each revolution of the roller a complete spiral is made. The angle or pitch given to the thread depends upon the angle at which the rollers are set with relation to the pipe. By means of the set-screw 24, the required pressure is given to the upper roller to properly compress the metal. For different thicknesses of metal the entire shaft 16, is adjusted vertically by adjusting the blocks 19, as before stated. The screw 20, forms a pivotal connection between it and the bushing 14, and in running over seams the spring will give to accommodate the extra thickness of metal.

In forming elbows with a screw thread the long bar 28, is substituted by a short bar with a single rest in order to allow the arm of the elbow to turn during the threading process. The roller in this instance consists of a series of grooves and depressions, in place of which,

one of them may have a single groove and the other an outer surface to fit in the groove which would form the thread in the same manner. The rollers are tapering in their lengthwise direction, the first groove not being as deep as the rest, and the last a little deeper than the second so that the thread is not formed complete by the first contact of the roller with the tubing. The shafts 10 and 16 are made lengthwise adjustable in order to form more threads upon the tubing. A scale is formed between the base and adjustable portion in order to properly determine the angle at which the rollers should be set in order to properly form the same thread upon the various sized tubing and either a right or left hand thread can be formed by adjusting the rollers either to the right or left.

We claim as our invention—

- 20 1. A machine forming a screw thread on the end of sheet metal tubing, consisting of a base, a portion carrying rollers made adjustable in

its connection with the base by curved slots and bolts passing through the slots into the base, a rest for the tubing made horizontally and vertically adjustable, and means for imparting a rotary movement to the rollers. 25

2. A machine forming a screw thread on the end of sheet metal tubing, consisting of a base, a portion carrying rollers made adjustable in its connection with the base by curved slots and bolts passing through the slots into the base, a rest for the tubing made horizontally and vertically adjustable, and means for imparting a rotary movement to the rollers, and a pointer and scale between the base and adjustable portion for determining their relative positions. 35

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