(No Model.)

R. REACH.

METAL PIPE BENDING MACHINE.

No. 280,862. Patented July 10, 1883.

Fig. 1.

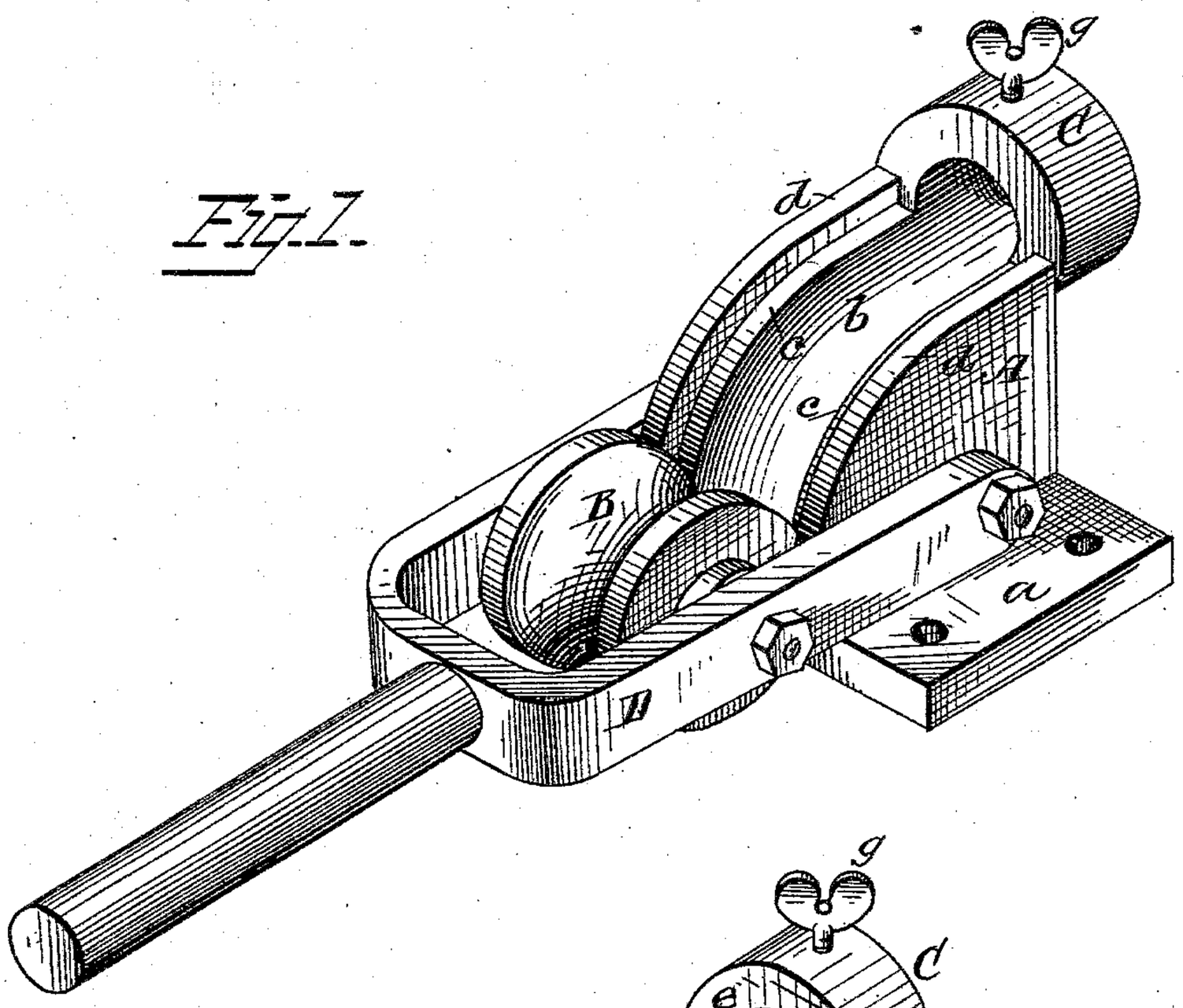


Fig. 2.

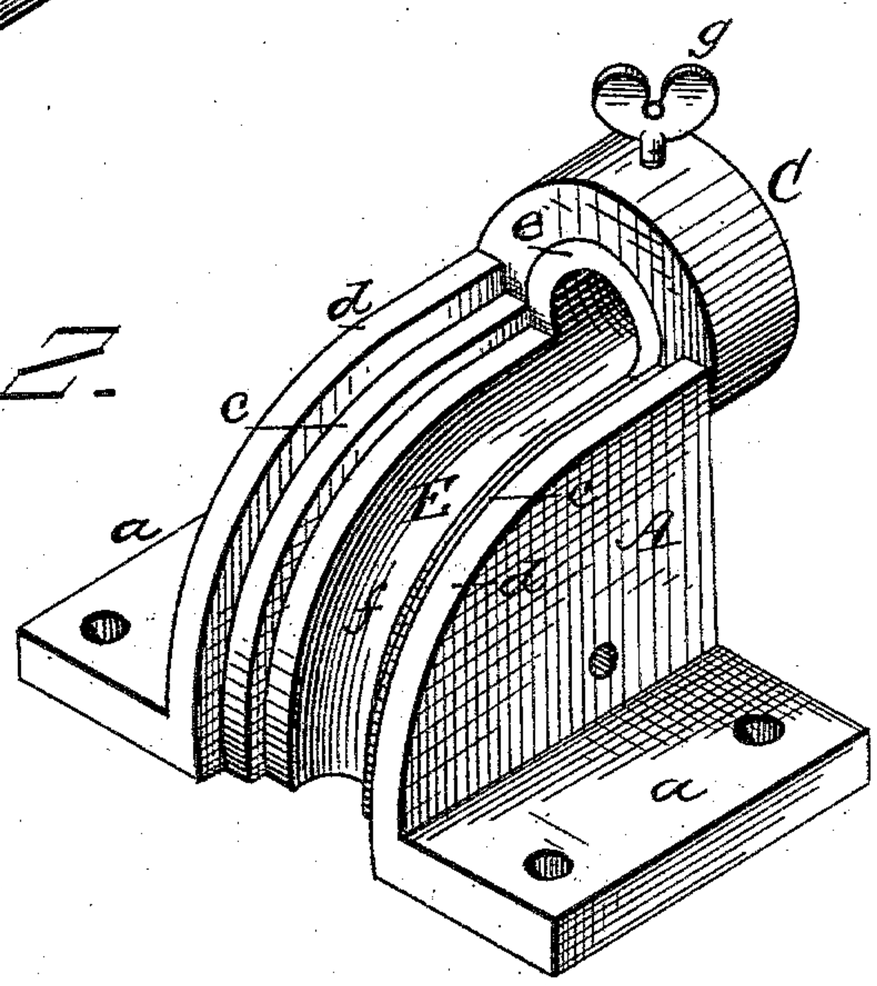
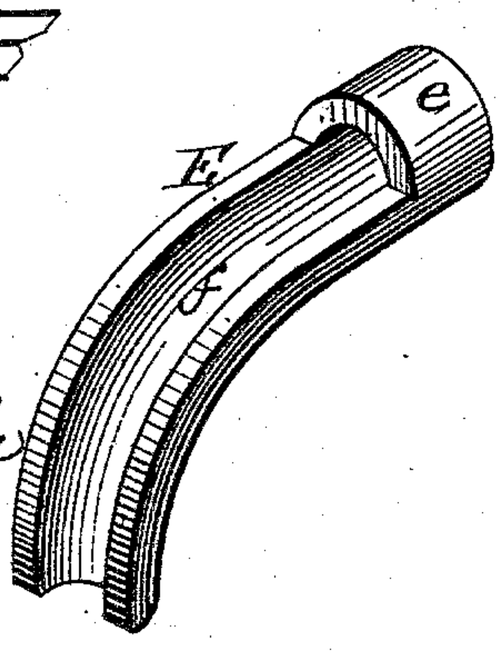


Fig. 3



WITNESSES
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UNITED STATES PATENT OFFICE.

ROBERT REACH, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO GEORGE H. PLANT, JR., OF SAME PLACE.

METAL-PIPE-BENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 280,862, dated July 10, 1883.

Application filed August 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROBERT REACH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Machines for Bending Metal Pipe; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a perspective view of my invention; Fig. 2, a similar view of the former, showing one of the reducers connected thereto; and Fig. 3, a detail view, in perspective, of the reducer.

The present invention has relation to certain new and useful improvements in that class of machines for bending at an angle metal pipe, in which is employed a former having a semicircular groove adapted to receive one-half the diameter of the pipe to be operated upon, and a grooved wheel connected to a bifurcated or forked lever, which presses the pipe down at the angle desired.

It is the object of the present invention to improve the construction of the above-mentioned class of machines, whereby the employment of double-grooved wheels, geared segments connected to the former, pinions secured to the wheels, hinged plates, and cam-levers pivoted to the former are rendered entirely unnecessary, thereby greatly simplifying the machine, rendering it less liable to get out of order, more certain and effective in its action upon the pipe, and capable of being manufactured at a comparatively small cost. This object I attain by the construction substantially as shown in the drawings and hereinafter described and claimed.

In the accompanying drawings, A represents the former, cast with flanges *a* for attaching it to a bench or other suitable support by screws, bolts, or other similar fastenings. The former A is curved at an angle of any suitable degree, and has upon its face a semicircular groove, *b*, in form and size to correspond with one-half the diameter of the pipe to be operated upon. The former is cast with tracks *c* and guide-flanges *d*, the flanges confining and guiding the grooved wheel B over the track in the process of bending the pipe. The former A is also cast with a confining-ring, C, through which passes the end of the pipe, thereby retaining it in the groove *b* while being operated upon by the wheel B. It should be noticed that the former A, with its flanges *a*, and ring C are cast in one piece, thereby dispensing with pivoted cam-levers and other similar attachments employed for retaining the pipe in the groove. The guide-flanges *d* are also an important adjunct to the tracks *c* in preventing the grooved wheel B from lateral displacement when passing over the tracks, thus dispensing with rack-segments and pinions. The grooved wheel B is detachably connected to a bifurcated lever, D, said bifurcated ends of the lever being pivotally connected to the sides of the former A.

To adapt the machine to pipes of various sizes or diameters, I provide what I term a series of "reducers," as shown at E, Fig. 3, each of which is cast at one end with a retaining-ring, *e*, similar to the ring C of the former A, and for the same purpose. These reducers are convex upon their under side to conform to the concavity of the groove *b* in the former, and said groove *f* in the reducer conforms to one-half the diameter of the pipe to be operated upon. These reducers are of various sizes and rest within the groove in the former, the ring registering with that on the former, and held in place by a set-screw, *g*, or other equivalent means. When one of these reducers is used, a different-size grooved wheel is employed, the edges of the reducer acting as the tracks, while the tracks of the former act as the guide-flanges.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for bending metal pipe, a former having a groove to receive the pipe, tracks and guide-flanges upon each side thereof, and a confining-ring integral therewith, in combination with a bifurcated lever pivoted to the sides of the former, and carrying a grooved roller with flanges adapted to ride

upon the tracks, substantially as and for the purpose set forth.

2. In a machine for bending metal pipe, the combination, with a grooved roller removably connected to a lever for operating it, of a concavo-convex reducer adapted to rest within the groove of the former, substantially as and for the purpose specified.

3. In a machine for bending metal pipe, a grooved former having a confining-ring, in combination with a grooved roller, and a concavo-convex reducer adapted to rest within the groove of the former, substantially as and for the purpose set forth.

4. In a machine for bending metal pipe, a grooved former having a confining-ring, in combination with a concavo-convex reducer cast at one end, with a ring adapted to fit within the confining-ring when resting in the groove of the former, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ROBERT REACH.

Witnesses:

GEO. H. PLANT, Jr.,

N. E. OLIPHANT.