

(No Model.)

2 Sheets—Sheet 1.

T. B. NUTTALL.
PIPE SHEARS.

No. 572,767.

Patented Dec. 8, 1896.

FIG. 1.

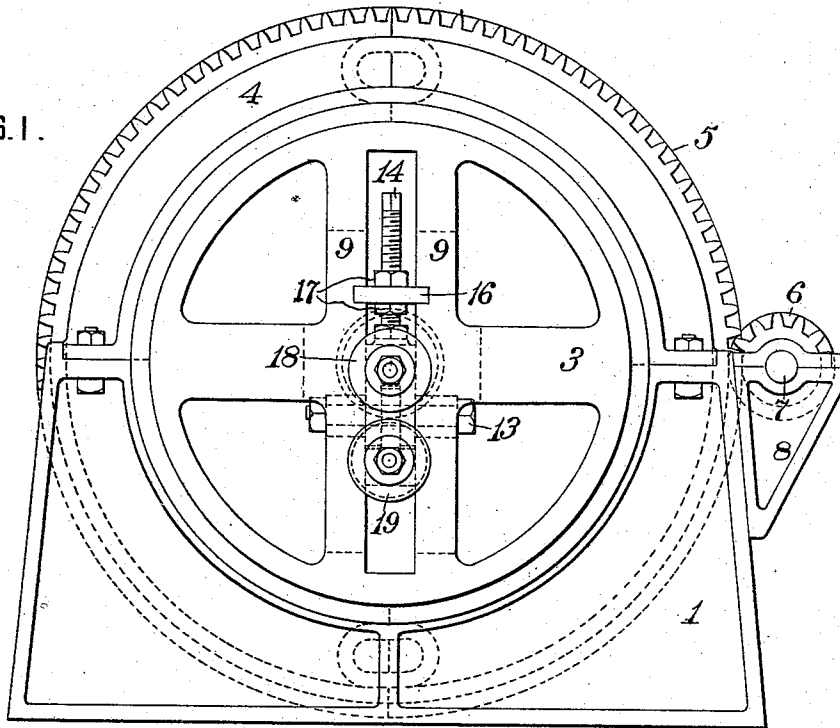
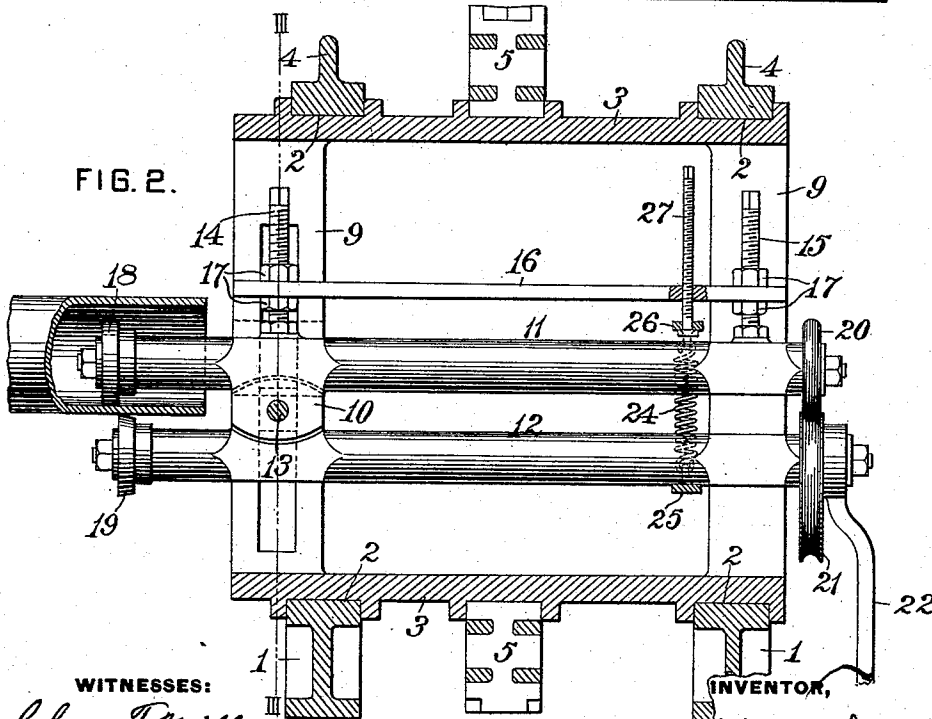


FIG. 2.



WITNESSES:

Chas. F. Miller.
J. E. Gaither

INVENTOR,

Thomas B. Nuttall
by Daniel S. Wolcott
Att'y.

(No Model.)

T. B. NUTTALL.
PIPE SHEARS

2 Sheets—Sheet 2.

No. 572,767.

Patented Dec. 8, 1896.

FIG. 3.

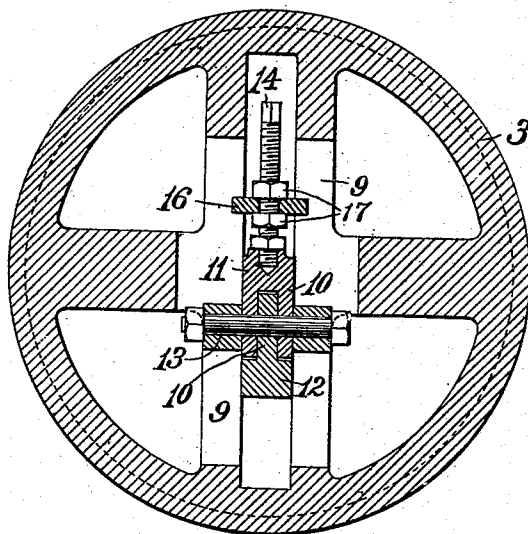


FIG. 5.

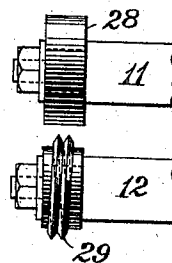
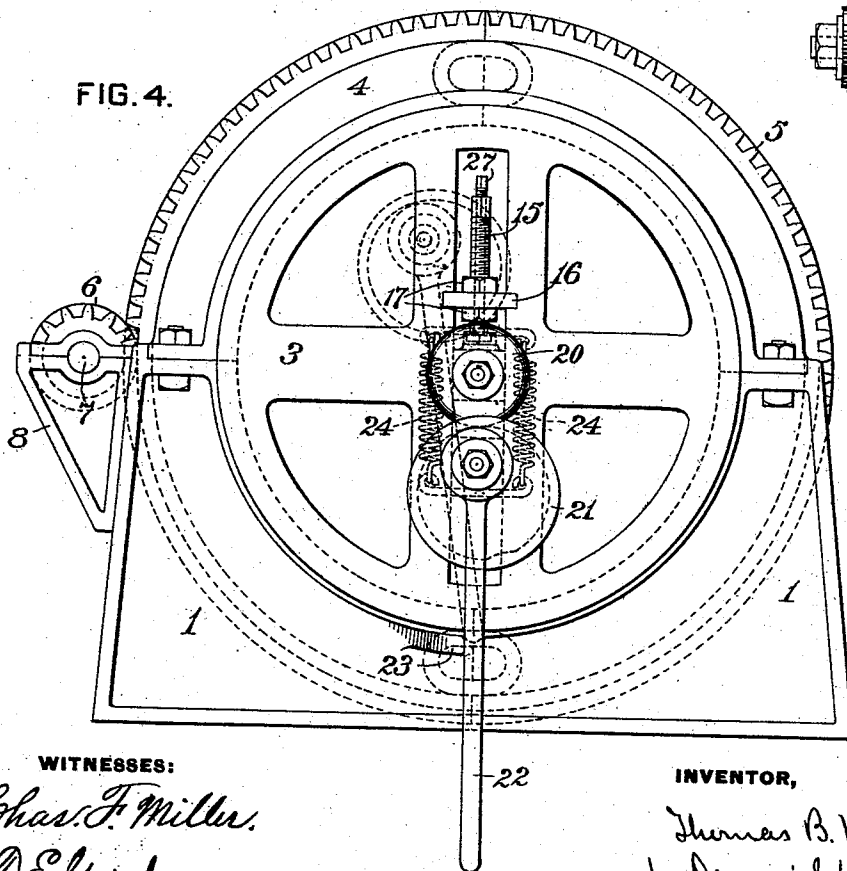


FIG. 4.



WITNESSES:

Chas. F. Miller.
J. E. Gaither

INVENTOR,

Thomas B. Nuttall.
by Danini S. Wolcott
Att'y.

UNITED STATES PATENT OFFICE.

THOMAS B. NUTTALL, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOSHUA RHODES, OF ALLEGHENY, PENNSYLVANIA.

PIPE-SHEARS.

SPECIFICATION forming part of Letters Patent No. 572,767, dated December 8, 1896.

Application filed June 30, 1896. Serial No. 597,552. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. NUTTALL, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Pipe-Shears, of which improvements the following is a specification.

The invention described herein relates to certain improvements in pipe-shears, and has for its object a construction whereby the pipes can be easily and quickly placed in position and the ragged or scrap ends thereof rapidly cut off.

In general terms the invention consists in the construction and combination substantially as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of my improved machine. Fig. 2 is a sectional elevation of the same. Fig. 3 is a transverse section of the revolving drum, the plane of section being indicated by the line III III, Fig. 2. Fig. 4 is a rear end elevation of the machine, and Fig. 5 is a detail view showing the cutters for grooving or threading pipe.

In the practice of my invention I provide a suitable base or frame 1, having concave seats adapted to form bearings for the journals 2 of the rotating drum 3. The rotating drum is held within its bearings in the base by cap-plates 4. On the drum about midway of its length is secured a circular toothed rack 5, adapted to intermesh with the pinion 6 on the driving-shaft 7, which is mounted in suitable bearings on the brackets 8, attached to the sides of the supporting-base 1. Bars 9 are arranged diagrammatically across the drum at both ends thereof, and between these guide-rods are arranged the shear-shafts 11 and 12. These shear-shafts are provided near their front ends with wings 10, which are adapted to overlap, and through these wings is passed a pivotal pin 13. The ends of this pin are arranged in blocks adapted to slide in slots in the vertical bars 9 at the front end of the machine. Threaded bolts 14 and 15 have one end secured to the upper shear-shaft 11 and project up through a plate 16, secured be-

tween the bars 9 at the ends of the drum. On the threaded bolts are screwed nuts 17, whereby the shear-shafts may be raised and lowered as desired. The rear end of the shear-shaft 12 is yieldingly supported in proper relation to the shaft 11 by means of springs 24, which have their lower ends connected to a bar 25, passing under the shaft 12, while their upper ends are connected to a bar 26, attached to a threaded rod 27, projecting up through the plate 16.

On the front ends of the shear-shafts are loosely mounted rotating cutters 18 and 19. The cutter 18, which is adapted to fit within the pipe to be sheared, is preferably formed a flat bearing-face, while the cutter is beveled, as shown, so that it will be toward the cutting edge of the cutter 18. On the rear end of the shear-shaft 11 is loosely mounted a disk 20, preferably formed with a transversely-convex periphery, and on the rear end of the shear-shaft 12 is mounted an eccentric 21, having a transversely-concave periphery. On the eccentric 21 is secured an operating-handle 22, which, as the drum rotates, will be carried against a stationary stop 23 on the supporting-frame and held from rotation with the drum until the eccentric 21 shall have been shifted to such an extent that its point of greatest eccentricity will bear against the periphery of the disk 20.

The handle 22 is made of such a length relative to the diameter of the circle described by the axis of the shaft 12 when carried around by the drum that when the shaft has reached that point in its path of movement where a line passing through the axes of the shaft 11 and 12 will also pass through the point of greatest eccentricity of the eccentric 21, as shown by dotted lines in Fig. 4, the handle will be drawn away from the stop 23, and will thereafter be carried around with the drum.

In order to prevent an accidental misplacement of the eccentric from its adjusted position, a recess or flattened portion is formed in its periphery at the point of greatest eccentricity for the reception of the edge of the disk 20, as shown in dotted lines in Fig. 4. This adjustment or shifting of the rear end of the shear-shaft 12 away from the shear-shaft 11 will force the cutters at the front ends

of said shafts toward each other until the shear edges will overlap.

In using my improved machine the shear-shafts are first adjusted toward or from the center of the drum until a pipe fitting over the upper shear-shaft or its cutting-disk and bearing against the flat bearing-periphery thereof will have its axis in line with the axis of the rotating drum. A pipe is then slipped over the projecting end of the shear-shaft 11 and the drum rotated. As the drum rotates the handle 22 will be brought into engagement with the stop 23, thereby, on the continued rotation of the drum, shifting the eccentric and forcing the cutter on the lower shear-shaft toward the cutter on the upper shear-shaft. By the continued rotation of the drum these cutters are carried around the pipe and its scrap end removed. It will be understood that during the operation of these shears the pipe is held stationary by any suitable form of pipe clamp or vise.

By placing a flat plane-faced disk 28 on the shear-shaft 11 and a disk 29, provided with a series of spirally-arranged cutting-ribs, on the

shaft 12 suitable external screw-threads may be formed on the pipe.

I claim herein as my invention—

1. In a pipe-shears, the combination of a rotating drum, two shear-shafts pivotally connected near their front ends and adjustable radially of the drum, cutters mounted on the front ends of the shear-shafts, and means for forcing the rear ends of the shear-shafts apart, substantially as set forth.

2. In a pipe-shears, the combination of a rotating drum, two shear-shafts pivotally connected near their front ends and adjustable radially of the drum, cutters mounted on the front ends of the shafts, and means actuated by the movement of the shear-shafts for forcing the rear ends apart, substantially as set forth.

In testimony whereof I have hereunto set my hand.

THOMAS B. NUTTALL.

Witnesses:

DARWIN S. WOLCOTT,
M. S. MURPHY.