WILLIAM WICKERSHAM.

Improvement in Machines for Making Wire for Boot and Shoe Pegs.

No. 118,318. Patented Aug. 22, 1871.

Fig. 1.

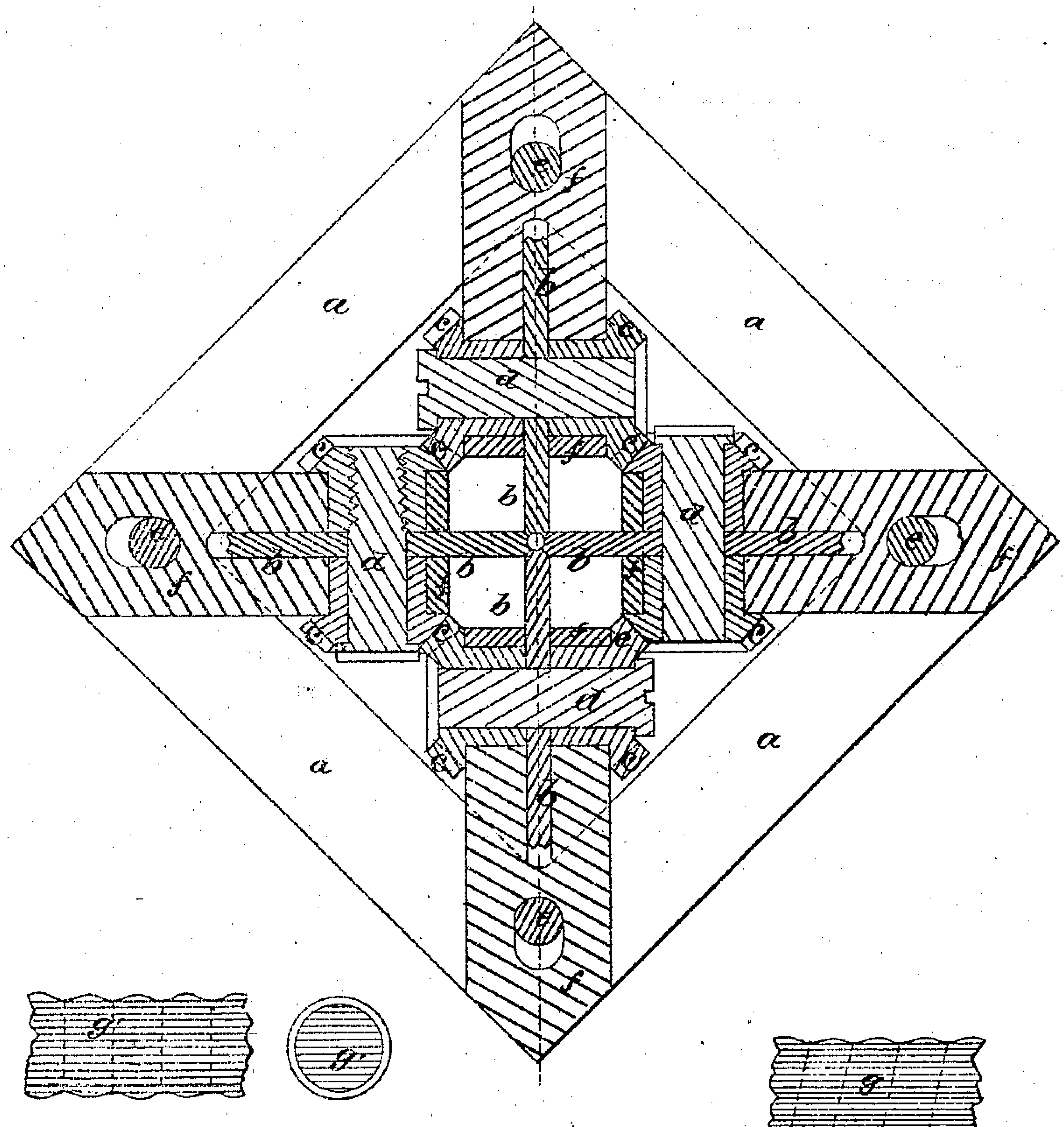


Fig. 2.

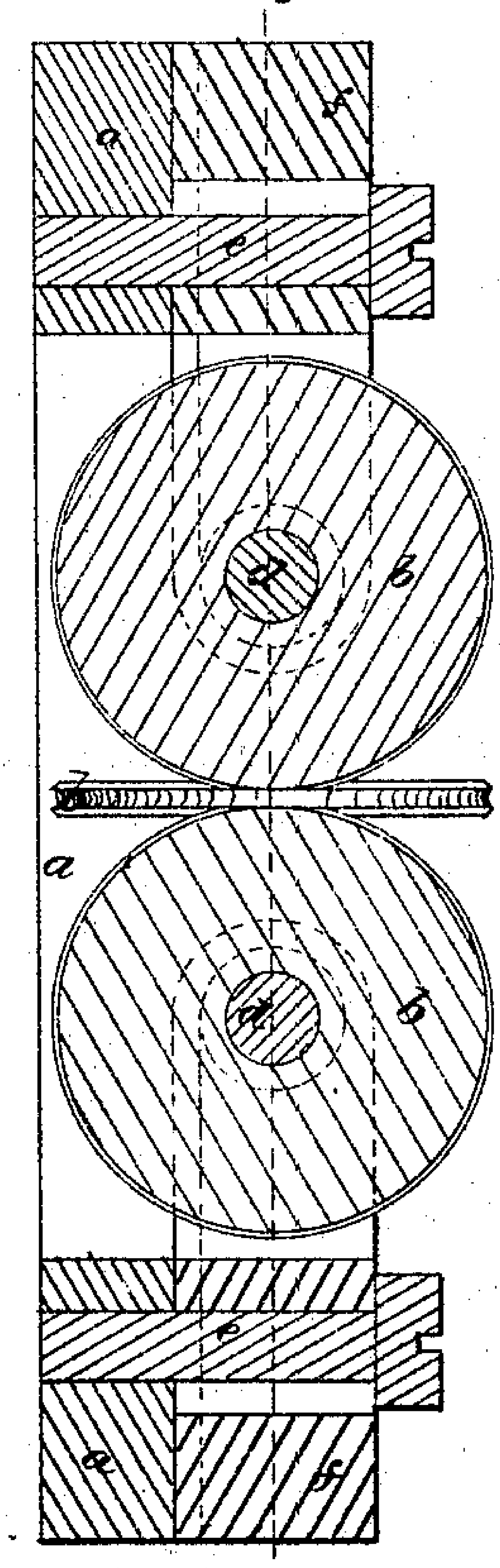


Fig. 3.

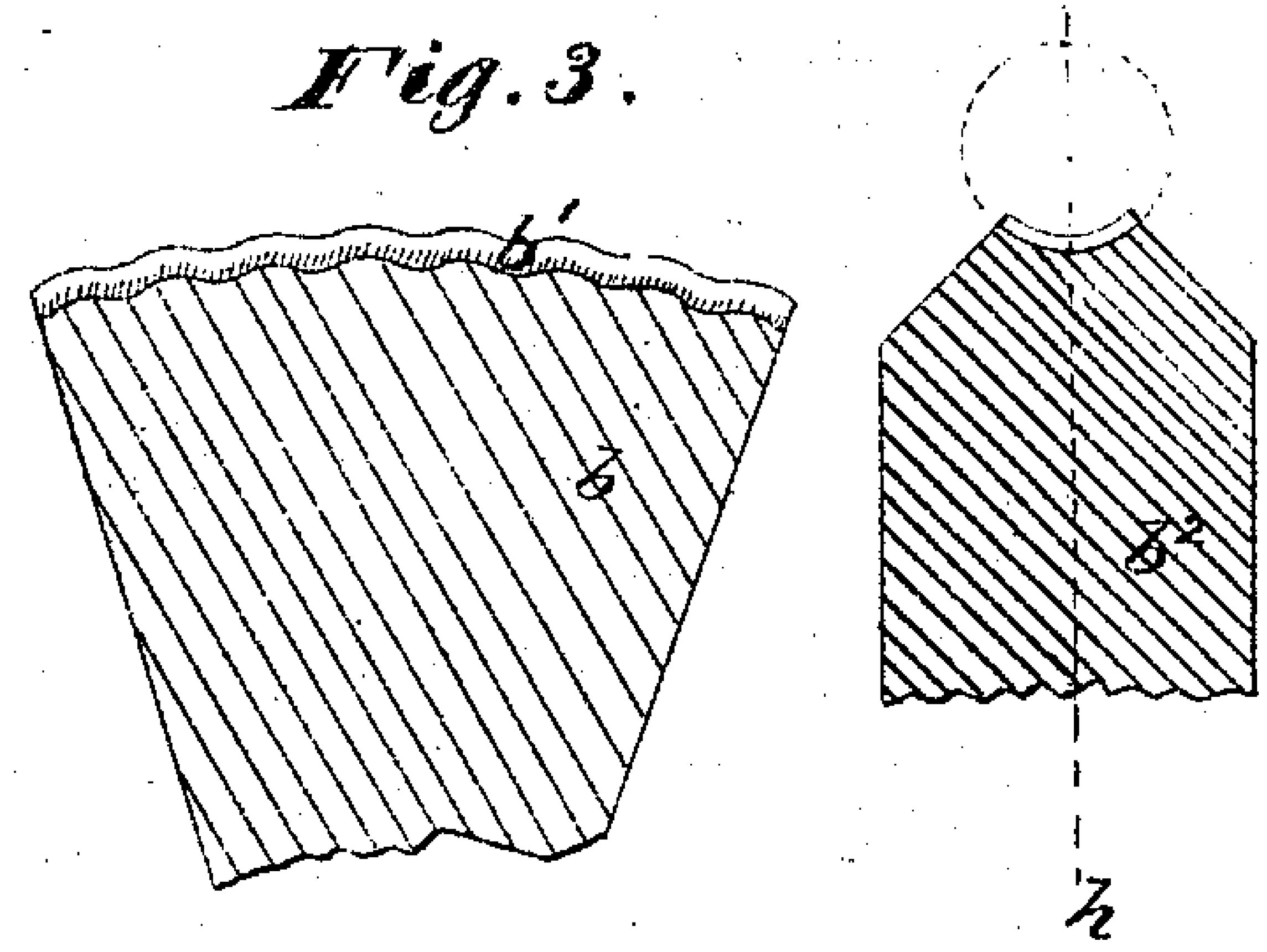


Fig. 4.

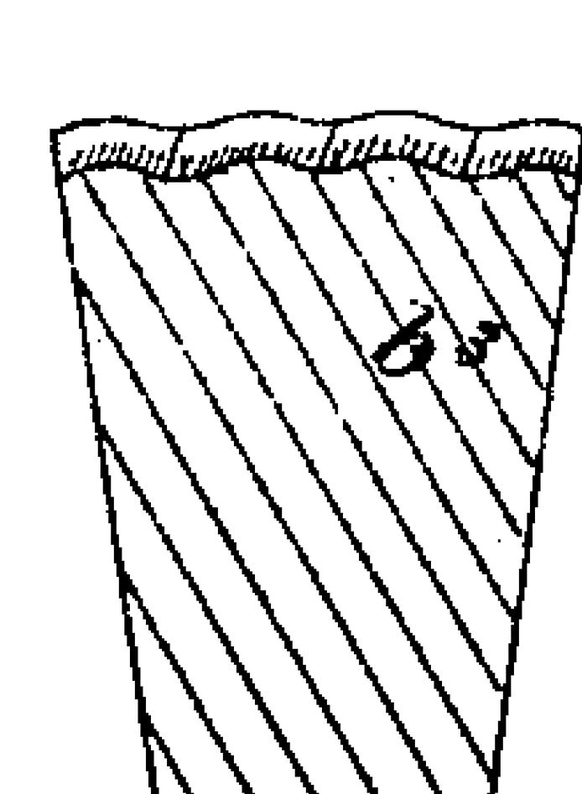
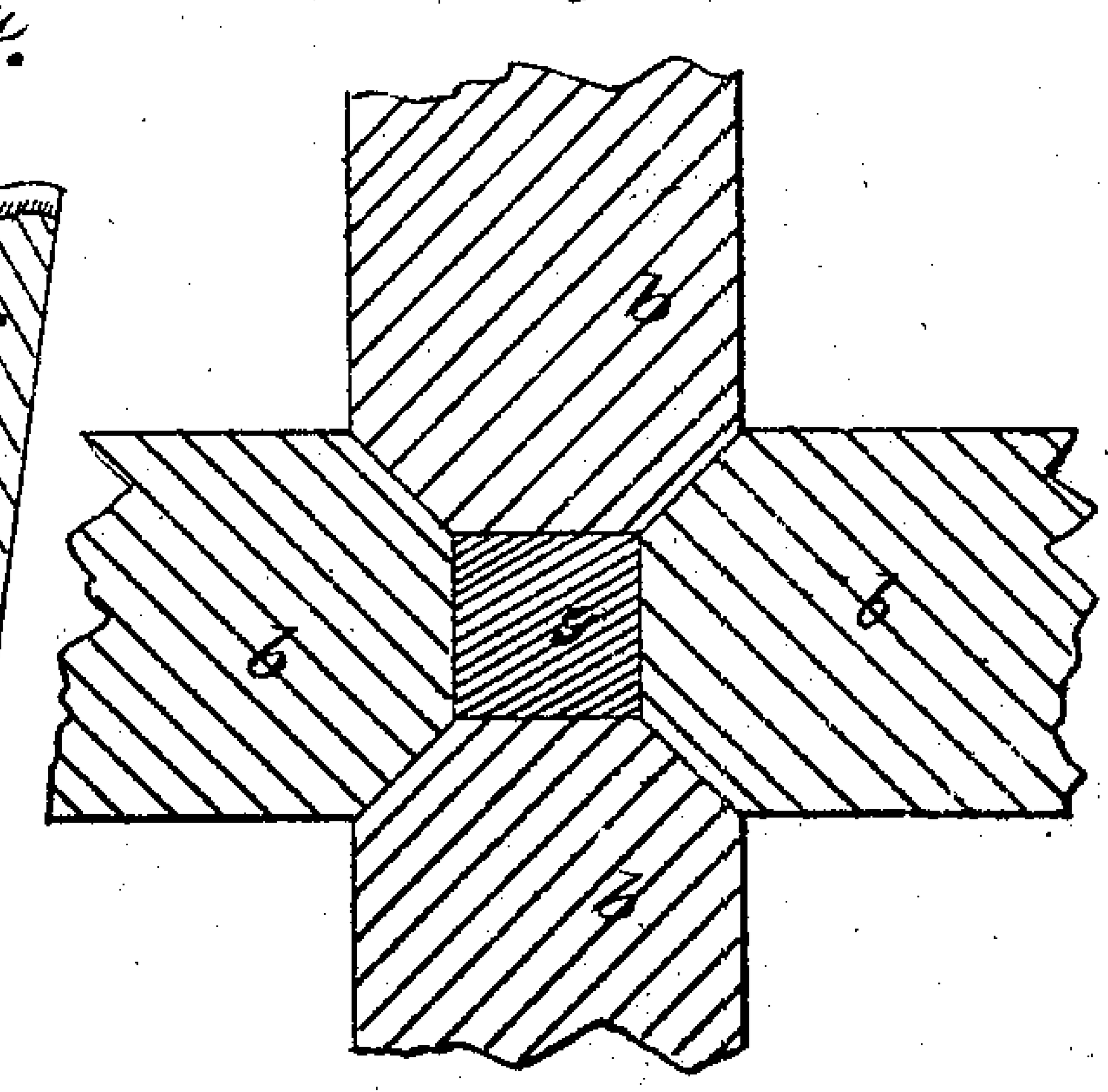


Fig. 5.



Witnesses.

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[signature]

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118,318

UNITED STATES PATENT OFFICE.

WILLIAM WICKERSHAM, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR MAKING WIRE FOR BOOT-AND-SHOE PEGS.

Specification forming part of Letters Patent No. 118,318, dated August 22, 1871.

To all whom it may concern:

Be it known that I, WILLIAM WICKERSHAM, of Boston, in the county of Suffolk and State of Massachusetts, have invented a Machine for Making Wire for attaching the Soles of Shoes and Boots; and I hereby declare that the following is a full and exact description of the same, the drawing and letters of reference marked thereon making a part of this specification.

My invention relates to an improved device for manufacturing wire for attaching the soles of shoes and boots, which wire has a succession of larger and smaller diameters or a screw-thread around its surface; and consists in three or more converging grooved rolls or rollers, with the walls of their grooved edges or working surfaces so striated as to impart the desired form to the surface of the wire as it passes through the aperture formed by the converging grooved edges of the rollers.

Figure 1 shows the frame of my machine, with a sectional view of all the working rolls parallel to their axes, and also sections of the gears and their boxes, which connect the rolls together. Fig. 2 is a section through the center of the machine at right angles to the section in Fig. 1. Fig. 3 shows portions of the roll on an enlarged scale; also enlarged sections of the wire, having a succession of larger and smaller diameters. Fig. 4 shows a segment of a roll calculated to produce a wire with a screw-thread on it; also a section of a wire so formed by passing between four rolls of the same kind. Fig. 5 shows, on a large scale, sectional portions of four rolls, and a square wire in which each roll impresses the form on one side of the wire.

a is the frame. *b b b b* are the working rolls. *c c*, &c., are the gears by which the motions of the rolls are connected and made uniform. *d d*, &c., are screws, by which two gears are made to secure each roll between them in their box. *e e e e* are the screws securing the boxes to the frame *a*. *f f*, &c., are the boxes. *g* is the wire.

Having described the parts, I will now describe the construction and operation of my machine.

As the drawing in Figs. 1, 2, and 3 shows, the rolls are constructed with a hole in the middle, with a concave edge of an arc of one-quarter of a circle, and the balance of the thickness on both sides is beveled off to an angle of forty-five degrees with the axis of the roll, so that four of them can be placed in the machine with their working surfaces together, as shown in Fig. 1, and the concave parts of the four will form a circle through which the wire *g* is to pass; and these working surfaces being corrugated, as shown at *b'*, Fig. 3, the corrugation will be pressed into the wire, giving said wire a succession of larger and smaller diameters, as shown in section at *g'*, Fig. 3, the wire being drawn through between said rolls as they revolve. These working rolls or disks are each secured between two gears, *c c*, by a screw, *d*, and all together fitted in boxes *f f*, &c., the four working rolls being so fitted, and the boxes being secured to the frame *a* in such a manner that, by means of the gears *c c*, &c., when one roll revolves all four will revolve at the same rate, so that the wire, being drawn through between said rolls as it is taken from one reel to another, causes the rolls to revolve; at the same time there is pressed into the wire, all the way round, small indentations, giving it a continuous succession of larger and smaller diameters. If the wire *g* is to be made square instead of round, the working surfaces are made straight in the rolls *b b b b*, as shown at Fig. 5.

I make wire by this machine for the purpose of securing soles to boots and shoes, which has the indentations around it, in the form of a short screw-thread, as *g*, Fig. 4; and in order to impress this form of indentations on the wire I have the corresponding indentations in the working surface of the rolls made in an obvious manner that is inclined to a parallel with the axes, as shown at b^3, Fig. 4. This method of forming suitable indentations around the wire in a screw form, for the attachment of soles to shoes and boots, is very rapid, as it can be performed as fast as the wire can be taken from one reel to another, just the same as when the indentations extend straight round the wire. The sections at *b*, Fig. 3, and b^3, Fig. 4, are taken in the dotted line *h*, Fig. 3.

I do not confine myself to four rolls, as three, four, five, or any number of rolls may converge together and work concurrently to produce the same result. Two pairs of rolls may be so arranged as to accomplish the same result attained by the converging rollers, viz., one pair arranged at right angles to the axis of the other pair but in advance, one pair indenting the two opposite

surfaces of the wire, and the other pair at right angles to the first, finishing said indentations; but I do not claim such arrangement in this application.

Having thus described my invention, I will state my claim as follows:

As an improvement for the purpose named, the combination of grooved rollers, convergent, to form an aperture, as described, the striation of the walls of said grooves as set forth.

WILLIAM WICKERSHAM.

Witnesses:

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JOS. A. DEEBLE.