

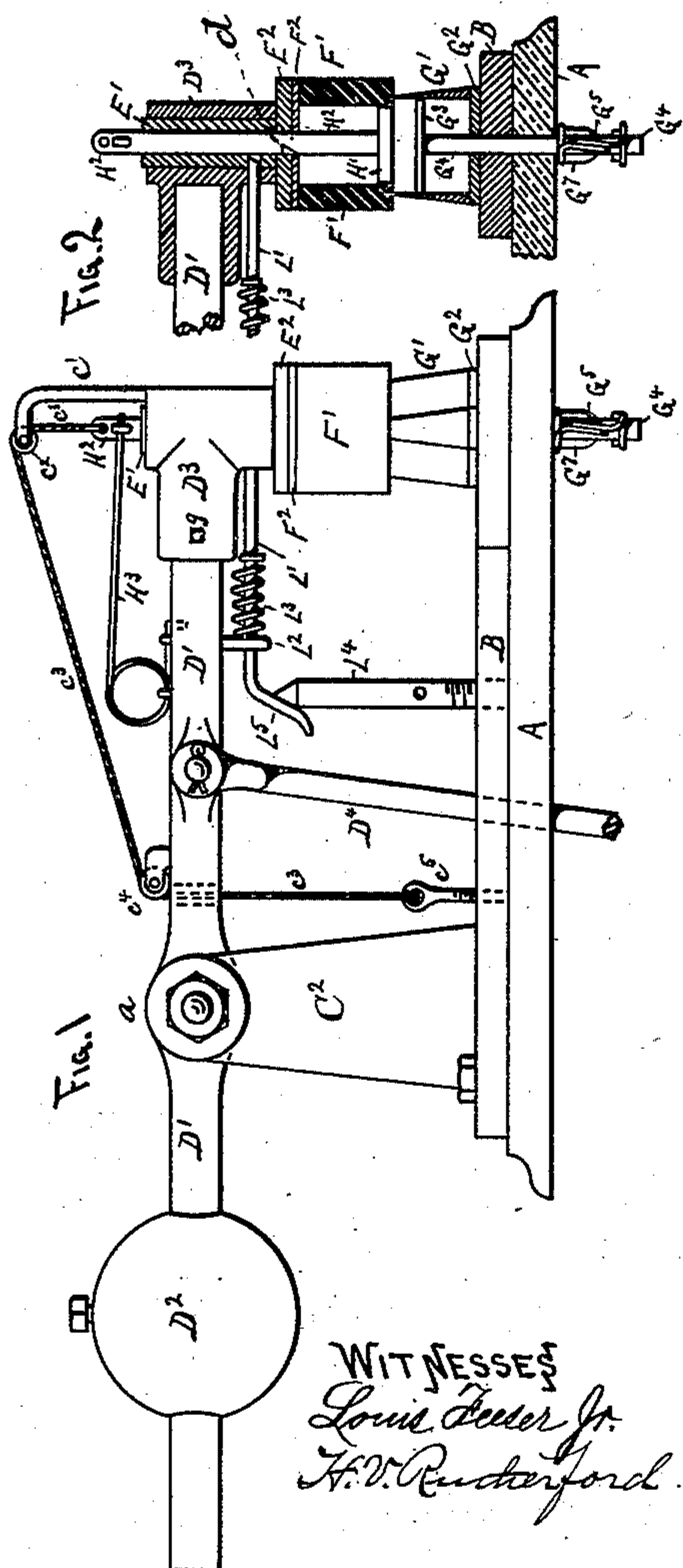
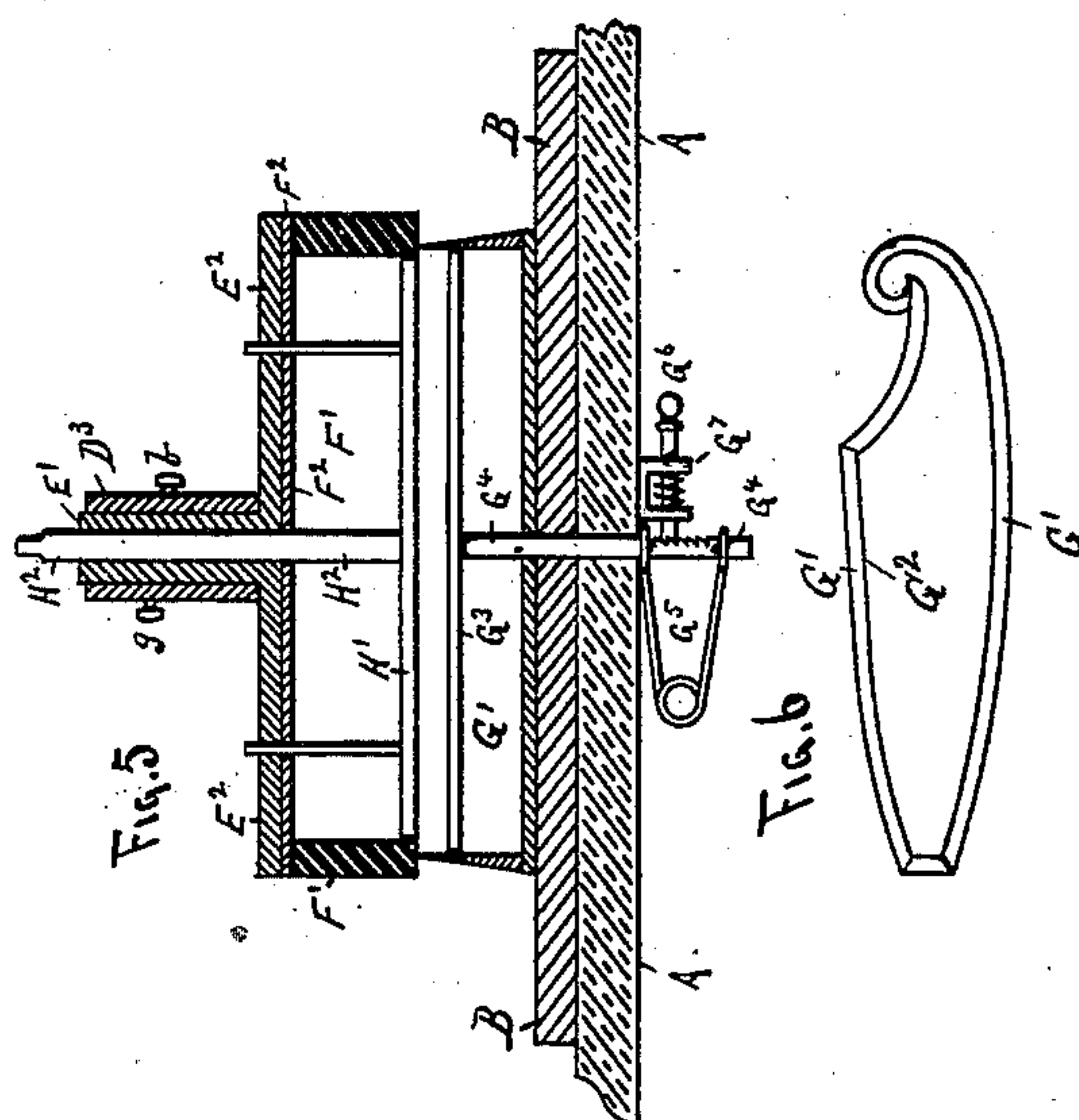
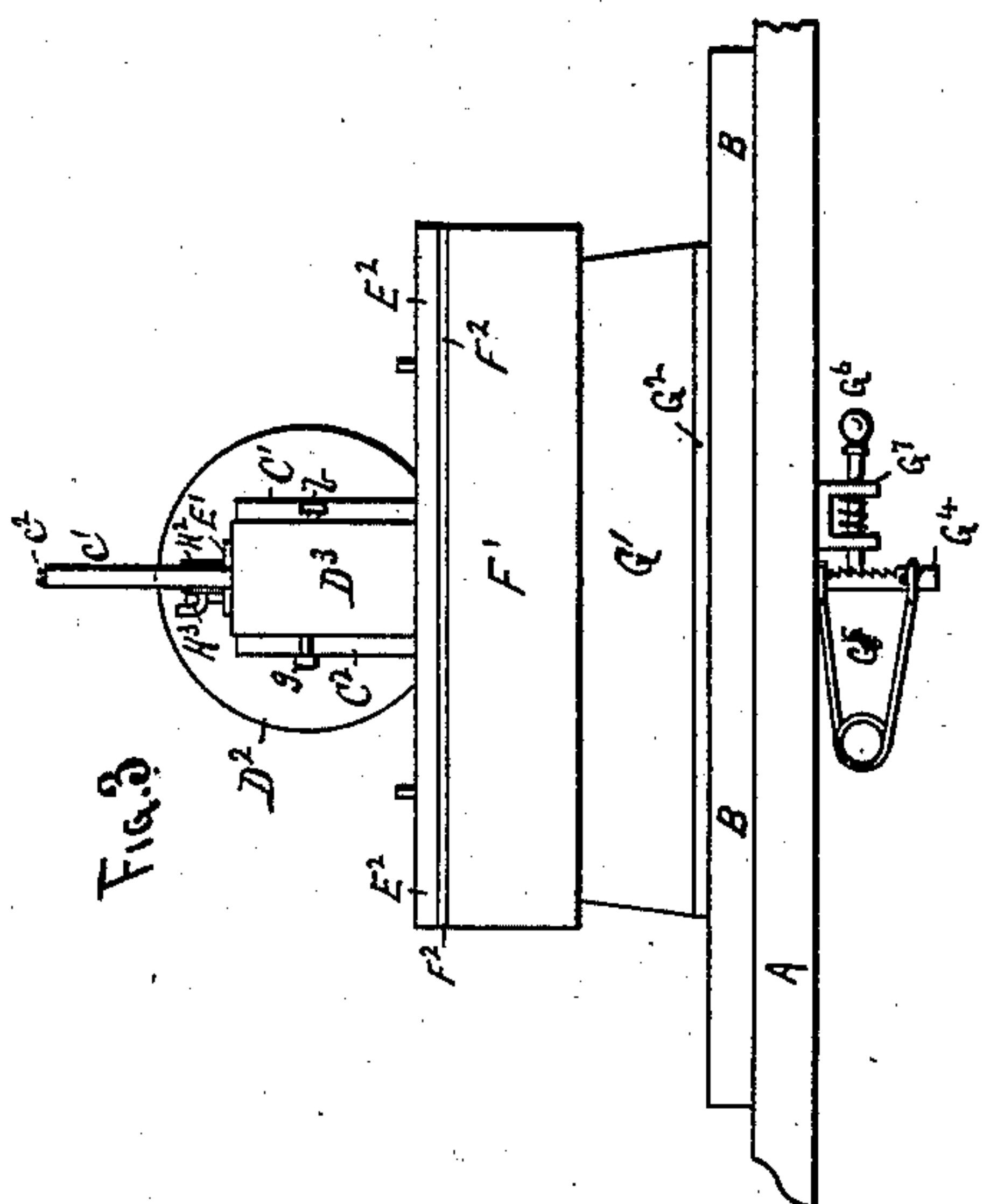
(No Model.)

H. GRUNHAGEN.

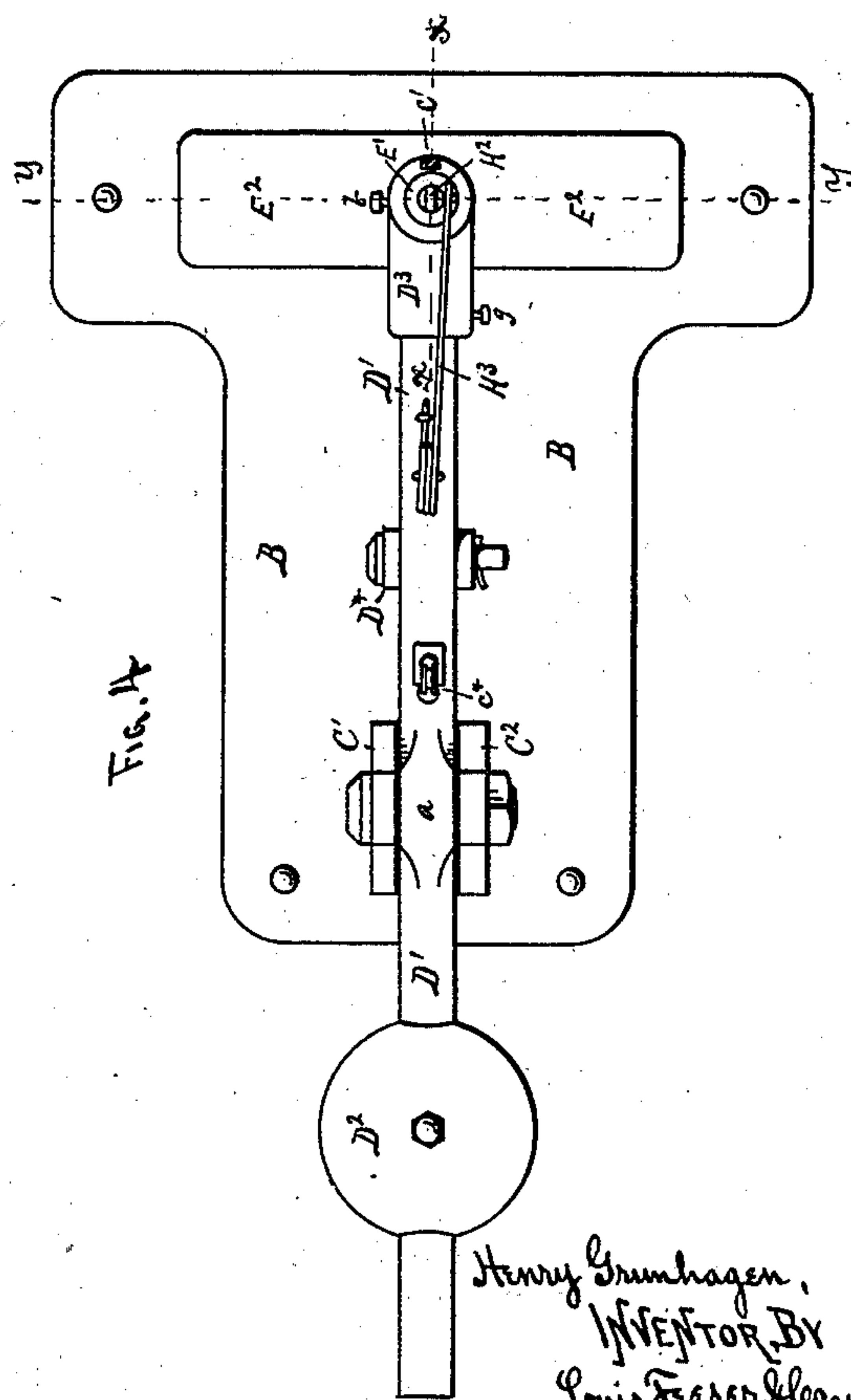
MACHINE FOR CUTTING CIGAR WRAPPERS.

No. 300,069.

Patented June 10, 1884.



WITNESSES
Louis Fisher Jr.
H. V. Ruckerford.



Henry Grunhagen,
INVENTOR, BY
Louis Friesel & Co. attys.

UNITED STATES PATENT OFFICE.

HENRY GRUNHAGEN, OF ST. PAUL, MINNESOTA, ASSIGNOR OF ONE-THIRD
TO WILLIAM PFAEUDER, JR., OF SAME PLACE.

MACHINE FOR CUTTING CIGAR-WRAPPERS.

SPECIFICATION forming part of Letters Patent No. 300,069, dated June 10, 1884.

Application filed October 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY GRUNHAGEN, a citizen of the United States, and a resident of St. Paul, in the county of Ramsey, in the State of Minnesota, have invented certain new and useful Improvements in Cigar-Wrapper-Cutting Machines, of which the following specification is a full, clear, and exact description, reference being also had to the accompanying drawings, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is a sectional view of the "head" and cutting mechanism on the line $x x$ of Fig. 4. Fig. 3 is a front elevation, and Fig. 4 is a plan view, of the machine. Fig. 5 is a sectional view on the line $y y$ of Fig. 4. Fig. 6 is a plan view of the fixed cutting-knife.

A is the table or stand mounted upon a suitable base or legs, (the latter not being shown,) and having a metal plate, B, secured thereon, as shown. Cast upon or otherwise secured to the rear part of the plate B are two standards, $C^1 C^2$, having pivoted between them at a a long lever, D^1 , the latter provided upon its rear end with an adjustable "counterpoise" or weight, D^2 , and upon its front end with a T-head, D^3 . This lever D^1 is adapted to be raised up by a rod, D^4 , actuated by a treadle or other power from below. The T-head D^3 is hollow, and supports a hollow stud, E^1 , having a plate, E^2 , secured to its lower end or formed in one piece therewith, the stud E^1 being held in the head D^3 by a set-screw, b , or by other means, and the head D^3 being similarly held upon the lever D^1 by a set-screw, g .

F^1 is a shell or block of hard rubber or other suitable material attached to a metal plate, F^2 , the latter being in turn attached to the lower side of the plate E^2 , so that the stud E^1 , plate E^2 , shell F^1 , and plate F^2 are all secured firmly together and held in the T-head D^3 , and moved up and down with it when the lever D^1 is operated.

G^1 is the cutter or knife formed in the ordinary manner, as shown in Fig. 6, and attached to a plate, G^2 , which in turn is attached to the plate B, directly beneath the shell F^1 , as shown. The interior shape of the shell F^1 is made to conform with the cutter G^1 , but some-

what smaller than its interior, so that the rubber or other material of which it is composed will strike the cutting-edge of the cutter.

H^1 is a plunger or piston plate arranged to slide up and down within the shell F^1 , and provided with a piston-rod, H^2 , running up through the stud E^1 , and adapted to be held down in place by a spring, H^3 , and mounted on the lever D^1 and moving up and down with it.

c^1 is a standard attached to the T-head D^3 , and provided with a small cord-pulley, c^2 , over which a cord, c^3 , attached by one end to the piston-rod H^2 , leads, and from thence down over pulley c^4 , through the lever D^1 , and is attached at the other end to a screw-pin, c^5 , tapped into the plate B.

L^1 is a rod having one end running into a hole in the lower part of the T-head D^3 , and supported at its other end by a hanger, L^2 , from the lever D^1 , as shown.

L^3 is a coiled spring, which serves to keep the inner end of the rod L^1 pressed in against the piston-rod H^2 . The outer end of the rod L^1 is curved downward and outward at an angle, as shown at L^5 , and adapted, when the lever D^1 is lowered down, to strike the upper pointed end of a pin or stud, L^4 , tapped into the plate B. The position of the pin L^4 is such that when the lever D^1 falls, the angular end L^5 striking it, the rod L^1 will be drawn outward and held outward away from its contact with the piston-rod H^2 , as hereinafter shown.

Within the knife G^1 is a plate or piston, G^3 , and piston-rod G^4 , similar to the plate H^1 and piston-rod H^2 , except that the piston-rod G^4 projects downward through the plates G^2 and B and table A, as shown. The piston-rod G^4 is provided with a spring, G^5 , to keep the piston G^3 up toward the upper or cutting edge of the knife G^1 .

G^6 is a small spring-bolt, supported in hangers G^7 beneath the table A, and provided with teeth in its inner end, adapted to fit into notches or serrations in the piston-rod G^4 . These notches or serrations are formed, as shown, with their upper surfaces horizontal, and their lower surfaces inclined, so that while the piston and piston-rod may be forced down

the spring-bolt will prevent them from being raised upward again unless the bolt be withdrawn, the object to be hereinafter explained.

The T-head D^3 , as before stated, is held upon the lever D' by a set-screw, g , so that the head may be adjusted upon the lever to adapt the surfaces of the shell and cutter to each other to secure an even cutting of the wrappers. The counterpoise is intended to be adjusted along the lever D' , to nearly if not quite balance the T-head D^3 and its attached parts, so that less power will be required to cut the wrappers, and consequently less wear will come upon the knife.

The operation of this machine is as follows: The operator, by pressing with the foot upon the rear part of the treadle, (not shown,) raises the lever D' by the rod D^4 . He then stretches a leaf of tobacco over the knife G' and presses down upon the forward part of the treadle, when the T-head D^3 and shell F' will cut a piece of the tobacco from the leaf of the shape of the knife G' , and thus form a wrapper. The piston G^3 will be raised up nearly to the top edge of the knife, and when enough wrappers have been cut to fill this space the pressure of the piston H' will cause the piston G^3 to be moved downward and caught and held in a new notch by the spring-bolt G^6 , and so on as fast as the number of wrappers increase the piston will be forced down, thereby keeping the wrappers pressed together between the two pistons G^3 and H' , the only interval of time when the pressure is removed being when a new leaf is inserted and a new wrapper cut. When the T-head D^3 of the lever D' is down, the rod L' will be held outward by the pin L^4 ; consequently the spring will hold the piston H' down a moment after the shell begins to rise, so that the cut wrapper will be pushed off from the shell and prevented from sticking thereto. The cord c^3 is short enough so that when the T-head D^3 on the lever D' is raised the pulley c^4 will draw the cord and cause it to pull the piston-rod H^2 and piston H' upward until a notch, d , in the piston-rod H^2 will come opposite the inner end of the rod L' , when the latter will be forced into it by the spring L^3 , and thus hold the piston-rod and piston elevated until the lever again drops, and causes the pin L^4 to release it and permit the spring to throw the piston downward and force the cut wrapper loose from the shell. By this means the wrappers are cut and stored in the hollow knife G' , but kept under pressure while so stored, and at the same time they are prevented from sticking to the shell or block by the action of the piston H' . When the knife G' is full of wrappers, (which will usually be after one hundred are cut,) the lever D' will be raised and the bolt L' pulled back by the spring L^3 , when the spring G^5 , after pulling back the bolt G^6 therefrom, will force the piston G^3 upward and throw the wrappers out, so that they can be easily removed from the machine.

It is of great importance in forming cigar-wrappers to keep them stretched out even until used, as they have a tendency to curl up and shrink, while at the same time the texture of the tobacco is so fragile that it is very easily injured by handling. By my device, however, the wrappers are held pressed together until one hundred (more or less) are cut, and without the necessity of each individual wrapper being handled.

It is not necessary with my device for the operator to touch the wrappers after they are cut, except in bulk or parcels of one hundred each, and even these may be handled by instruments or between plates, whereby they are not injured or allowed to shrink or curl up.

As before stated, the pins c^5 and L^4 are both tapped into the bed-plate B , so that by turning them the cord c^3 may be shortened or lengthened; or the point at which the rod L' is acted upon may be adjusted so that the action of the piston H' may be regulated to do its work properly.

I am aware that in horseshoe-nail machines receptacles have been employed to receive the nail-blanks as they are cut out by the die, the said blanks being sustained successively close up to the die, and lowering the follower the thickness of one blank at each formation of a new blank, thereby filling the receptacle with the blanks, to be all removed together for further treatment by the machine to finish the nails.

Having described my invention and set forth its merits, what I claim is—

1. In a cigar-wrapper-cutting machine, the combination of a fixed cutting-knife, a piston in the knife having a downward intermittent movement therein, and adapted to be held stationary after each downward movement, and a shell or block having an up and down reciprocating movement for pressing the successive wrappers upon the knife, substantially as and for the purpose herein specified.

2. The combination of a stationary cutting-knife, a reciprocating shell or block which presses the wrappers upon the knife, a spring-depressed piston within the said shell or block, means for raising the said piston in the shell or block, and means for locking and then releasing the piston in its raised position, substantially as and for the purpose herein specified.

3. The combination of the stationary knife G' , reciprocating piston G^3 in the said knife, reciprocating shell or block F' , reciprocating piston H' therein, means for retaining the piston G^3 after each intermittent downward movement, means for raising the piston H' in the shell or block, and means for locking and again releasing the same in its raised position, substantially as and for the purpose herein specified.

4. The combination of the lever D' , shell or block F' , attached to and operating with said lever, piston H' , piston-rod H^2 , spring H^3 ,

cord C³, rod L', pin L⁴, and knife G', substantially as set forth.

5 5. The combination of the pivoted lever D', means for depressing one end thereof bearing the head D³, counter-weight D² upon its other end, shell or block F', carried by the said lever-head, and stationary knife G', substantially as and for the purpose herein specified.

10 6. The combination of the lever D', piston H', piston-rod H², spring H³, stationary pul-

ley c², cord c³, pulley c⁴, carried by the said lever, and fixed pin c⁵, substantially as and for the purpose herein specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses. 15

HENRY GRUNHAGEN.

Witnesses:

C. N. WOODWARD,
LOUIS FEESER, Sr.