

W. A. L. KIRK.

Machines for Cutting and Slitting Lead.

No. 157,993.

Patented Dec. 22, 1874.

Fig. 1.

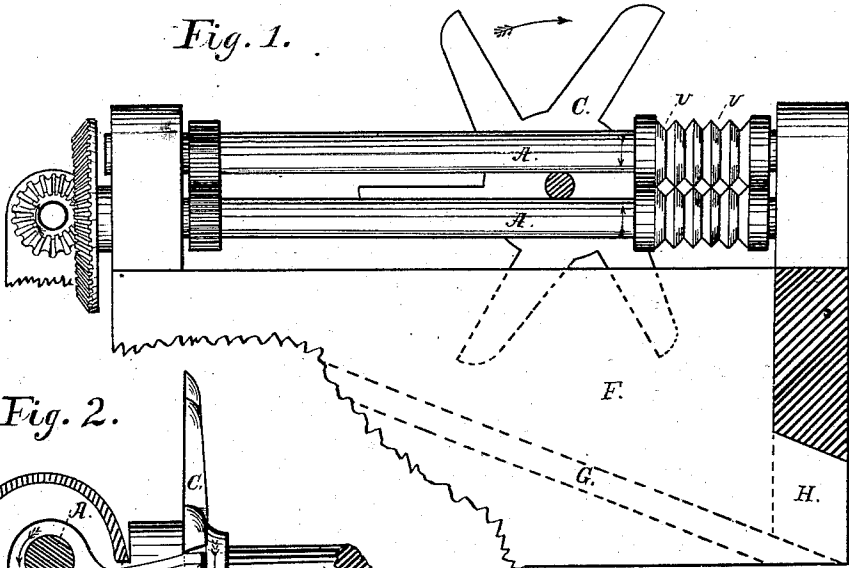


Fig. 2.

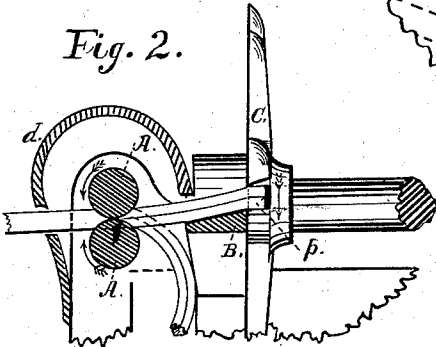
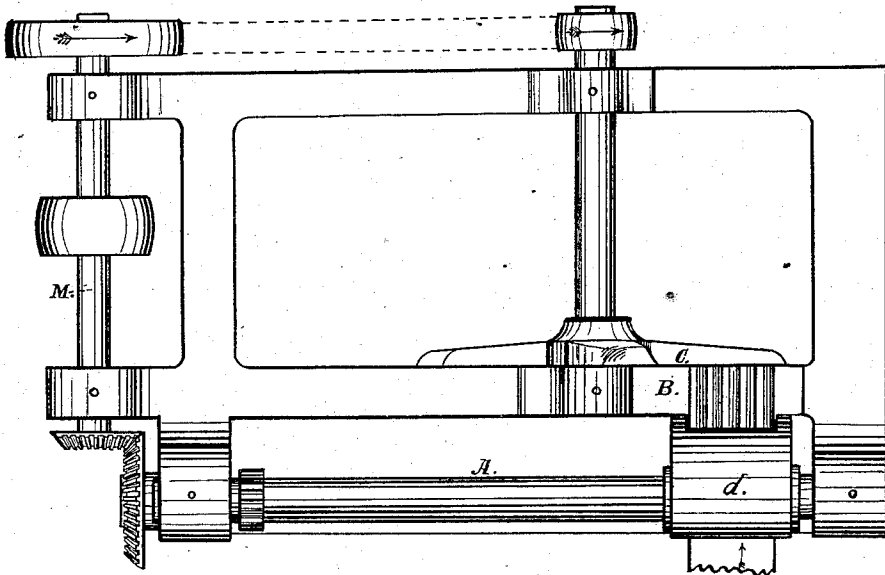


Fig. 3.



Witnesses;

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UNITED STATES PATENT OFFICE.

WILLIAM A. L. KIRK, OF HAMILTON, OHIO.

IMPROVEMENT IN MACHINES FOR CUTTING AND SLITTING LEAD.

Specification forming part of Letters Patent No. **157,993**, dated December 22, 1874; application filed September 9, 1874.

To all whom it may concern:

Be it known that I, WM. A. L. KIRK, of Hamilton, State of Ohio, have invented a new and useful Improvement in Machines for Cutting Lead or other Soft Metals; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 represents a sectional view of my improved machine, with parts broken away to show the operating devices. Fig. 2 is a sectional view, representing the rolls and revolving cutter. Fig. 3 is a plan view of my improved machine.

The object of my invention is the dividing of a bar of metal into small bars of any desired shape, and cutting the same into pieces of any desired length.

The essential features of this machine are, first, a pair of steel or other hard rollers, provided with grooves of proper shape to form bars; second, a revolving knife or cutter situated in front of the above-mentioned rollers, and adjusted to a bed-knife in such a way that the bars or strands from the rollers are cut of any desired length, depending on the relative motion of the rolls and cutter.

For cutting cubes in shot-making, the rolls are provided with V-shaped grooves, the angles of which are ninety degrees, and the rolls so adjusted to each other that a piece of metal passing between them will be divided into perfectly-square bars, and, when cut by the revolving knife, form perfect cubes.

In the accompanying drawings, A A represent the rolls, with the grooves *v v*, through

which the bars pass, either downward or over the bed-knife B, to the cutter C.

In shot-making, for which this machine is especially adapted, the interior F serves as a receptacle for the cubes as they fall from the cutter, and it has a slanting bottom, G, which delivers them at the opening H.

By a system of bevel-gearing the main shaft M imparts motion to the rolls, and to the revolving cutter by means of a belt, so that a uniformity of motion exists in the working of the machine, which can be varied at will, and which regulates the length of the pieces cut.

The use of my machine may be described as follows: A piece of lead or other metal is passed through the opening in the shield *d*, Fig. 2, between the rolls A A, which divide it into as many square bars as possible. These then pass over the bed-knife B to the revolving cutter C, which cuts them into perfect cubes, as seen at *p*, Fig. 2. The cubes drop into the receptacle F, and are ready to be rounded into shot.

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

In a machine for cutting cubes or square bars of optional lengths by passing the bars of metal through rolls, and subjecting them to the operation of a revolving cutter, the combination of the rolls A A, bed-knife B, revolving cutter C, and shield *d*, substantially as and for the purpose specified.

W. A. L. KIRK.

Witnesses:

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