

(No Model.)

J. W. WATSON.
ROLLS FOR ROLLING SPUR PLATES.

No. 535,648.

Patented Mar. 12, 1895.

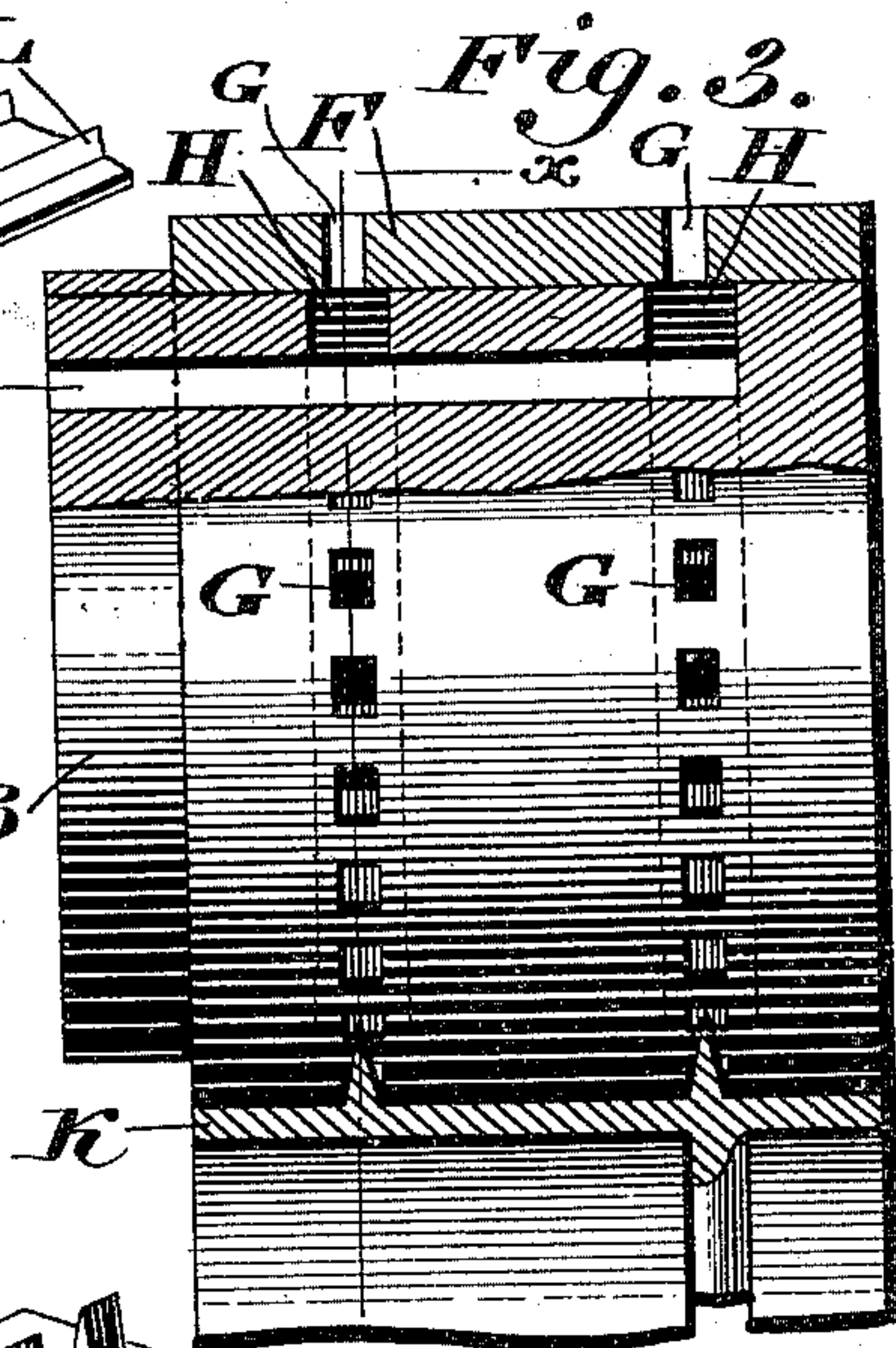
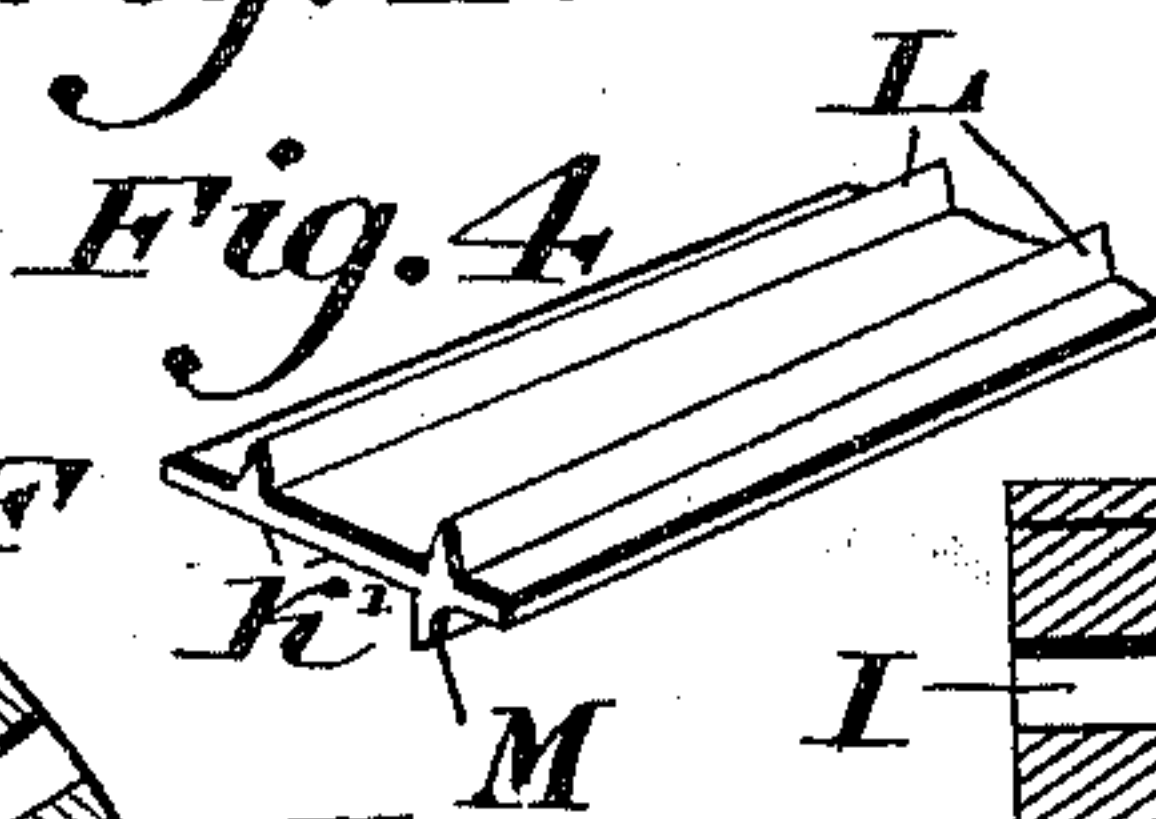
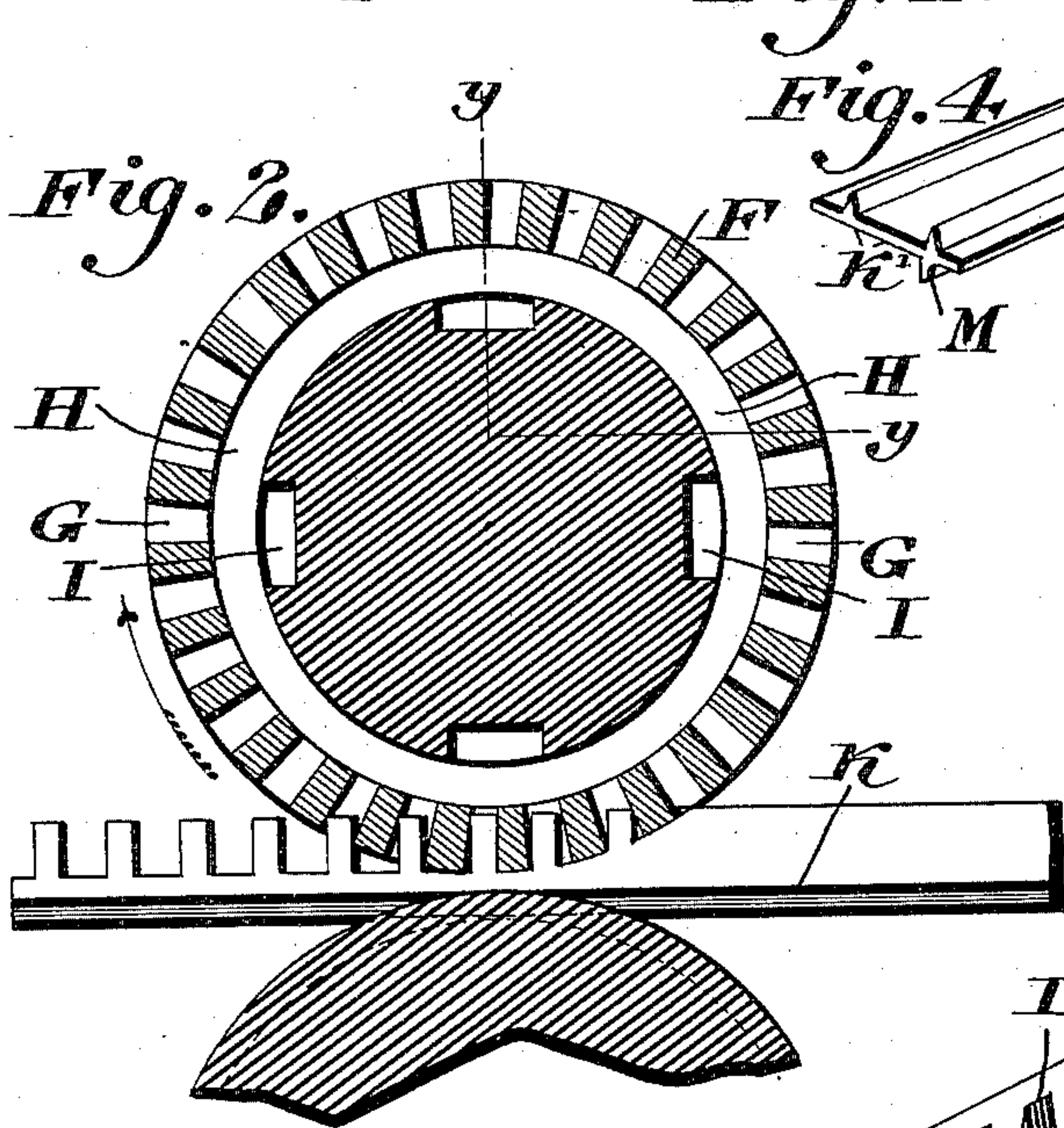
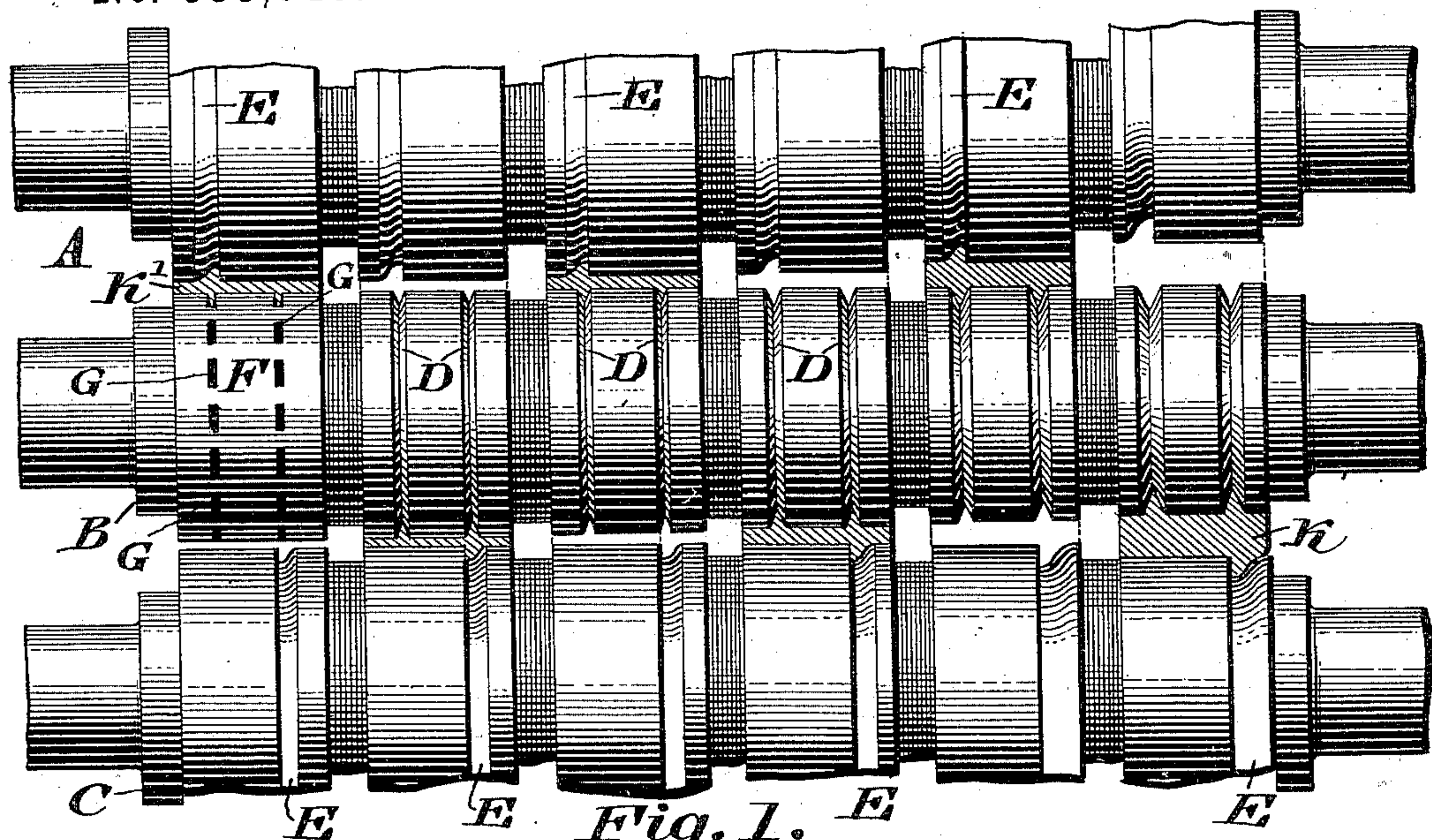
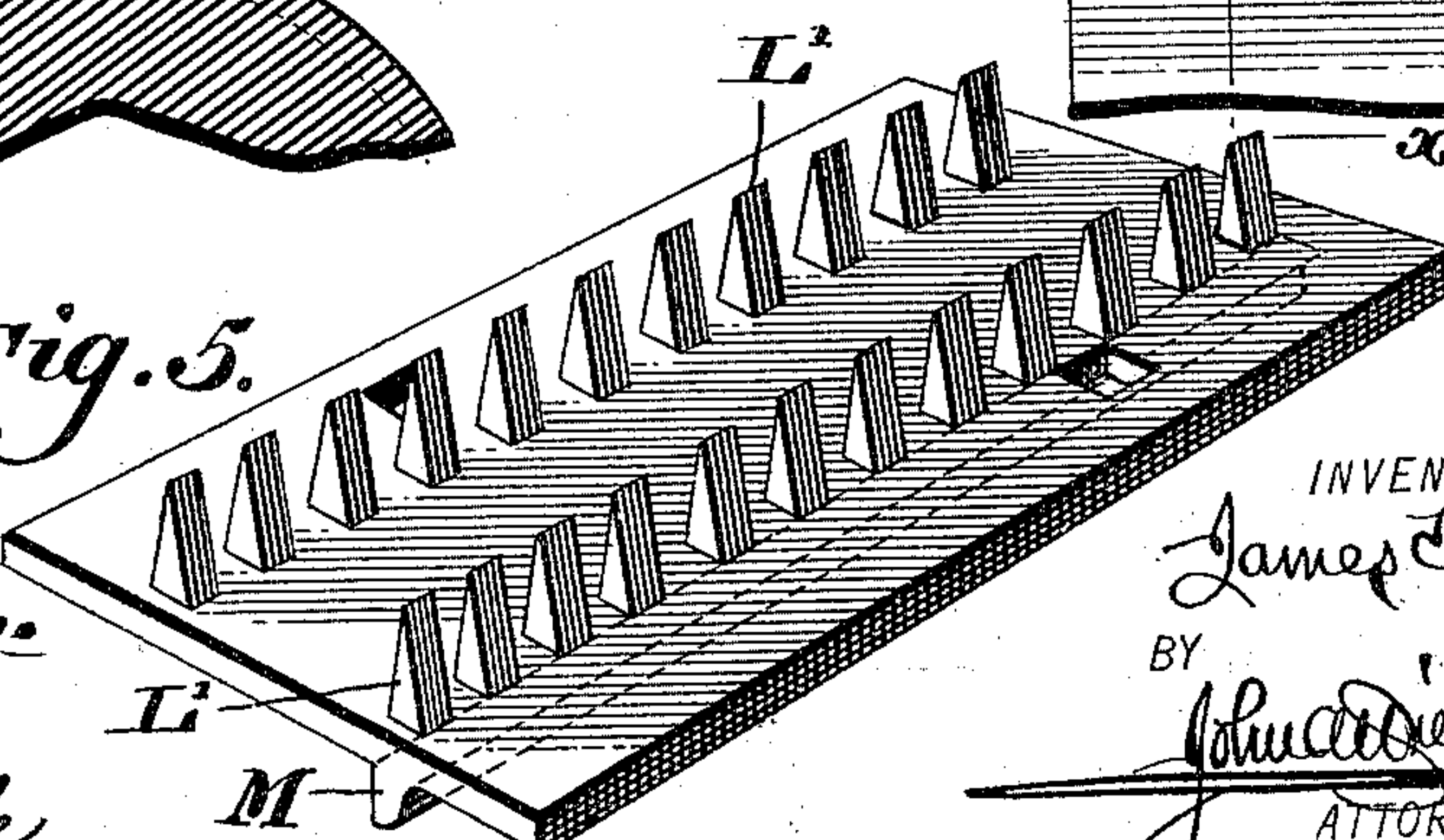


Fig. 5.



WITNESSES:

P. H. Chagler.
L. Douville.

INVENTOR

James W. Watson.
BY
John A. Dierschke
ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES WESLEY WATSON, OF CHESTER, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CHARLES A. WEED, OF SAME PLACE.

ROLLS FOR ROLLING SPUR-PLATES.

SPECIFICATION forming part of Letters Patent No. 535,648, dated March 12, 1895.

Application filed May 7, 1894. Serial No. 510,325. (No model.)

To all whom it may concern:

Be it known that I, JAMES WESLEY WATSON, a citizen of the United States, residing at Chester, in the county of Delaware, State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Rolling Spur-Plates, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a new and useful apparatus for manufacturing plates having spurs or projections thereon, all as will be hereinafter set forth.

Figure 1 represents a front elevation of rolls for manufacturing plates having spurs or projections thereon, embodying my invention, the same also showing the plate during the several stages of manufacture. Fig. 2 represents a section on line *x, x*, Fig. 3. Fig. 3 represents a partial elevation of the left hand end of the middle roll, the upper part being shown in section, taken on line *y, y*, of Fig. 2. Fig. 4 represents a perspective view on a reduced scale, of a plate in a primary condition. Fig. 5 represents a perspective view of the finished plate, on an enlarged scale.

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

Referring to the drawings, A, B, and C, designate three rolls arranged in proximity to each other, the middle roll having working grooves D, in pairs at intervals, while the upper and lower rolls have a single working groove E, which grooves are arranged staggered in relation to each other, so that the groove of the lower roll is in line with the right hand groove of the middle roll, while the working groove of the upper roll is in line with the left hand groove of the middle roll, it being noticed that the spaces between the rolls decrease or are reduced from right to left. On the extreme left end of the middle roll is the sleeve F for the final step of producing the spurs or projections on the plate, said sleeve being suitably secured to the roll, and having in its periphery two rows of recesses G, G, whose function will be hereinafter described. Communicating with said recesses G, G, are the grooves H, formed on the periphery of the roll B, the same being a little wider than the recesses G.

I, I, designate channels in the roll B, the same being behind and back of the groove H and extending to the outer end of the roll B in the direction of the axis of the latter.

The operation is as follows: A blank sheet of metal of the requisite dimension is passed through the rolls at the lower right hand end thereof, in hot or cold condition, said plate or blank then receiving its first impression, as shown at K, and as shaped appearing as in Fig. 4, it being reduced as it is passed through the rolls to the left, the product being shown at K' Figs. 1 and 4, there being two ridges L on one side, and a single ridge M on the opposite side, said ridges in the present case being V-shaped. The plate is now passed between the sleeve F, and the roll A, the side having the two ridges L being placed on said sleeve, so that the faces of the sleeve and roll will flatten at regular intervals portions of said ridges, the remaining portions of the ridges entering the recesses G, and being converted into spurs L', as shown in Fig. 5, the ridge M on the opposite side being unchanged.

It is obvious that the spurs can be rolled any size, shape, form or distance apart by varying the recesses in the sleeve F, which may be male or female in character, and can be used on rolls of any diameter, and adapted to plates of any desired width. The sleeve F may be removed and sharpened when desired.

The object of the peripheral grooves H, and the longitudinal channels I in the roll B, is to receive dirt or scale from the plate, and any spurs L that may break off during the operation of the rolls, said scale, &c., then escaping through the channels I to the end of the roll.

In Fig. 2, is shown the operation above described, taking place, the part to the right of the figure not having been worked by the rolls, while the part to the left represents the finished plate, shown in perspective in Fig. 5.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A roll having a peripheral groove therein, and a channel leading from said groove to the extremity of said roll, a recessed sleeve detachably secured to the latter, and a second

roll adjacent said first named roll, substantially as described.

2. In a rolling mill, a roll having a peripheral groove therein, and a channel leading
5 from said groove to the extremity of said roll, a sleeve having recesses therein, opening into said peripheral groove said sleeve being detachably secured to said roll, and a second roll
adjacent to said first named roll, substantially
10 as described.

3. A roll having a peripheral groove therein, and a longitudinal channel at the base of said groove, a removable sleeve on said roll hav-

ing recesses coinciding with said groove, and a roll adjacent to and parallel with said first 15 roll, said parts being combined substantially as described.

4. The roll B having the peripheral grooves and longitudinal channels H and I, and the detachable sleeve F on said roll, provided with 20 recesses G, substantially as described.

JAMES WESLEY WATSON.

Witnesses:

WILLIAM K. P. ROBERTS,
SARA MILES.