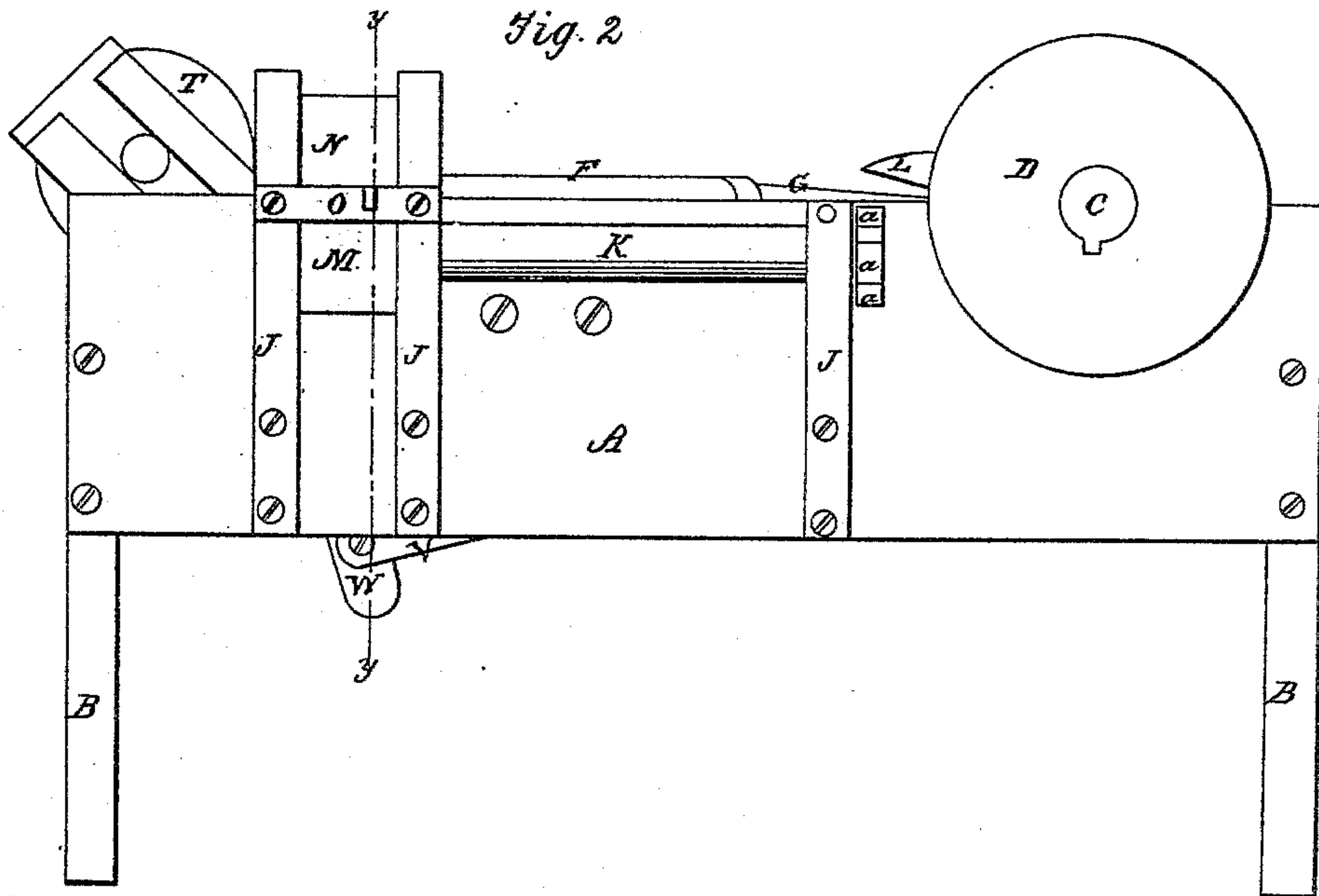
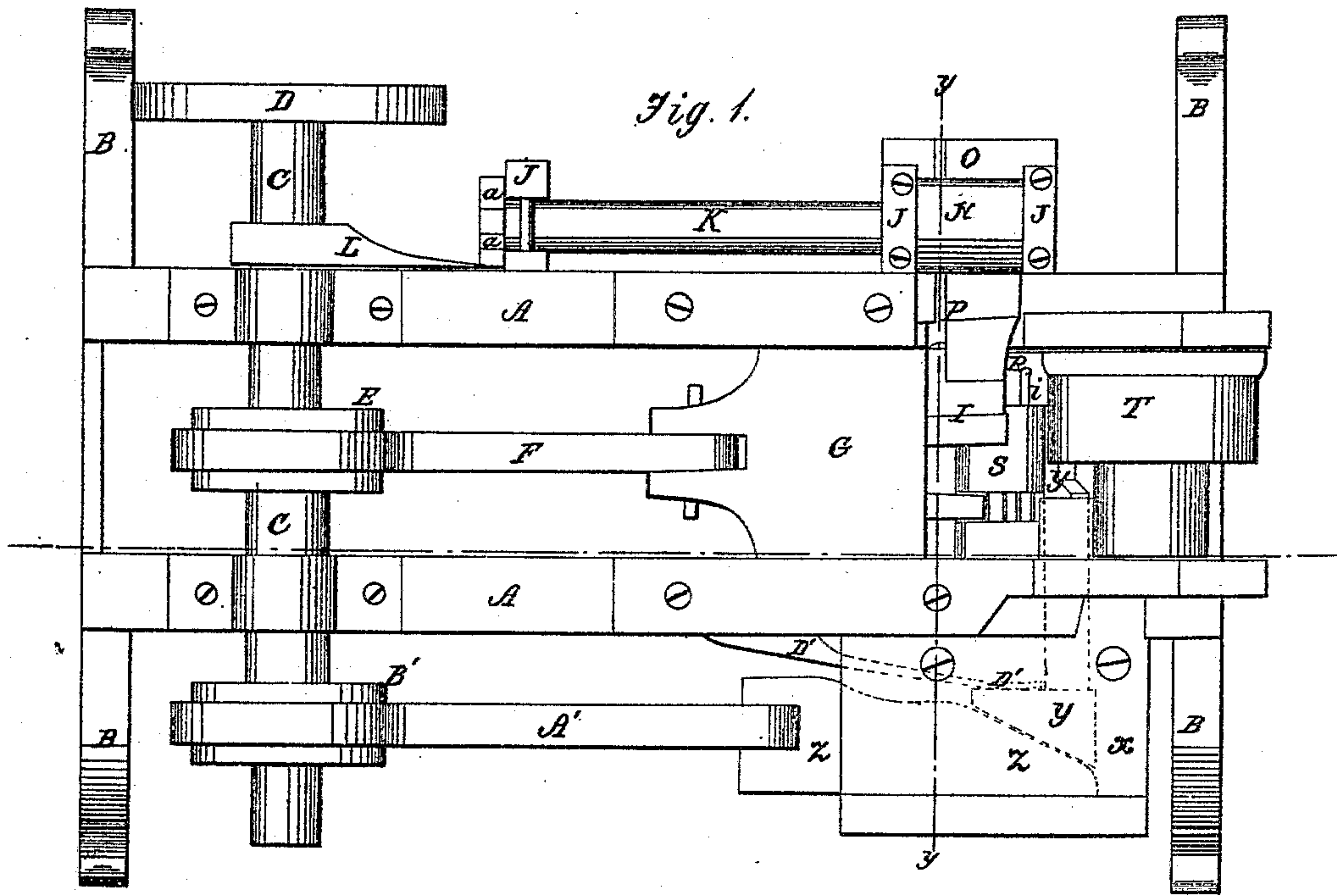


*F. Davison.*

*Spike Mach.*

*N<sup>o</sup> 87,474.*

*Patented Mar. 2, 1869.*



*Witnesses,  
Cozzelius Cox.  
Leopold Over*

*Inventor.  
F. Davison  
Alexander Mason atty*

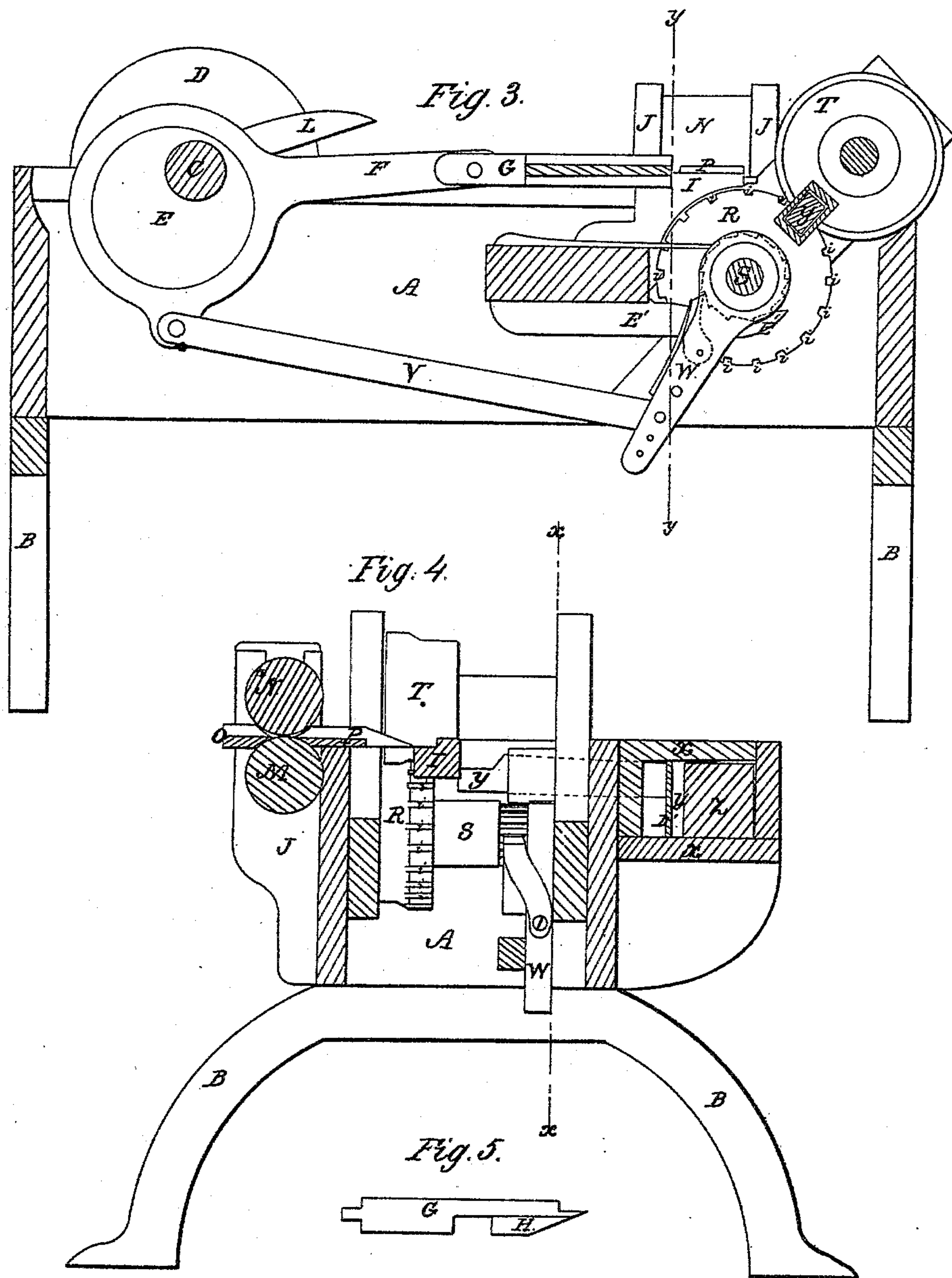
F. Davison.

Sheet 2,  
2 Sheets.

Spike Mach.

N<sup>o</sup> 87, 474.

Patented Mar. 2, 1860.



Witnesses,  
Cornelius Cox  
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Inventor:  
F. Davison  
per Alexander Mason  
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# United States Patent Office.

FERDINAND DAVISON, OF LIBERTY, VIRGINIA.

Letters Patent No. 87,474, dated March 2, 1869.

## IMPROVEMENT IN MACHINES FOR MAKING SPIKES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FERDINAND DAVISON, of Liberty, in the county of Bedford, and in the State of Virginia, have invented certain new and useful Improvements in "Spike-Machines;" and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the construction of a spike-machine, in such a manner that the cutters will be so placed as to cut the proper point on the spike, and in pressing the point by the proper bev-els in the die to its right place on the centre line of the spike; also in the arrangement for feeding the rod to the cutters.

In order to enable others skilled in the art to which my invention appertains, to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed two sheets of drawings, which form a part of this specification, and in which—

Figure 1 is a plan view;

Figure 2, a side elevation, showing the feeding-arrangement;

Figure 3 is a side elevation, in section, taken through the line *x x*;

Figure 4, an end view, in section, taken through the line *y y*; and

Figure 5 is a front view of the movable cutter-plate and cutter.

A represents the frame-work of the machine, resting on legs B B.

In the rear part of the frame A, is a shaft, C, which has its bearings in suitable journal-boxes in or on the sides of the frame.

This shaft C is provided with a wheel or pulley, D, for attaching suitable power to drive the machine; also, in the centre of the frame A, with an eccentric or cam-wheel, E, which connects, by means of a pitman, F, with the movable cutter-plate G.

This cutter-plate is provided with tongues along its sides, which tongues fit in grooves on the sides of the frame A, thus allowing the plate to slide back and forth on the same level exactly.

On the under side of the said cutter-plate G, is secured the cutter H, as shown in fig. 5, which cutter is bevelled, as shown, on one side, to cut the point of the spike at the proper point.

The cutter-plate G and cutter H rest on a bed-plate, I, of such width as to correspond with the length of the spike intended to be cut.

The bed-plate I is, along its inner edge, provided with a flange, against which the end of the rod from which the spikes are cut, is placed. The flange on the bed-plate I fits into a groove on the under or lower side of the cutter-plate G.

On the side of the frame A are placed three forked

arms J J, in which a shaft, K, has its bearings. This shaft is, at its rear end, provided with a suitable number of teeth, *a a*, which are operated upon by an arm, L, secured to the shaft C, so that, for each revolution of the main shaft C, the shaft K is turned the distance of one of the teeth *a*.

The shaft K is, at a suitable point, provided with a roller, M, between two of the arms J J, and over this roller is another roller, N, resting on the same, and having its journals placed in the same arms, J J. On the outer side of these two arms, and between the rollers M N, is placed a plate or block, O, which is grooved for the insertion of the bar or rod from which the spikes are to be cut.

When the machine is in operation, the rollers will carry this bar into the machine. As soon as the end of the bar emerges on the other or inner side of the two rollers, it passes into a groove or channel in another plate or block, P, which is cut, as shown in fig. 1, so that the part of said block in front of the channel extends further inward than the other, and is bevelled, to correspond with the cutter H, the edge being also sharpened, so as to form a cutter.

The two rollers M N feed the rod or bar, so that the end thereof strikes or rests against the flange on the plate I, when the cutter H cuts it off, and carries the cut-off piece forward; then, as soon as the cutter-plate G moves backward, the rollers carry the rod inward again, so as to be ready for the next forward movement of the cutter.

It will be seen that the bevelled and sharpened part of the plate P acts as an additional cutter, and when the bar is in its place, as above described, and the cutter H moves forward, the blank for the spike is entirely cut off from the bar.

The cutter H, and bevelled and sharpened part of the plate P, are so arranged as to cut the proper point on the spike at the same time as the blank is cut off; that is, the blank is cut off in the proper shape for the point.

After the first blank has been cut off from the rod or bar, the following blanks, it will be seen, are in the shape of a "rhomboid," having a point at each end, one of which is afterward formed into the head, and the other forms the point of the spike. The first blank, however, would, if the rod were square at the end, have more metal in the head than the succeeding ones. To insure uniformity, I may therefore first cut the end of the rod in proper shape, so that the first blank will correspond with the shape of the rest.

When the spike is thus cut, it is carried forward by the cutter-plate G, on the bed-plate I, and deposited in one of the notches *i i*, on the roller R, said roller being so placed on a shaft, S, which has its bearings in the sides of the frame A, that the spike, after being deposited in one of the notches, will project sufficiently on the inner side of the same, to form the head.

The outer edge of the roller R, which properly may



be called a die, is bevelled where the point of the spike is placed, and the pressing-roller T is provided with a flange to correspond therewith, so that the point of the spike will be placed on the centre line of the spike. This is more plainly shown in fig. 4.

The pressing-roller or die T is placed on a shaft, having proper bearings above and forward of the die R.

The shaft S, with the die R, is turned by a pitman, V, which connects the eccentric or cam-wheel E with a movable collar and arm, W, said collar being placed around the shaft S, and the arm provided with a spring-pawl or dog, working in cogs on the shaft, all arranged in such a manner, that for each revolution of the main shaft C, the die R is turned sufficiently to place one of the notches *i i* in position to receive the spike.

On the side of the frame A, opposite to the side where the feeding-apparatus is located, is placed a box, X, in which the punch Y is arranged in such a manner that the end thereof will press that end of the spike which projects beyond the notch in the die R, as already described, and form the head of the spike.

The punch Y is operated by the wedge Z, which is connected, by means of a pitman, A', to an eccentric or cam-wheel, B', placed on the main shaft C, outside of the frame A.

After the wedge Z has pressed the punch Y inward, and moves back again, a spring, D', carries the punch

Y out again, ready to be operated upon by the next forward movement of the wedge.

After the spike has been thus completely formed by the dies and punch, it remains in its notch on the die R, until the said die has been turned far enough around, so that the head of the spike strikes against a bar, E', placed under the die, when the spike drops out.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The form and construction of the holding and pointing-dies, on the rolls R and T, as and for the purpose specified.

2. The combination of the carrying and pointing-rolls R and T, with the bevelled cutter and holder-block P and reciprocating cutter and transferrer H, all arranged and operating together, substantially in the manner described.

3. In combination with subject-matter of second clause, the mechanism herein described, for feeding the blank-bar to the knives, as set forth.

In testimony that I claim the foregoing, I have hereunto set my hand, this 19th day of September, 1868.

F. DAVISON.

Witnesses:

A. J. COFFMAN,  
THOS. D. ALLEN.