

(No Model.)

2 Sheets—Sheet 1.

W. R. ANDERSON.  
NUT TAPPING MACHINE.

No. 429,878.

Patented June 10, 1890.

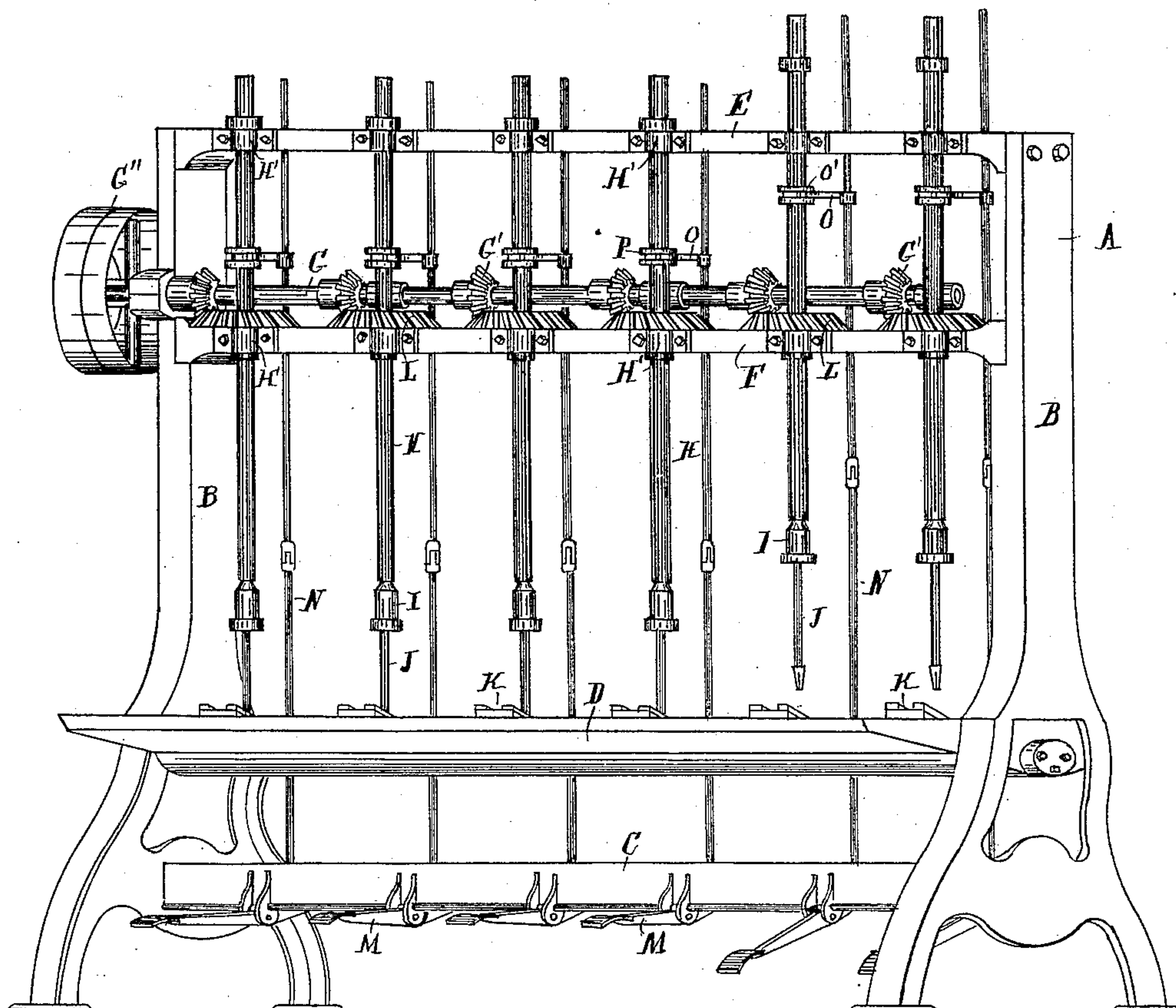


Fig. 1.

WITNESSES

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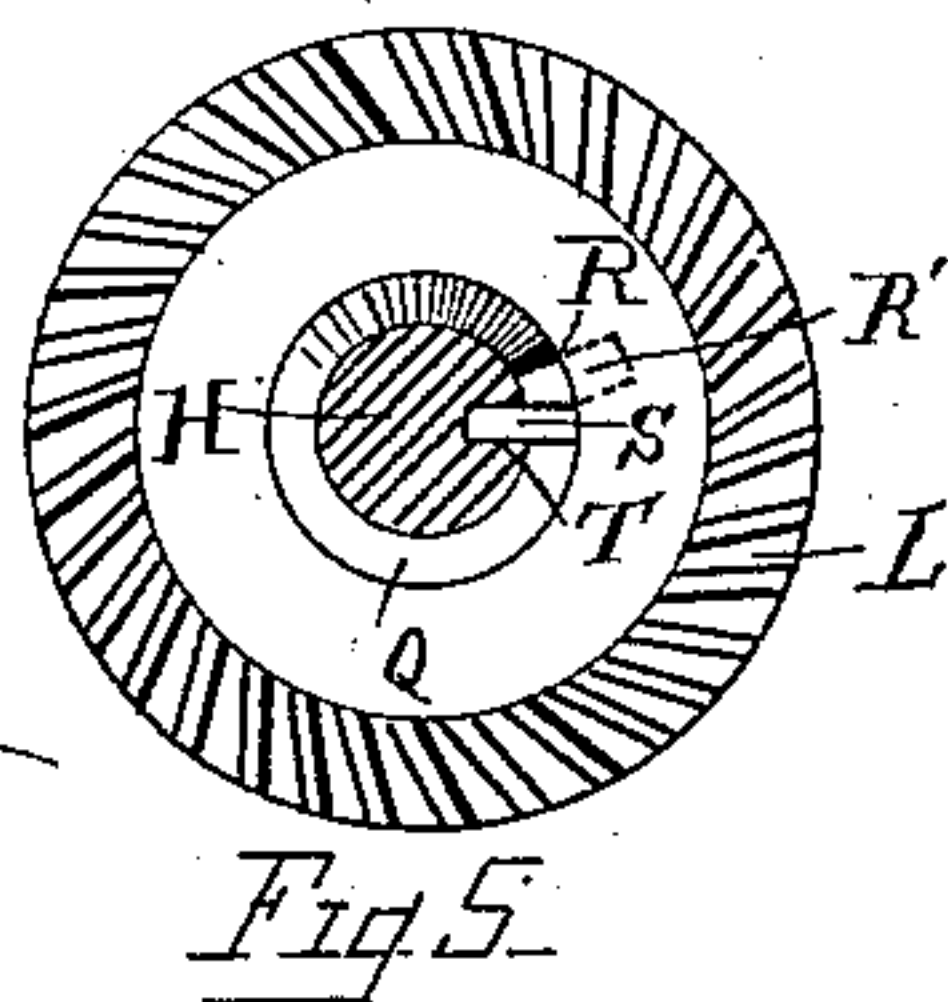
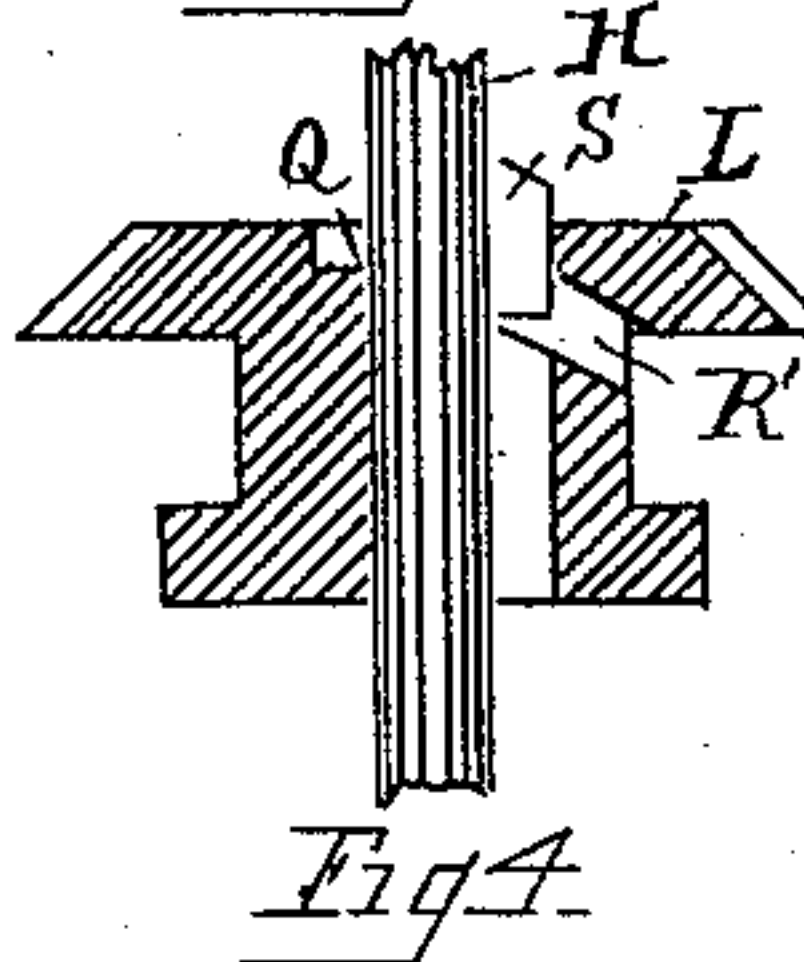
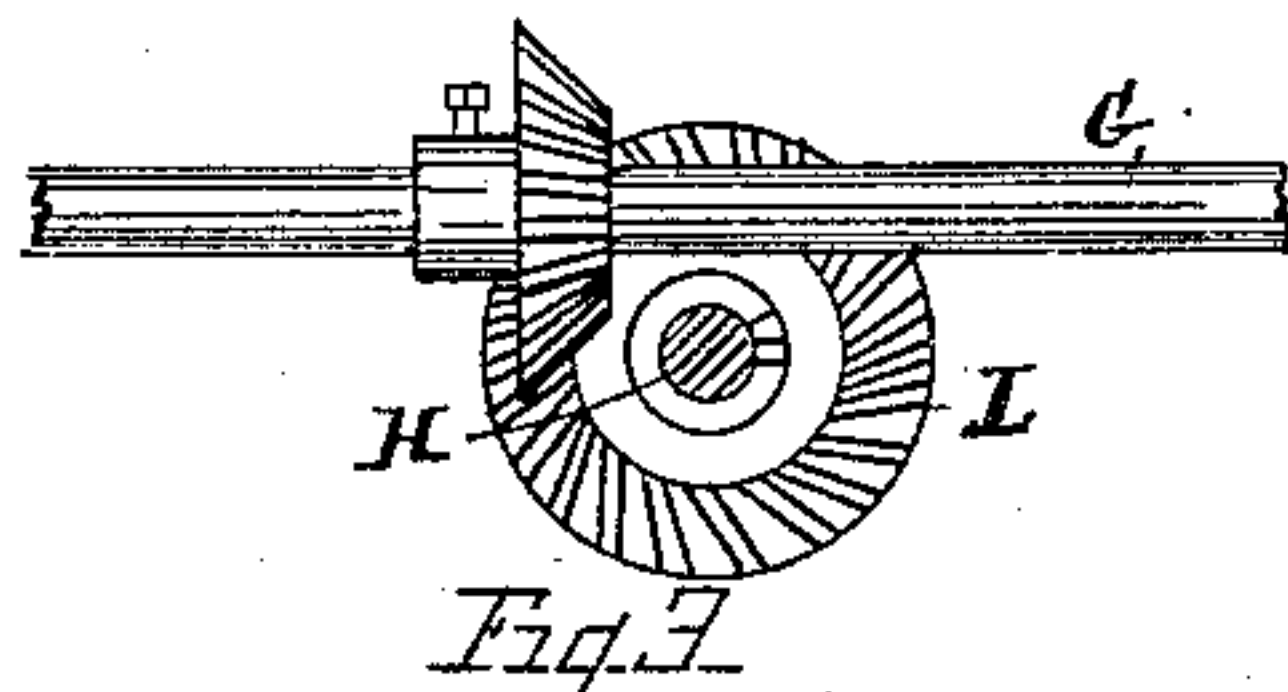
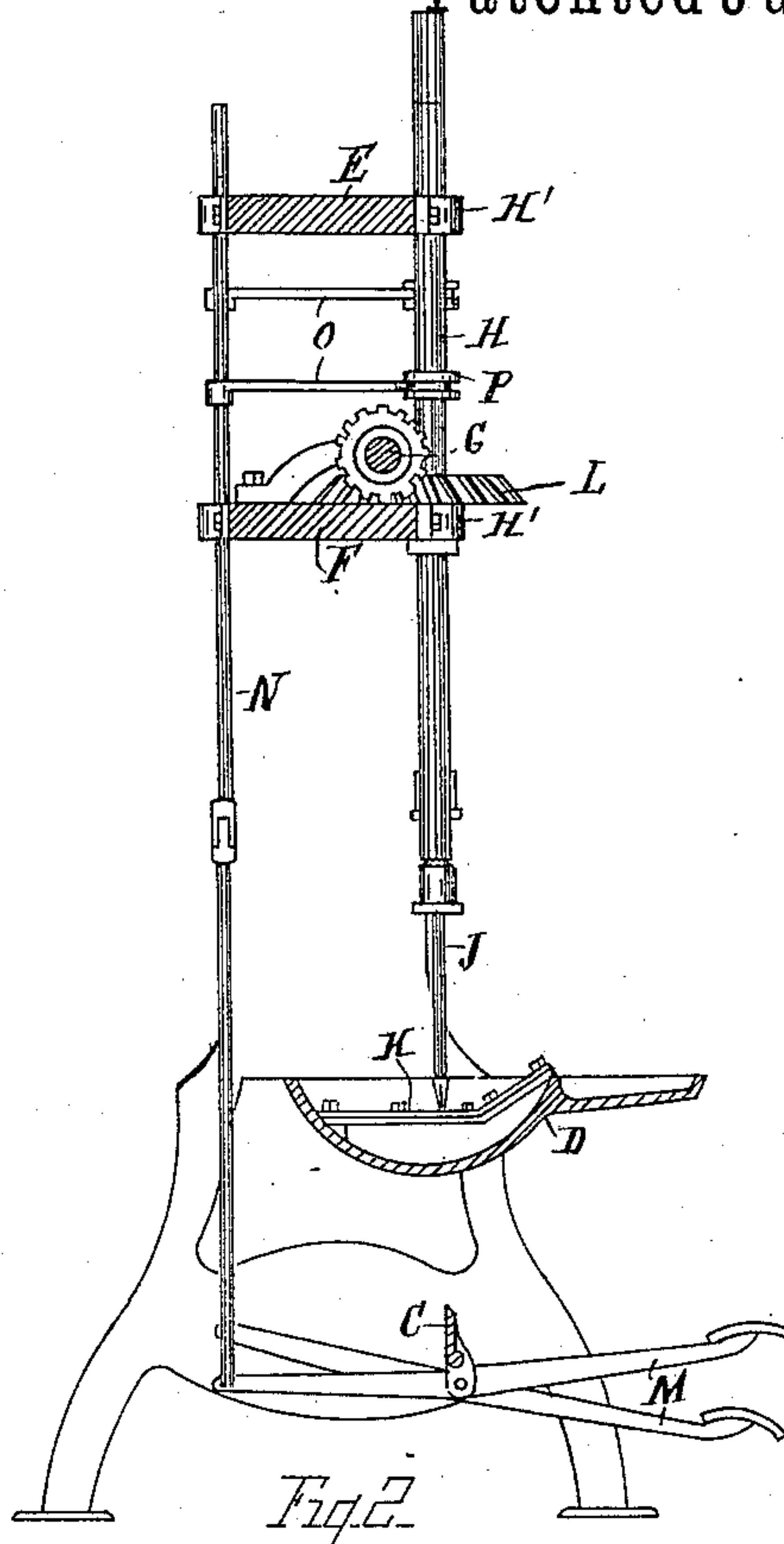
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# UNITED STATES PATENT OFFICE.

WILLIAM R. ANDERSON, OF TIFFIN, OHIO.

## NUT-TAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 429,878, dated June 10, 1890.

Application filed July 23, 1889. Serial No. 318,403. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM R. ANDERSON, a citizen of the United States, residing at Tiffin, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Nut-Tapping Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 the letters of reference marked thereon, which form part of this specification.

My invention relates to nut-tapping machines, and has for its object to construct a machine in which a series of vertically-reciprocating spindles shall receive a rotary motion from a main shaft by means of a skew-gear connection therewith.

A further object is to gear with the spindles in a manner to avoid raising the weight of the gear thereon when raising the spindle, thereby having the driving-power between two bearings instead of on top of machine, as is usual.

The invention consists in the parts and combination of parts hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a complete machine. Fig. 2 is a transverse section of the same. Fig. 3 is a plan view of one of the series of gears for actuating the spindles. Fig. 4 is a sectional view of the skew-gear and a portion of the spindle, illustrating a mode of connecting the two by a removable spline or key. Fig. 5 is a plan view of the skew-gear and spindles, showing the removable spline or key and the steel facing in the gear against which the key bears.

A designates the frame of the machine, comprising uprights B, a lower cross-frame C, the box D, in which the nut-blanks are secured while being tapped, an upper cross-frame E, and a cross-frame F intermediate the cross-frame E and the box D, these parts being secured to the uprights, forming a strong frame.

G designates a power-shaft journaled above cross-frame E and in horizontal alignment therewith and upon which is secured a number of bevel-gears G', corresponding in number to the number of taps to be driven, the

power-shaft receiving motion from a belt (not shown) upon pulley G''.

H designates spindles journaled in boxes H' upon cross-frames E and F, these boxes being removable to allow of rerabbiting the same when worn to cause the spindles to run true. Each spindle is provided with sockets I, into which are secured taps J, each tap registering with a holder K for the nut-blanks, the holders being arranged within the box D.

L designates skew-gears splined upon the spindles H in a manner to allow the spindle to move within the same and be revolved thereby, the obliquity of the teeth allowing the shaft G to be journaled closely and in rear of the spindles, thereby causing the gears G' to slide into the skew-gears without clashing, with the further advantage of allowing a stationary drive with the gearing fixed in place.

M designates treadles pivoted in hangers upon cross-frame C and connected with the spindles by means of jointed rods N, secured to arms O, provided with bifurcated ends O', which engage with collars P upon the spindles, thereby allowing the spindles to be raised and lowered by operating the treadles, and at the same time to have a rotary motion.

In operation a cooling-fluid is placed within box D to a height to allow the nut-blanks to rest therein when placed in the holders K. The operator depresses the treadles M, thereby raising the taps, and places the nut-blanks in position, after which the treadles are allowed to rise, thereby causing the taps to engage with the nut-blanks and tap the same.

In Figs. 4 and 5 is illustrated a removable spline or key by which the operator is enabled to stop the spindle by removing the key, and by means of an inclined groove in the hub of the gear L the key can be inserted while the gear is revolving, thereby causing the spindle to revolve therewith. In this construction an annular inclined groove Q is formed in the hub of the gear, the groove terminating at the lowest point of the inclination in shoulder R, into which is inserted a steel facing R', against which a spline or key S bears, the spline or key being inserted in a key-seat T in the spindle. By this construction, when it is desired to stop the revolution of any particular spindle, it is only necessary to move the spline or



key from the key-seat, and in gearing the same the spline or key is inserted in the key-seat, when the lower end of the key will gravitate into the groove Q, striking the highest point of the inclination and falling to the lowest point against the steel facing.

By reason of the removability of the steel facing, should a facing become worn it can be removed and a new one substituted.

10 What I claim is—

1. In a nut-tapping machine, a main power-shaft, bevel-gears secured thereon, spindles journaled at right angles to the power-shaft, skew-gears splined upon the spindles and intermeshing with the bevel-gears, as and for the purpose set forth.

2. In a nut-tapping machine, a power-shaft, bevel-gears secured thereon, spindles journaled at right angles to the power-shaft, gears formed with teeth having an obliquity to the axial center intermeshing with the bevel-gears, spindles passed through central perforations in the oblique gears and rotatively jointed by means of a key and key-seat, collars upon the spindles, and a rod and treadle connected therewith, as and for the purpose set forth.

3. In a nut-tapping machine, a power-shaft, bevel-gears secured thereon, spindles journaled at right angles thereto, and intermeshing skew-gears secured to the spindles by means of a key removably seated in a key-seat in the spindle and having a partial rotation in a concentric groove in the skew-gear, as and for the purpose set forth.

4. In a nut-tapping machine, a power-shaft, gears secured thereon, spindles journaled at right angles thereto, a key-seat in the spindles, gravitating keys placed therein, in combination with a gear intermeshing with the gear upon the power-shaft and formed with a central perforation through which the spindle passes, and an annular inclined groove concentric to the same, with a removable steel facing inserted in the groove in the path of travel of the key, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

WILLIAM R. ANDERSON.

Witnesses:

WILLIAM WEBSTER,  
HARRY W. MCAVOY.