

(No Model.)

H. H. FRANKLIN.
GROOVING AND SEAMING MACHINE.

No. 314,822.

Patented Mar. 31, 1885.

Fig. 1.

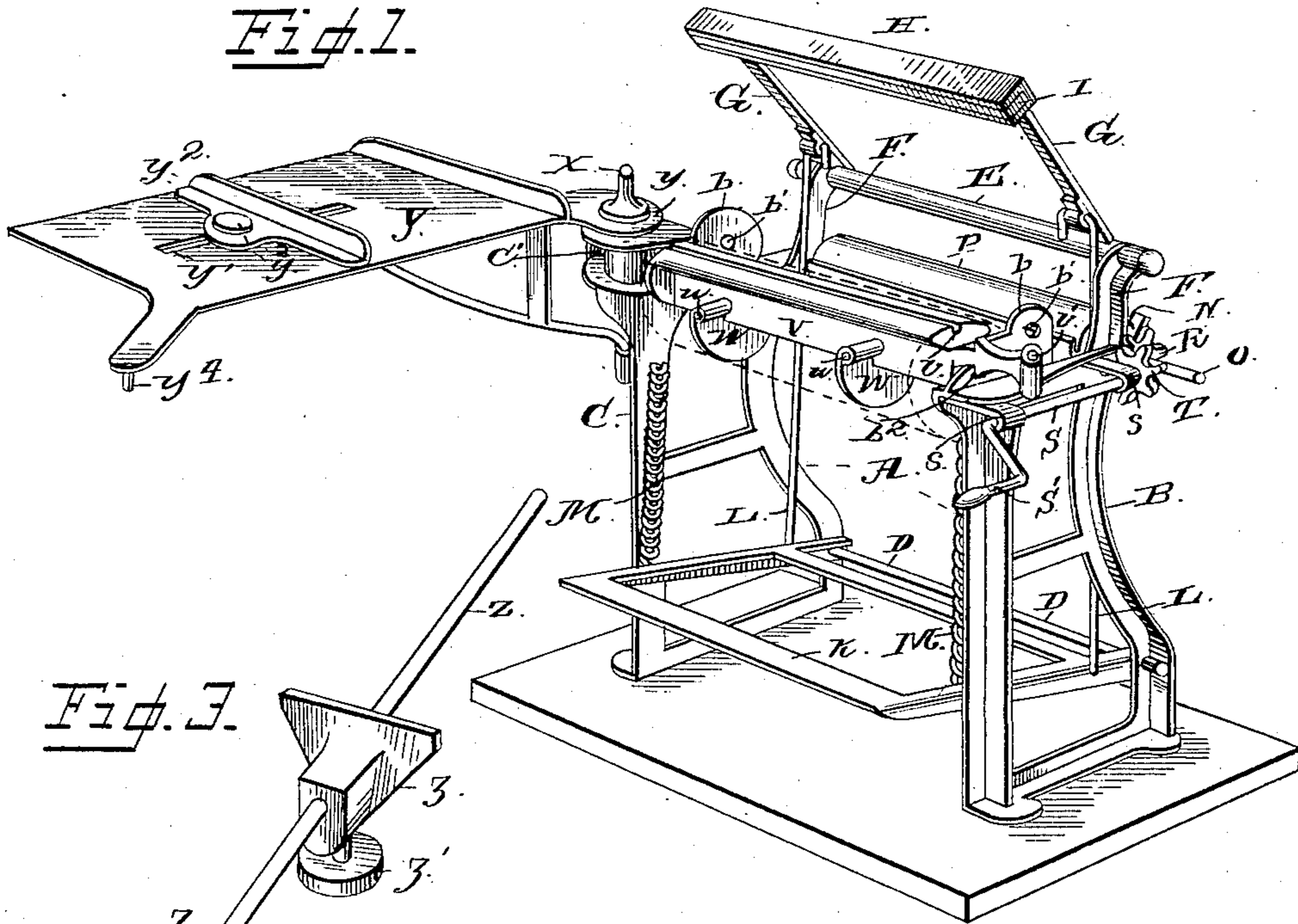


Fig. 3.

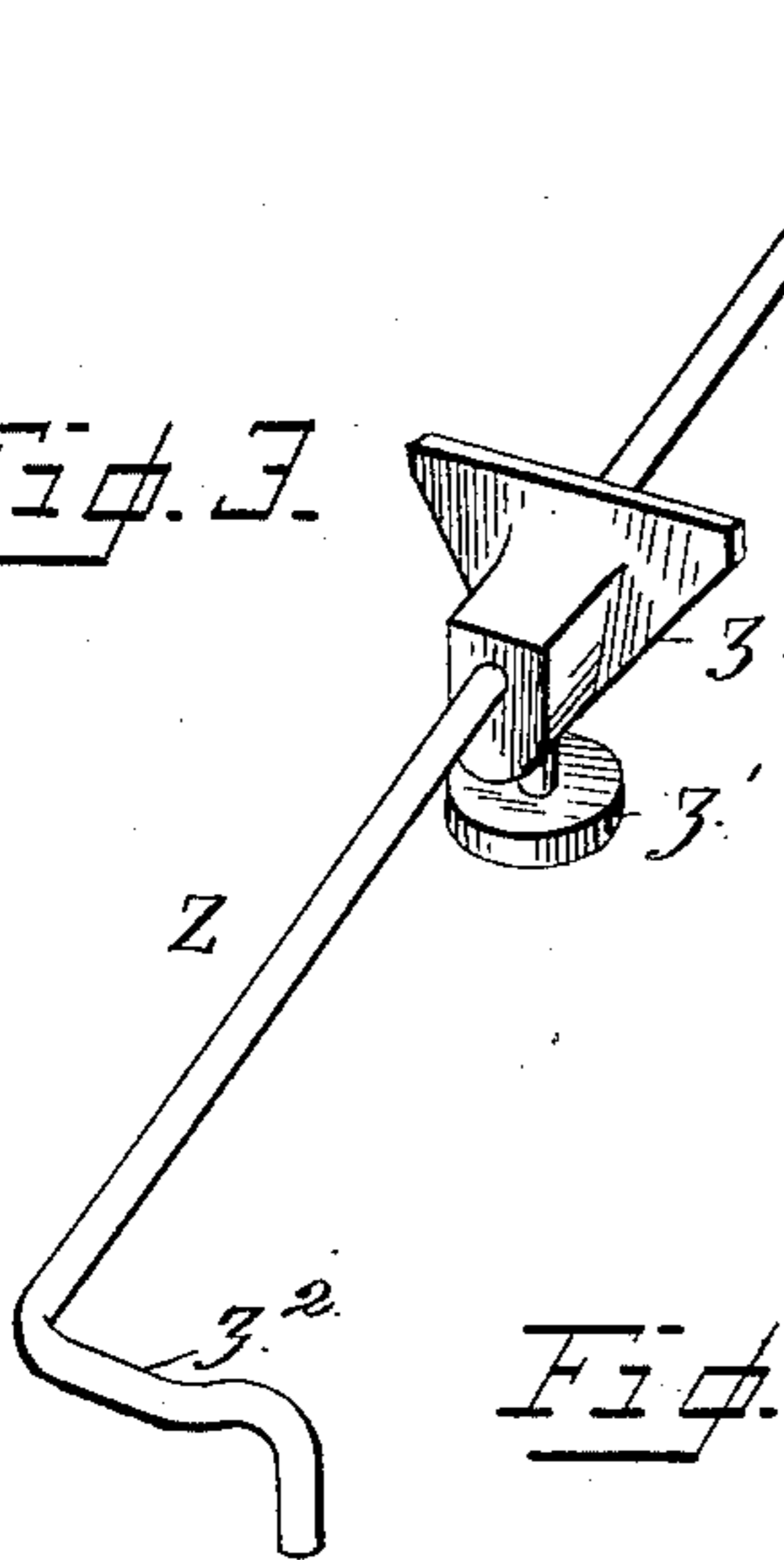


Fig. 2.

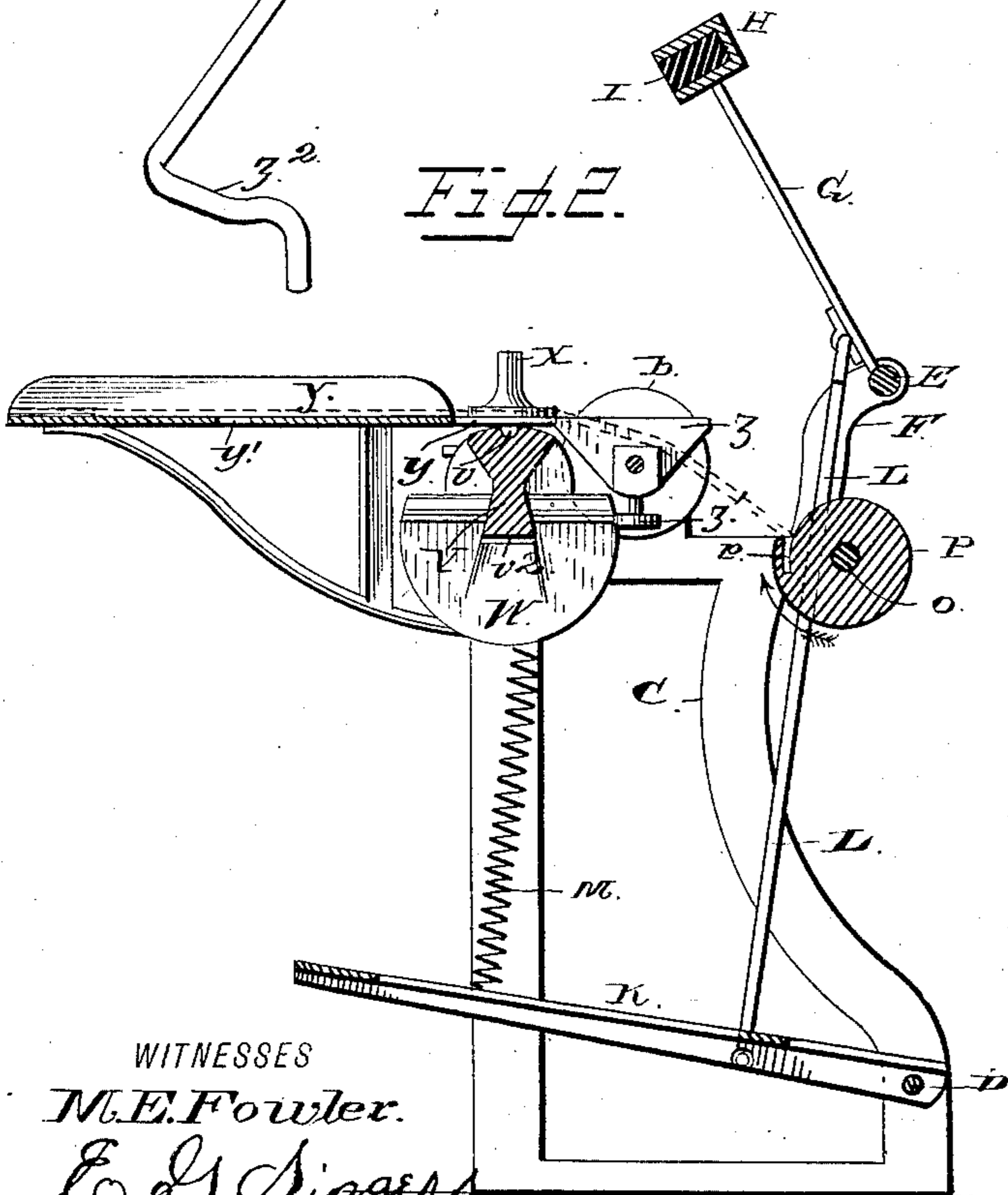
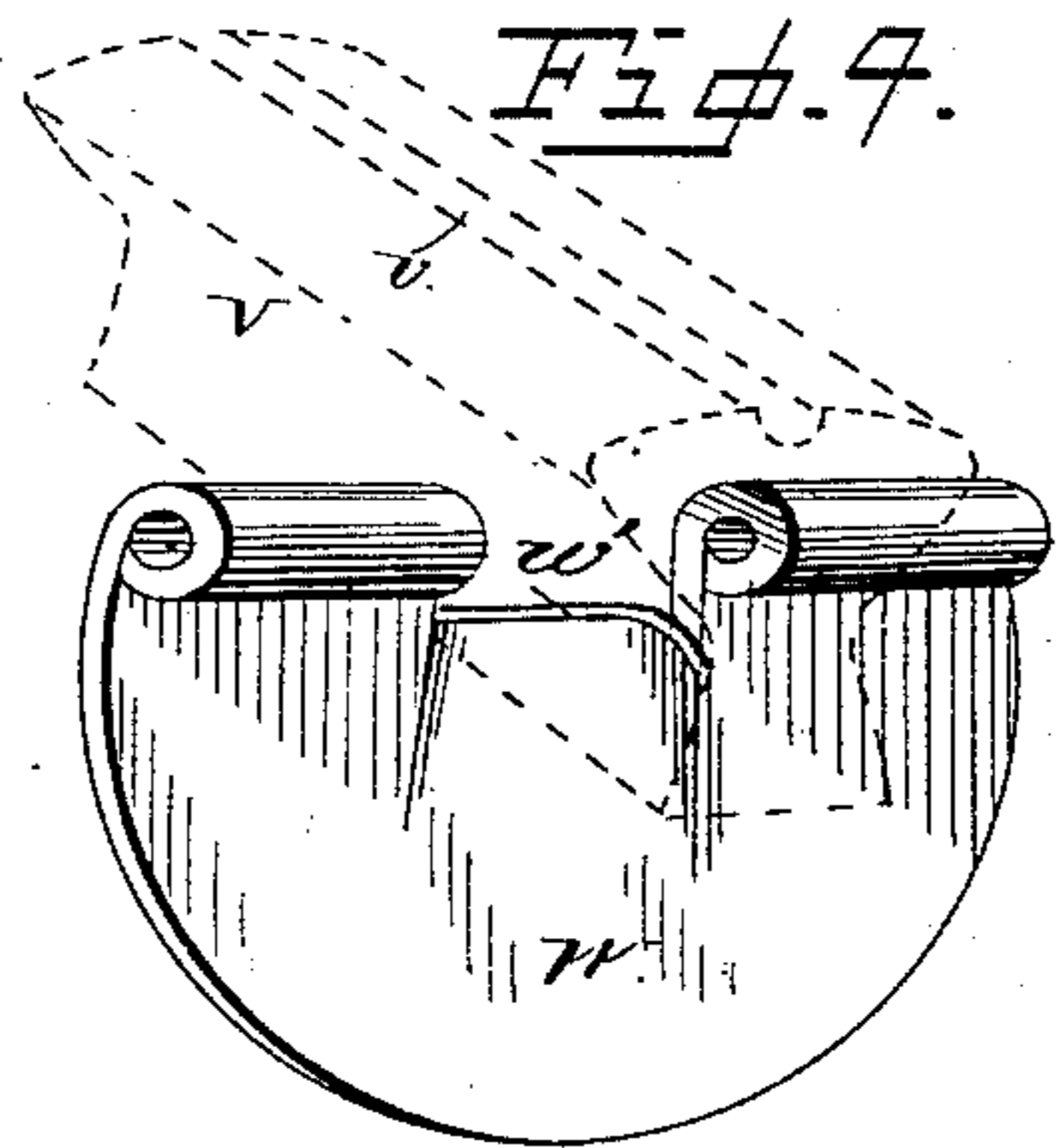


Fig. 4.



WITNESSES
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GROOVING AND SEAMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 314,822, dated March 31, 1885.

Application filed February 3, 1885. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. FRANKLIN, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and useful Improvement in Grooving and Seaming Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in grooving and seaming machines; and it consists in the peculiar construction and arrangement of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective of my invention when adapted for use in forming the seams of sheet-metal pipe. Fig. 2 is a vertical transverse section of the same when adapted for use in grooving tin. Fig. 3 is a detailed perspective of the removable rod and sliding gage. Fig. 4 is a detail view of one of the wings.

A represents a frame, which is composed of the cast standards B C and the connecting-bars D E. The bar or rod E is journaled in the upper rearwardly-extended ends F of the standards, and forms a rock-shaft having the arms G, to the outer ends of which is secured the hammer frame or head H, which consists of an outer case of steel or other hard metal, and an interior filling, I, of wood, Babbitt metal, or other soft material. On the rod or bar D is pivoted the treadle K, which is connected to the arms G by the rods L. Retractable springs M, which are secured to the standards and to the treadle, keep the treadle and the hammer normally in the raised position shown. The standards are provided on their rear sides, at a suitable height, with open slots N, in which are placed the extended ends of the shaft O, with which a drum, P, is provided. The slots form bearings for the drum, and the extended ends of the shaft form handles which enable the drum to be readily removed from the slots when desired. One end of the shaft O has a gear-wheel, R, fixed thereto, and to the standard B is journaled a shaft, S, as at s, which has a gear-wheel, T, at one end for meshing with the wheel R, and a crank, s', at

the front end, as shown. Ears b, which have openings b', are formed on the standards. The standard B has a notch, b², on its upper side, near its front edge, and the standard C is provided with pivotal recess C' on its upper side, near its front edge, and in this recess is pivoted one end of a grooved mandrel, V, the free end of which is reduced and adapted to catch in the notch b². The upper face of the mandrel is curved in cross-section, and semi-circular wings W are secured to the mandrel by pivotal pins w and depend vertically from the lower side thereof. These wings correspond to the diameter of the pipes of which the seams are to be formed, and have projections w' on their rear sides, which prevent them from being inclined in that direction, though they may readily be inclined toward the free end of the mandrel. The pivotal pin X, which secures the mandrel in the pivotal recess, also passes through the projecting pivotal end y of a table, Y. This table is adapted to be swung around out of the way, as shown at Fig. 1, when the machine is to be used for forming the seams of pipes, for which purpose it operates as follows: The pipe is formed with edges turned ready for seaming, the free end of the mandrel is taken from the notch and swung outwardly a sufficient distance, and the pipe is slipped over the end of the mandrel with its turned edges in the groove v. The hinged wings support the pipe firmly against the mandrel, the mandrel is returned to its place in the notch, and the operator places his foot on the treadle and causes the hammer to strike the seam with sufficient force to sink the seam into the groove, and thus form the seam on the inside of the pipe, leaving its outer side smooth. If the hammer were made of solid, hard metal, it would deal blows upon the seam with such crushing force as to mash the folded edge of the seam and cause it to break very easily; but by filling the hammer with wood or soft metal this objection is avoided. When the seam has been formed, the free end of the mandrel is released from the notch and the pipe withdrawn from the mandrel, the wings readily tilting in the direction in which the pipe is withdrawn and releasing their hold thereon. The table is slotted, as at y', and is pro-

vided with an adjustable gage, y^2 , having a set-screw, y^3 , which works in the slot.

When the machine is to be used for grooving tin, the table is swung around in line with the mandrel, and the depending securing-pin y^4 thereof is inserted in the opening v' of the free end of the mandrel. The rod Z, which has a sliding gage, z , having a set-screw, z' , is placed in the openings b' of the ears b , and extends across the space between the standards parallel with the table and mandrel. The rod Z is secured against lateral movement by the turned-down end z^2 , which bears against the inner side of the standard B, and the gage of said rod is set with the gage y^2 at the necessary distance from the vertical end y^1 of the table. The tin to be grooved is fed from the table over the mandrel, being guided by the gages, and is forced into the groove v by the hammer, as before. As the tin reaches the inner side of the drum P it enters a recess, p , formed in the drum, and the crank and connecting-gearing enable the operator to wind the tin upon the drum, as will be very readily understood. When it is desired to form flat seams on the tin, the mandrel will be taken out from the machine, and replaced with its smooth side v^2 uppermost. By driving out the pins w the wings may be removed and replaced by larger or smaller ones for different sizes of pipe.

Having thus described my invention, I claim—

1. The combination, with the standards, of the pivoted mandrel, the pivoted hammer, and the operating-treadle and springs, substantially as described.

2. The combination, with the standards, of the pivoted mandrel having one face grooved

and the other face plain, substantially as described.

3. The combination, with the standards, of the pivoted hammer, the operating-treadle and springs, and the pivoted mandrel having the wings hinged thereto, for the purpose set forth, substantially as described.

4. The combination, with the standards, of the pivoted hammer, the operating-treadle and springs, the mandrel, the drum, gearing for rotating the drum, the guiding-table, and guiding-rod, said table and rod having adjustable gages, substantially as described.

5. The combination of the removable mandrel, having a groove in one face and the opposite face plain, with the pivoted table having an adjustable gage, substantially as described.

6. The combination, with the standards, of the pivoted reversible mandrel, having one side grooved and the other side plain, the pivoted table having the adjustable gage, the drum, and gearing for rotating the drum, substantially as described.

7. The combination, with the standards, of the pivoted hammer, the operating-treadle and springs, the pivoted reversible mandrel, having one grooved side and one plain side, the drum, gearing for rotating the drum, the pivoted guiding-table, and the guiding-rod, said table and rod having adjustable gages, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY HALE FRANKLIN.

Witnesses:

MERRILL A. FROST,
J. L. URREY.