

J. GARLAND.

MACHINE FOR STRIPPING FILES.

No. 170,725.

Patented Dec. 7, 1875.

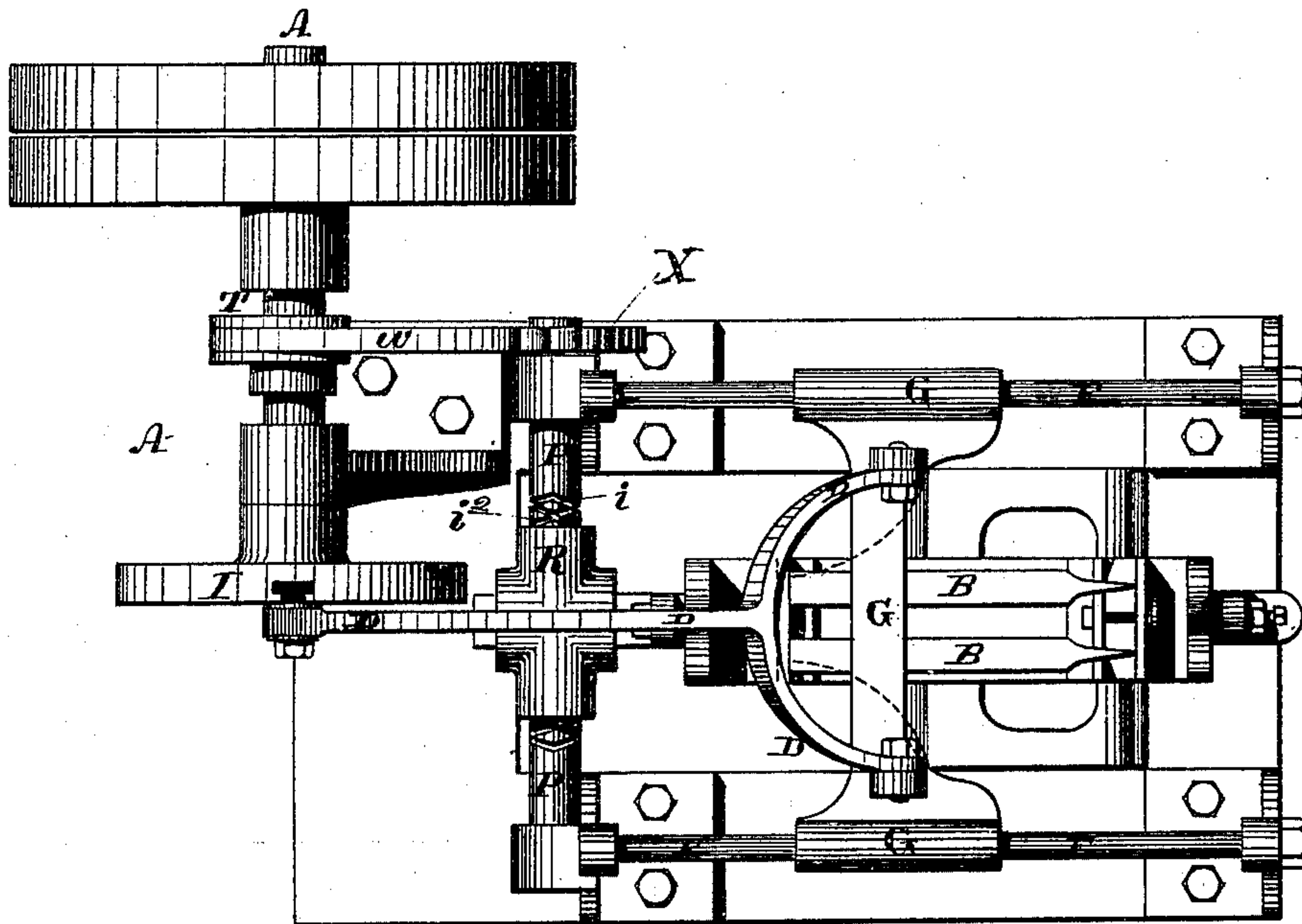


FIG. 1.

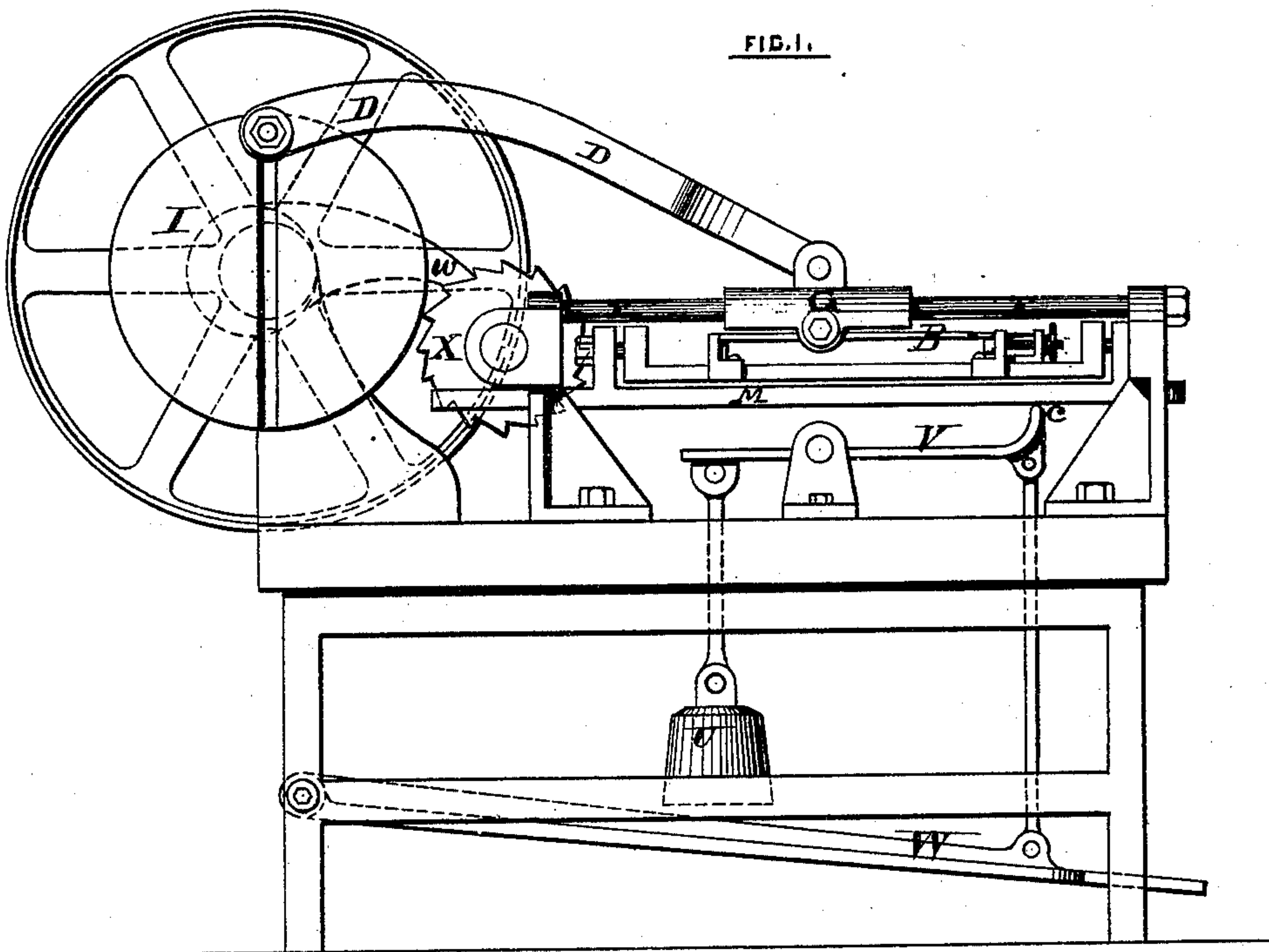


FIG. 2.

WITNESSES.

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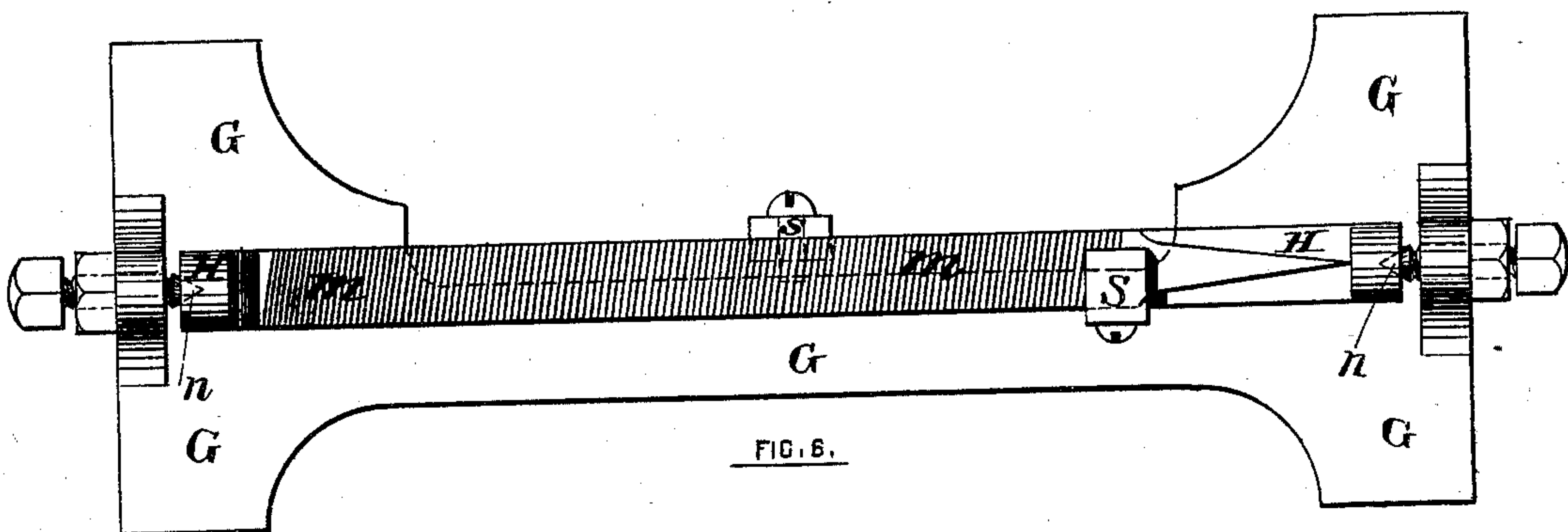
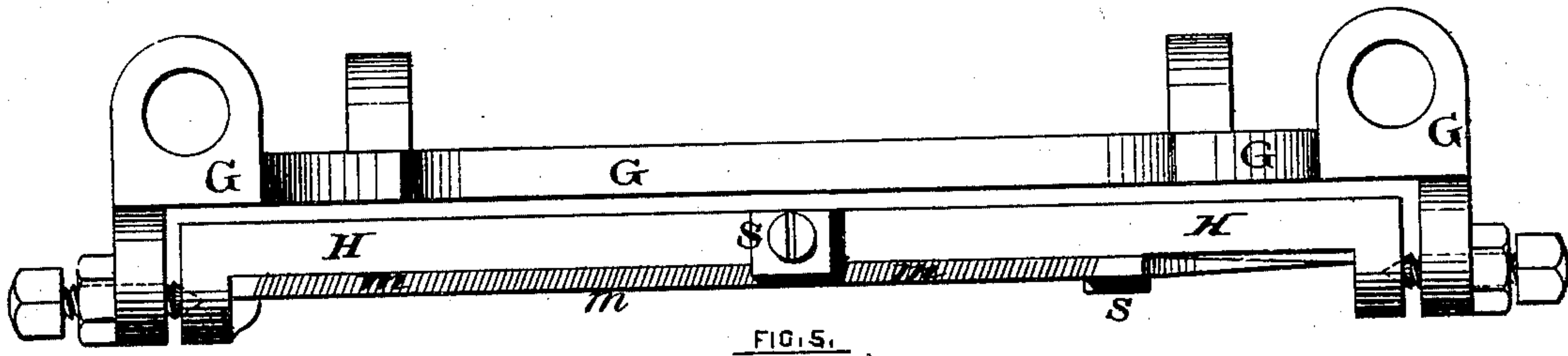
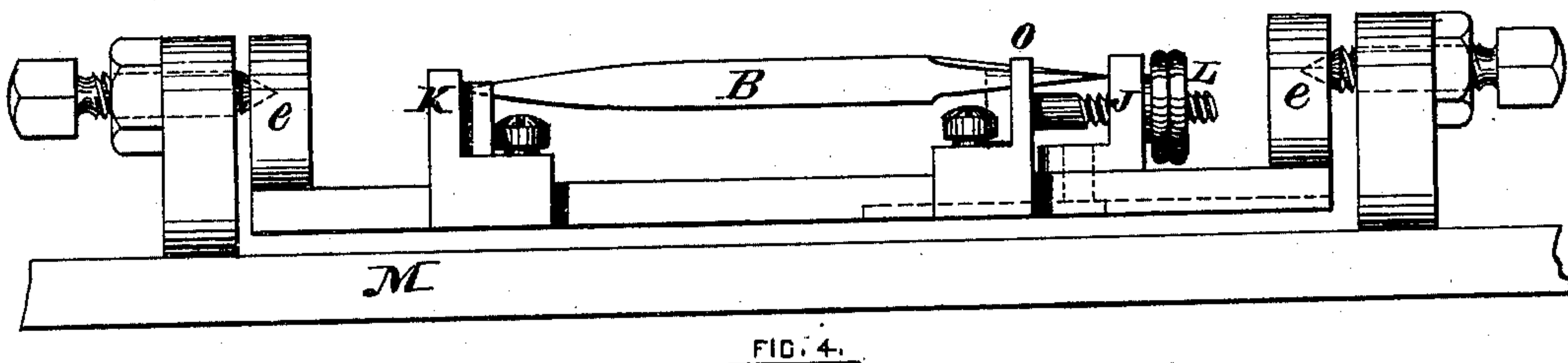
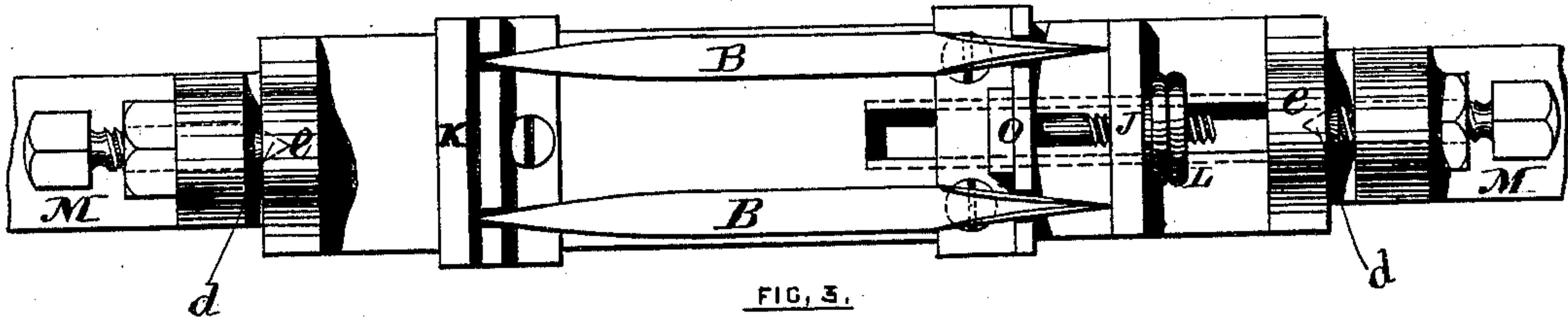
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UNITED STATES PATENT OFFICE.

JAMES GARLAND, OF PAWTUCKET, RHODE ISLAND.

IMPROVEMENT IN MACHINES FOR STRIPPING FILES.

Specification forming part of Letters Patent No. 170,725, dated December 7, 1875; application filed April 7, 1875.

To all whom it may concern:

Be it known that I, JAMES GARLAND, of Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and Improved Machine for Stripping Files, of which the following is a specification, referring to the accompanying drawings making part of the same, in which—

Figure 1 is a plan or top view of my improved file-stripping machine. Fig. 2 is a side elevation of the same. Fig. 3 is a plan, and Fig. 4 is a side elevation, of the device which holds the file-blanks to be stripped. Fig. 5 is a front elevation, and Fig. 6 is a plan, of the under side of the stripper, or device by which the file-blanks are stripped.

Similar letters mark like parts in all the figures.

In the manufacture of files it is the practice, after the blank is forged into the proper shape, to grind it to a surface preparatory to cutting; but it is found in practice that the most careful grinding fails to reduce the surface of the blank to such a degree of uniformity as to be capable of receiving the finer grades of cuts, which can only be produced by an after operation of draw-filing, or what is technically known as "stripping," which consists in smoothing the already-ground surface to an even and uniform condition by subjecting it to the drawing action backward and forward of a fine smooth file, and this is practiced both by hand and by machinery.

The invention, in this instance, relates to a new combination and arrangement of mechanism which is calculated to facilitate and cheapen this operation.

My invention consists in combining with a reciprocating stripping-instrument a leveling file-blank holder on an elevating-bed, having means for shifting its position laterally with reference to the stripper in such a manner that a number of like file-blanks may be held and properly presented to the stripper, and shifted laterally therewith from time to time, to bring the blanks into contact with a fresh stripping-surface, so that the stripping operation may be performed automatically, and the file-blanks be inserted in the holder and turned to present the different sides, and, finally, be removed without stopping the machine. My in-

vention further consists in the novel arrangement of the file-blank and stripping-file holders, consisting in an adjustable cradle suspended from two points, which are on a line with the face of the file-blanks and stripping-file, so that the same can freely adjust themselves face to face without moving laterally, as is the case when the same are supported on a rocking bed, or at any point not on a line with the surfaces in contact.

In the drawings the stripping file or instrument *m* is shown clearly in Figs. 5 and 6. It is held by screw-clamps *s s*, or other convenient means, in a leveling-holder, *H*, which is confined by two center-points, *n n*, at the ends in a carriage, *G*, in such a manner that when the surface of the file-blanks is pressed against the surface of the stripper the latter will accommodate itself with the former, and keep level with the surface of the blanks in passing to and fro over them. The carriage *G* is mounted on two guide-rods, *F F*, Figs. 1 and 2, and, by the shackle-bar *D*, is connected to a variable crank, *I*, on the driving-shaft *A*, to which a rotative movement is communicated by a band running over the pulley *E*. The crank *I* is made variable by sliding the crank-pin nearer to or farther from the center of the slotted plate, and the object is to adapt the length of the stroke to that of the surface to be stripped, and by its operation the carriage and the stripper receive a regular reciprocating movement over the file-blanks. The holder in which the file-blanks are confined is constructed as shown clearly in Figs. 3 and 4, and consists of a flat plate of metal with two upright ends, *e e*, by which it is confined between two center-points, *d d*, on which it swings to a level when the surfaces of the several blanks *B B* therein are pressed upward against the stripper. The file-blanks are confined by their ends between a fixed block, *K*, and a movable block, *J*, adjusted and set up by a screw and nut, *L*, and otherwise held firmly by an intermediate block, *O*, that supports the blank near the junction of the shank with the file-surface. This file-blank holder is confined by the center-points mentioned upon the bed *M*, one end of which is confined to the frame-work by a shaft or spindle, *P*, which passes through an

enlargement, R, thereon, provided for the purpose at its rear end, from which the said bed extends forward to the front of the machine, the front end being free to be elevated or depressed by suitable means to carry the file-blanks against the continuously-moving stripper, or to withdraw the blanks from the same, as may be required. The said bed has a lateral movement on the spindle P by means of a spiral score or groove, *i*, Fig. 1, and a return-groove, *i*², and a switch running in said grooves, which is of well-known construction, and is contained in the barrel or enlarged portion R of the bed. The said spindle P is rotated intermittently, for the purpose of imparting the said lateral movement of the bed by the pawl *w* and ratchet X from an eccentric, T, on the driving-shaft, each revolution of which makes one stroke of said pawl and a partial turn of said spindle, and advances the said bed slightly sidewise, and by so doing shifts the surface of the blanks upon the stripping-surface which is reducing and smoothing it. The forward or free end of the bed M is elevated to carry the blanks against the stripper, and depressed to remove the blanks from contact therewith, by means of a lever, V, Fig. 2, the forward end of which affords a rest, C, for the bed to slide on, as well as be supported, and the rear end of the lever being provided with a weight, U, or a spring, which exerts a sufficient pressure on the bed to keep the file-blanks against the stripper with sufficient force to produce the requisite stripping action thereon. Connected with the said lever there is a treadle, W, by which the forward end of said lever and the bed are depressed by the foot of the operator to withdraw the file-blanks, for the purpose of turning or removing the same and inserting new blanks in their place.

The several parts being constructed and arranged as described, the operation is, that the file-stripper is constantly moving forward and backward, and by means of the treadle W the table and file-holder are depressed, and a number of file-blanks are placed in the holder between the confining-blocks and secured therein, after which the treadle is released, and the file-blanks are elevated with the bed by the force of the weight or spring into contact with the moving stripper, when, by means of the leveling device, in which both the stripper and the file-blanks are mounted, the two rubbing-surfaces are made to adapt themselves each to the movement and action of the other, and by that means to perform the stripping

operation upon the several blanks with an equal and uniform effect upon each, during which operation, by the action of the pawl and ratchet upon the spindle to rotate it, the bed receives lateral movements a short distance with each forward stroke of the stripper, which places the file-blanks in contact with a fresh surface of the same, which aids in clearing the stripper from file-dust, and in other ways contributes to produce a more uniform cut, and a better and smoother surface.

When in a file-stripping machine the file-blanks are supported in a rocking bed, as has been the custom heretofore, or at any point not in line with the face of the file-blank to be operated upon, they cannot freely adjust themselves to the face of the stripping-file, as a certain amount of lateral motion is required, which is resisted by the rough surface of the stripping-file.

When the file-blanks are supported in a cradle, as in my invention, and the cradle is supported at points in line with the surface or surfaces to be operated upon, the same can freely adjust themselves without any lateral motion. The stripper-file also is required to adjust itself to the surface of the file-blanks. When supported on a rocking bed, or at any point not in line with the surface or face of the file, such adjustment is difficult. As the resistance of the face in its reciprocation is not in the same plane of its support, the file is liable to tilt and produce bad work.

Having described my invention, I claim—

1. The combination of the stripping-instrument *m*, the leveling-holder H, and the reciprocating carriage G, substantially as described.
2. The leveling file-blank holders, as described, in combination with the elevating-bed M, arranged and operating substantially in the manner described.
3. The combination, with the holders or cradles, to which the file-blanks and stripper-file are secured, of the center-points supporting the same, and placed on a line with the surfaces in contact, substantially as and for the purpose set forth.
4. The combination of the lever V, the rest *c*, the weight U, or spring, and the treadle W, arranged and operating substantially as described.

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Witnesses:

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