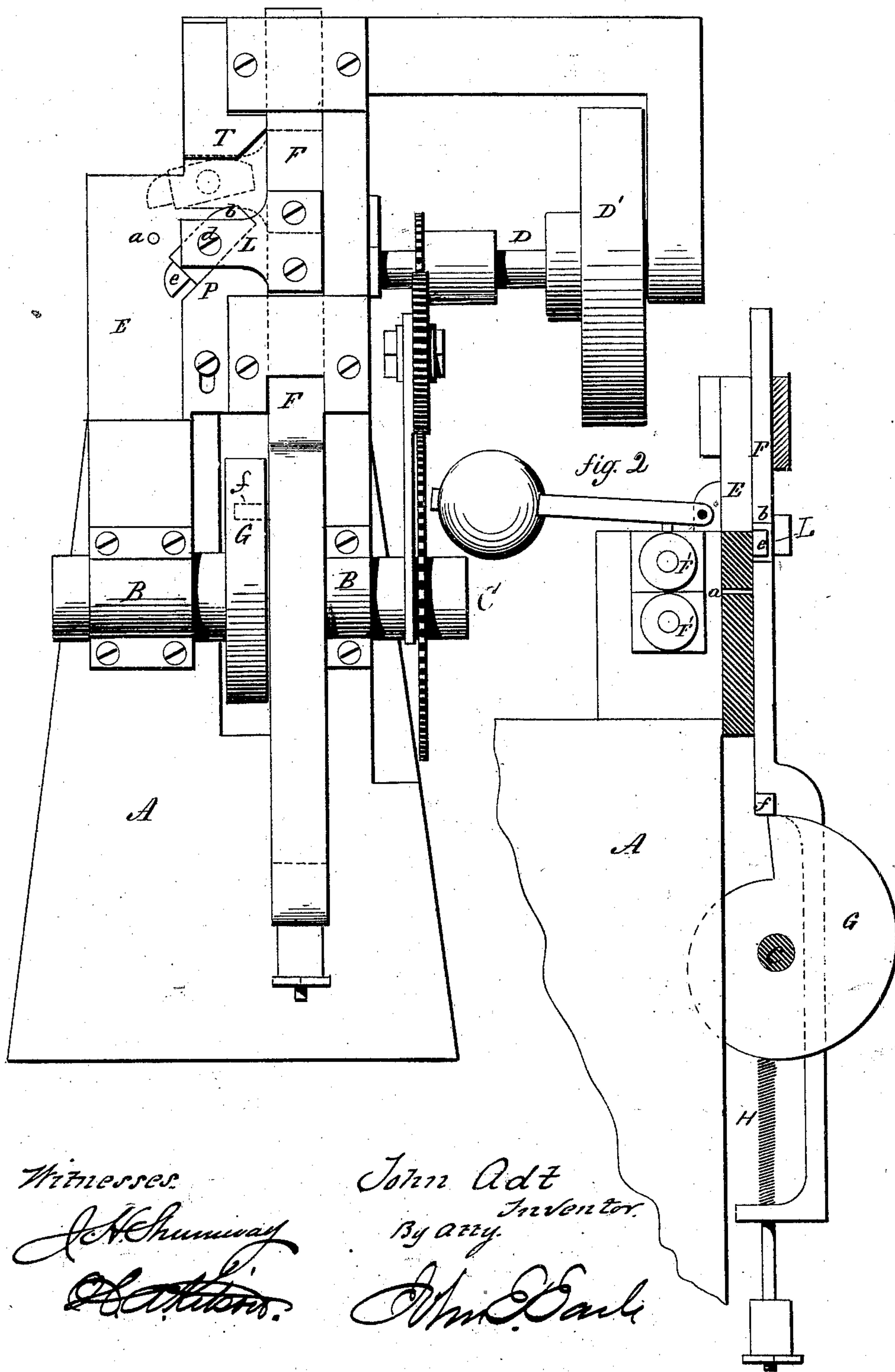


J. ADT.  
Wire-Cutting Machine.

No. 203,691.

Patented May 14, 1878.

*fig. 1*



Witnesses:

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# UNITED STATES PATENT OFFICE.

JOHN ADT, OF NEW HAVEN, CONNECTICUT.

## IMPROVEMENT IN WIRE-CUTTING MACHINES.

Specification forming part of Letters Patent No. **203,691**, dated May 14, 1878; application filed April 30, 1878.

*To all whom it may concern:*

Be it known that I, JOHN ADT, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machines for Cutting Wire; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in

Figure 1, a front view; Fig. 2, a vertical sectional view.

This invention relates to an improvement in machines for cutting wire into predetermined lengths, as for blanks from which articles are to be made, or the article of manufacture known as "wire rods," the object being the construction of an automatic machine which will feed the wire and cut it into predetermined lengths; and the invention consists in the construction and combination of parts, as hereinafter described, and more particularly recited in the claims.

A is the bed of the machine, on which, in suitable bearings B, the shaft C is arranged, and so as to revolve by the application of power thereto in any convenient manner, here represented as by a train of gearing from a counter-shaft, D, and driving-pulley D', thereon. In the head E there is a horizontal aperture, *a*, through which the wire is passed, as seen in Fig. 2. The feeding device is arranged in rear of this aperture, and is preferably a pair of grooved rolls, F' F', to which a constant revolution is imparted, the friction of the rolls on the wire being sufficient to draw the wire into the machine, but yet turn freely upon the wire when the progress of the wire is interrupted. Other feeds may, however, be substituted, if desirable.

In connection with the feed a straightening apparatus of any of the known constructions is used, so that the wire is straightened as it is drawn into the machine.

In front of the head E there is a vertical sliding bar, F, to which a vertical movement is imparted by a cam, G, on the shaft C, the said bar being shown in its lowest position in Fig. 2, and just on the point of escaping from the cam. It is drawn down by a spring, H, so as to make the descent very quick or in-

stantaneous. From the slide F an arm, L, projects toward the aperture *a*, and to this there is loosely hung a cutter-holder, *b*, upon a pivot, *d*, projecting both ways from the pivot. In the end of this holder *b* toward the aperture *a* the cutter *c* is fixed. The normal condition of the cutter is as seen in Fig. 1, the cutter hanging downward, and out of the vertical line of the aperture *a*, and it is turned into this position when the bar F descends in consequence of an inclined stop, P, on the face of the head. Therefore when the bar F is raised, the cutter and its holder will remain in that position till the cutter has passed above the aperture *a*. Then the end of the cutter-holder opposite the cutter strikes a stop, T, above, which turns the cutter-holder into a horizontal position, bringing the cutter into the vertical line of the aperture *a*, and this condition occurs just as the cam G has reached its highest point and is bearing against the projection *f* on the slide F, as seen in Fig. 2. During this upward movement of the cutter the wire has been passing through the aperture *a*, and so soon as the bar F escapes from the cam G it instantaneously descends, in its descent cutting off the wire.

It will be understood that the cutter runs close to the face of the head E, as seen in Fig. 2, so that the aperture *a* forms a die to support the wire against the descending cutter. The cutter returns to its position on the stop P, is again raised, more wire fed in, a second piece cut, and so on.

The length of the wire is adjusted by the relative velocities of the feed-rolls and the cam G. The feed-rolls are driven directly from the shaft D; hence change of gearing between the shaft D and shaft C, on which the cam is arranged, will give a different velocity to the said two shafts. If, therefore, a shorter cut of wire is required, the cam G must revolve with greater velocity. On the contrary, if a longer piece of wire is required, the cam G must revolve slower, and the chain of gearing between the shaft D and the shaft C must be varied accordingly—that is to say, the time between the successive descents of the cutter determines the length of the wire cut.

This change of gearing is too well understood to require further explanation here than



to say it is substantially like that used in screw-cutting lathes and similar machines.

This order of adjustment may be reversed, making the revolution of the cam constant, and adjusting the feed accordingly.

I claim—

1. In a machine for cutting wire, the combination, substantially as described, of a feeding device, an aperture through which the wire is delivered, a sliding bar and cutter hung thereon, and stops to turn the said cutter from and into the line of the aperture through which the wire is fed, substantially as described.

2. In a machine for cutting wire, the com-

bination, substantially as described, of a feeding device, an aperture through which the wire is delivered, a sliding bar and cutter hung thereon, and stops to turn the said cutter from and into the line of the aperture through which the wire is fed, with intermediate gearing between the said feed and the device for operating the cutter-bar, whereby the relative movements of the feed and cutter may be varied, substantially as and for the purpose described.

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Witnesses:

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