

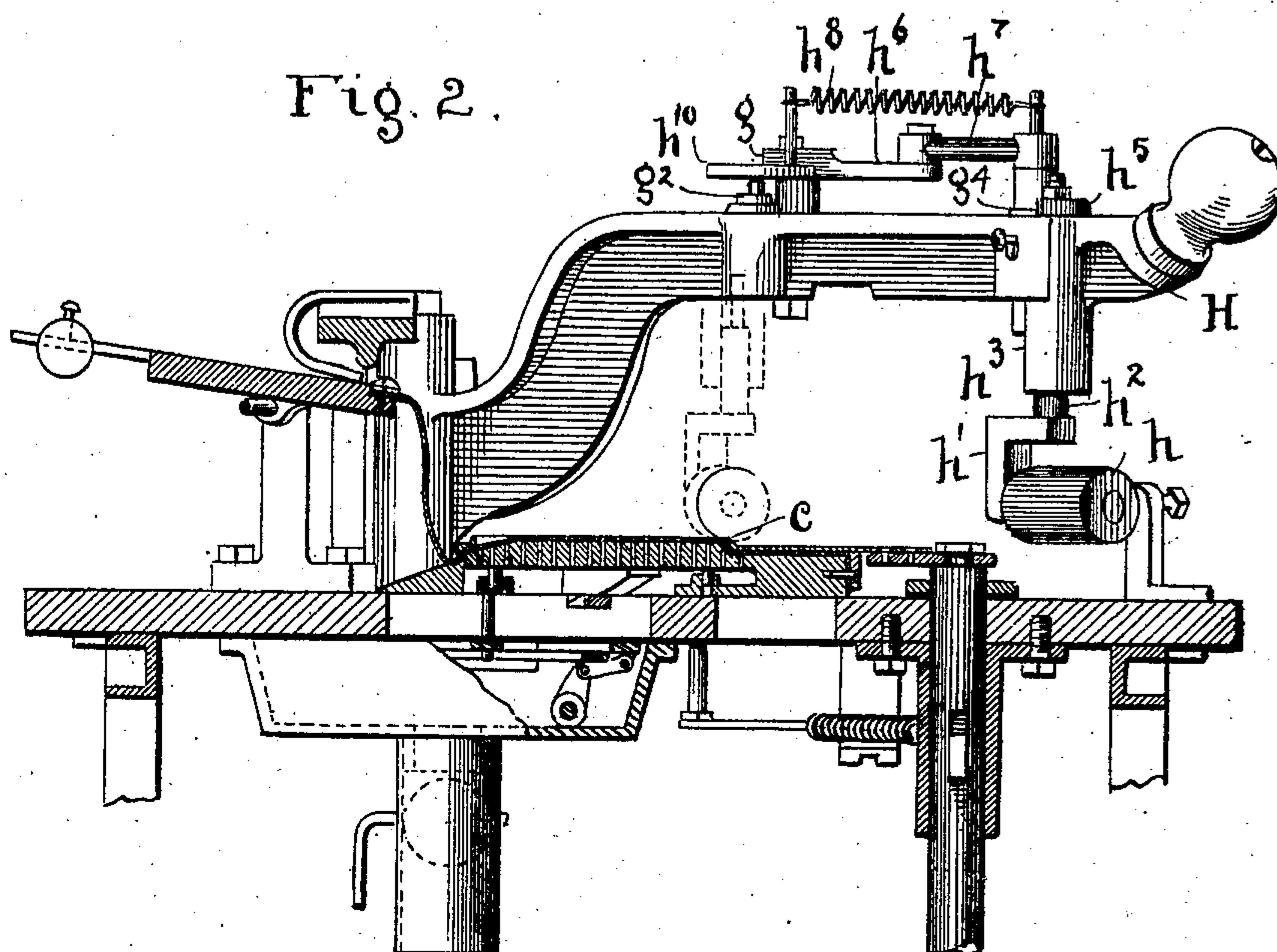
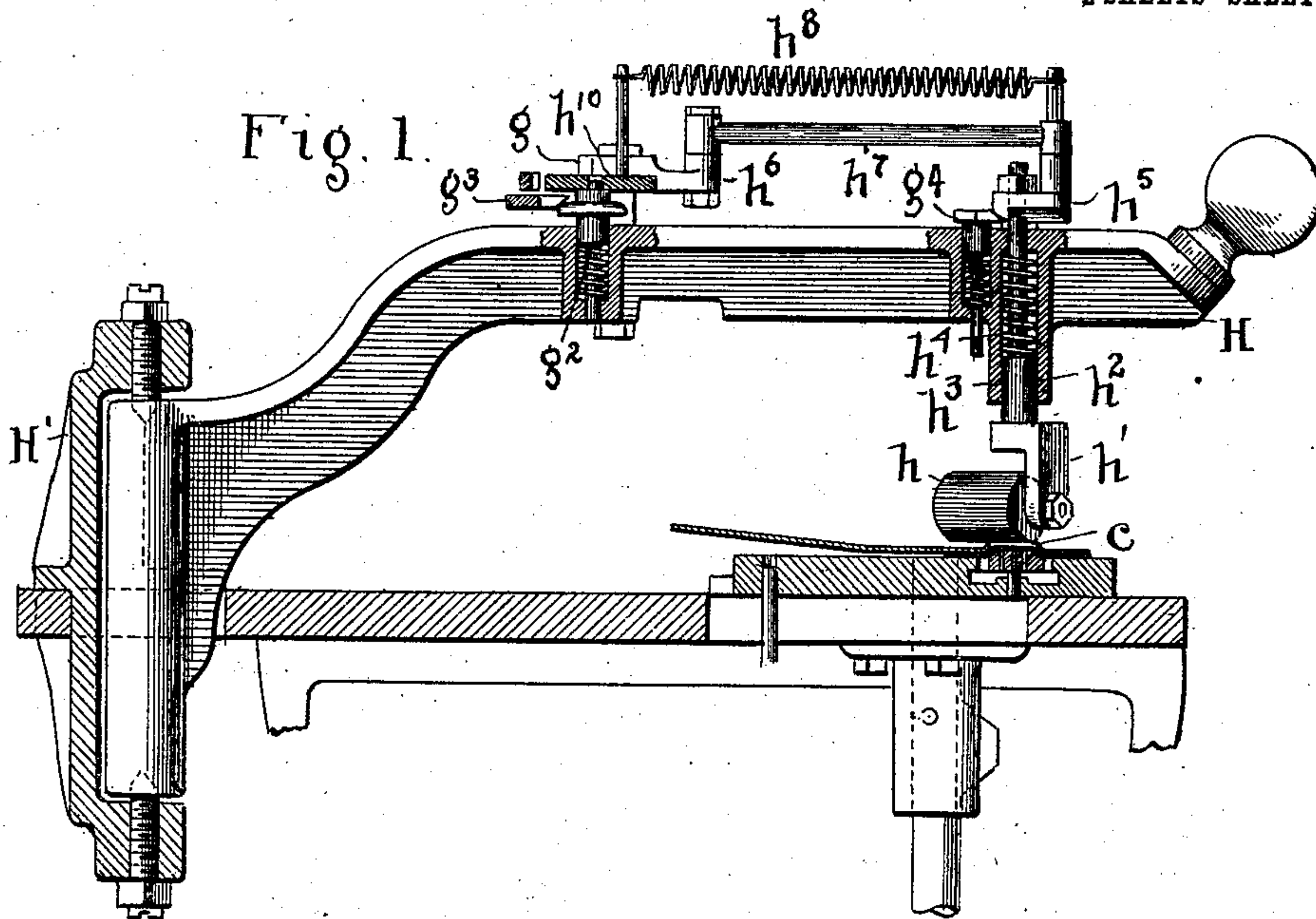
No. 859,982.

PATENTED JULY 16, 1907.

L. A. SCHAEFFER.
CUTTING ROLLER FOR CIGAR MAKING MACHINES.

APPLICATION FILED SEPT. 25, 1905.

2 SHEETS—SHEET 1.



ATTEST
Witness
R. B. Moser

INVENTOR
Lester A. Schaeffer
By H. J. Fisher, ATTY

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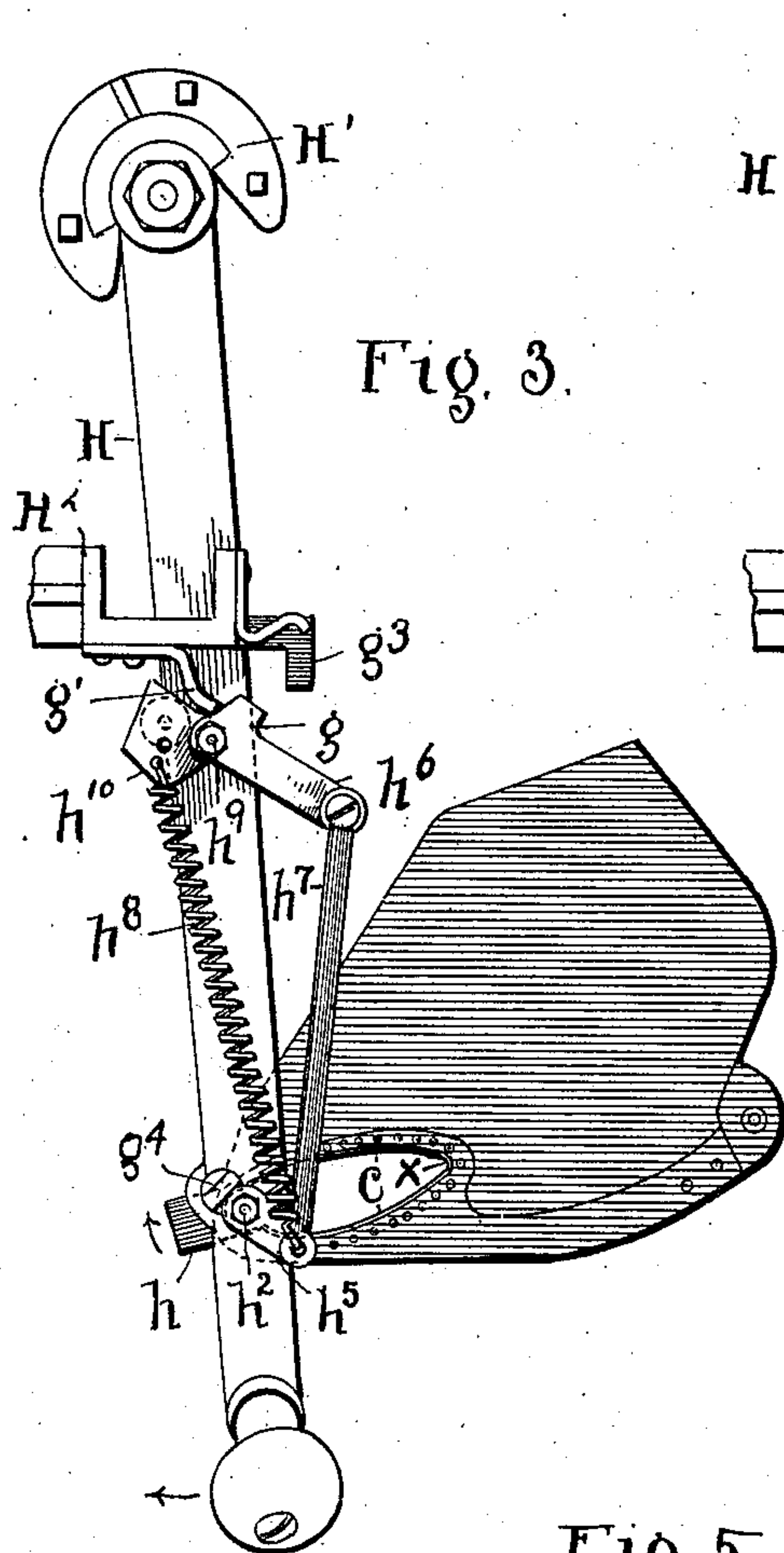


Fig. 3.

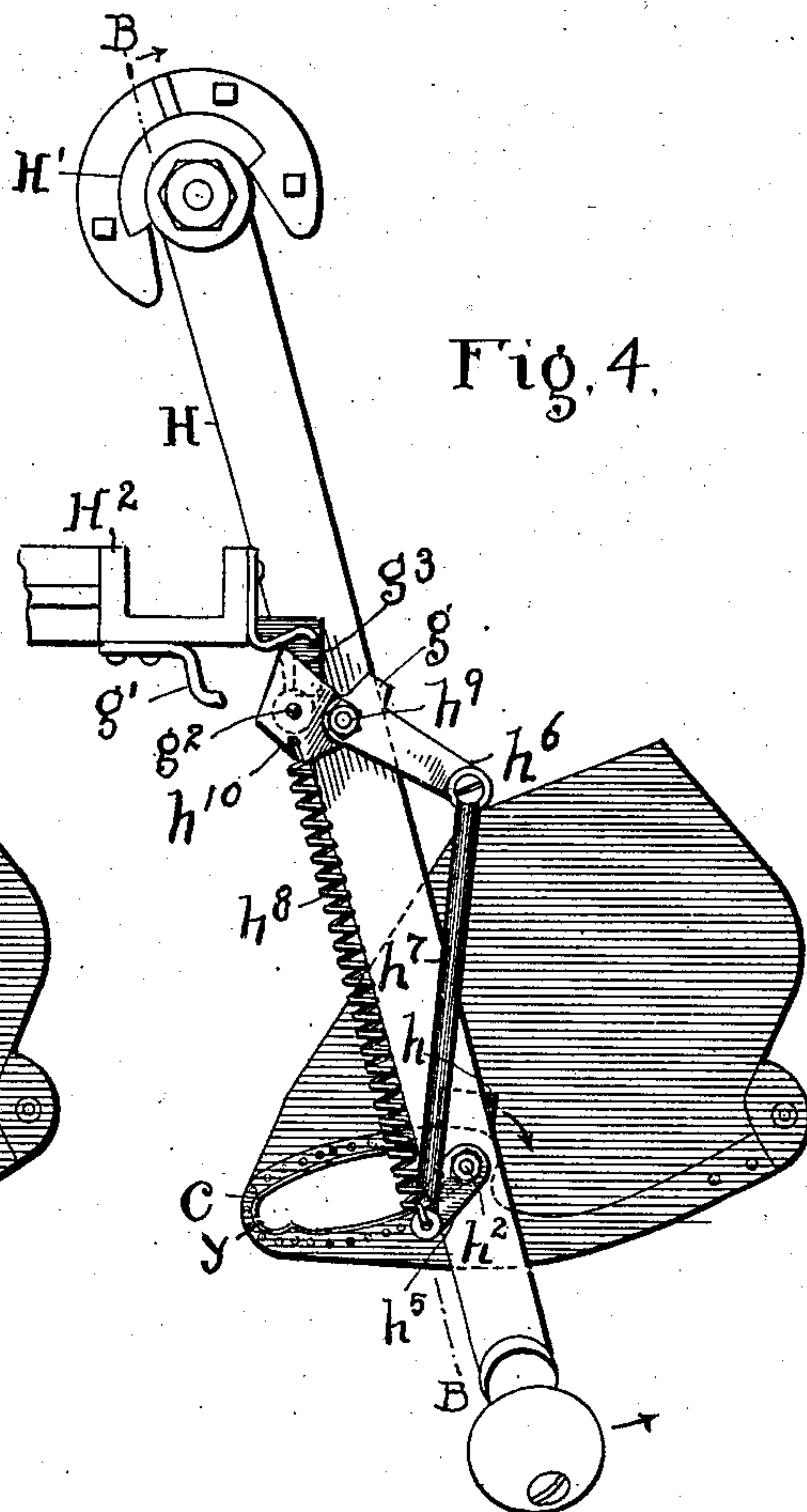


Fig. 4.

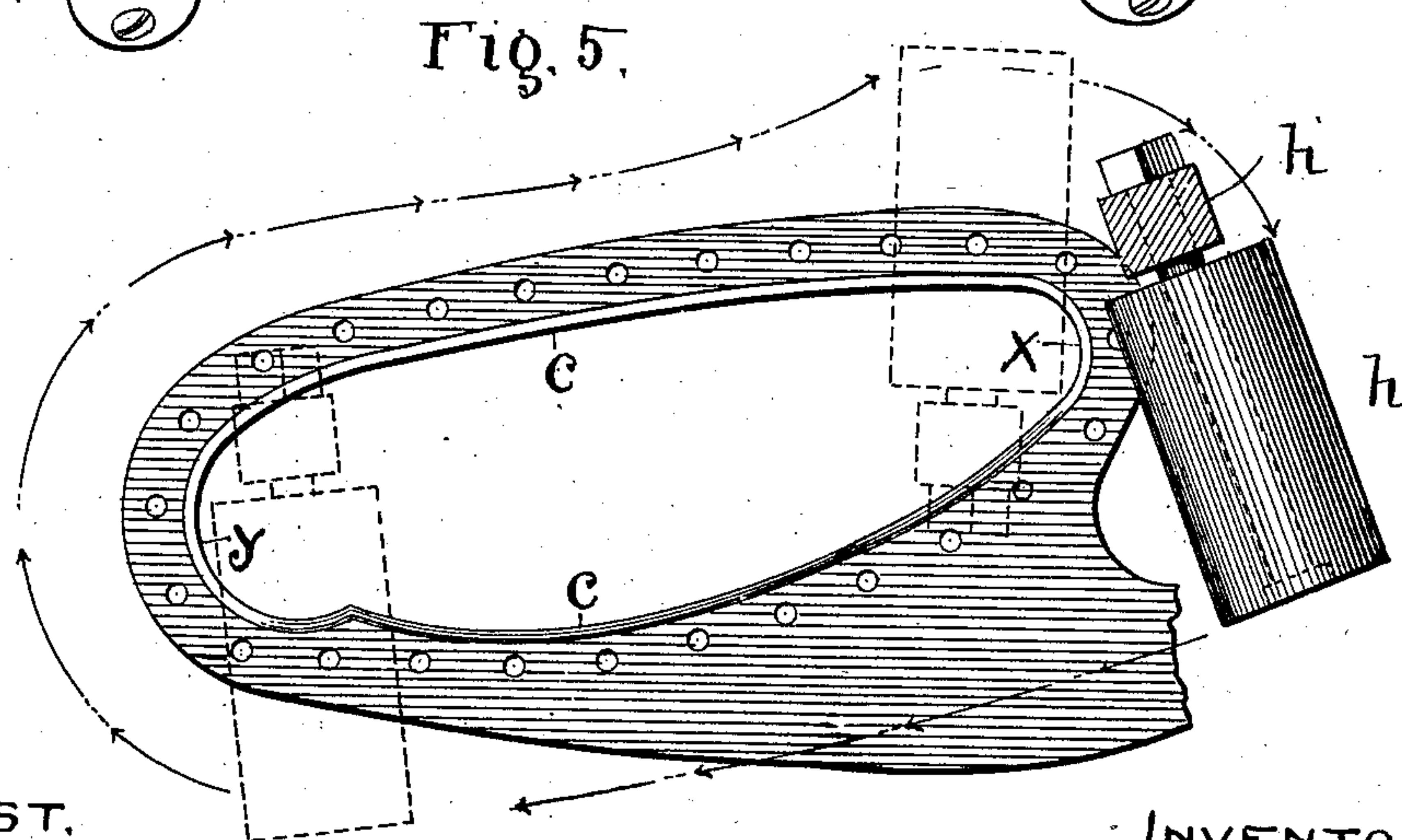


Fig. 5.

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UNITED STATES PATENT OFFICE.

LESTER A. SCHAEFFER, OF DAYTON, OHIO, ASSIGNOR OF TWO-FIFTHS TO EDGAR A. SCHAEFFER AND B. D. ANNEWALT, OF CLEVELAND, OHIO.

CUTTING-ROLLER FOR CIGAR-MAKING MACHINES.

No. 859,982.

Specification of Letters Patent.

Patented July 16, 1907.

Original application filed June 15, 1904, Serial No. 64,738. Divided and this application filed September 25, 1905. Serial No. 280,065.

To all whom it may concern:

Be it known that I, LESTER A. SCHAEFFER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cutting-Rollers for Cigar-Making Machines; and I do 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.

My invention relates to machines for making cigars, and is a division of my application filed June 15, 1904, Serial No. 64,738.

In the accompanying drawings Figure 1 is a sectional elevation of the machine on a line corresponding substantially to B, B, Fig. 4. Fig. 2 is a sectional elevation showing the cutter roller and arm in normal or waiting position. Fig. 3 is a plan view of the wrapper cutter arm and die-plate with the said arm at the second arc of the said plate. Fig. 4 is a plan view of the cutter arm and die-plate, showing the roller actuating mechanism on said arm as about to be released for the action of the spring and with the roller in position to turn on the arc beneath to normal position. Fig. 5 is an enlarged diagrammatic view of the die-plate, showing the cutting roller at the right in full lines in its normal position, and at the left in dotted lines at the beginning of its rotary movement, and again at the right in dotted lines in position corresponding substantially to Fig. 4.

The mechanism thus shown has to do principally with the roll for cutting the wrapper and means for carrying and operating the roll. Specifically said means or mechanism includes a roll supported on a vertical axis and adapted to be rotated on said axis to run around upon the edge of the die or wrapper cutter and sever the wrapper from the leaf as it goes. In this operation the roller runs to the left along the front or outer side or edge of the die, and back along the inner side cutting as it goes, and it is turned on its axis at the end of the die sufficiently to travel forward with the same front along the inner portion of the die as it maintained along the outer portion thereof.

The turning position of the roller is clearly disclosed in Fig. 3, and this turning is mechanically effected when the swinging arm carrying the roller has reached the end of its outward sweep. As thus shown H represents the roller carrying arm, which is pivoted on the main frame or table of the machine in bracket H' and has the cutting roller h mounted in the outer free end thereof. The said roller is journaled in bracket h' on spindle h² supported in a vertical socket h³ in the arm H. A coiled or spiral spring h⁴ about the upper and reduced portion of spindle h² in socket h³ is adapted to exert a constant downward pressure on the roller while at work, and serves to give the roller a firm but yielding

pressure. A crank or arm h⁵ is fixed on the upper end of spindle h² above arm H with which connections are made for rotating the roller axially so as to follow the die or cutting edge c around from start to finish. At this point I may explain that I find very material advantage following around the edge of the die with the cutter roller and cutting at only a single point in the travel rather than cutting broadly across the die at one sweep of the roller and going back idle, for the reason, first, that by cutting with the whole roller at a time there is great danger of defective cutting at some point, here or there, and which leaves the wrapper unsevered from the leaf at such point. This is especially liable to occur at the ends of the die where the edges dull most easily, and sometimes it occurs more or less along the sides as well. But by running the roller around the circuit of the die I cut at only one point as I go and both avoid the objection of dulling some one or other portion of the cutter more than others, and the serious objection of leaving some parts uncut, thus being prevented from proceeding until the wrapper is otherwise relieved. Furthermore, I get essentially a shearing cut all the way around by reason of the irregular curved outlines of the die and the different arc movement of the roller in respect to the die, so that I never fail to sever the wrapper all around and in no less time than the other way. Now, in doing this work, roller h adapts itself to the edge of the die and switches around at both arcs, x and y, and cuts here also as it goes. Normally, said roller is entirely clear of the die-plate, Fig. 2, and the space above said plate is otherwise unobstructed to allow said plate to be raised. But when lever H is carried to the left the roller first strikes the arc x, Fig. 5, and travels over the near edge of the die to the other arc y. Once there its spindle is axially and automatically reversed half way, which causes the roller to travel back on the inner side of the die, as it has done in dotted lines at the right in Fig. 5. From this latter point it turns to the intersection of its original position on arc x and at the same time is automatically reversed to starting position, full lines. The mechanism for effecting these operations is mostly carried by lever H, and consists of a reversing or switching crank h⁶, rod h⁷ connecting crank h⁶ with crank h⁵. Spring h⁸ is likewise connected to crank h⁵, and at its other end to cam h¹⁰ which is rigidly attached on crank h⁶ inward from its pivot h⁹ on lever H. Crank h⁶ has a cam g directly off its pivot to the rear adapted to be engaged by a fixed projection g' on stationary arm H², as reversal of roller h is to be made and as shown as partially turned in Fig. 3. Once at this point a further push of lever H to the left throws crank h⁵ by means of projections g' past its center and brings it under the pull of spring h⁸ to complete the reversal. Then the

parts instantly assume position as in Fig. 4, and the reversing action of spring h^8 is temporarily suspended by spring pressed headed bolt g^2 engaging at its upper point in a hole in cam h^{10} , thus for the time connecting 5 said parts rigidly, as in Fig. 1.

Upon returning lever H to normal position an arm g^3 , with a beveled edge and operating as a cam enters over the flanged head of bolt g^2 and depresses it sufficiently to disengage its top point from cam h^{10} , thus 10 liberating the parts again to the pull of spring h^8 . As this disengagement occurs the roller h has reached the reversing point of the arc x of the wrapper cutting die, and spring h^8 instantaneously reverses roller h through its operating and associated parts back to normal position. 15

Incident to the last reverse action of roller h by spring h^8 there is such impetus given to the roller that it at once assumes its right working position, but spring h^8 would carry it back out of this position more or less 20 if not prevented. To this end I employ a spring pressed bolt g^4 , Fig. 1. Normally said bolt is up, and is only depressed when crank h^5 rides over it, said crank being beveled on one side to do so. Bolt g^4 is acting as a back stop in Fig. 1 and always when the parts are 25 normal.

Roller h is in initial but opposite reversing positions in both Figs. 3 and 4, and a corresponding position to Fig. 4 is shown in dotted lines Fig. 5, and the reversal thereof and the other details of its operation will be 30 understood from the description already given. Assuming now that lever H is normal, roller h first assumes position as to the die as it is moved up to full lines, Fig. 5, and then travels around upon the edge of the die and reverses upon its arcs as already described and 35 with the operating parts relatively as seen in Figs. 3 and 4, just before each reversal occurs.

It is to be observed that the circle of the die is the path the cutting roller describes in its complete movement or trip, and that said roller sweeps its outer end 40 around at the points x and y at what are regarded as the ends of the die so as to keep the outer end out all the time. In no case does the roller overreach both edges of the die at the same time, and the peculiar shape of bracket h' contributes to this result. Thus,

it is noticed that said bracket is of a crank or L pattern 45 or shape, having the spindle or shaft h^2 connected with the end of its horizontal arm, and the shaft for roller h engaged through the end of its vertical arm. This brings spindle h^2 over one end of roller h , and it maintains this relation to the roller as the roller travels 50 its circuit over the edge of die c , as seen in dotted lines Fig. 5.

What I claim is:—

1. In a machine for making cigars, a pivoted arm adapted to swing horizontally back and forth within fixed limits, 55 a cutting roller mounted thereon and means to cause said roller to travel on two different arcs of a circuit with the arm pivot at the center of its movement, in combination with a die plate having a continuous and irregular curved cutting edge disposed obliquely to the travel of said roller 60 to provide a shearing cut.

2. In a machine for making cigars, a die with circular ends, in combination with a pivoted arm, a roller on said arm and means to reverse said roller at the ends of said 65 die comprising a spindle and crank for said roller, a switching crank and lever connecting the same with said roller crank, a spring pressed bolt and springs for said parts, and stationary projections adapted to engage said switching crank and said bolt.

3. In a machine for making cigars, a horizontally movable arm, a cutter roller and a bracket supporting the roller having a vertical shaft in said arm, and means connected with the top of said shaft to turn the same comprising a pair of connected levers and a stationary part 70 to actuate said levers.

4. In a machine for making cigars, an arm, a cutter roller thereon and a vertical shaft in said arm supporting said roller, in combination with a switching crank having 75 a cam, connections from said crank to said shaft, and means to engage said cam and rotate said shaft, whereby said roller is horizontally rotated. 80

5. In a machine for making cigars, a horizontally rotatable arm, a roller and a bracket carrying the roller having a crank spindle rotatable in said arm, in combination with mechanism to rotate said spindle comprising a connecting lever and a reversible crank and a spring therefor, 85 and stationary means adapted to engage said reversing crank during the movement of said arm.

In testimony whereof I sign this specification in the presence of two witnesses.

LESTER A. SCHAEFFER.

Witnesses:

GRAFTON C. KENNEDY,
MAE DEMPSEY.