

No. 635,263.

Patented Oct. 17, 1899.

H. LEVY & M. HIMOFF.
TOBACCO CUTTING MACHINE.

(Application filed Mar. 4, 1899.)

(No Model.)

2 Sheets—Sheet 1.

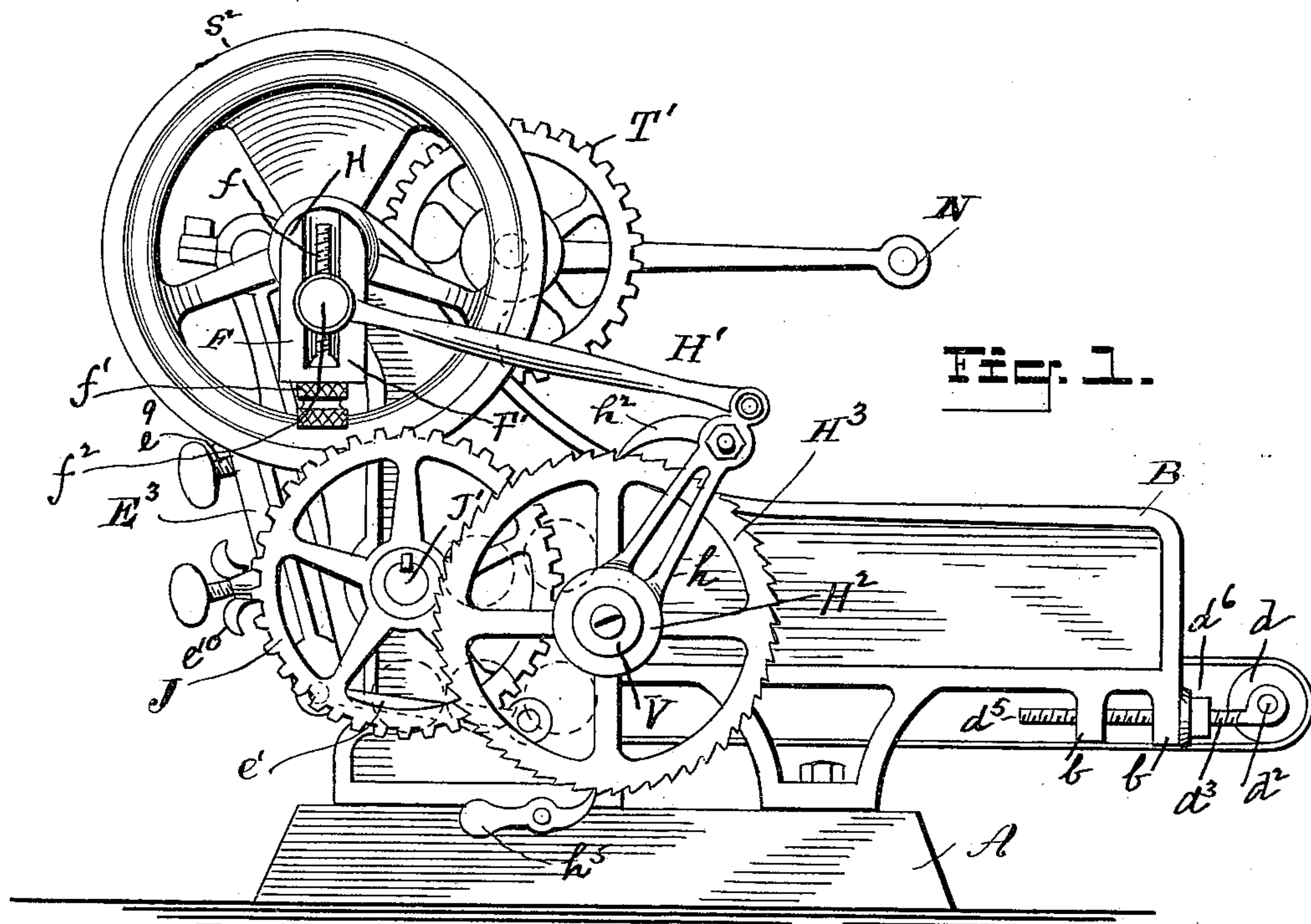


Fig. 1.

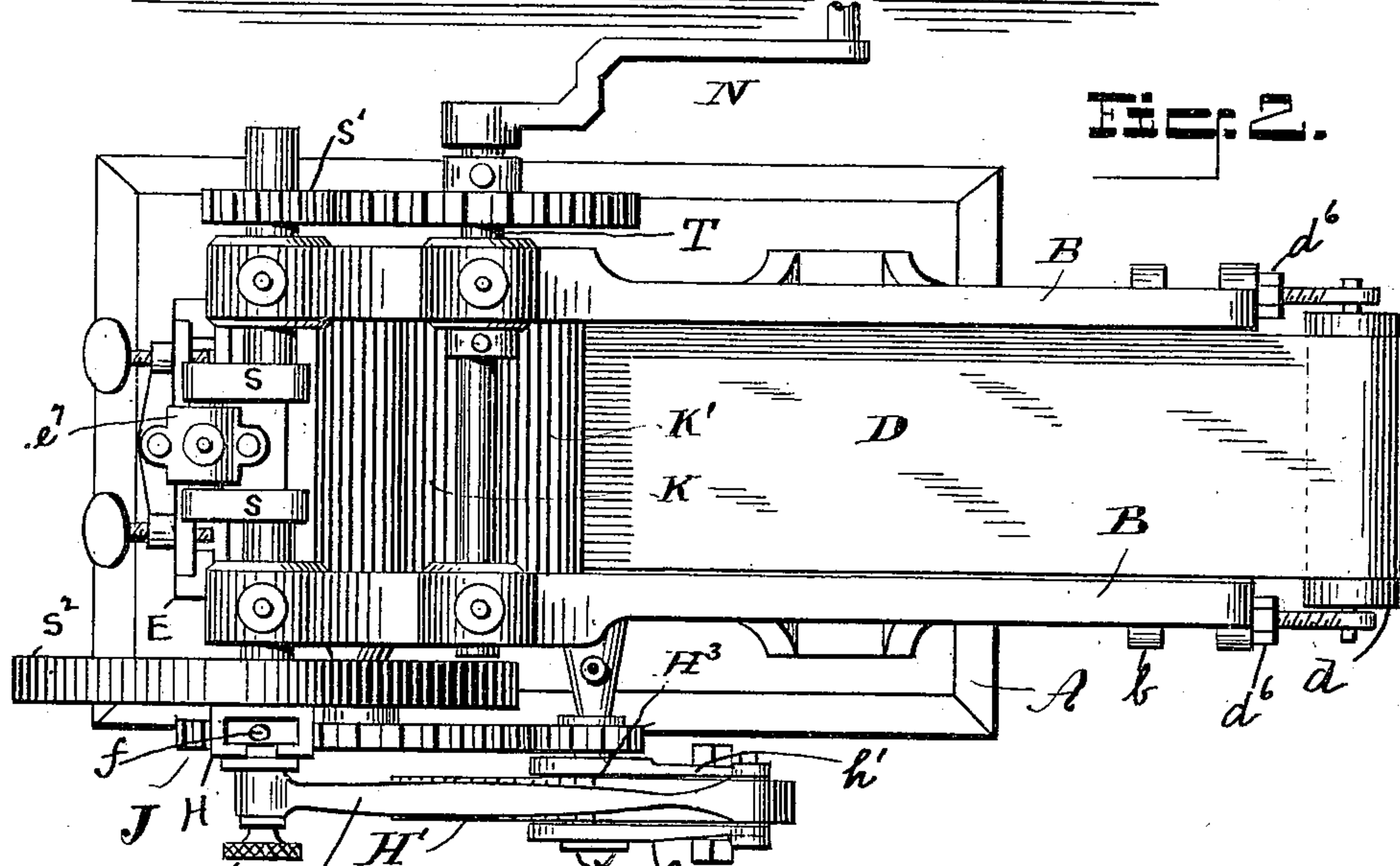


Fig. 2.

WITNESSES:

D. W. Moore
Chester H. Higgins

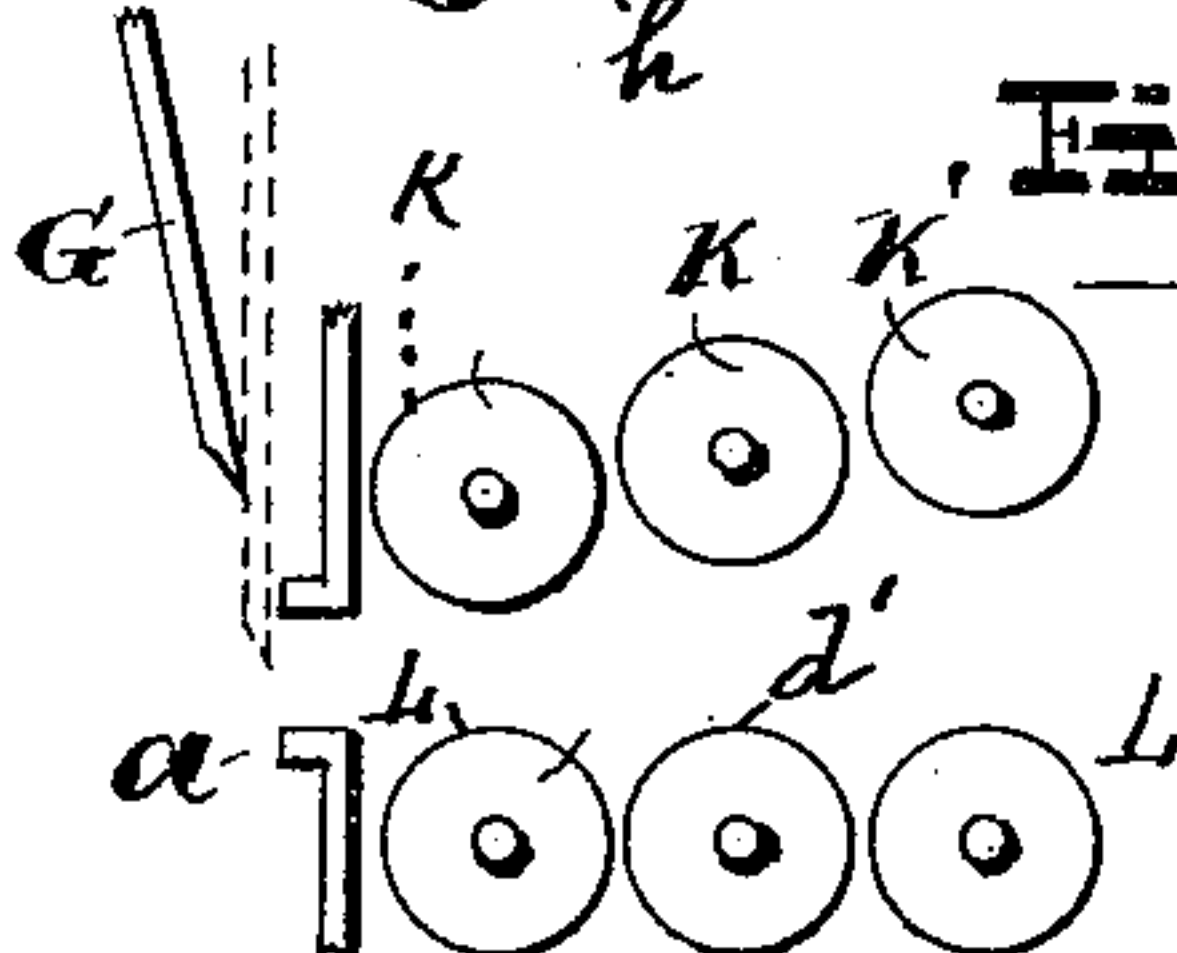


Fig. 3.

INVENTORS
Harry Levy and
Max Himoff
BY
William R. Bond
ATTORNEY

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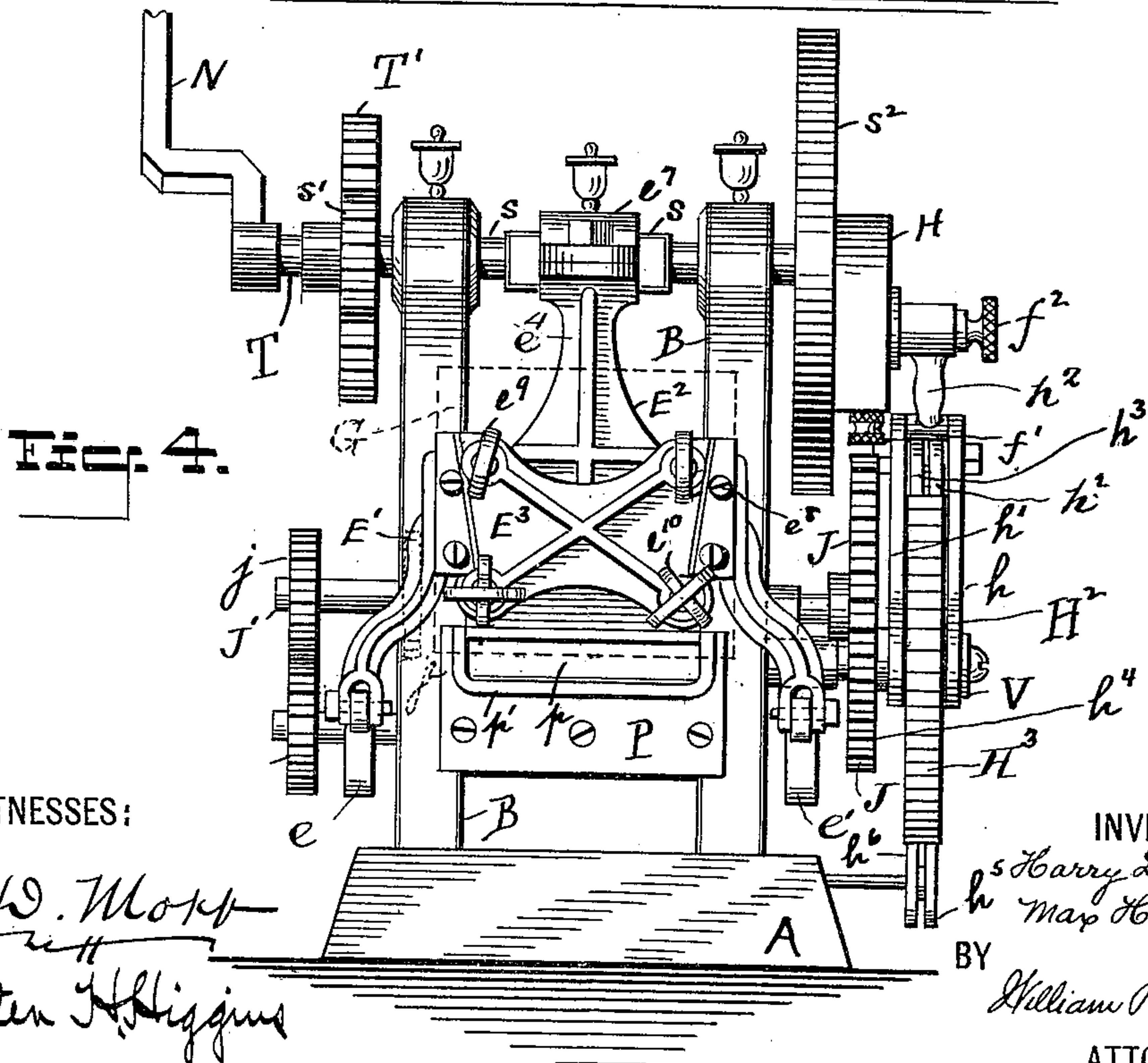
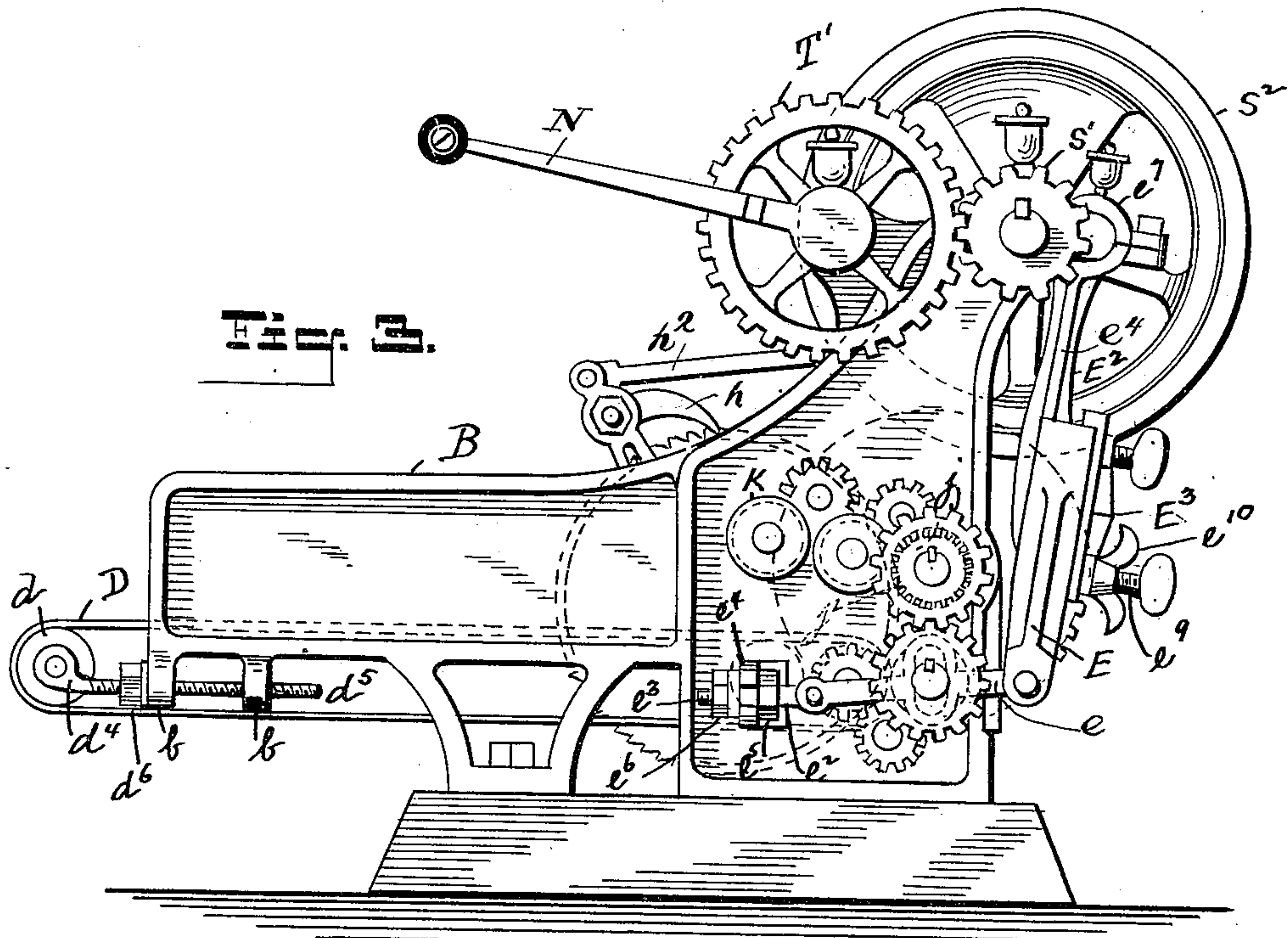
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2 Sheets—Sheet 2.



WITNESSES:

O. W. Mott
Charles H. Higgins

INVENTORS

Harry Levy and
Max Himoff

BY

William R. Baird
ATTORNEY

UNITED STATES PATENT OFFICE.

HARRY LEVY AND MAX HIMOFF, OF NEW YORK, N. Y.

TOBACCO-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 635,263, dated October 17, 1899.

Application filed March 4, 1899. Serial No. 707,808. (No model.)

To all whom it may concern:

Be it known that we, HARRY LEVY and MAX HIMOFF, citizens of the United States, and residents of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Tobacco-Cutting Machines, of which the following is a specification.

Our invention relates to machines for cutting tobacco; and its novelty consists in the construction and adaptation of the parts, as will be more fully hereinafter pointed out.

Referring to the drawings, Figure 1 is a side elevation of our improved machine. Fig. 2 is a plan view thereof. Fig. 3 is an elevation of the side of the machine opposite that side shown in Fig. 1. Fig. 4 is a front elevation, and Fig. 5 is a diagrammatic view, of the compression-rollers.

The machine consists of a bed-plate A and two vertical sides BB, forming between them a trough, which may, if desired, be provided with a bottom of wood or other suitable material. Within the trough is placed an endless apron D, adapted to pass over two rollers, one an adjustable roller d and the other an actuating-roller d' , moved in the manner presently to be described. The adjustable roller d is provided with a shaft d^2 , adapted to revolve in bearings d^3 and d^4 , each of which terminates in threaded shanks d^5 , adapted to pass through suitable apertures formed in projecting brackets b , depending from the sides of the machine and to engage with adjusting-nuts d^6 . By means of this contrivance the horizontal position of the roller d may be varied at will and the apron D kept taut under all conditions.

E is the knife-holder, consisting of a rear plate E', pivotally hinged at the bottom to two adjustable links e and e' , each one of which is hinged upon a bearing e^2 , provided with a threaded shank e^3 , adapted to pass through an aperture in a bracket e^4 , extending from the side of the machine and horizontally adjusted by the nuts e^5 and e^6 . The rear plate E' is connected by the pitman E² to the double crank and its shaft s by means of the flange e^7 in the usual manner. The crank-shaft s is adapted to rotate in suitable bearings in the sides of the machine and at one end is provided with the driving-pinion

s' and at the other with the fly-wheel s^2 and slotted crank H.

The knife-holder is provided in front with a retaining-plate E³, secured to the rear plate E' by any suitable means—for instance, the screws e^8 . It is reinforced at suitable places and provided with threaded apertures, through which are adapted to pass adjusting thumb-screws e^9 , the lower pair being provided with winged lock-nuts e^{10} .

The knife G is held between the front and rear plates of the knife-holder and is firmly fastened in any desired position by means of the thumb-screws e^9 and lock-nuts e^{10} .

The cutting-plate P is made of any suitable material, is mounted upon the sides of the machine, and is provided with an aperture p , corresponding in size to the trough of the machine. A rim p' , forming the edges of the aperture, has a smooth outward plane surface, along which the knife G vertically reciprocates.

The actuating-shaft T is turned either by a handle N or is connected with a prime motor or other source of power. It is supported in bearings upon the sides of the machine, and to it is rigidly secured a gear-wheel T', adapted to mesh with and impart motion to the driving-pinion s' .

The slotted crank H has two slides F and F', between which is secured a small threaded shoe adapted to embrace and move upon a centrally-placed adjusting-rod f , which is adapted to be turned by the thumb-nut f' . The shoe extends outwardly from the crank H and forms an axle upon which the connecting-rod H' is hung. At its outer extremity the axle is threaded and provided with a thumb-nut f^2 , by means of which the connecting-rod can be securely held in place after longitudinal adjustment. The connecting-rod H' at its other extremity is hinged upon bearings mounted between the two members h and h' of a radial link H², mounted upon a shaft V, supported in a bracket in the side B of the machine. Between the members of the link are mounted two pawls h^2 and h^3 side by side, which actuate the ratchet-wheel H³, mounted upon the same shaft V, and upon which is rigidly mounted a pinion h^4 , which in turn meshes with and actuates a gear-wheel J, keyed to a shaft J', transversely placed

across the machine and mounted in bearings in its sides. Upon the other extremity of the shaft J' is keyed a pinion j , which imparts motion to a train of gears mounted upon the shafts of the lower series of rollers L and causes them to rotate. Upon the same shaft J', intermediate the pinion j and plate B, is mounted a second pinion j^2 , which imparts motion to a second train of gears mounted upon the shafts of the upper series of rollers K and causes them to rotate. Each one of the upper series of rollers is longitudinally fluted. That roller of the lower series nearest the knife is similarly fluted, but the other rollers of the lower train are smooth. As there are three rollers in each series they are arranged in pairs, the vertical distance between the opposing surfaces of the pair nearest to the knife being less than the distance between the opposing surfaces of the pair to the rear of them and this distance in turn being less than that between the opposing surfaces of the third pair. The purpose of this arrangement is to gradually compress the tobacco as it approaches the knife. The second roller of the lower series is the actuating-roller of the apron D.

By means of the pawls h^2 and h^3 and the ratchet-wheel H^3 an intermittent rotary motion is imparted to the two trains of gear and an intermittent forward motion to the apron.

The relative positions of the parts are so timed that the knife is descending while the gears and apron are at rest and is ascending as the mass of tobacco is moved forward for a new cut.

The effective length of the crank H, and therefore the length of the stroke of the pawls h^2 and h^3 , may be varied by means of the adjusting-rod f and thumb-nut f' . One of the pawls h^2 and h^3 is made slightly longer than the other, so as to vary the feed by a distance equal to less than the space between two teeth on the wheel H^3 . Beneath the wheel H^3 are suspended two stop-pawls h^5 and h^6 , provided with a counterpoise to prevent any backward motion of the ratchet-wheel H^3 .

The operation of the machine is as follows: Motion being imparted to the shaft, it is com-

municated through the described mechanism to produce a reciprocating movement in the knife, which as it passes downward descends close to the cutting-plate. In its upward path the double crank s throws the knife-holder away from the cutting-plate, so as to permit the projection of the mass of tobacco through the aperture p , and thus prepare it for the next cutting operation. In the meantime the intermittent motion of the compression-rolls and of the apron has advanced and squeezed the mass of tobacco to prepare it to be cut.

The advantages of my machine lie in its simplicity, in the ease and readiness with which the tension on the apron, the rate and extent of motion of the apron and compression-rolls, and the stroke and position of the knife may be varied.

What we claim as new is—

1. In a tobacco-cutting machine the combination with means for intermittently feeding and compressing the tobacco and means for varying the extent of the feeding motion, of a knife adapted to descend in a vertical plane against the cutting-plate and to ascend in a path outside of said plane, and means for reciprocating the knife, of adjusting its position in its holder and varying the extent of its obliquity to the cutting plane.

2. In a tobacco-cutting machine the combination with the apron and means for varying the tension thereon, of means for intermittently moving the apron and varying the extent of said movement, means for compressing the tobacco while feeding the same to the knife, the knife and means for reciprocating the knife-holder and adjusting the position of the knife therein and means for varying the obliquity of the knife to the cutting plane and means for varying the duration of the feeding movement.

Signed at New York, in the county of New York and State of New York, this 23d day of November, A. D. 1898.

HARRY LEVY.
MAX HIMOFF.

Witnesses:

WM. F. MULLINS,
JOSEPH J. KIERNAN.