July 26, 1927. 1,636,744

C. JOHANSON

METAL WORKING IMPLEMENT

Filed Aug. 14, 1925 2 Sheets-Sheet 1

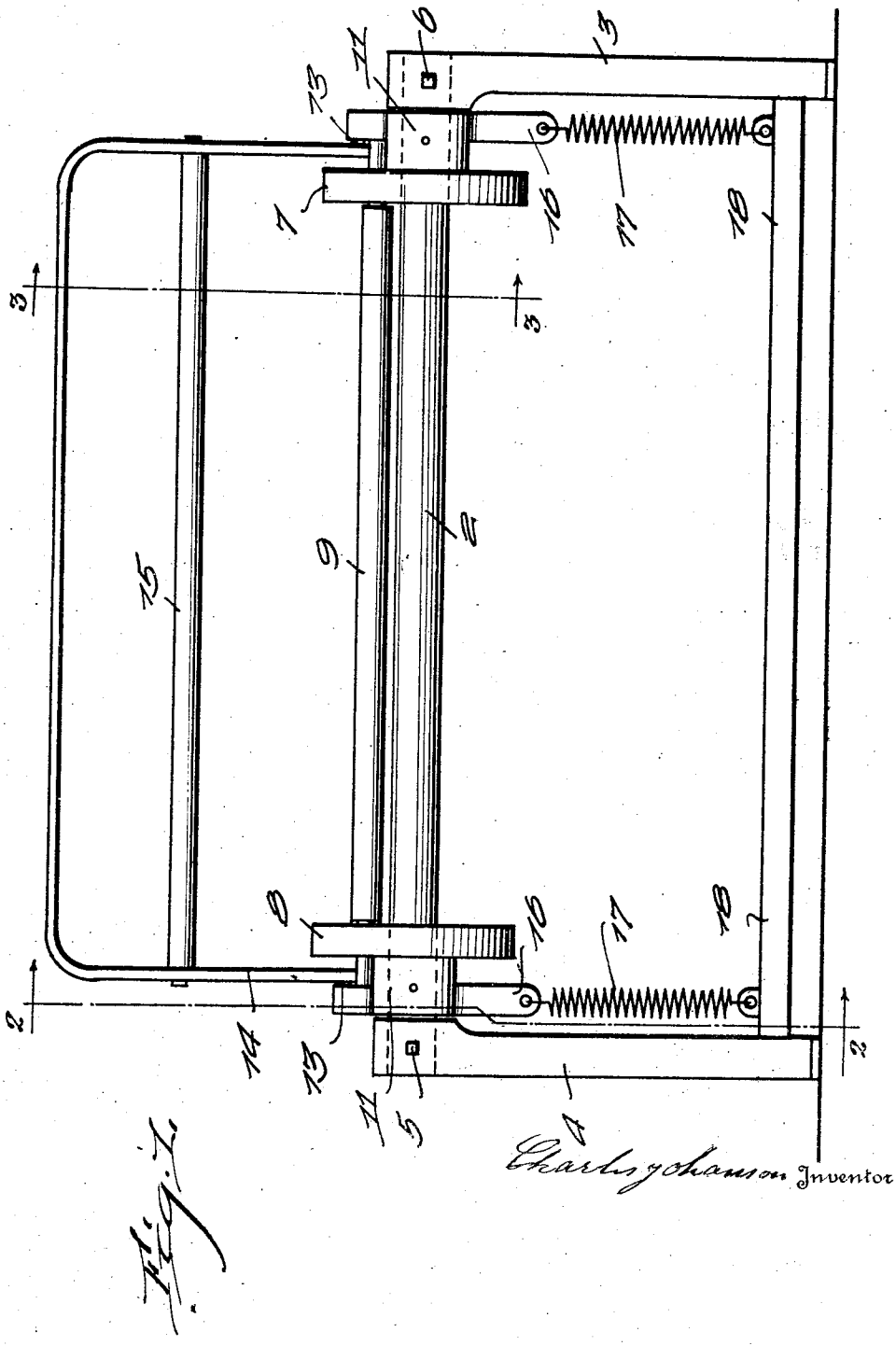


Fig. 1.

Charles Johanson. Inventor

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Fig. 2.

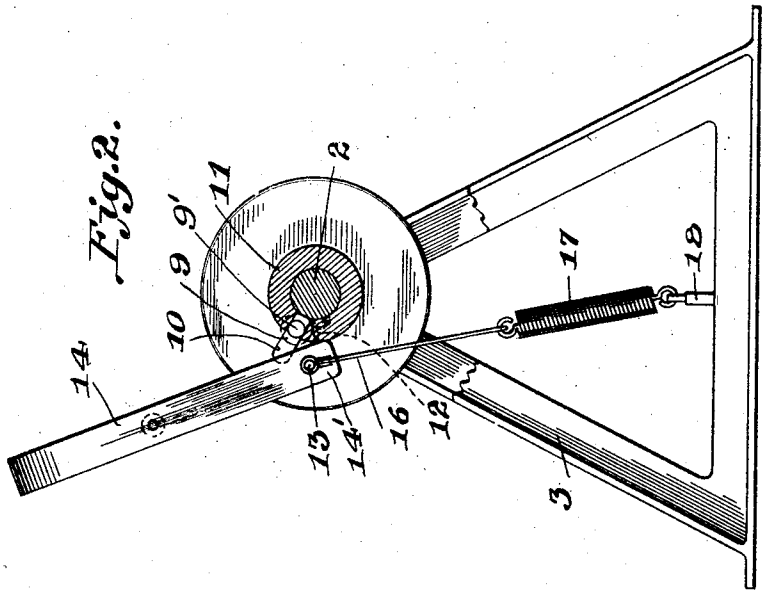


Fig. 4.

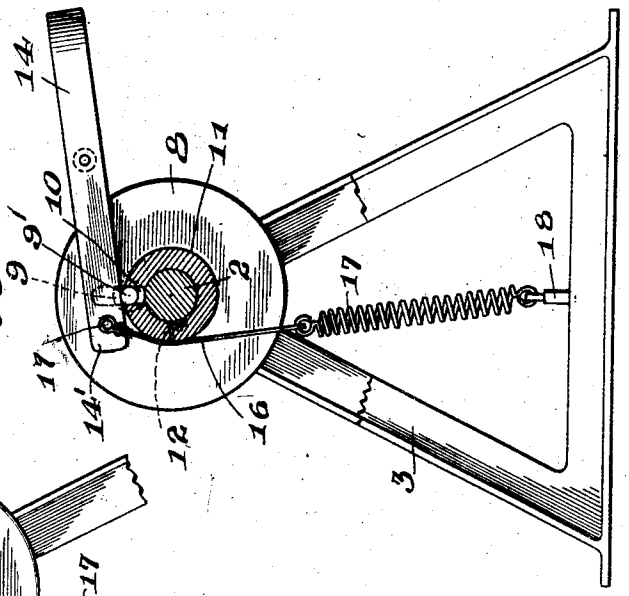
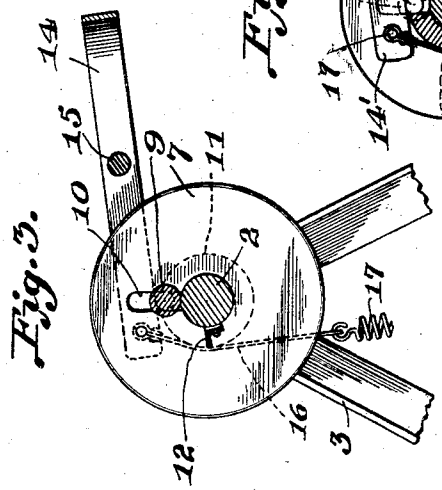


Fig. 3.



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UNITED STATES PATENT OFFICE.

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METAL-WORKING IMPLEMENT.

Application filed August 14, 1925. Serial No. 50,297.

This invention relates to sheet metal working implements, and particularly to a device for bending ovals in sheet metal.

An object of this invention is to provide a device for bending ovals in sheet metal, and particularly to provide a device which is of simple construction, quick to operate, which occupies a minimum space and which may be hand operated.

A further object of this invention is to provide a device of this character which may be manufactured at a minimum cost, which is efficient in operation and of strong and durable construction.

With the foregoing and other objects in view, I have invented the device illustrated in the accompanying drawings, in which:

Fig. 1 is a front elevation of my device.

Fig. 2 is a section at 2—2 of Figure 1.

Fig. 3 is a fragmentary section on the line 3—3 of Fig. 1 showing the operating lever in a different position.

Figure 4 is a like showing to that of Figure 2 with the bending lever in a different position.

The device comprises a cylindrical forming mandrel 2 having its opposite ends fixed to the standards 3 and 4 by the bolts or set screws 5 and 6 respectively. Disks 7 and 8 are rotatably mounted on the mandrel 2, and have a secondary roller mandrel 9 provided with reduced ends 9′ slidable in slots 10 extending radially from the hubs 11 of said disks and projecting through said slots.

Between the disks 7 and 8 a stretch of angle iron is suitably fixed to the mandrel 2, has edge nearest said mandrel 2 spaced therefrom a distance equal to the thickness of the sheet metal to be bent, and serves as a fixed gage to position the end of the sheet to be bent.

The disks 8 and 9 have fixed thereto, adjacent the slots 10, the pins 13 which serve as pivots for the yoke lever 14, which has its ends provided with apertures adapted to engage said pins. When the yoke lever is assembled on said pins, the rod 15 may have its opposite ends suitably bolted or otherwise secured to the legs of the yoke lever to serve as a brace.

Straps 16 supported from the pins 13 are anchored by tension springs 17 to longitudinal brace 18 connecting the standards 3 and 4. These springs 16 serve to keep the disks 7 and 8 normally positioned so that the yoke lever 14 stands vertically as shown in Fig. 2 with the short arms 14′ extending into contact with the hubs 11 to prevent the lever 14 falling to the rear of the machine.

In operation the sheet of metal to be bent is slid under the roller-mandrel 9 and into the space between the fixed mandrel 2 and the angle iron 12 fixed to mandrel 2. The yoke lever is then pulled forwardly until its arms contact with the ends 9′ of roller 9 which project through the disks 7 and 8. This presses the roller mandrel 9 firmly down on the sheet of metal. The lever 14 is next pulled forwardly with continued pressure on mandrel 9 and, since the pins 13 on which it is pivoted are fixed to the disks 7 and 8, these disks and roller mandrel 9 are pulled around with it and roll the mandrel 9 over the sheet to bend it around the fixed mandrel 2. This operation bends the metal in a semi-cylinder having a diameter equal to the diameter of the fixed mandrel 2.

During the metal bending operation the springs 17 resist rotation of the disks 7 and 8, and serve to return these disks, roller-mandrel 9 and yoke 8 to their original inoperative position.

Claims:

1. In a sheet metal bending machine, a pair of standards, a cylindrical mandrel having its opposite ends fixed to said standards, a plate parallel to and spaced from and having its ends fixed to said mandrel, a pair of disks rotatably mounted on opposite ends of said mandrel and having a radial slot through each, a bending roller having its ends slidably mounted in and projecting through said slots, and a U-shaped yoke lever having the legs thereof pivoted intermediate their ends to the outside faces of said disks and adapted to be rotated into contact with the ends of said roller projecting through said slots and to rotate said disks on said mandrel.

2. The apparatus set forth in claim 1 in combination with springs detachably secured to said disks to resist rotation thereof by said lever and yieldingly maintain said disks and lever in predetermined positions relative to said mandrel.

3. A sheet metal bending machine comprising a pair of spaced apart standards, a cylindrical mandrel having its opposite ends fixed to said standards, spaced apart brackets mounted to rotate on said mandrel and having slots extending radially out from said mandrel, a roller extending along said

mandrel and having its opposite ends projecting through said slots, a yoke lever having its arms pivoted to said brackets and adapted to contact with the projecting ends of said roller to press said roller against said mandrel and to rotate said disks and roller relative to said mandrel.

4. The combination set forth in claim 3 with yielding means for connecting said brackets and standards to maintain said yoke lever brackets and roller in predetermined positions relative to said mandrel.

In testimony whereof I affix my signature.

CHARLES JOHANSON.