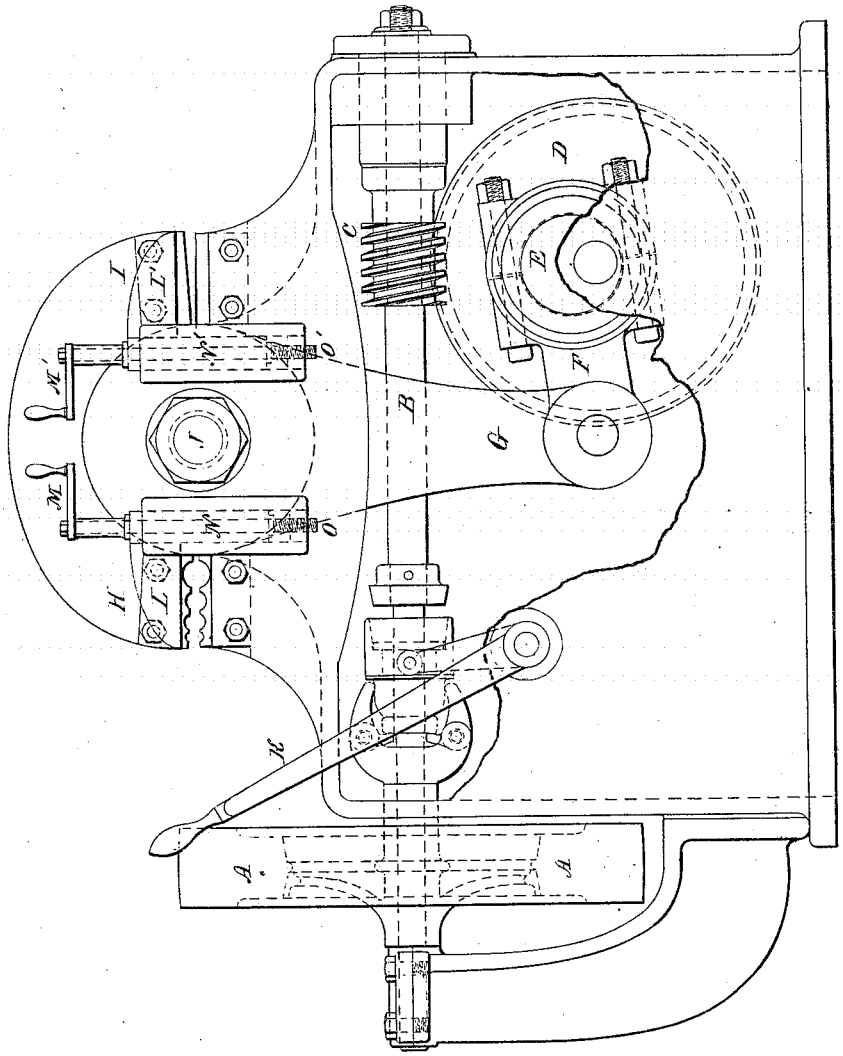
2 Sheets--Sheet 1.

F. A. PRATT.

Metal-Shearing Machine.

No. 164,391. Patented June 15, 1875.

Fig. 1.



Witnesses;

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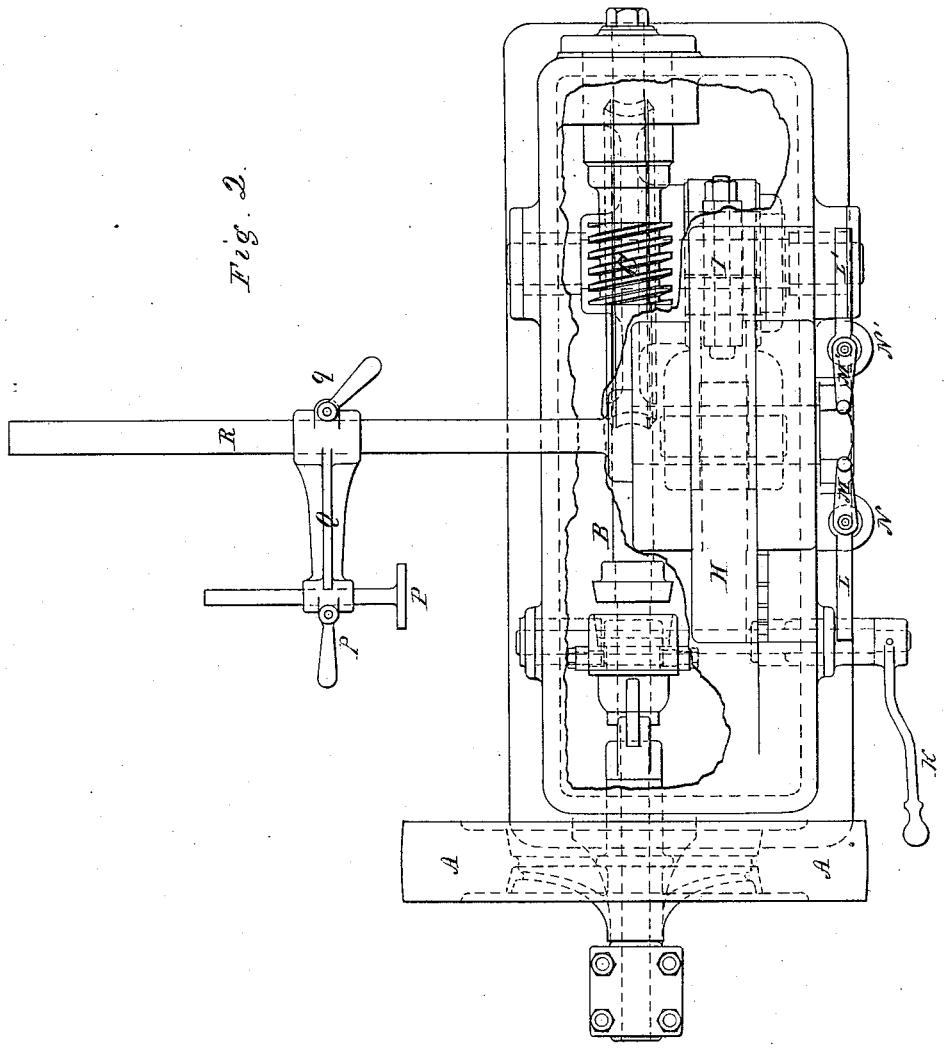
2 Sheets--Sheet 2.

F. A. PRATT.

Metal-Shearing Machine.

No. 164,391. Patented June 15, 1875.

Fig. 2.



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UNITED STATES PATENT OFFICE.

FRANCIS A. PRATT, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE PRATT & WHITNEY COMPANY, OF SAME PLACE.

IMPROVEMENT IN METAL-SHEARING MACHINES.

Specification forming part of Letters Patent No. **164,391**, dated June 15, 1875; application filed March 10, 1875.

To all whom it may concern:

Be it known that I, FRANCIS A. PRATT, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Cutting and Shearing Metals; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

The object of my invention is to provide a simple, compact, and powerful shearing-machine for metals, which shall be double-acting, so as to save one-half the time usually taken to raise and lower the lever in single-acting machines.

My invention consists in the construction and arrangement of the several parts of the herein-described machine.

In the accompanying drawings, on two sheets, Figure 1 is a front view of my improved machine with part of the frame removed so as to show the construction of the interior parts. Fig. 2 is a top view of the machine, likewise with part of the frame removed to show the interior parts.

A is the driving-pulley, which gives motion to the shaft B. C is a worm upon the shaft B, which gears into the wheel D and turns it with a slow motion. Upon the same axis as D is placed the eccentric E. Around this is an eccentric strap, which is connected by the bar F to the lower end of the lever G, so that the rotation of the eccentric draws it alternately back and forth. The bearings of the shaft upon which the eccentric and the wheel D are fixed, and also the bearings of the shaft B, are placed in the solid frame of the machine. G H I is a solid three-armed lever, turning about a firm support in the frame of the machine at J. The two short arms H and I each carry the upper or movable blade of the shearing mechanism, the corresponding lower blades of which are attached to the frame of the machine. The swinging motion of the arm G alternately raises and depresses the arms H and I, and operates the cutting mechanism. Between the driving-pulley A and the shaft B is a friction-clutch for connecting and disconnecting the machine, so that it can be stopped and started at pleasure by a movement of the lever K. L and L′ are gages, which can be raised or lowered by turning the cranks M or M′. These gages have a hollow stem sliding in sockets N N′, through which the screws O O′ pass and enter a thread in the bottom of the socket. These gages are intended to rest upon the top surface of the article to be cut, and prevent its being displaced by the cutting action of the shears. They are open upon the outer side, so that a bar of metal or any other article can be placed laterally in the shears without disturbing them. They are firmly held in place by the stems in the sockets N N′. P is a stop-gage in the rear of the shears, to determine the length of the part cut off from a bar. This gage slides in the end of the arm Q, and is held by the clamp *p*. The other end of the arm Q slides upon a bar, R, extending to the rear from the frame of the machine. It is held firmly in place, when desired, by the clamp *q*. This gage P can be turned over to either side, so as to be used with either set of shears.

In the drawing, the cutting-edges upon the arm L of the shears are shown of a form suitable for cutting round rods, and those upon the arm L′ are plain; but they may be of any other desired form. They are bolted to the machine, and are easily removed and replaced.

What I claim as my invention is—

1. The combination of the shaft B, the worm C, the wheel D, the eccentric E, and the connecting-rod F with the arm G, and the shears H and I, substantially as described.

2. The gage L, with its sliding stem in the socket N, and the screw O, in combination with the cutting-shears, substantially as herein described.

FRANCIS A. PRATT.

Witnesses:

THEO. G. ELLIS,

WENDELL R. CURTIS.