G. Miller.

File-Cutting Machine.

No. 53,650. Patented Apr. 3, 1866.

Fig. 1

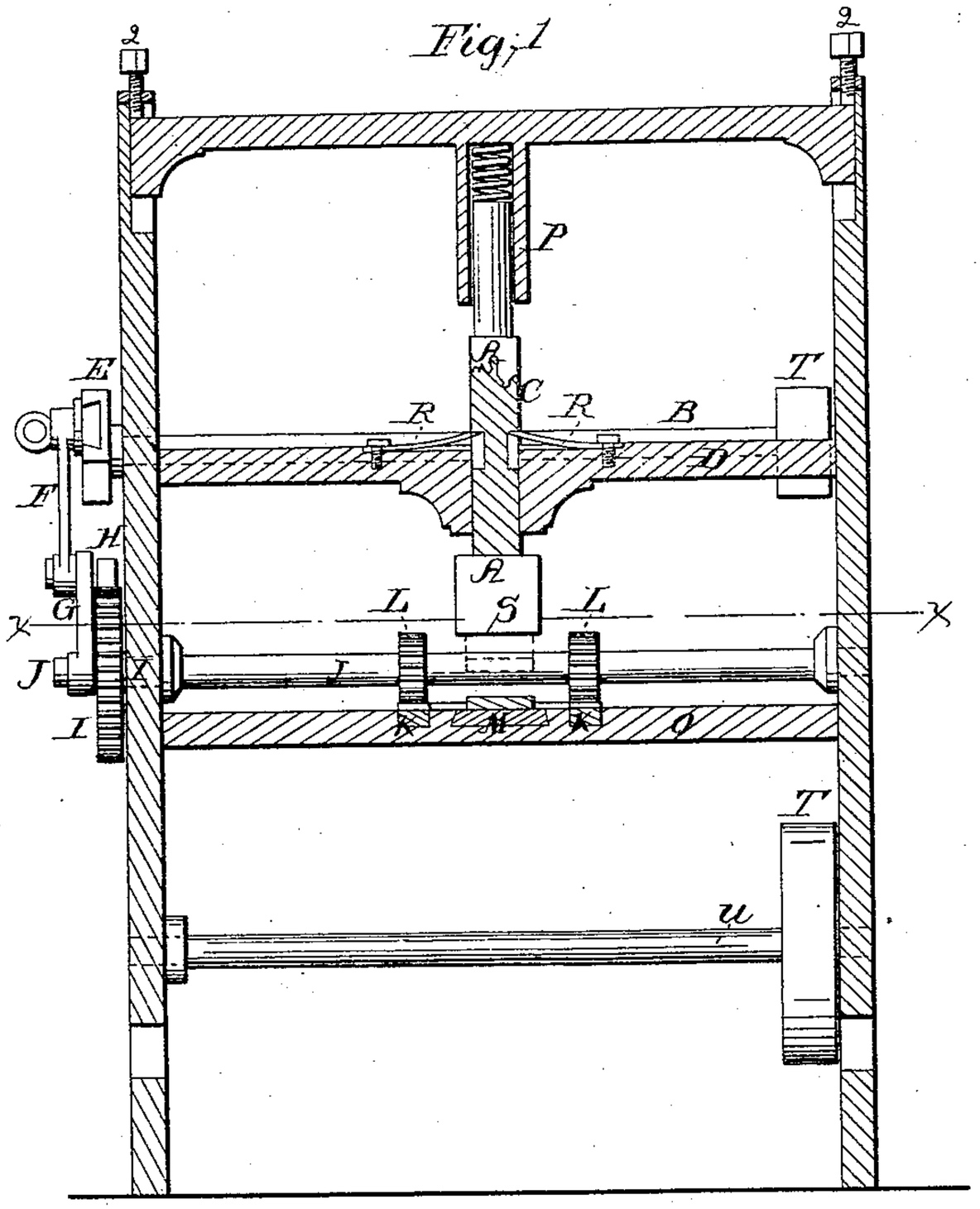

Fig. 2.

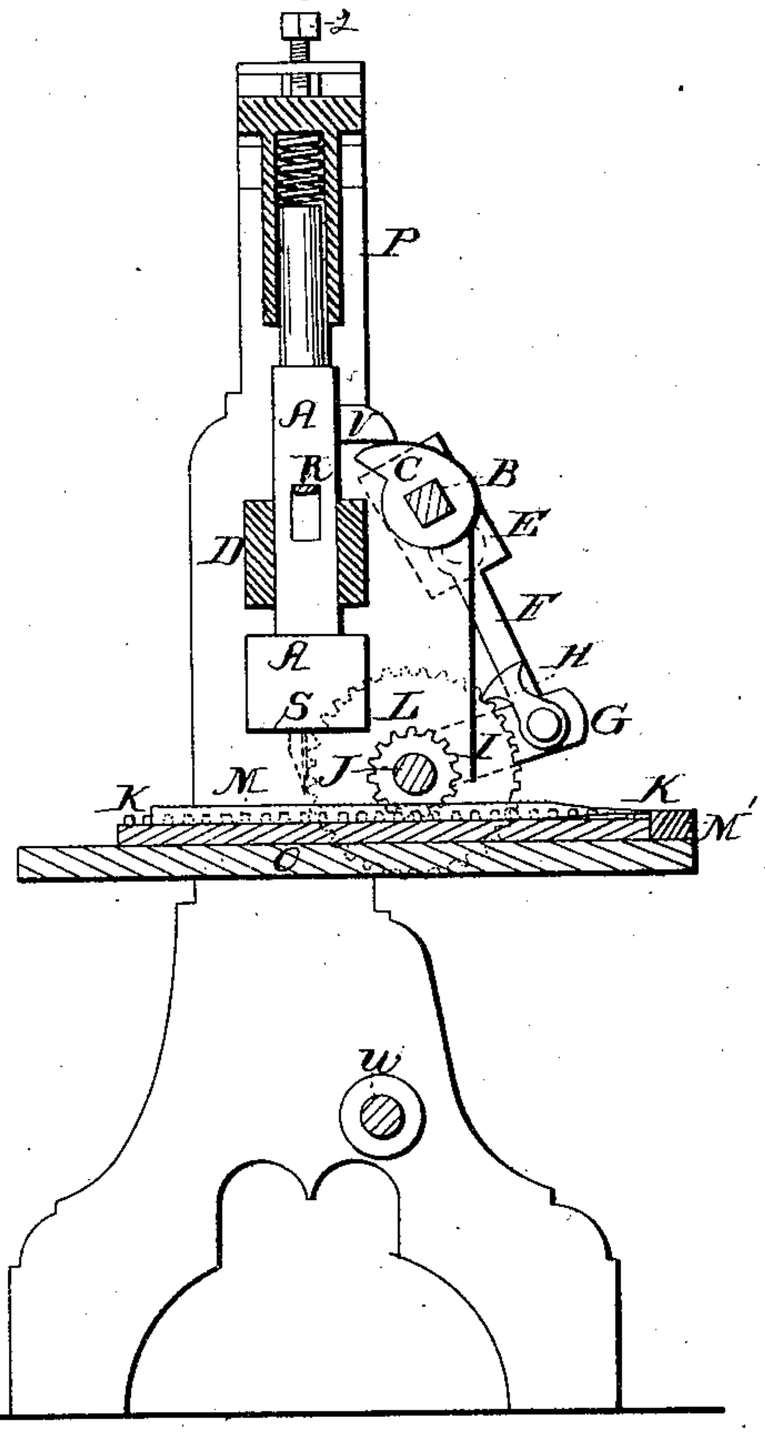

Fig. 3.

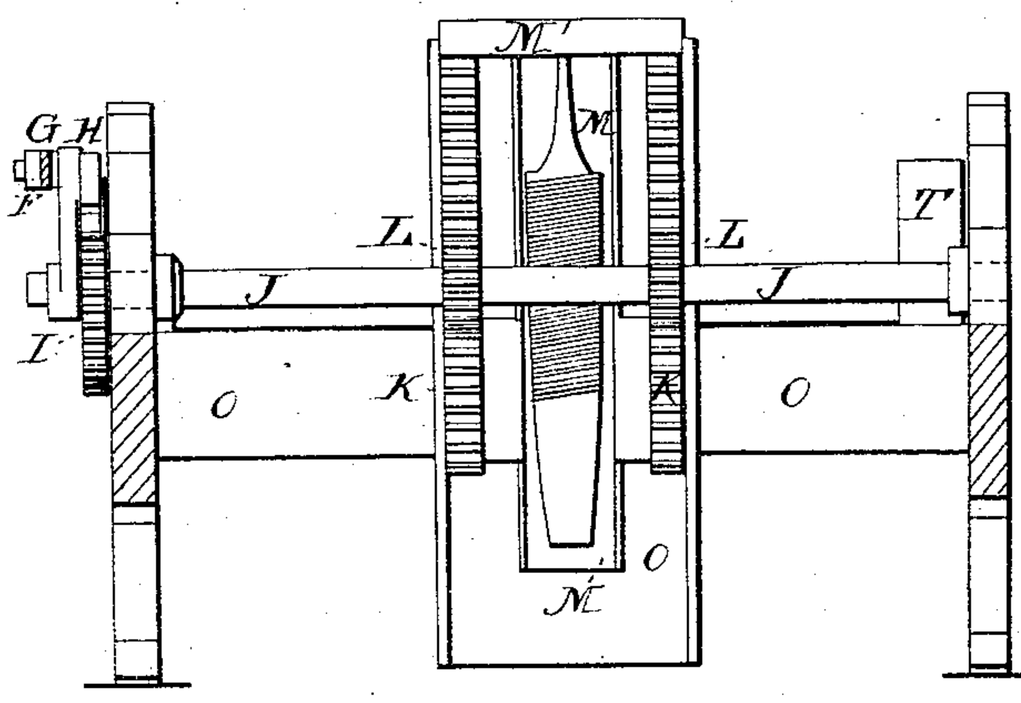

Fig. 4.

Witnesses;
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UNITED STATES PATENT OFFICE.

GEORGE MILLER, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR CUTTING FILES.

Specification forming part of Letters Patent No. **53,650,** dated April 3, 1866.

To all whom it may concern:

Be it known that I, GEORGE MILLER, of the city, county, and State of New York, have invented certain new and useful Improvements in File-Cutting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings which accompany and form a part of this specification.

Of these drawings, Figure 1 represents a vertical longitudinal central section of a machine containing my improvements. Fig. 2 represents a central vertical cross-section of the same. Fig. 3 represents a horizontal section of the same, the plane of section being indicated by the line *x x*, Fig. 1. Fig. 4 represents a detached horizontal section of the portion of the chisel-stock immediately above the middle transom, through which the chisel-stock plays.

Similar letters of reference in the several drawings indicate corresponding parts.

Most of the machines for cutting files heretofore invented and at present in use are complicated in their construction, and very few are effective for the purpose for which they were designed.

The nature of my invention therefore consists in providing in a file-cutting machine suitable mechanism by means of which a novel and at the same time a more simple arrangement and combination of parts is attained therein.

To enable others to make and use my invention, I will proceed to describe it in detail.

A is the chisel-stock; B, the driving-spindle with its lifting-cam C. D is the middle transom, through which the chisel-stock A plays.

On one end of the driving-spindle B is placed the adjustable slotted crank E, which, together with the connecting-link F, the carrier G, reversible pawl H (or a single pawl may be used instead) attached, and spur-wheel I, constitutes the feed-motion of my improved machine. The spindle J, connected directly with said feed-motion, drives the racks K K by means of the pinions L L. The racks K K are connected together by a cross-piece, M′, and the file-plate M, by means of these racks, receives motion along the bed that is affixed to the lower transom, O. An equivalent for these racks and pinions—such as one or more endless screws connected by proper gearing to the spindle J—could be substituted for giving motion to the file-plate, if desired.

The upper transom of the machine has affixed to its under side a socket-bearing, P, containing a helical spring, and in which the upper end of the chisel-stock is set, bearing against said spring. This transom is adjustable by means of the adjustable screws 2 2, with which the intensity of the blow of the chisel is regulated.

On the upper side of the middle transom are affixed two recoil-springs, R R, with an end of each taking into a small recess placed in the opposite sides of the chisel-stock, in order that the blow of the chisel-stock may be arrested and the chisel thrown back off the file at the termination of each blow.

S is the boss on the chisel-stock, in which is affixed the chisel for cutting the file.

T T are pulleys attached to the spindles B and U, around which is passed the belt.

V is the stud on the chisel-stock, against which the cam C operates.

A treadle can be attached, as the machine is peculiarly adapted thereto, or power can be applied instead thereof when it is convenient to do so.

The feed-motion can be varied, though the one I have adopted in my machine seems to be superior to most known for the purpose of getting a very small and at the same time an unvarying, determinate and easily adjustable motion of the file along the table of the machine.

The chisel-stock is, in cutting files, to be placed somewhat oblique to the plane of the face of the file to be cut.

It is evident that by combining and arranging the driving-spindle B with the chisel-stock and the spindle J with the rack and pinions, or their equivalents, and both directly with the feed mechanism, in the manner shown, fewer parts are required and much shop-room is economized.

Having thus described my improved file-cutting machine, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

1. The combination and arrangement of the chisel-stock with the recoil-springs, socket bearing and springs, connected with the ad-

justable transom, and operating substantially as and for the purpose herein shown and described.

2. The combination and arrangement of the spindles B J with the feed-motion, chisel-stock, and rack and pinions, or their equivalents, as specified, and operating substantially as and for the purpose herein shown and described.

GEORGE MILLER.

Witnesses:
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