

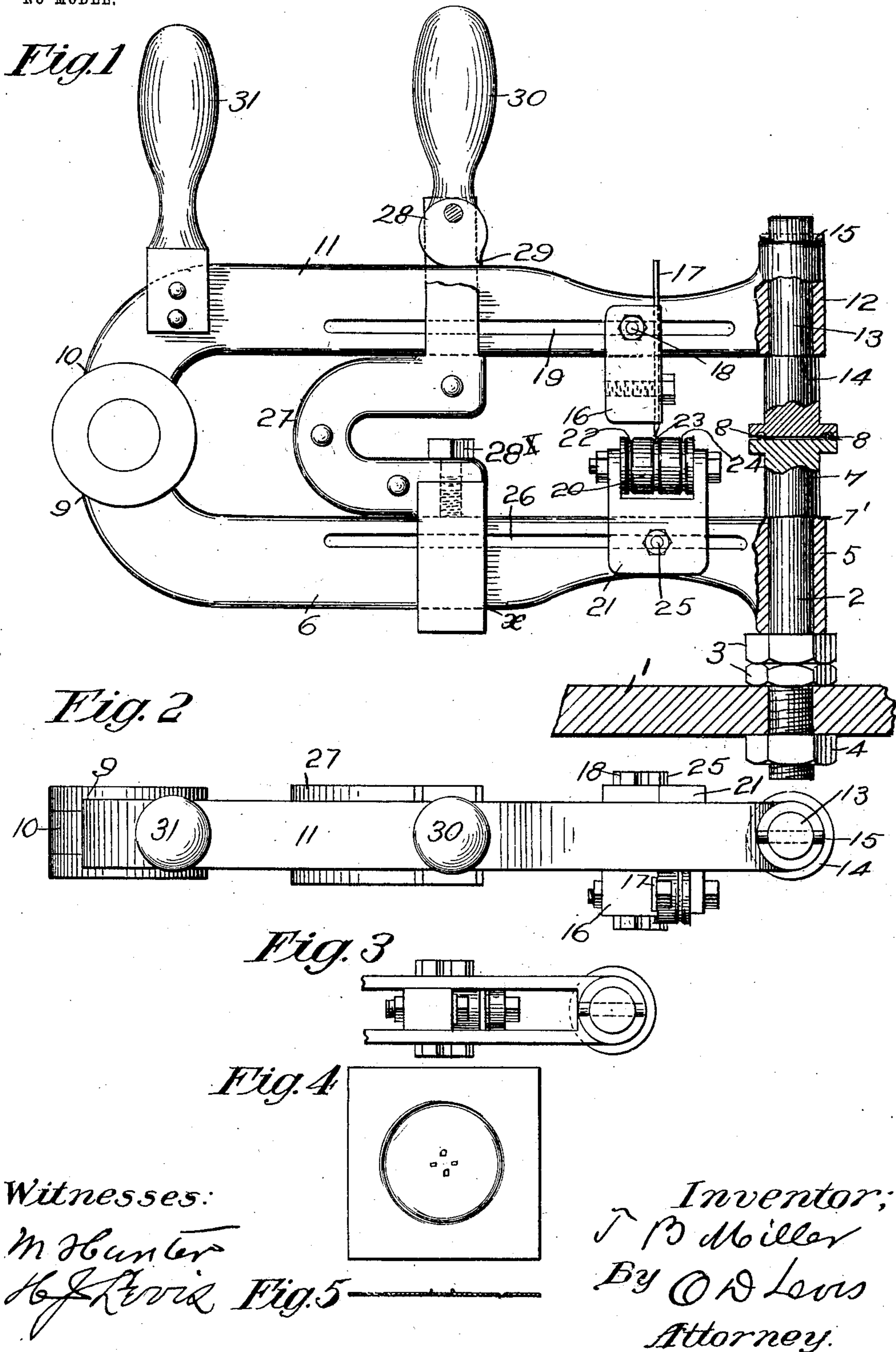
No. 763,687.

PATENTED JUNE 28, 1904.

T. B. MILLER.
CUTTER.

APPLICATION FILED MAR. 21, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

THOMAS B. MILLER, OF McKEESPORT, PENNSYLVANIA.

CUTTER.

SPECIFICATION forming part of Letters Patent No. 763,687, dated June 28, 1904.

Application filed March 21, 1903. Serial No. 148,909. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. MILLER, a citizen of the United States, residing at McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Cutters, of which improvement the following is a specification.

This invention relates to certain new and useful improvements in cutters, and relates more particularly to that class of cutters which are used to cut substantially circular apertures in sheet metal.

The object of this invention is to provide a simple and effective means whereby substantially circular apertures may be cut from sheet metal and to construct said machine in such a manner that the interior diameter of said apertures may be varied to the desired size.

My invention will be hereinafter fully described, and in so doing reference will be had to the accompanying drawings, forming a part of this specification, in which like reference characters indicate like parts, and in which—

Figure 1 is a side elevation, partly in section, of my improved cutter. Fig. 2 is a plan view of the same. Fig. 3 is a fragmentary plan view showing a modified form of mounting the knife-block on the frame 1. Figs. 4 and 5 are plan and vertical section, respectively, on a reduced scale, of the material after being operated on by the machine.

In the accompanying drawings, 1 represents a bench or other suitable support for my cutter, and a spindle 2 is secured thereto by the nuts 3 3 and 4. The spindle 2 passes through a sleeve 5 of the lower part 6 of the frame and at its upper end is provided with the enlarged portion 7, which has a shoulder 7' to prevent vertical movement of the sleeve 5, and on its upper surface is provided with the sheet-metal-holding pins 8.

The lower part 6 of the frame has formed at its rear one part 9 of a hinge, a coacting part 10 being formed on the upper part 11 of the frame, said upper part being provided at its forward end with a sleeve 12 diametrically opposite the sleeve 5, formed in the lower part 6, and in sleeve 12 a spindle 13, having the enlarged end 14, is rotatably mounted.

The spindle 13 is prevented from having vertical movement relative to the sleeve 12 by the pin 15 being inserted through its upper end and by its lower enlarged end 14 abutting against the under surface of the sleeve 12, and the said enlarged end 14 is provided with an annular groove on its face, in which the metal-holding pins 8 project when the upper and lower parts of the frame are brought toward each other.

The upper part 11 of the frame carries a longitudinally-adjustable block 16, on which is adjustably mounted the cutter-knife 17, said block being secured in position by the set-screw 18 passing through the slot 19, formed in the part 11 of the frame, and a grooved roller 20, rotatably mounted in the adjustably-mounted block 21, is adapted to be so moved that any one of its annular grooves 22 23 24 will register with the knife 17 by the set-screw 25 and slot 26, formed in the lower part 6 of the frame.

A clamp-frame 27 is secured to the lower part 6 by the set-screw 28^x and is thus capable of longitudinal adjustment and may be vertically adjusted by the insertion of sheet metal at the point marked X. In the upper end of this frame 27 is pivotally mounted the eccentric-clamp 28, said eccentric being provided on its engaging edge with a flat portion 29 for the purpose of preventing the same being moved past its most efficient clamping position. The eccentric-clamp 28 is provided with the operating-handle 30, and a handle 31 is also secured to the upper part 11 of the frame for the purpose of rotating the same.

The operation of the device is as follows: The cutter-knife 17 and roller 20 having been moved to a position where the cutting edge of the knife is at a distance from the center of the spindles 2 13 equal to the radius of the apertures which it is desired to cut, the eccentric-clamp 28 is released, thereby permitting the arms 6 11, carrying the enlarged portions 7 14 of the spindles 2 13, to be separated, at which time the metal in which the aperture is to be cut may be inserted between the said enlarged portions of the spindles, the point at which the center of said aperture will be being in line with the center of the spindles. The upper part of the frame is

then dropped down and the metal-holding pins 8 are forced through the metal by the action of the eccentric-clamp 28, which is then operated. It will thus be seen that the sheet metal to be operated on is secured against rotation by the spindle 2, secured to the mounting of the cutter and the pins 8. By grasping the handle 31 and rotating the frame around the center upon which it is mounted the cutter-knife 17 will sever the metal, and when a complete revolution is made the aperture will have been formed, leaving the body of the metal free from the disk, which has been cut out and is held between the spindles 2 13.

It will be noted that various changes may be made in carrying out my invention without departing from the general spirit thereof.

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

In a rotatably-mounted cutter, the combina-

tion of a hinged frame consisting of two arms one arm being rotatably mounted on a spindle the other carrying a member adapted to coact with the end of said spindle for the purpose of holding the material to be cut, the said arms having adjustably mounted thereon a cutter-knife and roller having a plurality of periphery and adapted annular grooves cut on it to coact with the cutter-knife and means for forcing the said arms together for the purpose of holding the material to be cut and cutting in the same an aperture substantially circular in form by the rotation of said frame.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

THOMAS B. MILLER.

In presence of—

ALICE E. DUFF,
H. J. LEVIS.