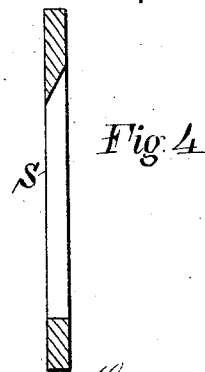
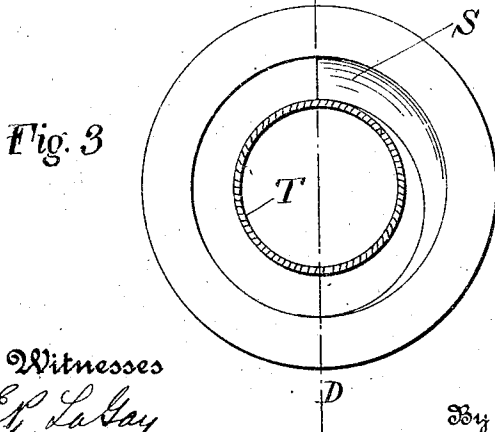
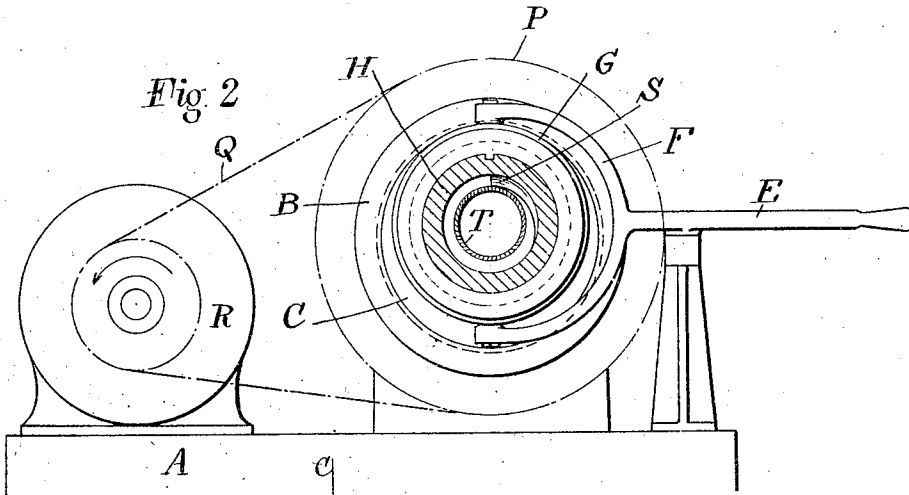
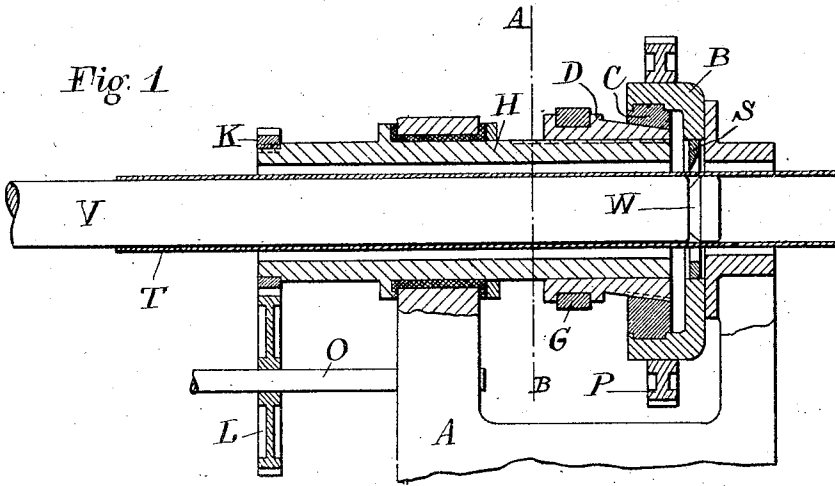


L. D. DAVIS.
CUTTING-OFF MACHINE.
APPLICATION FILED NOV. 6, 1908.

931,043.

Patented Aug. 17, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

LEONARD D. DAVIS, OF ERIE, PENNSYLVANIA.

CUTTING-OFF MACHINE.

No. 931,043.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed November 6, 1908. Serial No. 461,294.

To all whom it may concern:

Be it known that I, LEONARD D. DAVIS, a citizen of the United States, and a resident of Erie, Pennsylvania, have invented certain new and useful Improvements in Cutting-Off Machines, of which the following is a specification accompanied by drawings.

This invention relates to machines for cutting off tubes, billets and other work in a heated or a cold state, although the machine may be used for any other purposes to which it is adapted.

The object of the invention is to produce a cutting off mechanism having at will a combined orbital and rotatory movement of the cutter, or a rotary eccentric movement of the cutter. The orbital motion is designed to take place about the axis of the pass as a center, while the rotatory motion takes place about a center which is not coincident with the axis of the pass.

The invention also contemplates the separate control of each of these components of the motion and these components may occur in the same or opposite directions at the same or different speeds.

The invention may also be applied to a rotary saw as well as to a cutter, which may be used as a hot or cold saw.

Further objects of the invention will hereinafter appear and to all of these ends the invention consists of the cutting off machine substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings in which—

Figure 1 is a vertical longitudinal sectional view of the machine; Fig. 2 is a transverse sectional view on the line A, B of Fig. 1; Fig. 3 is an enlarged detail side view of one form of knife or cutter employed; Fig. 4 is a vertical sectional view of the knife on the line C, D of Fig. 3.

The machine embodies broadly a circular cutter, means for imparting an eccentric movement to the cutter and means for bodily revolving the cutter. As an example of one form of a machine, the circular cutter may be mounted on a revoluble holder which turns on an eccentric, and means are provided for revolving the holder on the eccentric in combination with means for bodily revolving the eccentric. Means are also preferably provided for adjusting the throw of the eccentric.

Referring to the drawings, which show

one embodiment of the invention, A represents a suitable frame or bed for the machine and B is a frame or holder mounted to turn on the eccentric C, which is suitably keyed to the sliding adjusting member D, to turn therewith. Means are provided as a hand lever E and fork F pivoted to the ring G loosely embracing the member D for sliding said member longitudinally on the sleeve H, so that the throw of the eccentric C may be adjusted. The member D is free to revolve within the ring G.

The sleeve H is provided with a pinion K meshing with the gear L mounted on the shaft O whereby rotary motion is transmitted to the sleeve H, member D and eccentric C bodily about the axis of the pass.

The holder or frame B is provided with means for rotating the same, in this instance said holder being provided with sprocket wheel P connected by a chain Q to a motor R.

A circular cutter or knife S is mounted in the holder B and this knife is shown in detail in Figs. 3 and 4. The tube T to be cut is shown in the machine and the knife edge may be either a true circle or of eccentric shape as shown in Figs. 3 and 4. Instead of a knife, saw teeth may be provided for the cutter.

In the operation of the machine if the tube T is held stationary, the sleeve H is revolved, thereby revolving the eccentric C and imparting an orbital movement to the cutter S. A combined orbital and rotatory movement may be imparted to the cutter by revolving the sleeve H and the holder B. If the tube T is revolved the sleeve H may be held stationary, thereby holding the eccentric C stationary and an eccentric movement may be imparted to the cutter S by rotating the holder B upon the eccentric.

If desired, a mandrel V may be used within the tube having a notch W for cooperating with the knife edge.

I claim and desire to obtain by Letters Patent the following:

1. A cutting off machine for cutting off tubes, billets and other work, having a disk whose axis is eccentric to the axis of the machine, a carrier journaled on said disk, an annular cutter mounted on said carrier, the circumference of the disk embracing both axes, and means for revolving said carrier on the disk.

2. A cutting off machine for cutting off

tubes, billets and other work, having a disk whose axis is eccentric to the axis of the machine, means for passing the work through said disk, a carrier journaled on said disk, an annular cutter mounted on said carrier, the circumference of the disk embracing both axes, and means for revolving said carrier on the disk.

3. A cutting off machine for cutting off tubes, billets and other work, having a circular cutter and means for imparting an eccentric movement to said cutter, and independent means for revolving said cutter.

4. A cutting off machine for cutting off tubes, billets and other work, having a circular cutter, an eccentric on which said cutter turns, means for revolving the cutter on the eccentric, and means for bodily revolving the eccentric.

5. A cutting off machine for cutting off tubes, billets and other work, having a circular cutter, an eccentric on which said cutter turns, means for revolving the cutter on the eccentric, means for bodily revolving the

eccentric, and means for adjusting the throw of the eccentric.

6. A cutting off machine for cutting off tubes, billets and other work, having a revoluble holder, an eccentric on which said holder turns, a circular cutter mounted on said holder, means for revolving the holder on the eccentric and means for bodily revolving the eccentric.

7. A cutting off machine for cutting off tubes, billets and other work, having a revoluble holder, an eccentric on which said holder turns, a circular cutter mounted on said holder, means for revolving the holder on the eccentric, means for bodily revolving the eccentric, and means for adjusting the throw of the eccentric.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LEONARD D. DAVIS.

Witnesses:

ROBERT A. THOMSON,
JOHN CARRICK.