

(No Model.)

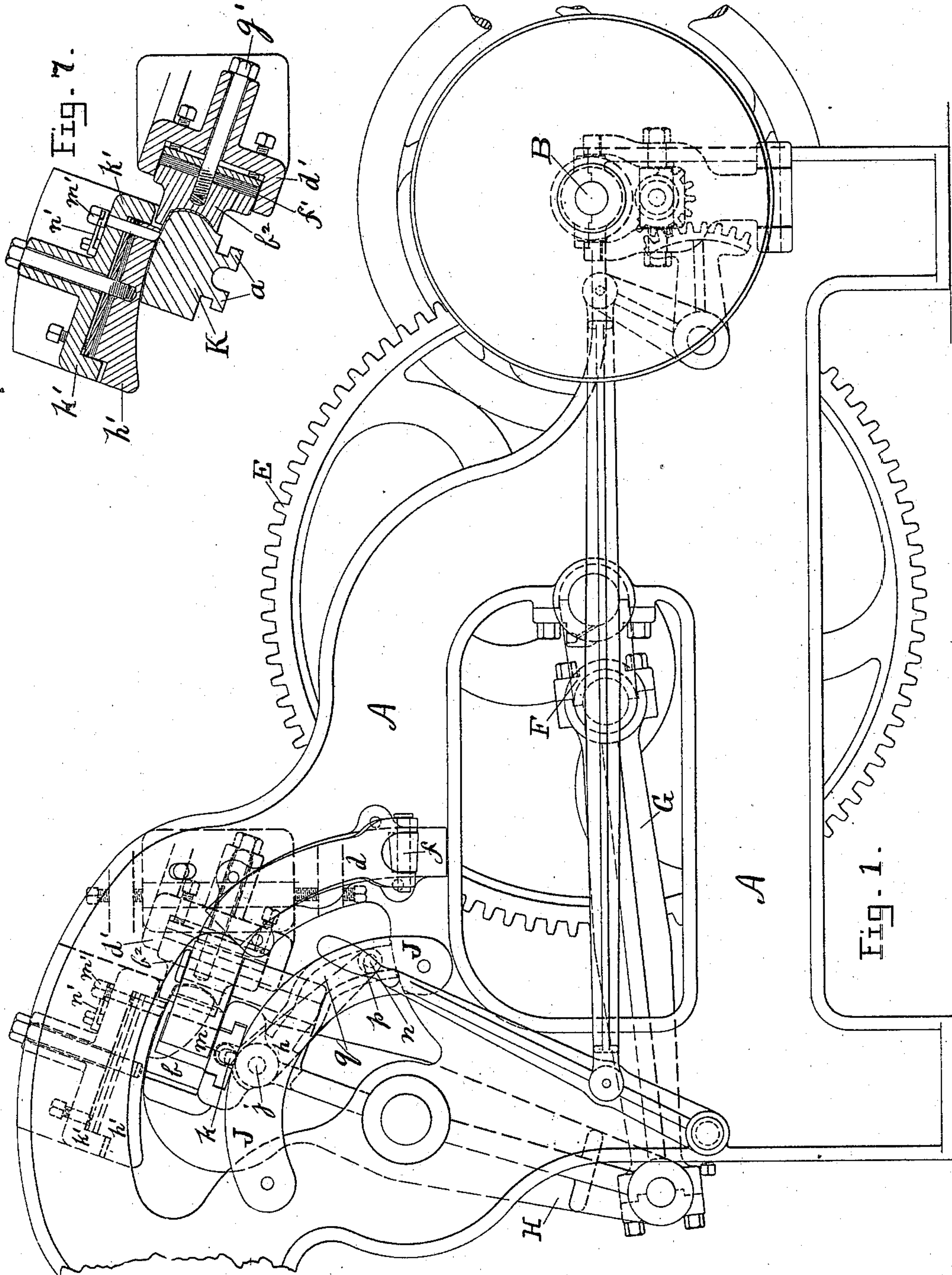
4 Sheets—Sheet 1.

N. J. SIMONDS.

MACHINE FOR MAKING COUNTER STIFFENERS.

No. 533,237.

Patented Jan. 29, 1895.



Witnesses.

Robert Wallace.
Milan F. Stevens.

Inventor.

Nathan J. Simonds
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his atty

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4 Sheets—Sheet 2.

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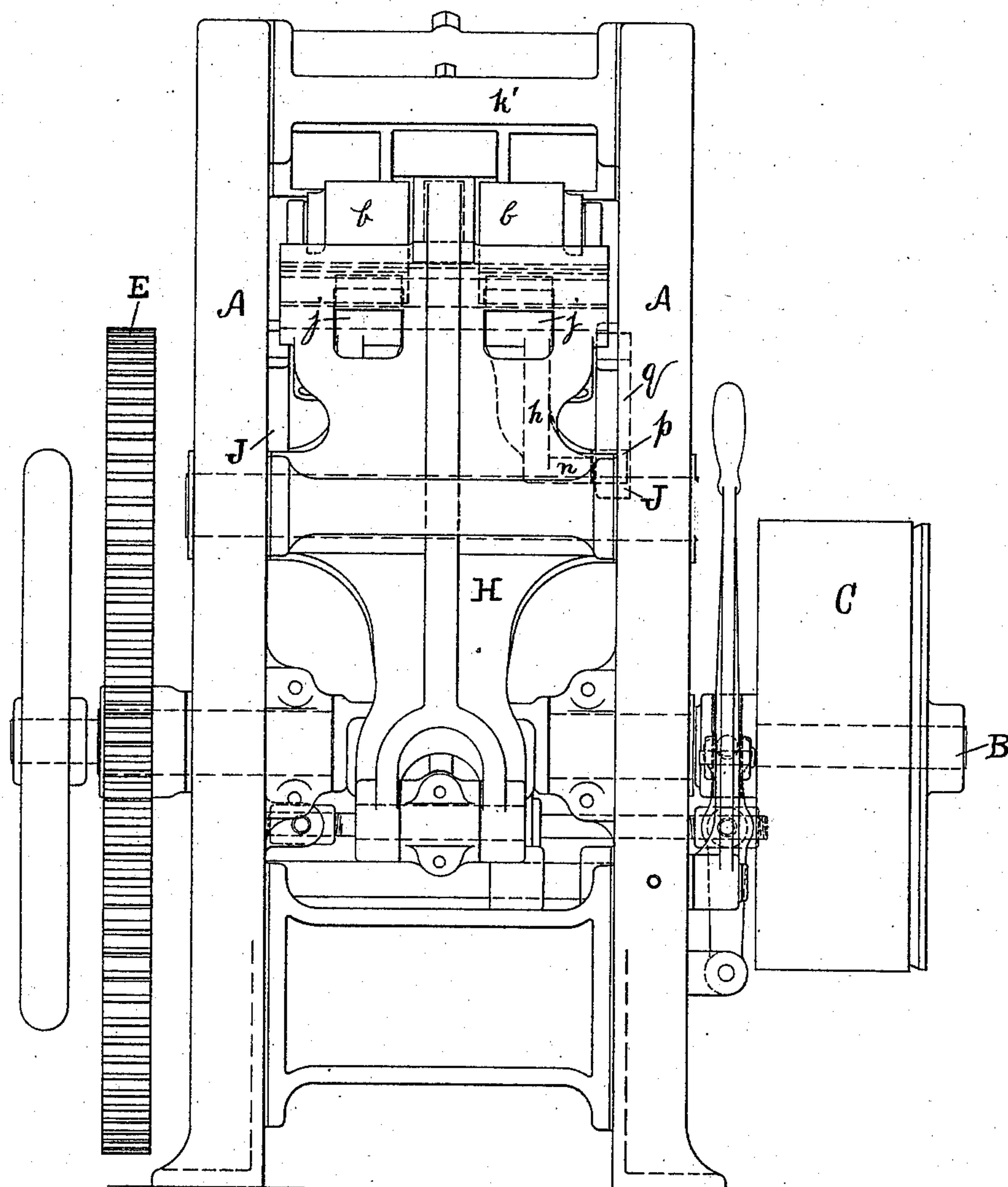


Fig. 2.

Witnesses.

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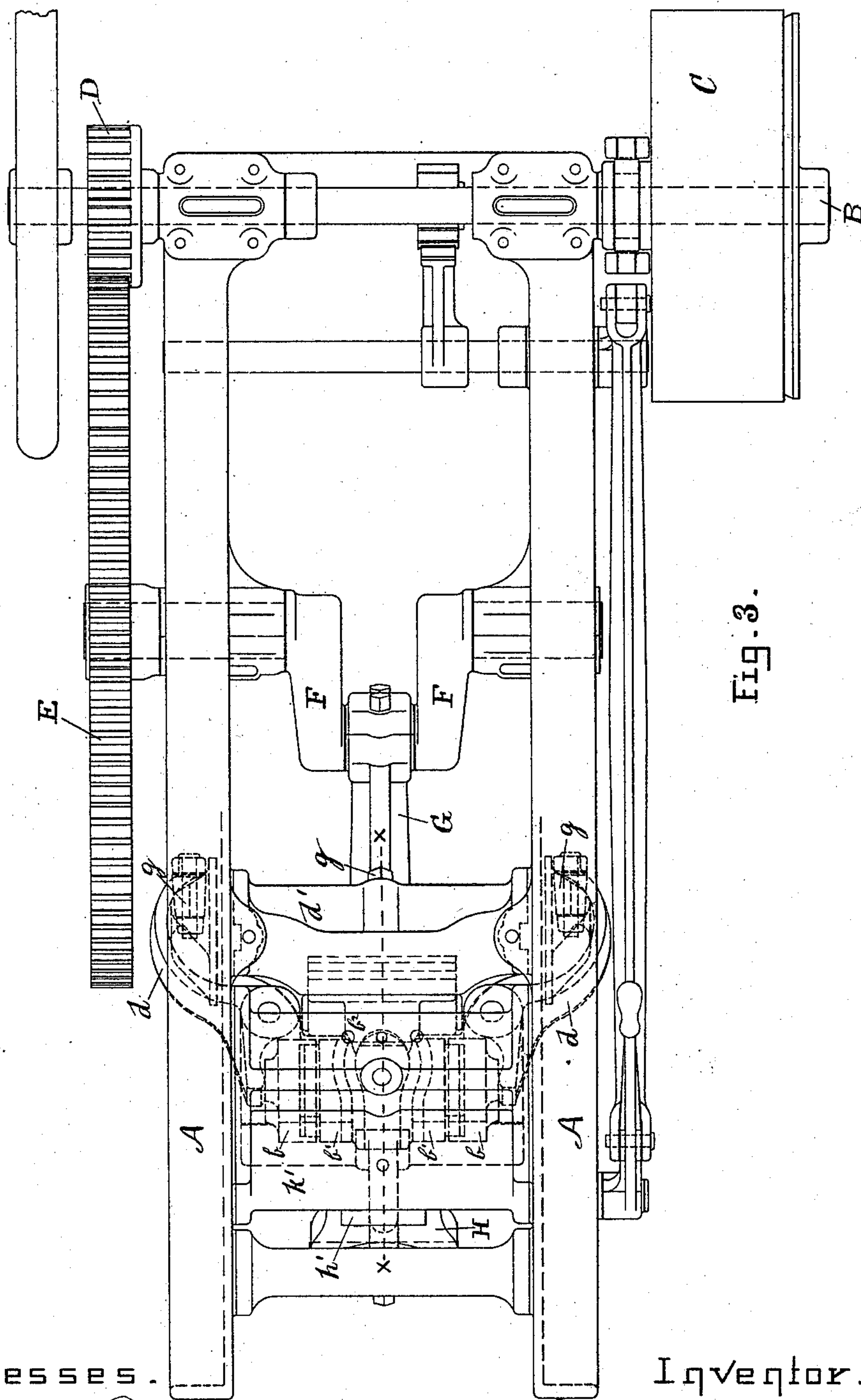
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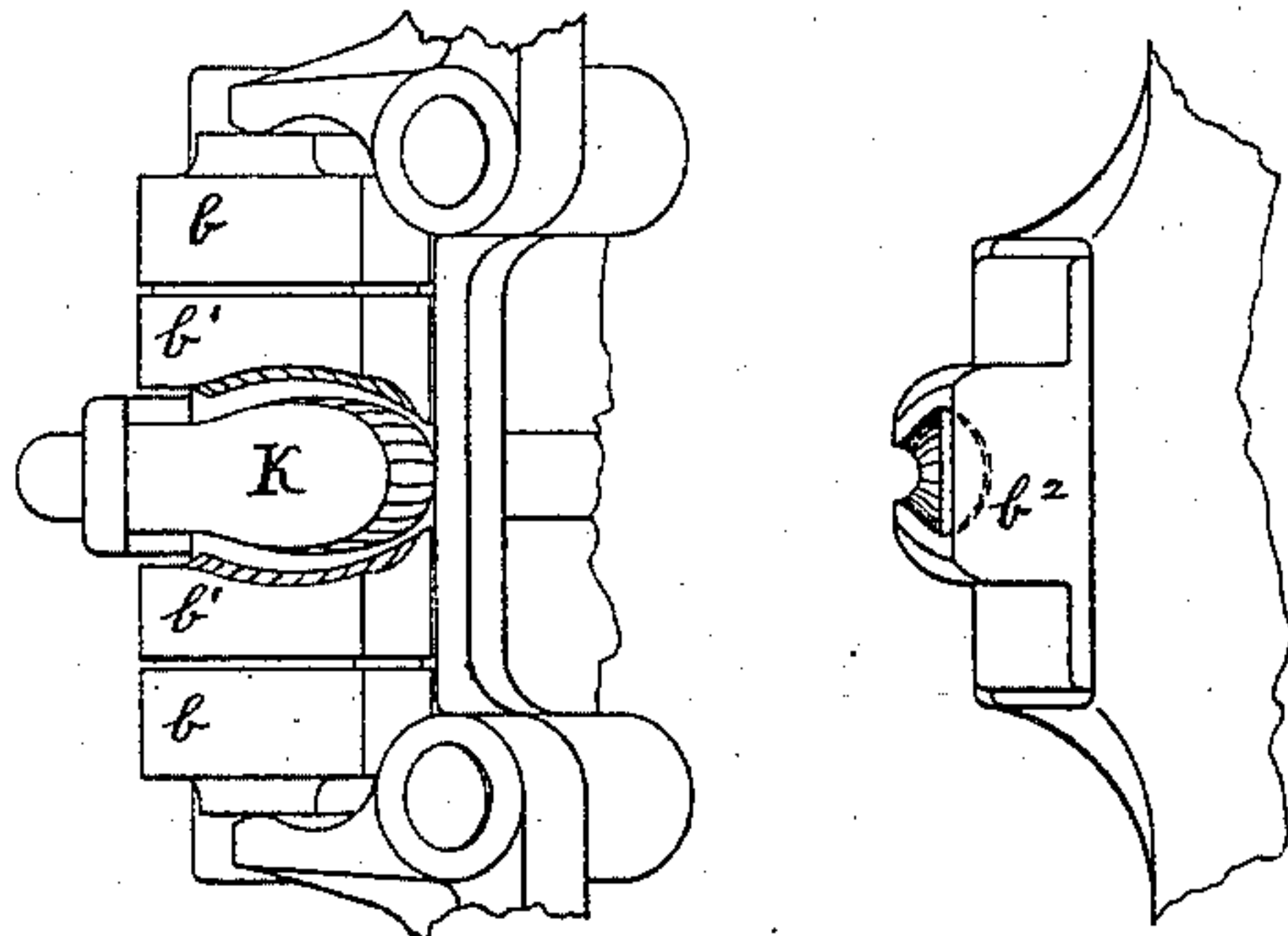


Fig. 4.

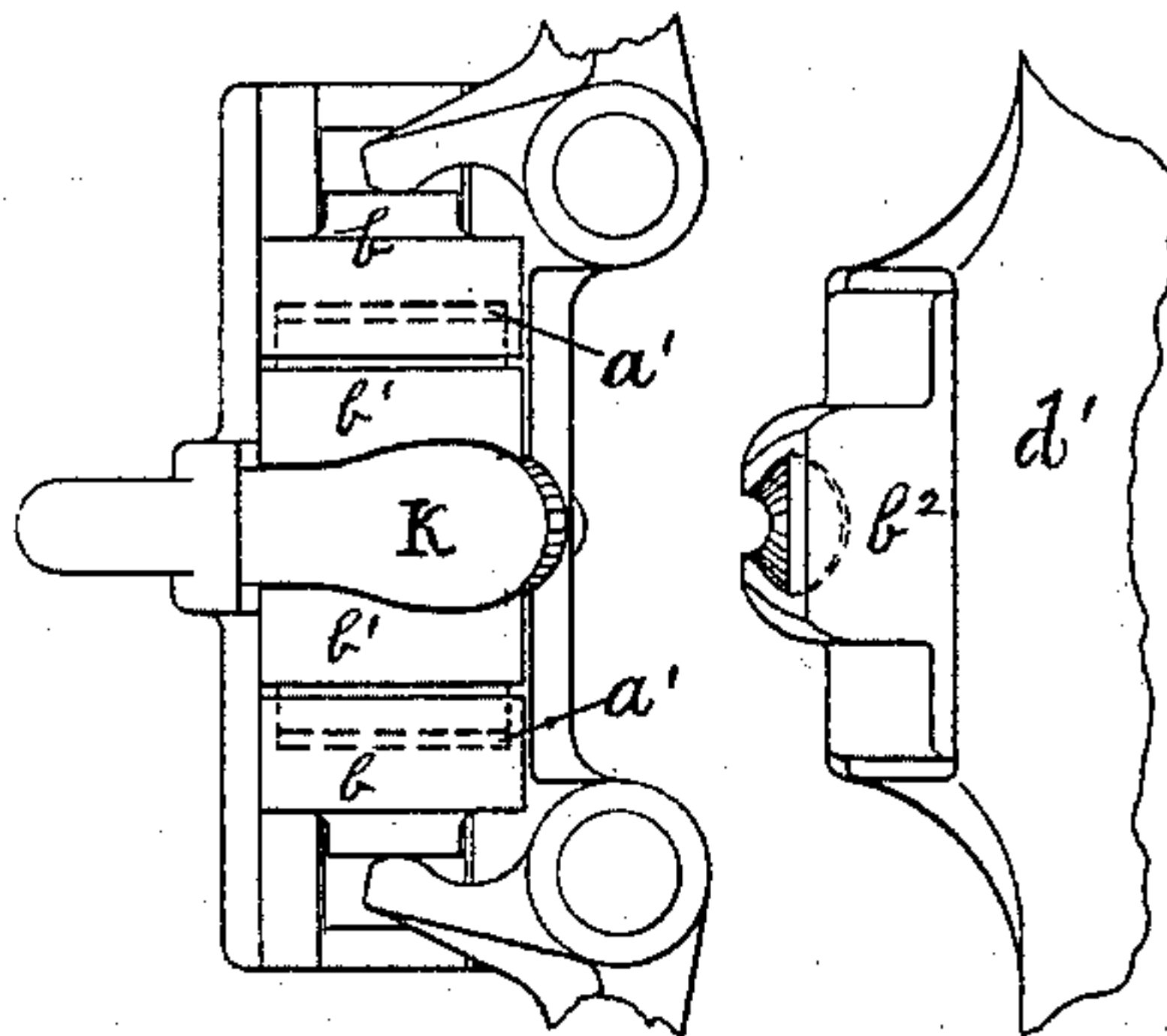


Fig. 5.

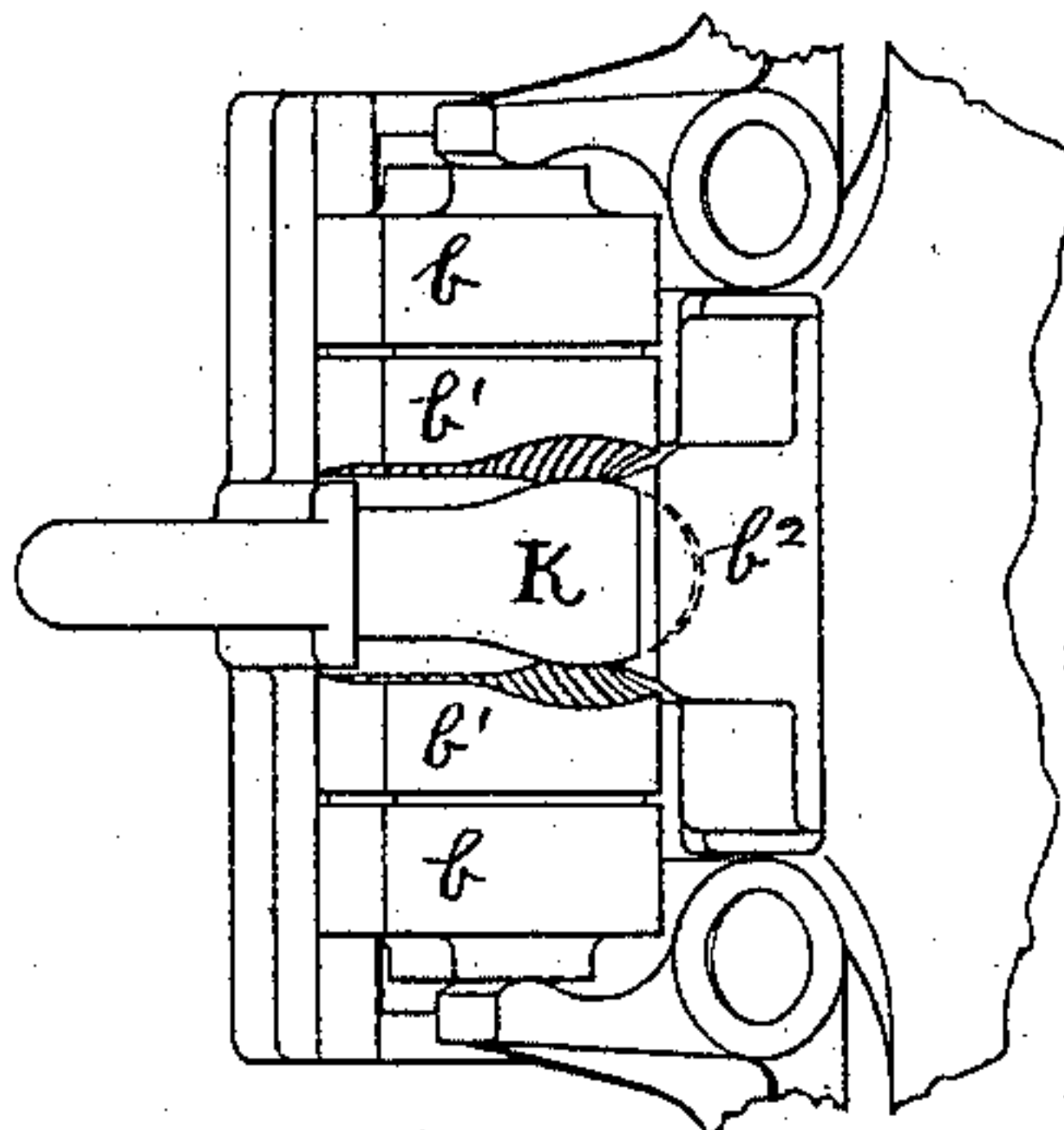


Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

NATHAN J. SIMONDS, OF WOBURN, MASSACHUSETTS.

MACHINE FOR MAKING COUNTER-STIFFENERS.

SPECIFICATION forming part of Letters Patent No. 533,237, dated January 29, 1895.

Application filed August 8, 1888. Serial No. 282,267. (No model.)

To all whom it may concern:

Be it known that I, NATHAN J. SIMONDS, of Woburn, county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Machines for Making Counter-Stiffeners for Boots or Shoes, of which the following is a specification, reference being had to the drawings accompanying and forming a part hereof, in which—
10 Figure 1 is a side elevation of my machine. Fig. 2 is a front elevation. Fig. 3 is a plan view. Fig. 4 is a detail, showing the former and molds, and denoting their relative positions when the machine is ready to receive a
15 blank. Fig. 5 is a similar view, showing the position of the parts when the side molds or dies have closed on the former. Fig. 6 is a similar view, showing the parts after the side dies have opened and with the back die against the former. Fig. 7 is a section on line
20 $x-x$, Fig. 3.

The object of my invention is the construction of a speedy and effective machine for molding to shape counter-stiffeners for boots
25 and shoes, and it consists, chiefly, in the employment, in a machine such as will be hereinafter described, of a set of molds acting in conjunction with the former to press and rub a blank from which counters are made so as
30 to set it to the shape of the former, the molds being arranged and operated in such manner as to not only press the blank but also to rub it, the side and back portions of the counter being acted on successively and a smooth
35 counter produced, conforming accurately in shape to the exterior of the former; and it consists further in the construction and arrangement of the mechanism for actuating the molds and former as also for freeing the
40 formed counter from the machine.

I have shown in the accompanying drawings the best form of machine now known to me which embodies my invention and I will describe it using like letters of reference to
45 indicate like parts throughout said drawings.

A is the frame of the machine which consists of two sides secured together by cross-pieces bolted thereto. The sides A may be of any convenient shape to support the shafts
50 and moving parts.

The main shaft B, is journaled in the rear of the frame, as shown, Figs. 1 and 3, and is

provided with a driving pulley C, connected with a suitable clutch and shipper mechanism of usual construction by which the pulley 55 may be made fast or loose on the shaft when it is desired to start or stop the machine.

Near the other end of the shaft B a pinion D, is secured, which meshes with a gear E, fast on a crank-shaft F, which is also journaled in the frame of the machine about mid-way between the front and rear thereof. See Fig. 3.

A pitman or connecting rod G, connects the crank-shaft with the lower end of a swinging 65 frame H, see Figs. 1 and 2, for the purpose of actuating said frame. The frame H carries the former as also the side dies which co-operate therewith to mold the sides of the counter, and is suspended in the frame A of the 70 machine by means of a shaft J which passes through a hole or bearing in the swinging frame H, and is journaled at either end in frame A.

The former-block K, Fig. 7, is of the shape 75 to which it is desired to mold the counter, and is mounted centrally on the swinging frame H by means of flanged projections a on the base thereof, which slide laterally in grooves cut across the top of the frame H to 80 receive them. By this means a former may be taken out and another one put in its place, if desired. The blocks b , which carry the side molds b' , are similarly mounted in grooves cut across the upper end of the frame H so 85 that they may have a lateral movement toward and from the former K. The molds b' are mounted in the blocks b by means of tongues on the molds b' which are received in grooves in the blocks, as shown at a' , Fig. 5. 90

Between the molds b' and their blocks a strip of rubber, or similar yielding material, is interposed so that the molds may yield slightly when they come in contact with the counter blank. This is desirable for various 95 reasons, as for example if the stock of the blank be of unequal thickness throughout.

For the purpose of actuating the side molds b' I have provided cam-actuated levers d , of the shape shown, Figs. 1 and 3, which are piv- 100 oted near their upper ends in the swinging frame H and which project downwardly through curved slots in the frame A and are provided at their lower ends with friction

rolls f , which, as the head H swings, travel over cam projections g , see Fig. 3, thus throwing in the upper ends which bear against the mold blocks b of the levers d and forcing the molds against the counter blank on the former. The cams g , which act to tilt the levers d , are secured on the outside of the frame A . The side molds b' have in addition to their movement toward and from the former, a slight slipping or sliding movement lengthwise of the former, so that they not only act upon the counter-blank by direct pressure but also by a sliding or rubbing pressure which aids in setting the blank to shape. The movement of the side molds b' , which causes a rubbing action on the blank, is obtained by means of levers h , which are pivoted near their upper ends at j , see Fig. 1, in a recess or opening in the upper portion of the swinging frame H . See Fig. 2.

A short projection k , on the lever h , above the pivot thereof, projects into a recess m , in the under side of the block b , and the lower end of the lever is provided with a stud n , Fig. 2, which carries a friction roll p and projects into a cam path or slot q , Fig. 1, in the curved piece J which is secured to the frame of the machine. As the upper end of the frame H swings backward after a counter-blank is placed on the former the roll p traverses the cam-slot and gives the mold a slight forward movement against the sides of the counter.

The tongues on the under side of the blocks b are not as wide as the grooves in the top of the frame H , in which said tongues are received, and this permits of the movement of the blocks b by the levers h which cause the side-molds to rub the blank. After the side-molds b have acted on the counter they open and the former, continuing its backward movement, carries the counter against the back mold b^2 , which is mounted in a cross-piece d' of the frame. This cross-piece is recessed, as shown, Fig. 7, to receive the mold b^2 and a piece of rubber or yielding material f' , is placed in the recess behind the mold to give it a slightly yielding seat. An adjusting screw g' is set in the cross-piece d' and bears on the back of the mold for the purpose of adjusting it.

It will be observed that the back mold b^2 acts after the side molds have withdrawn and overlaps the portion of the back of the counter which was not touched by the side molds so that any ridge left by the rear ends of the side molds is pressed out by the back mold and the counter left smooth.

The flange of the counter, which lies on the top or tread of the former, is rubbed and pressed down smoothly by the flange-block h' which is mounted in the cross-piece k' in the same manner as is the back mold b^2 in the cross-piece d' . See Fig. 7. The operating face of the flange-block h' is curved slightly to correspond to the curve of the top or tread of the former and thus a counter is produced

which is slightly curved from front to rear of the bottom or flange. This curve is desirable, as it fits the corresponding curve of the heel of the last and of the foot.

For the purpose of freeing the formed counter from the machine a pin m' , Fig. 7, is provided, which projects through a hole in the cross-piece k' and flange-block h' and is pressed down by a leaf-spring n' , which is secured to the cross-piece k' . This spring bears against the upper end of the pin m' . As the former moves back it carries the flange of the counter under the pin m' , raising the pin slightly. When the former moves forward the pin comes in contact with the flange of the counter, holding the counter back and thus freeing the counter from the former and allowing it to drop out of the machine.

The operation of the machine is as follows: When the swinging frame H is at the forward end of its throw (the reverse of its position in Fig. 1), the operator places either a partially formed blank or a flat blank on the former, the side molds close on it and press and rub the side portions. The former then passes under the flange-block, pressing and rubbing down the flange. The side molds then separate and the back of the former approaches the back mold, molding the back of the counter. The former then moves forward, the counter comes in contact with the clearing pin and is pulled off the former and drops out of the machine.

The machine shown in the drawings is more particularly designed as a finishing machine, that is, for finishing counters which have been previously partially formed or brought to approximate shape, but it may be used when desired to shape counters from flat blanks.

Great pressure is necessary or desirable in molding a heel stiffener to shape, and the swinging frame H has proved a desirable and economical means of actuating the former, and since the former, by this device, moves through the arc of a circle the precise curved shape of the tread of the heel may be given to the bottom or flange of the counter. This curved bottom or flange, although desirable, is not absolutely necessary to produce a salable counter, since at the present time many counters are made with flat bottoms. The former might, therefore, in my machine be reciprocated in a straight line and I do not desire to limit myself to the precise form of frame shown as other forms might be employed.

What I claim is—

1. A counter molding machine provided with a former upon which the counter is molded, and having two side molds which co-operate with said former to mold the sides of the counter and a back mold which co-operates with the former to mold the back of the counter, said back mold having a contact face greater than the space between the rear ends of the side molds, when said side

molds are closed on the former, and suitable mechanism for forcing the back and side molds into contact with the counter successively whereby a counter is produced having its surface smooth throughout, substantially as set forth.

2. A counter molding machine comprising a former upon which the counter is molded, female side dies fitting along substantially the length of the sides of the said former, means for pressing said side dies toward said former to thereby mold the sides of the counter, and means whereby, after the sides of the counter have been molded, and while said side dies are held in close contact with the counter, the said side dies are moved slightly lengthwise of the former to press and rub the sides of the counter, substantially as described.

3. A counter molding machine comprising a support, a shaft on which said support is mounted to turn, means for turning the said support around the axis of said shaft, a former carried by said support, female dies movable in unison with said support and former, and means acting to press said female dies against the said former as the support turns forward, substantially as described.

4. A counter molding machine comprising a support, a shaft or pivot about which said support is arranged to turn, a former carried

by said support, female dies movable in unison with said support and former, means for actuating said female dies, and a flange-block having a curved operating face against which the flange of the counter is carried in moving past the same, substantially as described.

5. In a counter-molding machine the combination, with the former mounted on the swinging frame, the stationary flange-block and the clearing pin *m*, for the purposes and substantially as set forth.

6. In a counter-molding machine the combination with the swinging frame of the former and side molds mounted on said frame, the levers *d*, pivoted thereto, and the cam projections *g*, whereby the side molds are made to approach the former as the frame swings, substantially as set forth.

7. In a counter-molding machine the combination with the swinging frame, of the former and side molds mounted on said frame, the levers *h* pivoted thereto, and the cams *q* for actuating said levers, whereby, as the frame swings, the side molds are caused to move lengthwise of the former and to rub the counter thereon, substantially as described.

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Witnesses:

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