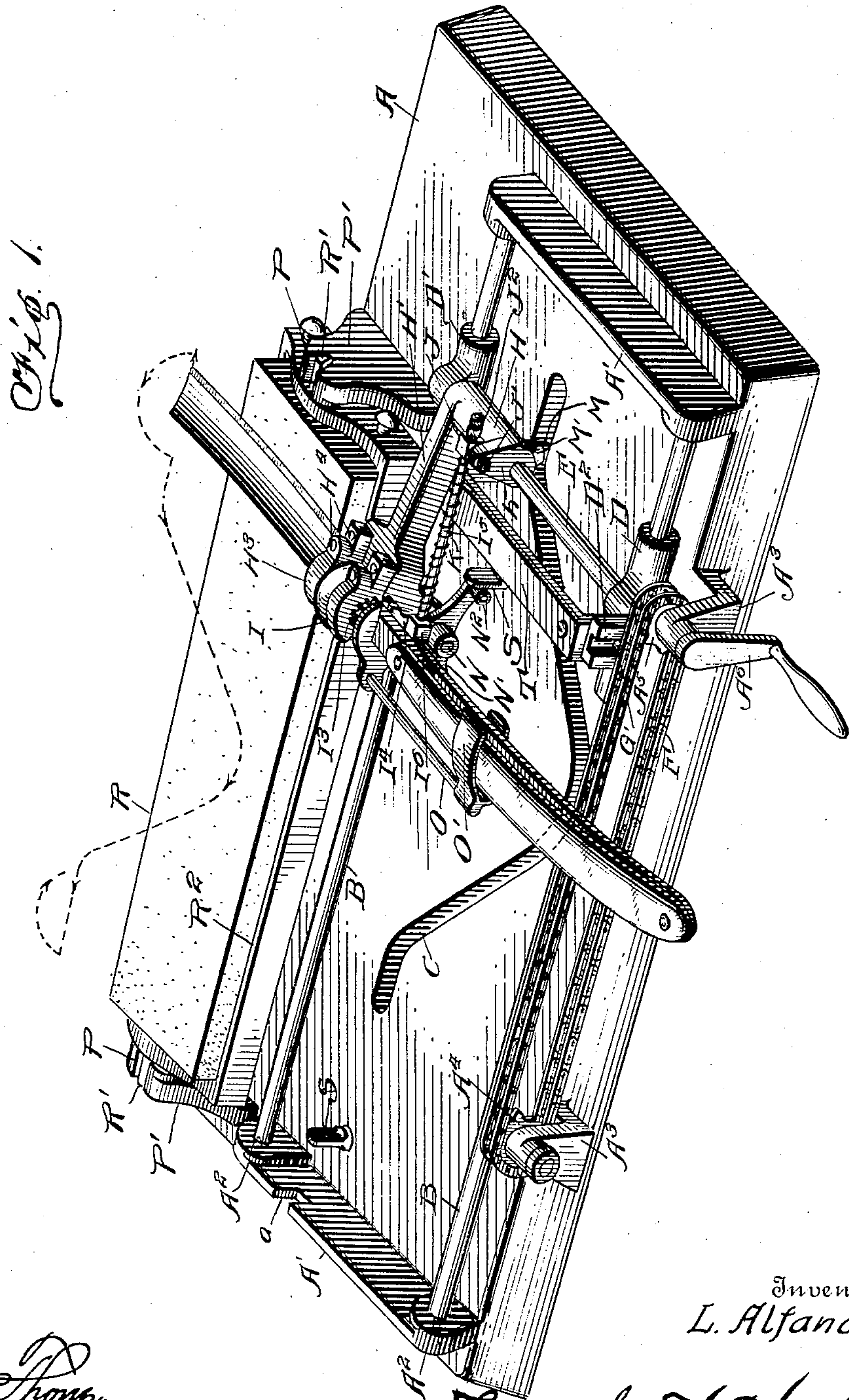


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 APPARATUS FOR HONING RAZORS.
 APPLICATION FILED MAR. 19, 1910.

962,935.

Patented June 28, 1910.

3 SHEETS—SHEET 1.



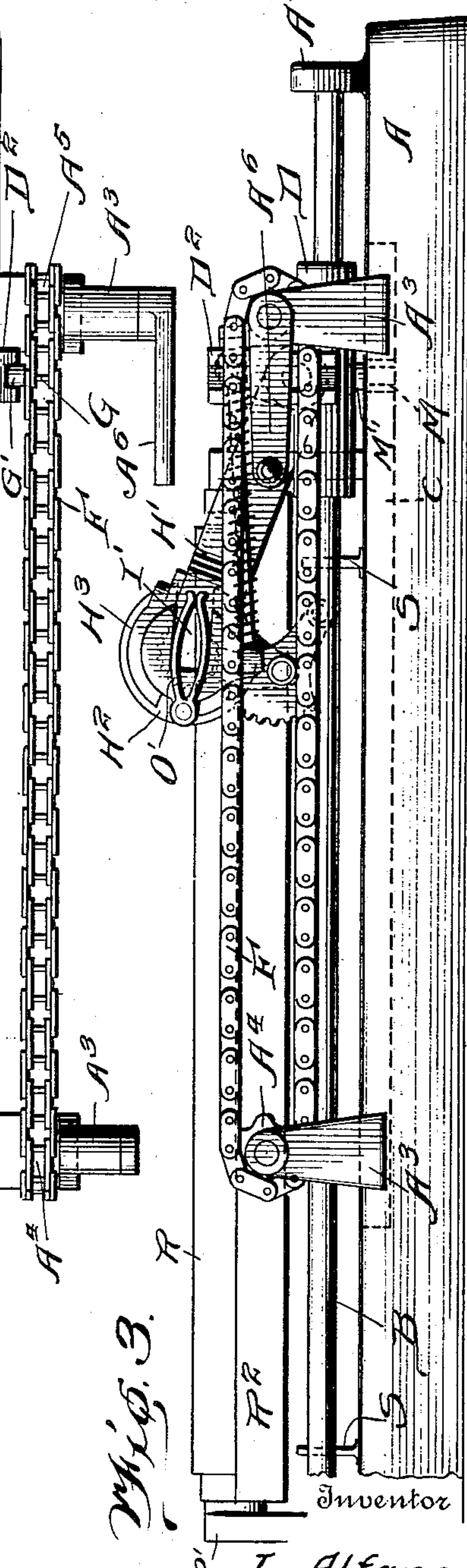
Witnesses
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3 SHEETS—SHEET 2.



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Franklin D. Douglass

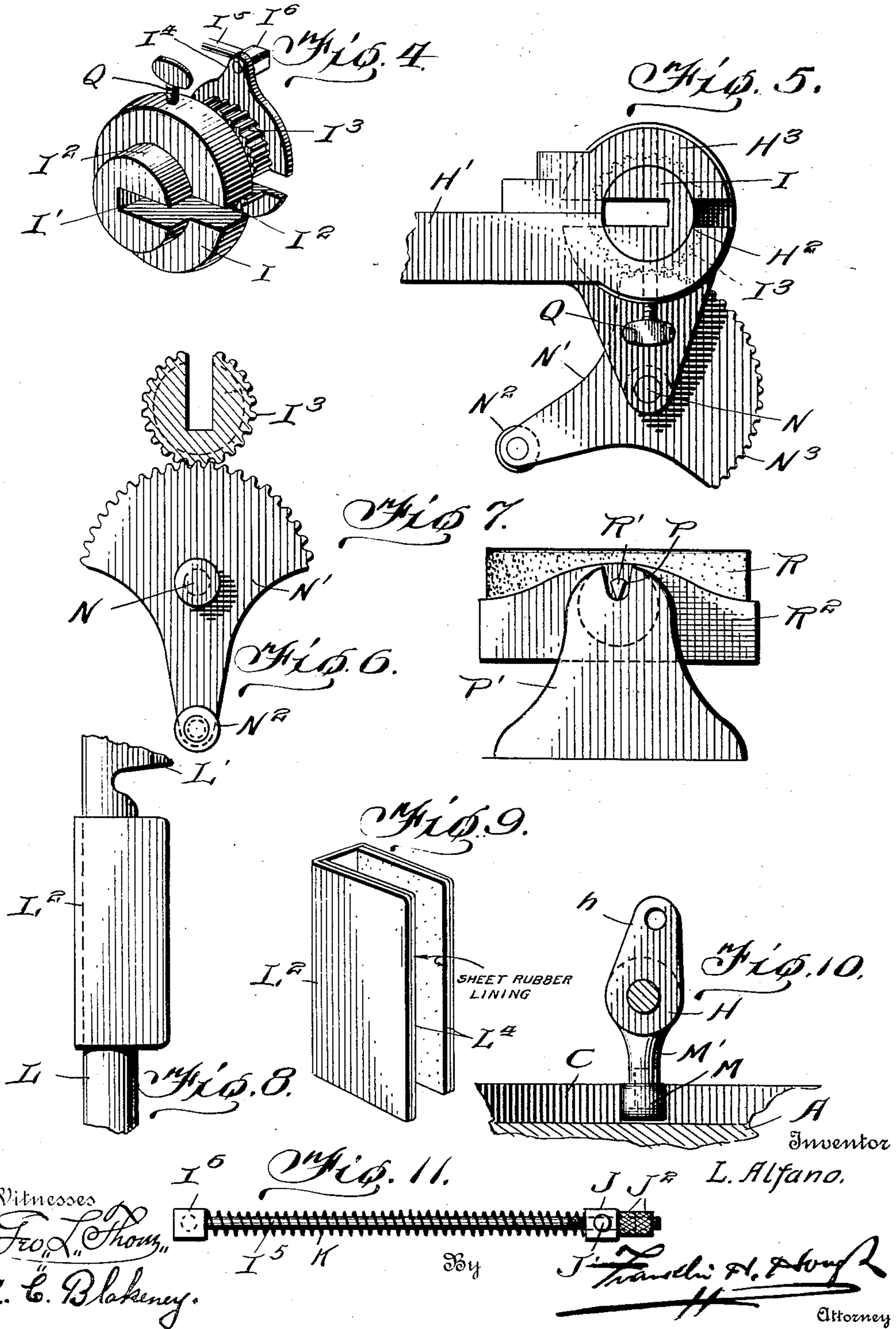
Attorney

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3 SHEETS—SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

LEONARD ALFANO, OF BROOKLYN, NEW YORK.

APPARATUS FOR HONING RAZORS.

962,935.

Specification of Letters Patent. Patented June 28, 1910.

Application filed March 19, 1910. Serial No. 550,355.

To all whom it may concern:

Be it known that I, LEONARD ALFANO, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Apparatus for Honing Razors; and I do hereby 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 the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in apparatus for honing razors and comprises mechanism of this nature having various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which—

Figure 1 is a perspective view of the apparatus. Fig. 2 is a top plan view. Fig. 3 is a side elevation. Fig. 4 is a perspective view of the razor holder. Fig. 5 is a side elevation of the form shown in Fig. 4. Fig. 6 is a detail view of a segment member and means for turning the razor at the end of its throw. Fig. 7 is an edge view of the hone showing the manner of pivotally mounting the same. Fig. 8 is a slight modification of the invention showing the manner of holding a safety razor to be honed. Fig. 9 is a detail view of the modified form for holding the safety razor. Fig. 10 is a detail view of a part of the invention, and Fig. 11 is a detail view of a tension means for regulating the pressure of the razor upon the hone.

Reference now being had to the details of the drawings by letter, A designates the base of the apparatus from which rise the flanges A' which are apertured at A² for the reception of the rods B. The upper surface of said base has a curved groove or channel C adapted to cooperate with means to be hereafter described for regulating the longitudinal movement of the razor as it is drawn back and forth over the hone. Mounted upon said rods B are the sleeves D and D',

the former of which is provided with a vertically disposed cross-head D². A shaft E is mounted at its ends in apertures in said sleeves and affords means whereby the latter may be moved together back and forth upon said rods. Projecting from said base are the bracket arms A³ in which are journaled the two sprocket wheels A⁴ and A⁵ upon suitable stub shafts, and A⁶ is a handle which is fixed to the stub shaft upon which the sprocket wheel A⁵ is fixed. A sprocket chain F passes about said sprocket wheels and to one of the links of the chain is fastened a pin G upon which is journaled a roller G' adapted to have a rolling movement within the slot of said cross-head so that, when the crank A⁶ is turned continuously in one direction, the endless sprocket chain carrying the pin will cause the sleeves to reciprocate back and forth upon the rods B and which will cause the razor to be honed to move to its limit in opposite directions.

A sleeve H is journaled upon the rod E and has an integral arm H' projecting therefrom, the end of which is bifurcated, said arm having a recess H² in its end, and H³ designates a recessed member similar in shape to the bifurcated part of the arm H' and adapted to be clamped against the latter by means of bolts H⁴ to form bearing members for the rocking member I which is adapted to carry the handle of the razor. It will be noted that said member I is provided with a transverse recess I' which is preferably rectangular in cross section and provided with two hub portions I² which are cylindrical shaped and form the bearings for said member. The bifurcated end of said arm H' and the member H³, having two concaved arms, is adapted to clamp about the hub portion I² and hold the member I as it rocks therein. Integral with said member I is a gear segment I³ through which the recess I' extends and I⁴ designates a lug which is integral with the gear segment portion and to which a rod I⁵ is pivotally connected. The other end of said rod I⁵ is threaded and passes through an apertured bearing member J having an integral pin J' projecting through a lug h integral with the collar H, said pin I' being adapted to rock within the aperture in which it is mounted.

An anti-friction roller M is mounted in

the pin M' projecting from the lug h and is adapted to travel in the curved channel or groove C for the purpose of giving the razor a back and forth movement across the hone as the razor moves from one end to the other of the hone.

Jam nuts J^2 are mounted upon the threaded end of the rod H' and serve as means for regulating the tension of a spring K which is mounted upon the rod I^5 and bearing between the member J and the head I^6 upon said rod which is connected to the lug I^4 .

Pivotally mounted upon a pin N which projects from the member H^3 is a gear segment N' having an anti-friction roller N^2 pivotally mounted near its lower end and the teeth N^3 of said member are adapted to mesh with the teeth of the integral gear segment I^3 so that, when the segment N' rocks upon its pivot, a partial rotary movement may be given to the member I which carries the razor to be honed.

Projecting from the member I is a rod O carrying resilient clamping jaws O' at its end and which are adapted to engage the handle of the razor, as shown clearly in Fig. 1 of the drawings, to assist in holding the same steady.

A set screw, designated by letter Q , is mounted in a threaded aperture in the member I and is adapted to bear against the handle of the razor and cooperate with one of the walls of the recess I' to securely hold the razor while being honed.

Stops S are fastened to the upper surface of the base portion and in the path of the anti-friction roller N^2 upon the pivotal segment member N' and serve to tip the latter as the razor approaches the limit of its throw in opposite directions, said stop being adapted to cooperate with the pivotal segments for turning the razor. The rib A' at one end of the base portion is provided with a notch a in which the pivotal segment is adapted to move as it is tilted by coming in contact with the stop S near one end of the device.

A spring arm T is fastened to the cross head D^2 and has a free end positioned underneath the arm H' and provided for the purpose of causing the arm H' to rise slightly in the act of the apparatus turning the razor at the limits of its throws in opposite direction, this provision of the spring being to prevent an uneven wear upon the hone as the blade turns.

The hone, designated by letter R , has pintles R' in its opposite ends, which latter are preferably provided with a sharp bearing edge which reduce the friction of the tilting hone to minimum and to allow the hone to automatically adjust itself to the razor being drawn against the surface thereof. Said hone is shown as being in a casing or box R^2 and held therein by means of set

screws R^3 . The pintles R' , it will be noted, are mounted in recesses P formed in the bracket arms P' which rise from the base portion A .

In Figs. 8 and 9 of the drawings, I have shown a slight modification of my invention in which means is shown for adapting the apparatus for honing safety razors and in which drawings L designates the handle of a safety razor and L' the safety razor held thereto. L^2 designates a holder for the handle L and comprises a metallic clip having two parallel walls, preferably lined with rubber L^4 , and said holder L^2 is of such a shape as to fit the recess I' and, as the sides are thin and resilient, they may be held in clamped relation against diametrically opposite sides of the round handle of the safety razor by tightening the set screw Q .

In operation, the handle of the razor is inserted in the recess I' and held therein by tightening the set screw Q , the blade of the razor lying flat against the surface of the hone. As the crank is turned, the anti-friction roller carried by the pin upon the sprocket chain will cause the two sleeves D and D' , which are connected together by the shaft E and form a carriage, to move toward the other end of the block or base. The anti-friction roller M moving in the groove or channel C will draw the sleeve H toward the sprocket chain and the razor blade will be gripped and held by the apparatus connected to the integral arm I' upon the sleeve H and will draw the razor with it and at the same time the razor will be drawn with its cutting edge forward toward the opposite end of the hone. In Fig. 1 of the drawings, the part of the apparatus represents the razor having been drawn to a position upon the hone in readiness for the blade to be turned over to make a return draw movement upon the hone. When the anti-friction roller N^2 comes in contact with the stop S , the pivotal segment N' will be rocked upon its pivot N and the intermeshing teeth of the two segments N' and I^3 will cause the member I to rock within its bearings and reverse the razor blade. As the segment N' swings over as it approaches its limit in one direction, it will engage the recess a and cut even with the flange A' . As the roller carried by the pin upon the sprocket chain approaches the other sprocket wheel, it will turn about the same and return to its starting position without interference with the sprocket wheel, the roller G' moving back and forth in the slot of the cross head as the razor reaches its limit in opposite directions. As the arm H' approaches its limit in opposite directions and as it moves toward the hone, its under edge will contact with the upper surface of the spring T and have a tendency to slightly raise the blade of the razor

as the latter is turned upon its rear edge and thereby prevent uneven wear at the turning point.

By the provision of the coiled spring upon the rod K, the pressure of the razor to be ground may be regulated by moving the nuts upon the threaded ends of said rod in one direction or the other, the varying of the tension of said coiled spring causing the member I to be held in slightly different axial adjusted positions. As the razor is drawn back and forth upon the hone, it will be noted that the latter will tilt under the slightest pressure to conform to the proper bevel to be given to the cutting edge of the razor, the hone adjusting itself automatically to the razor and thus affording means for honing the blade evenly.

In honing a safety razor, the handle is placed within the holder L² with the rubber lining thereof gripping the round handle of the safety razor and which holder is adjusted in the recess and held by the set screw in the same manner as shown in Fig. 1 of the drawings.

From the foregoing, it will be noted that, by the provision of an apparatus as shown and described, a simple and efficient mechanism will be afforded whereby razors of the ordinary or safety types may be held so as to cause a true and evenly ground cutting edge.

What I claim to be new is:—

1. A honing apparatus comprising a base having a curved groove in the upper surface thereof, shafts mounted in projecting portions of the base, sleeves movable upon said shafts, a rod connecting said sleeves, a sleeve movably held upon said rod, an anti-friction roller mounted upon said movable sleeve and adapted to travel in said groove, a razor holding member carried by said arm, an endless chain, means carried by the chain and adapted to engage one of said sleeves, and means for reversing the razor holding member.

2. A honing apparatus comprising a base having a curved groove in the upper surface thereof, shafts mounted in projecting portions of the base, sleeves movable upon said shafts, a rod connecting said sleeves, a sleeve movably held upon said rod, an anti-friction roller mounted upon said movable sleeve and adapted to travel in said groove, a razor holding member carried by said arm, an endless chain, a pin carried by the endless chain, anti-friction roller upon said pin, a cross head fixed to one of said sleeves and

in which said pin carrying roller is adapted to move, a stop, and means carried by said razor holding member for rocking the razor holder to reverse the blade.

3. A honing apparatus comprising a base having a curved groove in the upper surface thereof, shafts mounted in projecting portions of the base, sleeves movable upon said shafts, a rod connecting said sleeves, a sleeve movably held upon said rod, an anti-friction roller mounted upon said movable sleeve and adapted to travel in said groove, a razor holding member carried by said arm, an endless chain, a pin carried by the endless chain, anti-friction roller upon said pin, a cross head fixed to one of said sleeves and in which said pin carrying roller is adapted to move, a stop, a pivotal segment carried by said razor holding member, an anti-friction roller mounted upon one end thereof and adapted to contact with said stop, the teeth of said member engaging teeth upon a gear segment upon the razor carrier to cause the latter to make a partial rotary movement to reverse the razor.

4. A honing apparatus comprising a base having a curved groove in the upper surface thereof, shafts mounted in projecting portions of the base, sleeves movable upon said shafts, a rod connecting said sleeves, a sleeve movably held upon said rod, an anti-friction roller mounted upon said movable sleeve and adapted to travel in said groove, a razor holding member carried by said arm, an endless chain, a pin carried by the endless chain, an anti-friction roller upon said pin, a cross head fixed to one of said sleeves and in which said pin carrying roller is adapted to move, a stop, a pivotal segment carried by said razor holding member, an anti-friction roller mounted upon one end thereof and adapted to contact with said stop, the teeth of said member engaging teeth upon a gear segment upon the razor carrier to cause the latter to make a partial rotary movement to reverse the razor, a spring fastened to said cross head and against which said arm carrying the razor holding member is adapted to bear as the razor approaches the limit of its throw in opposite directions.

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

LEONARD ALFANO.

Witnesses:

EDWARD A. SEXTON,
JAMES V. PERILLO.