

(No Model.)

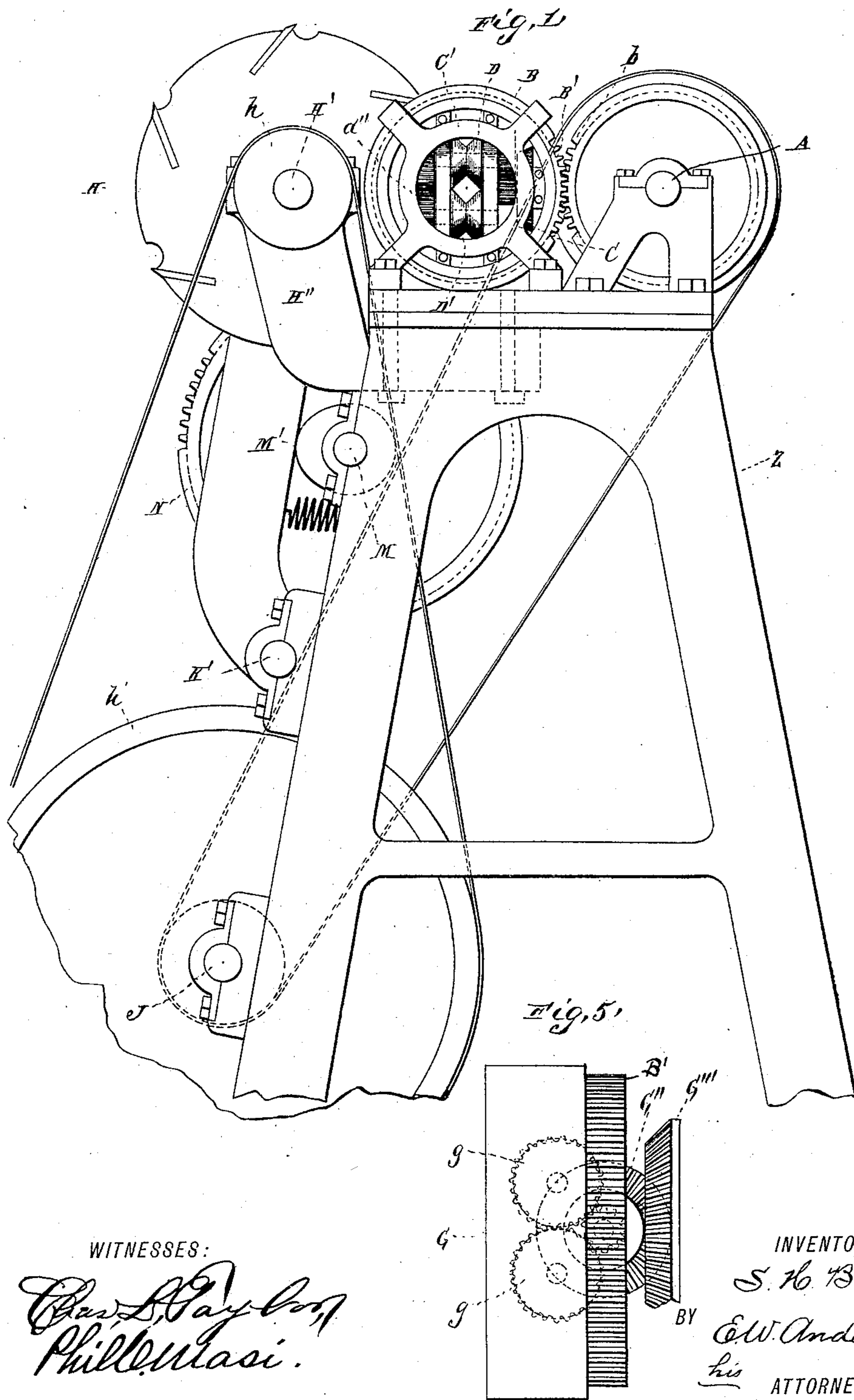
3 Sheets—Sheet 1.

S. H. BRITTON.

ROD AND BROOM HANDLE TURNING MACHINE.

No. 472,332.

Patented Apr. 5, 1892.



WITNESSES:

Chas. L. Taylor
Phillips.

INVENTOR

S. H. Britton

BY

E. W. Anderson,

his

ATTORNEY.

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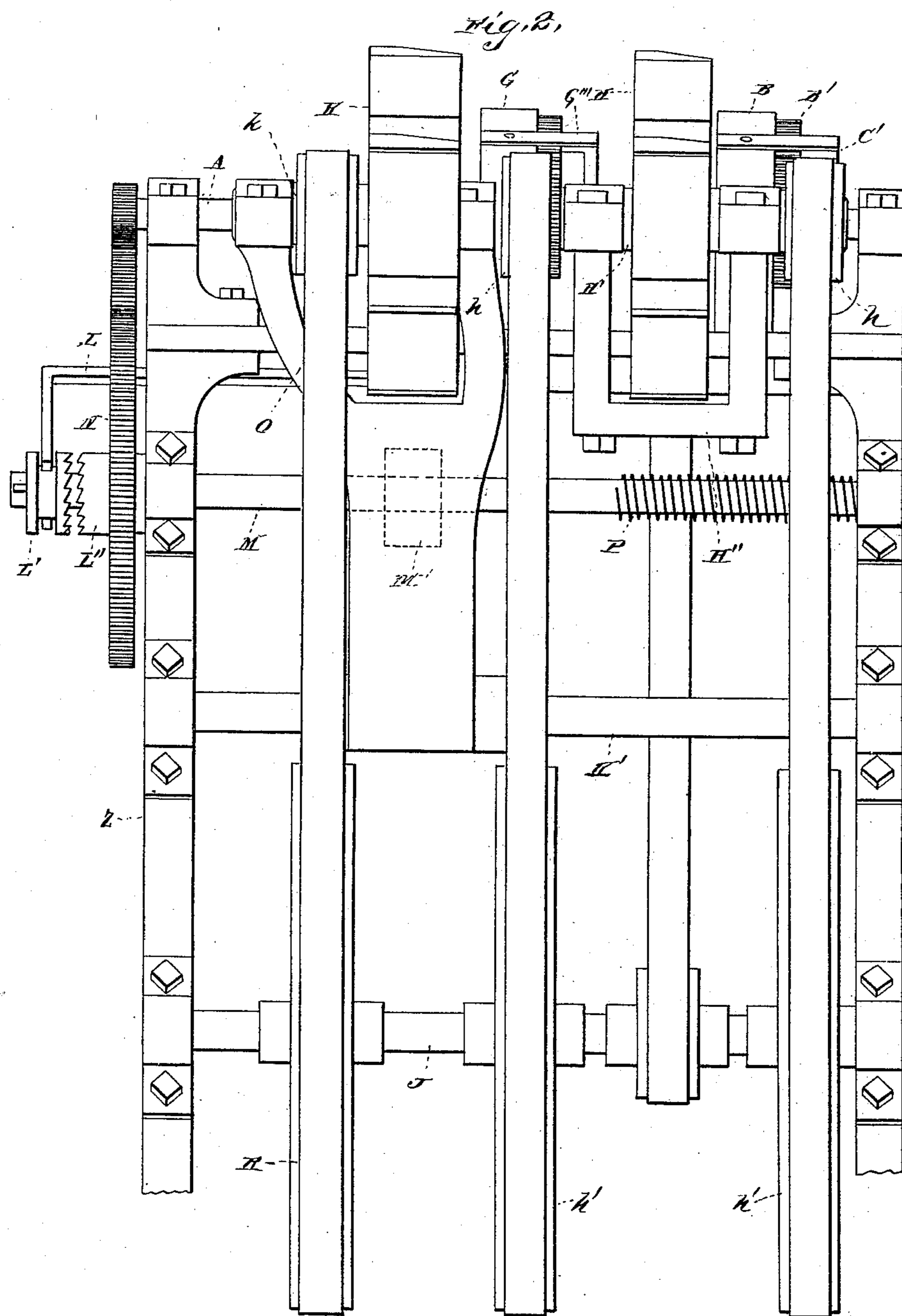
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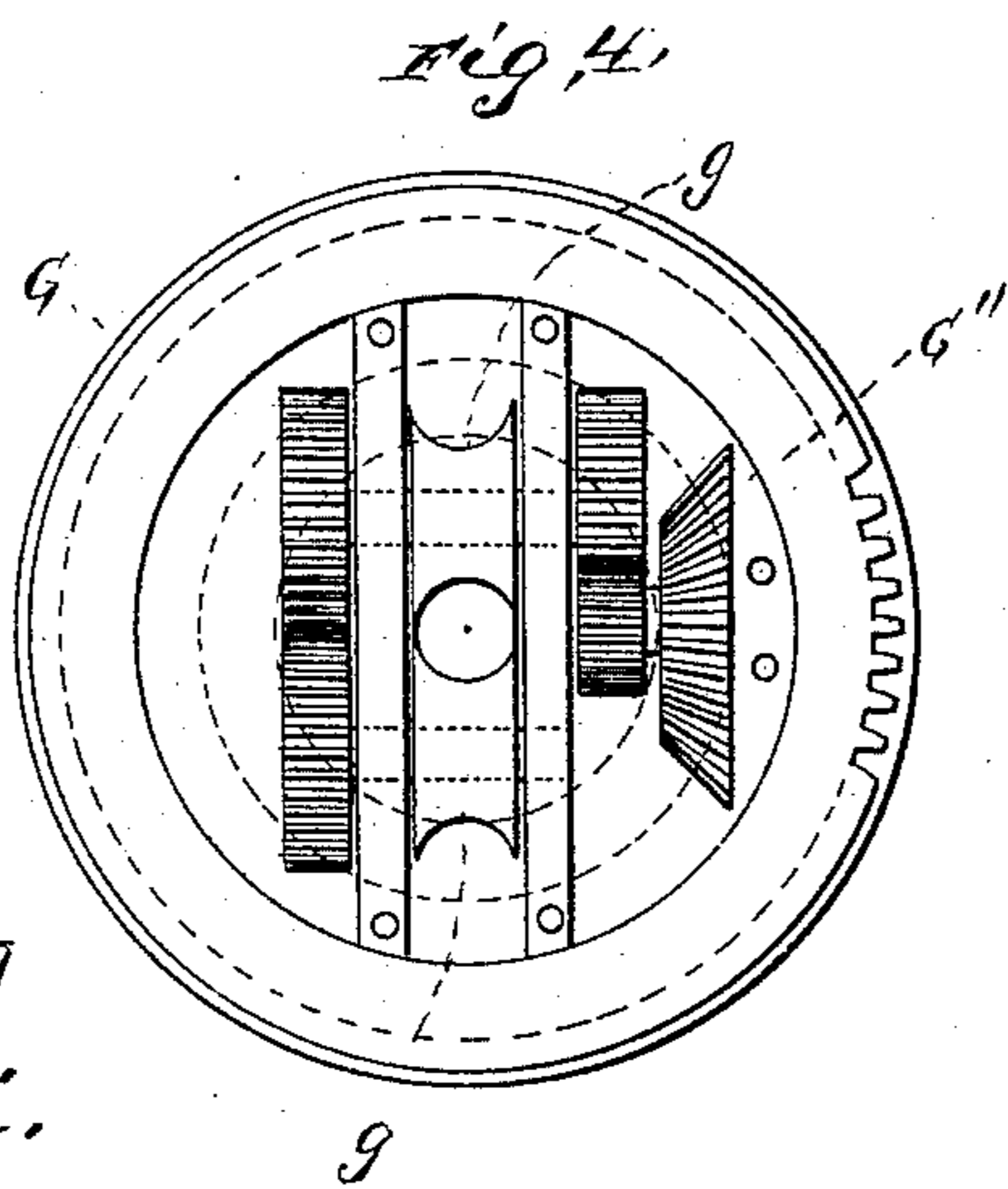
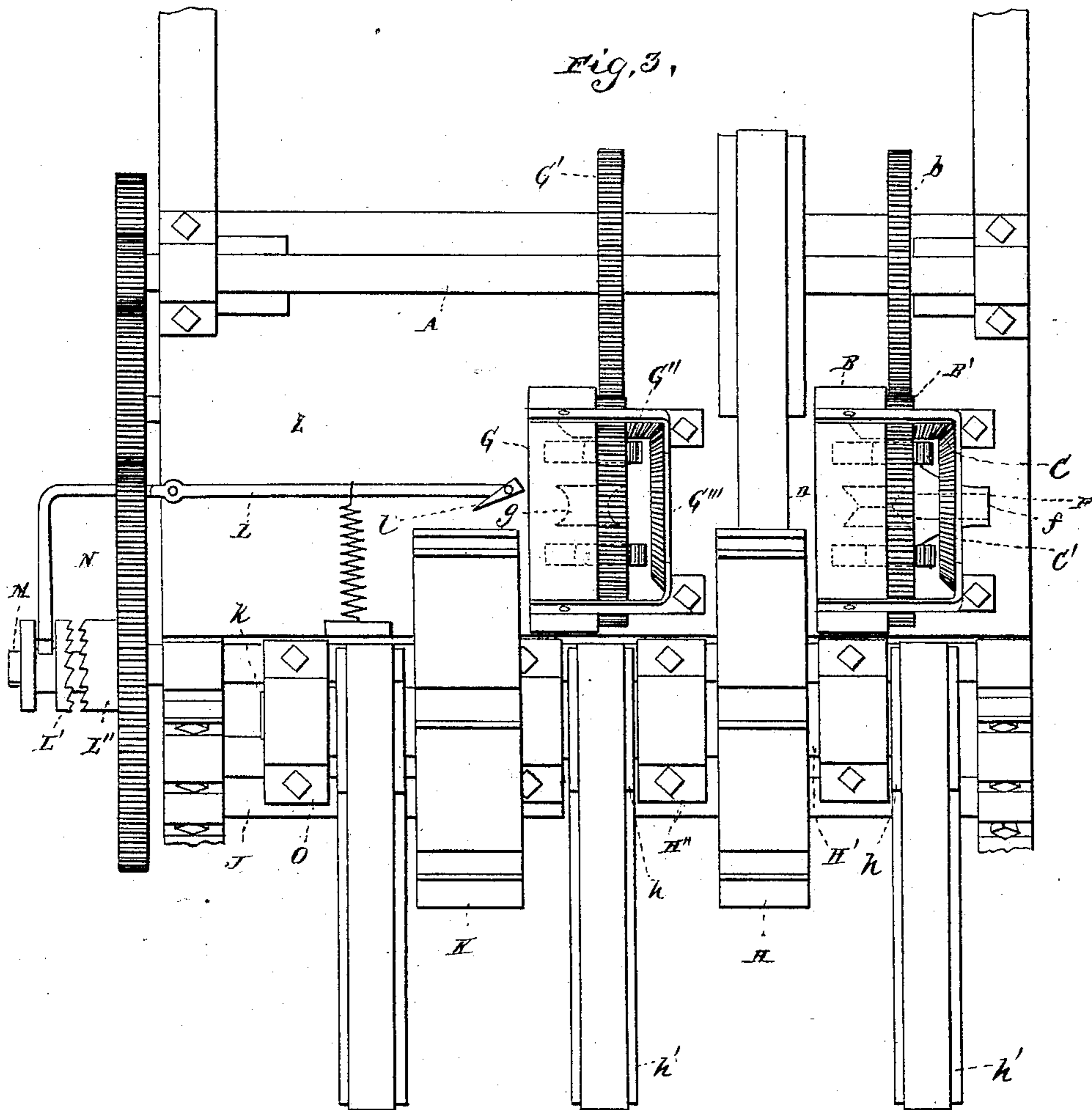
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UNITED STATES PATENT OFFICE.

SAMUEL H. BRITTON, OF MUSKEGON, MICHIGAN.

ROD AND BROOM-HANDLE TURNING MACHINE.

SPECIFICATION forming part of Letters Patent No. 472,332, dated April 5, 1892.

Application filed March 28, 1891. Serial No. 386,731. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. BRITTON, a citizen of the United States, and a resident of Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Rod and Broom-Handle Turning Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as

will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is an end elevation partly broken away. Fig. 2 is a front elevation. Fig. 3 is a top plan view, and Figs. 4 and 5 are detail views.

This invention has relation to machines for turning rods and broom-handles; and it consists in the novel combination and arrangement of parts, as hereinafter described.

In the accompanying drawings, illustrating the invention, the letter A designates the main driving-shaft of the machine, journaled in boxes on the supporting-frame Z.

B is a case or box journaled on the frame and carrying the feed-rollers for the roughing cylinder or cutter H. This case has connected thereto the annular gear B', driven by a gear-wheel b on the main shaft, thereby providing for its revolution. Inside of this case and carried thereby is the roller-driving beveled gear-wheel C, which projects therefrom at right angles and engages the teeth of a circular stationary bevel-toothed rack C', supported on the main frame. When the roller-case is revolved, the wheel C is carried thereby and is revolved by means of the stationary rack. A smaller gear-wheel carried by the shaft of the wheel C meshes with the gear of the upper feed-roller D, which it revolves and which in turn revolves the lower roller D' by means of the gear d''. These rollers are shaped to receive and feed a stick of square or irregular form. A guide F is bolted to the roller-case and projects through the stationary rack C', and this guide is provided with a squared opening f for the reception of the stick to be turned, and is designed to carry it between the feed-rollers, which, by the revolution of the case, will give said stick

a rotary and at the same time forward movement.

H represents the roughing cylinder or cutter, which is mounted on the short shaft H', hung in the bracket H''. On this shaft are the driving-pulleys h h, driven by belts from the pulleys h' on a counter-shaft J, which is driven by the main shaft A.

G is a second roller-case similar to the first case A and driven by a gear-wheel G' on the main shaft. This case has a beveled gear-wheel G'', similar to the wheel C of the case B and engaging a corresponding stationary rack G''', similar gear being also provided for its feed-rollers g. The rollers g are similar to those D D', but are shaped to feed a cylindrical instead of an irregular block. This case is parallel with the case A, and after the stick has undergone the operation of the roughing-cylinder H it is guided into this case through the rack G''' and between the rollers g, which brings it under the operation of the finishing or tapering cylinder K. When the end of the stick passes the rollers g, it engages a cam wedge or projection l, carried by the end of an angle-lever L, pivoted at its angle and having a clutch L' at its opposite end. This clutch works on a feather or spline on a shaft M, parallel with the main and counter shafts. A corresponding clutch L'' is carried loosely on this shaft and to this is connected a gear-wheel N, also loosely mounted on said shaft and driven by gear to the shaft A. When the stick or rod engages the cam-wedge or the angle-lever, the clutch L' will be thrown into engagement with the clutch L'', thereby causing the revolution of the shaft M.

The finishing or tapering cylinder K is mounted on a short shaft k, which is hung in a yoke or bracket O, carried by a shaft K' and independent of the roller-gear. A cam M' is mounted on the shaft M, and when the shaft is thrown into revolution by the automatic clutch mechanism described this cam will engage the yoke O, giving a reciprocating motion to the cylinder or cutter K to effect the proper tapering and finishing of the rod. The yoke O may be held in engagement with its operating-cam by a spring. As the stick or rod passes into engagement with the finishing-cutter, the action of the cam will

bring said cutter into greater or less engagement with said stick as it is fed from the rollers, so that its proper taper is effected. When the rod has entirely passed the last rollers, the cam-wedge *l* will be released, permitting the arm of the angle-lever to fall and causing the clutch to fall out of gear, the cam being returned to its original position by means of a spring *P*. The operation of the angle-lever *L* may be governed by gravity or by a spring, so that when the wedge is released the arm carrying said wedge will drop into a position nearer the finishing-cylinder. This throws the arm carrying the clutch-section *L'* outwardly, carrying said clutch-section (which works loosely on its shaft) out of engagement with the opposing section *L''*.

As the rollers' cases and the cam are operated from the same shaft, the speed of the latter will be governed by that of the former.

The finishing or tapering cylinder *K* is driven by a pulley *R* on the counter-shaft.

It will be seen that by the arrangement of the feed-rollers and their cases, whereby a double feed movement is given to the stick which is brought under the operation of a high-motioned cylinder driven by double pulleys, it is possible to turn dry stock at a much faster rate than in the old style of machines.

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

1. The rod and broom-handle machine comprising the driving-gear, the roughing rotary cylinder or cutter, the feed-guide, the rotary-roller case, the rollers therein, the bevel-gear for operating said rollers, the high-motioned rotary finishing cutter-cylinder, its rotary feed-case, feed-rollers, and the bevel-gear for driving said rollers, said finishing-cylinder being carried by a short shaft hung in a yoke or bracket carried by a shaft parallel with the main and counter shafts, a cam-shaft, and a cam carried thereby and adapted to engage said yoke or bracket to reciprocate said cylinder, and means for automatically throwing said cam into operation, substantially as specified.

2. In a rod and broom-handle machine, the feed mechanism for the cutters, comprising the cases or boxes journaled on the supporting-frame and having rotary rollers therein, an annular gear on said cases, the driving-

gear therefor, the roller-driving gear-wheels in said cases and projecting therefrom at right angles, the stationary beveled toothed circular racks engaged by said wheels, gear on the shafts of said wheels in engagement with gear on the rollers, and the feed-guides, substantially as specified.

3. In a machine for the purpose described, the main driving-shaft *A*, carrying gear for actuating the feed mechanism, a counter-shaft driven by said main shaft and driving the cutting mechanism, and a cam-shaft *M*, driven by said main shaft and carrying a cam *M'*, arranged to intermittently reciprocate one of the cutters, substantially as specified.

4. The combination, with the finishing and tapering cylinder hung on a short shaft hung on a yoke or bracket carried by a shaft *K'*, parallel with the main and counter shafts, of a cam-shaft and a cam carried thereby and adapted to engage said yoke or bracket to reciprocate said cylinder, and means for automatically throwing said cam into operation, substantially as specified.

5. The combination, with the feed mechanism for the finishing and tapering cylinder, of a cam-shaft and a cam carried thereby arranged to intermittently reciprocate said cylinder, said shaft having a gear-wheel and a clutch-section loose thereon and a clutch-section having a sliding fast connection therewith, a pivoted angle-lever connected to the latter section, said lever being actuated to operate said cam by the stick or handle passing through said feed-rollers, substantially as specified.

6. The combination, with the feed-rollers, the finishing and tapering cylinder, and the pivoted angle-lever carrying a wedge or cam over said cylinder in position to be engaged by the stick passing through said feed, of the cam-shaft carrying a cam adapted to reciprocate said cylinder, the loose gear-wheel and clutch-section on said shaft, and the clutch-section having a spline-and-groove connection with said shaft and connected with said angle-lever, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL H. BRITTON.

Witnesses:

FRANK L. ALLEN,
GEORGE S. GORDON.