

No. 609,075.

Patented Aug. 16, 1898.

E. B. BENHAM & H. E. BARLOW.
MACHINE FOR MAKING TOOTHPICKS.

(Application filed Mar. 31, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

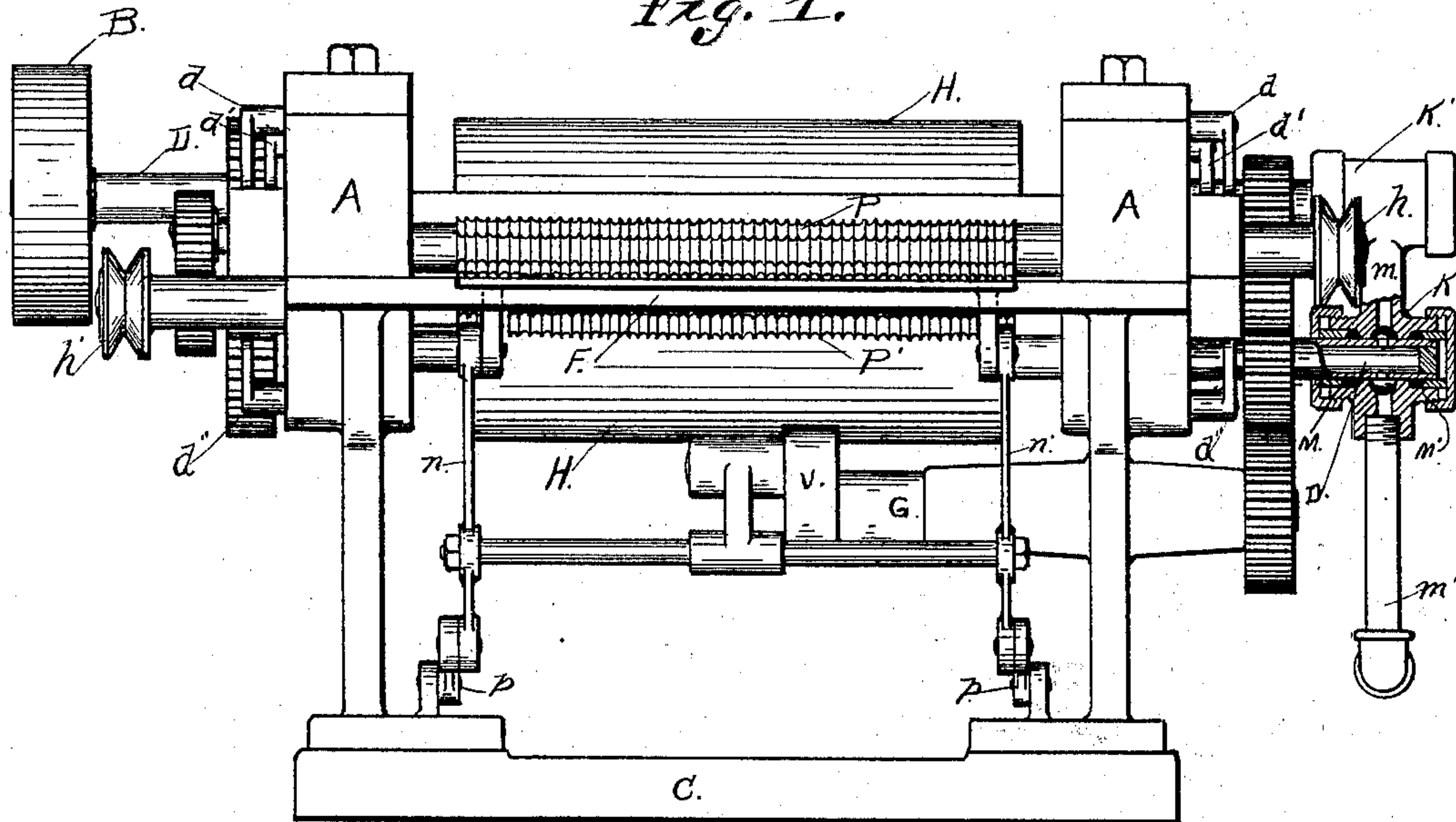
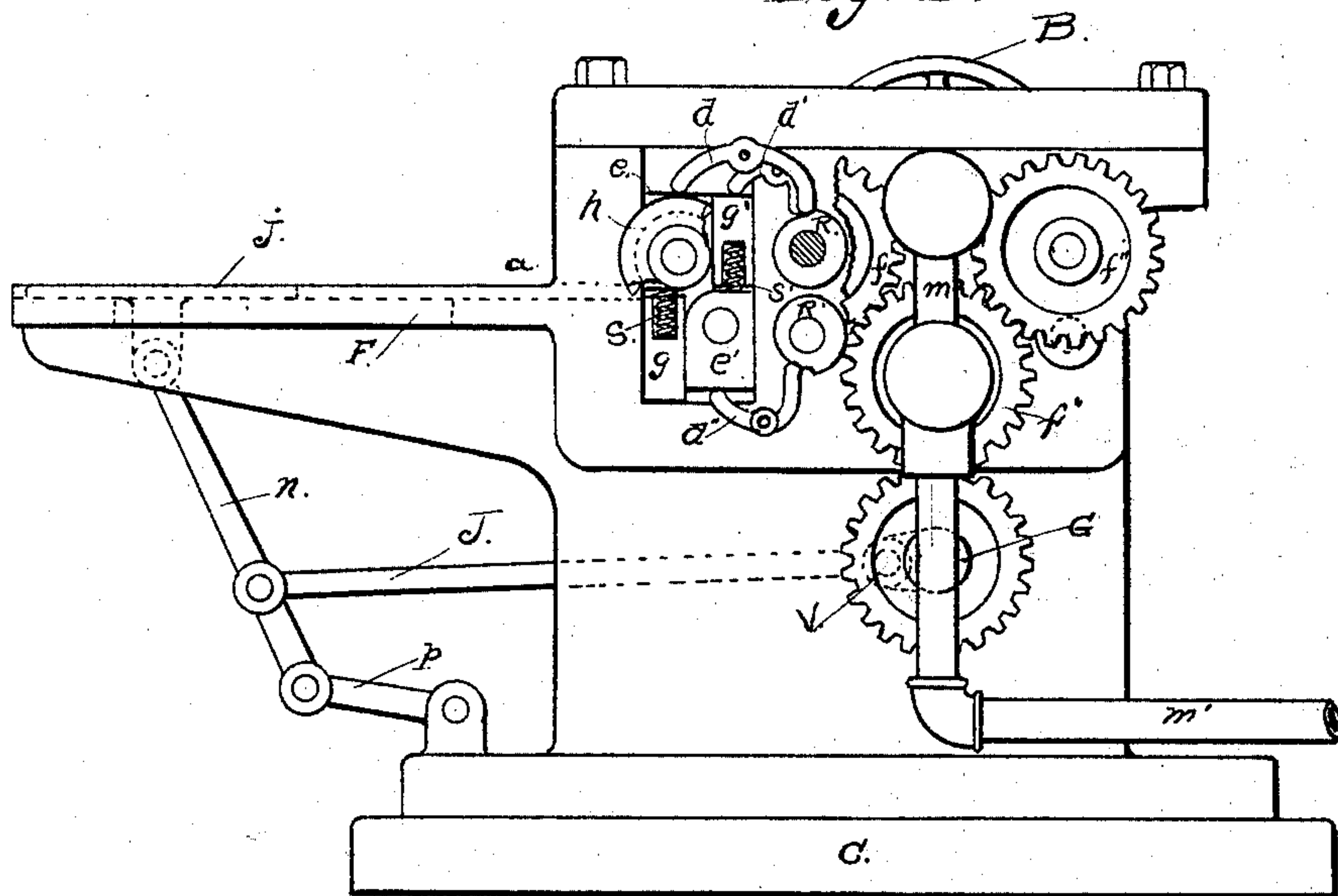


Fig. 2.



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Fig. 3.

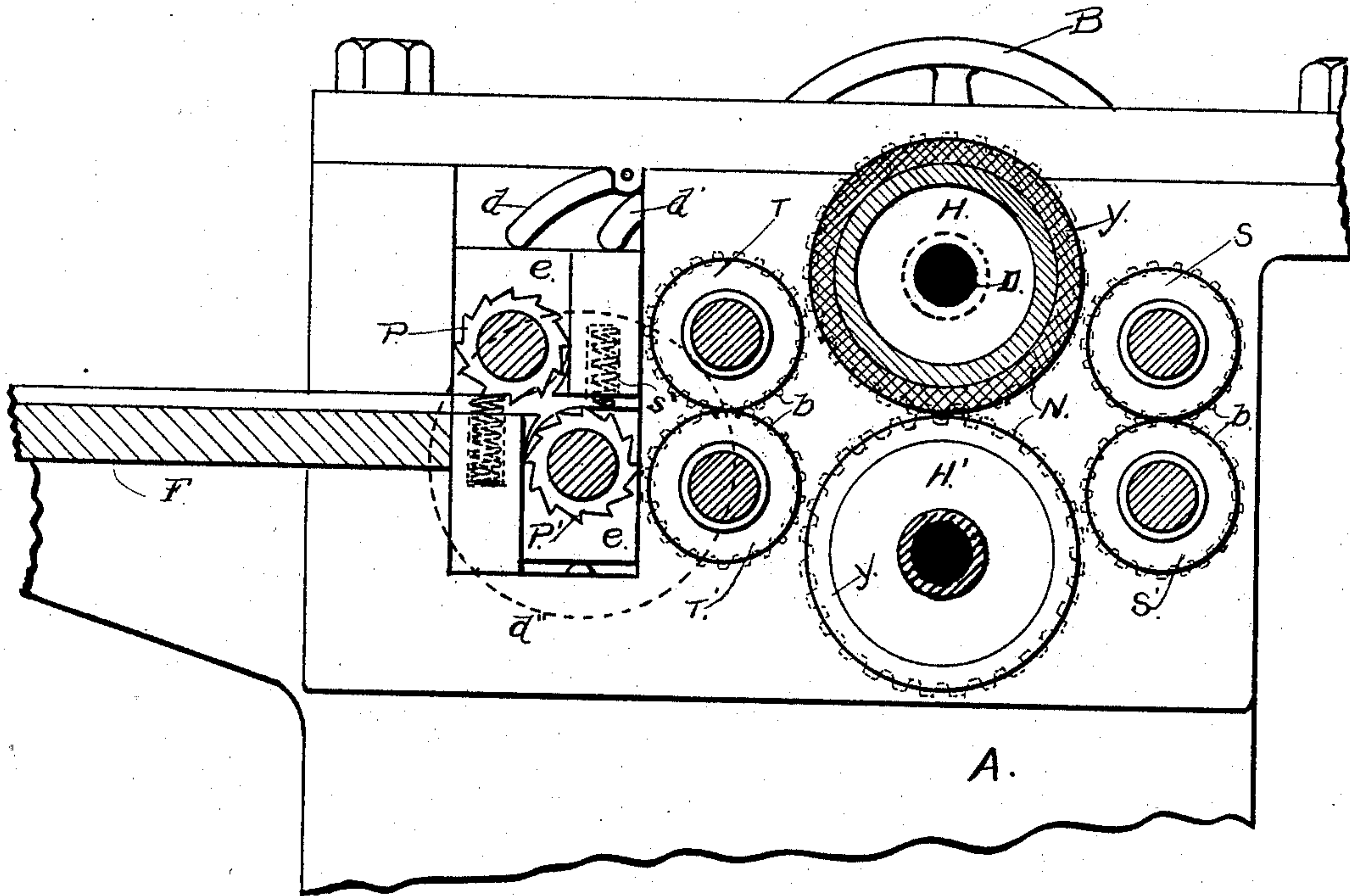
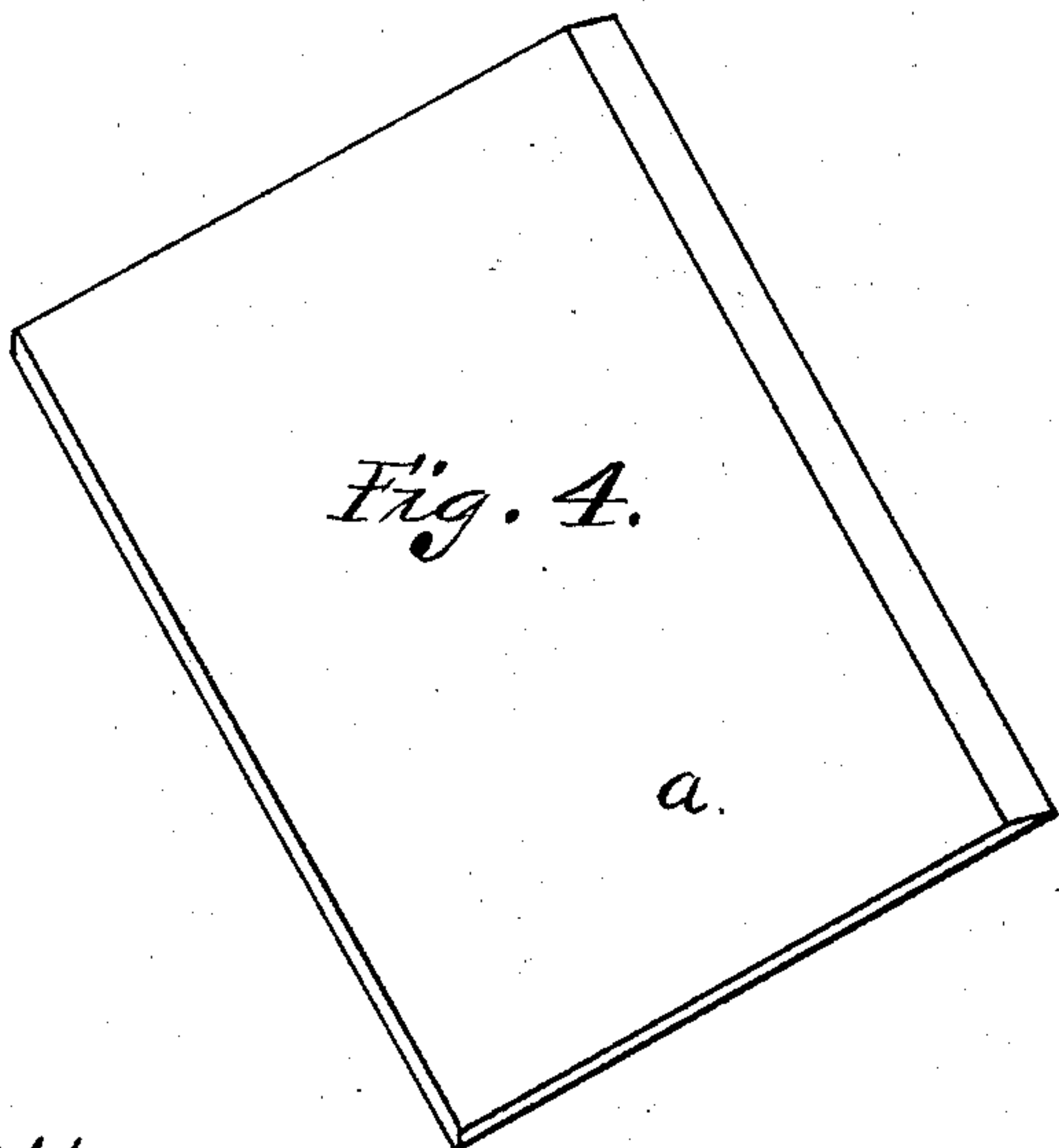


Fig. 5.



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UNITED STATES PATENT OFFICE.

ELIJAH BAILEY BENHAM, OF MYSTIC, CONNECTICUT, AND HOWARD E. BARLOW, OF PROVIDENCE, RHODE ISLAND; SAID BARLOW ASSIGNOR TO FRANK F. TRIPP, OF BOSTON, MASSACHUSETTS.

MACHINE FOR MAKING TOOTHPICKS.

SPECIFICATION forming part of Letters Patent No. 609,075, dated August 16, 1898.

Application filed March 31, 1897. Serial No. 630,099. (No model.)

To all whom it may concern:

Be it known that we, ELIJAH BAILEY BENHAM, residing at Mystic, in the county of New London and State of Connecticut, and HOWARD E. BARLOW, residing at Providence, in the county of Providence and State of Rhode Island, citizens of the United States of America, have invented new and useful Improvements in Machines for Making Toothpicks, of which the following is a specification.

The object of this invention is to produce a machine for making toothpicks of wood or like material, neatly formed and having properly-shaped points, all finished and polished as they come from the machine. It is fully explained and illustrated in this specification and the accompanying drawings.

In the drawings forming part of this specification, Figure 1 is a front elevation of the machine. Fig. 2 shows an elevation of the right side of the machine. Fig. 3 shows an end view of the grooved cutting-rolls and the supporting or backing devices to hold the wood while being cut with the feed and polishing rolls, the side frame being removed. Fig. 4 represents one of the plates of wood that are fed to the machine. Fig. 5 represents a finished toothpick.

The machine is constructed of two vertical side frames A A, bolted to a platform C. Between these side frames the greater part of the mechanism is held, the shafts extending from one frame to the other and having bearings in both frames.

A table F is held between the two frames at the front, and two cutter-rolls P P' extend across the machine and are held in bearings on each side frame, the lower roll P' being placed a little farther in from the front than the upper roll P to admit of supports or backers g g' being held one above one of the rolls and the other below the other roll.

The cutting-rolls P P' are made with semi-circular grooves running around them close together, making sharp edges between them. These grooves are made to the depth of about one-half the thickness of the plates of wood that are used to make the toothpicks. The rolls P P' have also V-shaped scorers made lengthwise in them to form cutting-teeth.

The outer cutting-roll P has a support g under it to hold the wood a while the teeth of the roll over it are cutting the grooves in the upper side of it.

The support g is stationary; but the bearings of the roll P are made movable vertically, and a spiral spring s, Fig. 2, at each end presses the roll up when it is not pushed down by the levers d, that are pivoted to the side frames and have one end resting on the bearing of the roll and their other ends on cams R R', so shaped as to push the roll down at the proper time.

The cutter-roll P' has a movable support g' for the wood, held in ways above it, and the bearing e' of the roll is made movable, and a spiral spring s' is placed between the bearing e' and the support g' to press the bearing down and the support up when not pushed in the contrary direction by the levers d d' d'' bearing on the cams R R'.

The cutting-rolls P P' are driven at a high speed by belts from a shaft overhead, running on the pulleys h h'.

A platen j is placed to slide on the table F to push the piece of wood a in between the rolls P P', and it receives a reciprocating motion in and out by means of levers n n, pivoted to stand on the under side of the platen and connected at their lower ends to the outer ends of levers p p, which are held in bearings on the frame A, Fig. 1.

A rod J connects the lever n to a crank v, fast on a shaft G, held in a long bearing in one of the side frames A. (See Figs. 1 and 2.)

D is the main shaft, with a driving-pulley B made fast on one end. This shaft D also holds the upper polishing-roll H, and the polishing-roll H' is held in bearings in the side frames below, and the two rolls are geared together by the wheels N, fast on their shafts outside the frame.

A pair of feed-rolls T T' are placed between the cutter-rolls and the polishing-rolls H to push the picks into the polishing-rolls, and another pair of feed-rolls S S' are placed on the other side of the polishing-rolls to draw them clear through the rolls.

The shafts of the feed-rolls T T' carry the cams R R', that move the levers to adjust the

cutting-rolls and the wood-supports. Each pair of feed-rolls T and S' are geared together by gears $b b'$ and are geared to the polishing-roll by the gears $f f' f''$.

5 The polishing-rolls H H' are covered with felt y or other suitable material and made hollow to be heated by steam through a hollow journal. (See section of coupling K, Fig. 1.) K is a T-coupling with stuffing-boxes M M',
 10 one at each end, and D the hollow shaft. A pipe m connects the coupling with a like arrangement for heating the upper roll H, and pipe m' connects with a source of steam-supply.

15 The feed-rolls T T' are covered with rubber or other suitable material to take a firm hold on the splints.

The operation of making the toothpicks with the machine is as follows: The wood is
 20 previously prepared by being cut up into plates a , as seen in Fig. 4, of the length, grainwise, and thickness of the intended toothpicks when finished and having one end made with a bevel, as at i . These plates a
 25 are fed into the machine in advance of the platen j when clear out and pushed by it, by the action of the crank v and rod J and lever n , in between the roll P and the support g , where the upper side of the wood is scored
 30 by the cutter-teeth as by a reeding-plane. Then the wood enters between the roll P' and the support g' and the under side is scored in like manner, and the scores meeting in the wood it is cut up into separate round
 35 splints. When the wood is about half-way by the roll P, the roll begins to descend by the action of the cam R on the lever d and gradually to thin the wood away toward the end. As the under side of the wood is still straight,
 40 the support g does not need to rise; but when the roll P' begins in like manner to rise and thin away the under side of the wood, as the upper side is already tapered away by the roll P, it is necessary for the support g' to descend
 45 a like distance to properly support the wood against the cutting-roll and make good work. This is done by the cams R R' and levers $d' d''$.

Between the two rolls a perfectly-tapering point is made, as seen in Fig. 5. As the splints leave the roll P' they are caught be- 50
 tween the feed-rolls T and pushed in between the polishing-rolls H H', and on the other side are caught between the feed-rolls T', drawn out, and delivered in a perfectly-finished condition. 55

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a machine for making toothpicks, means for forming a tapered point consisting 60
 of rotary cutters for operating on the pick on opposite sides thereof, and at different times, backing-blocks opposite said cutters, one of said blocks being movable toward the cutter opposite it, feed-rolls located in operative re- 65
 lation to said rotary cutters for moving said picks longitudinally through the machine, and means for variably moving the cutters in directions transverse to said longitudinal 70
 movement and against said picks, combined with suitable driving mechanism for said cutters and rolls, and means for moving said backing-block toward said cutter, substan-
 tially as described.

2. In a machine for making toothpicks, 75
 the combination with a series of rotary cutter-blades having transversely-corrugated edges for both separating the picks and finishing them upon opposite sides, and alternately dis- 80
 posed in relation to each other, and means for alternately moving said cutters automati-
 cally through the action of the machine alternately against opposite sides of the picks, of feeding mechanism operatively located near 85
 said cutters and rolls, for successively feeding strips of wood thereto, and means for rotating said cutters and rolls, and imparting move-
 ments to said feed mechanism substantially as described.

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