

E. SCHWARZ.
NAIL MACHINE.

(Application filed Mar. 22, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1

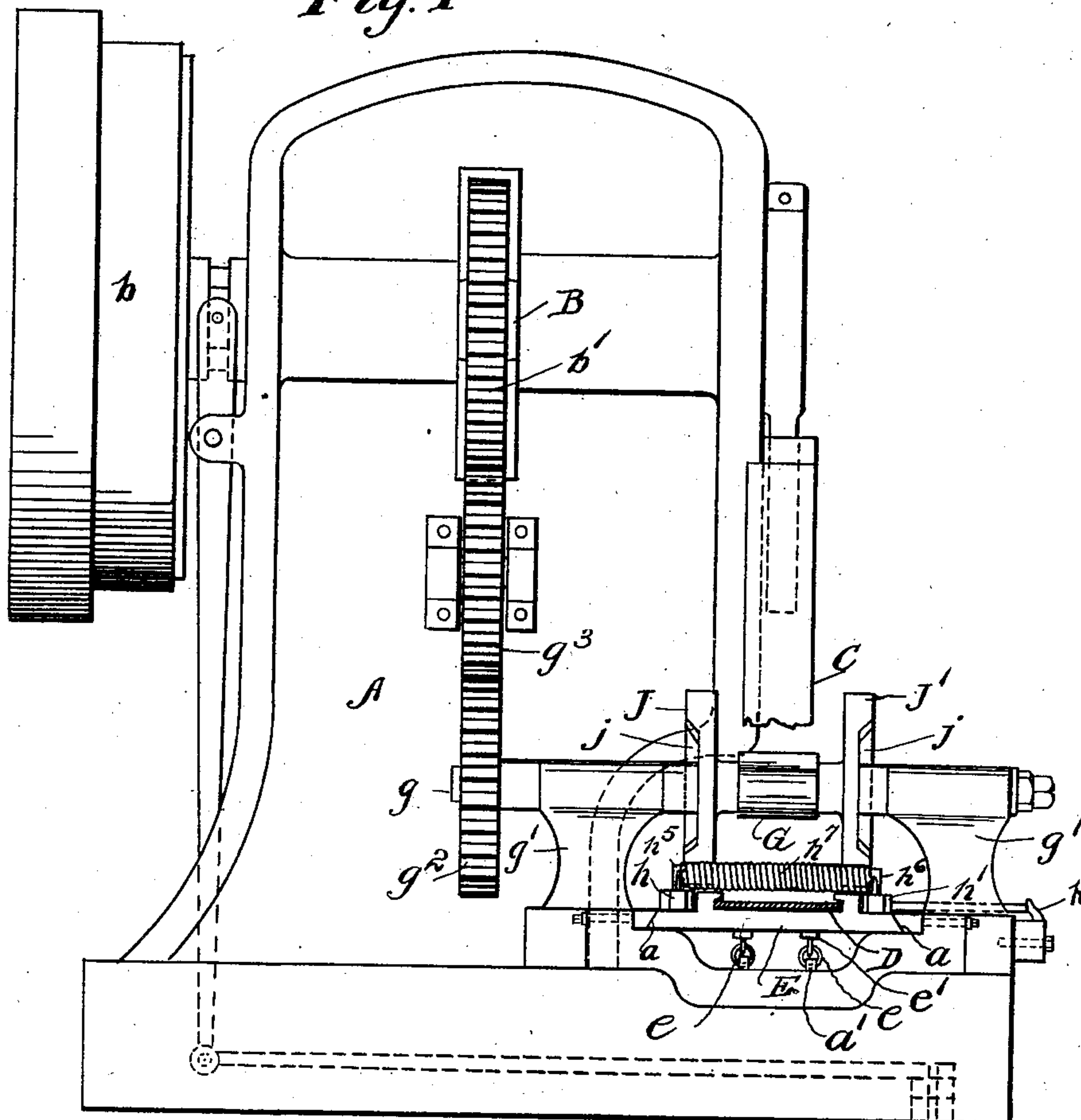
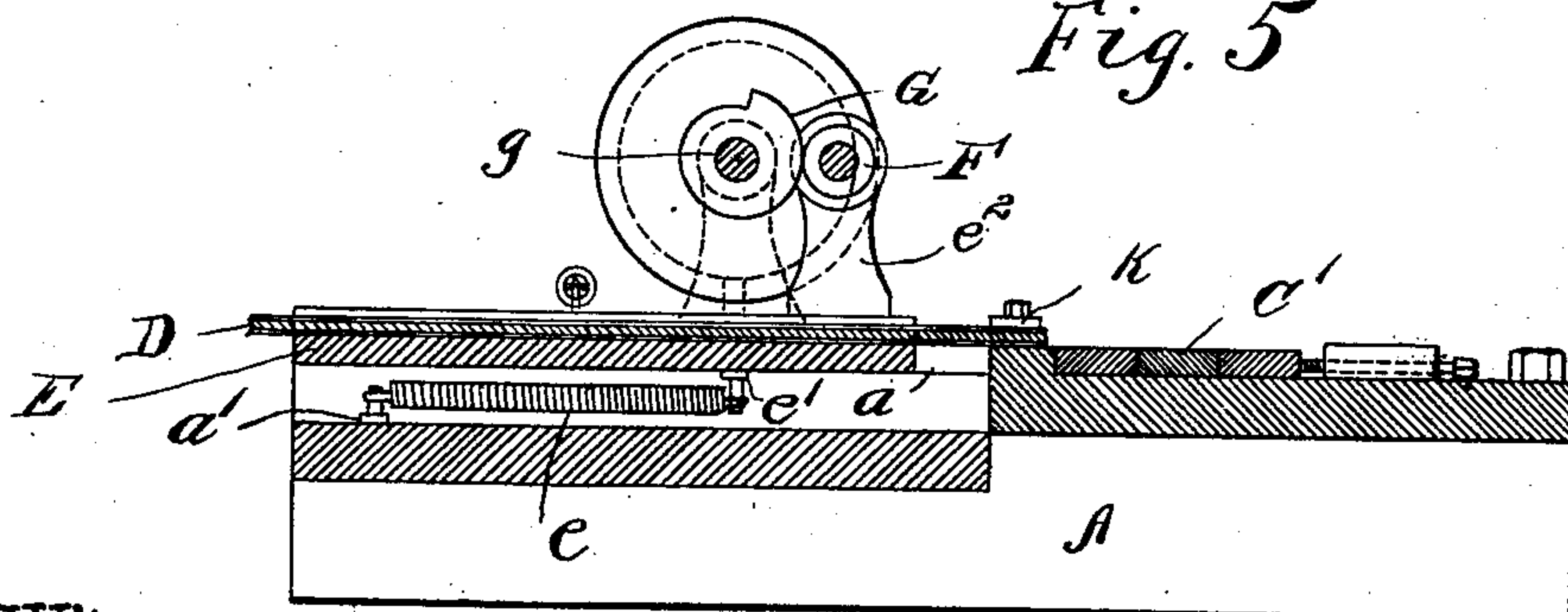


Fig. 5



Witnesses:

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Peter Pooley

Inventor,

Emerich Schwarz
By Glenn S. Noble
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2 Sheets—Sheet 2.

Fig. 2

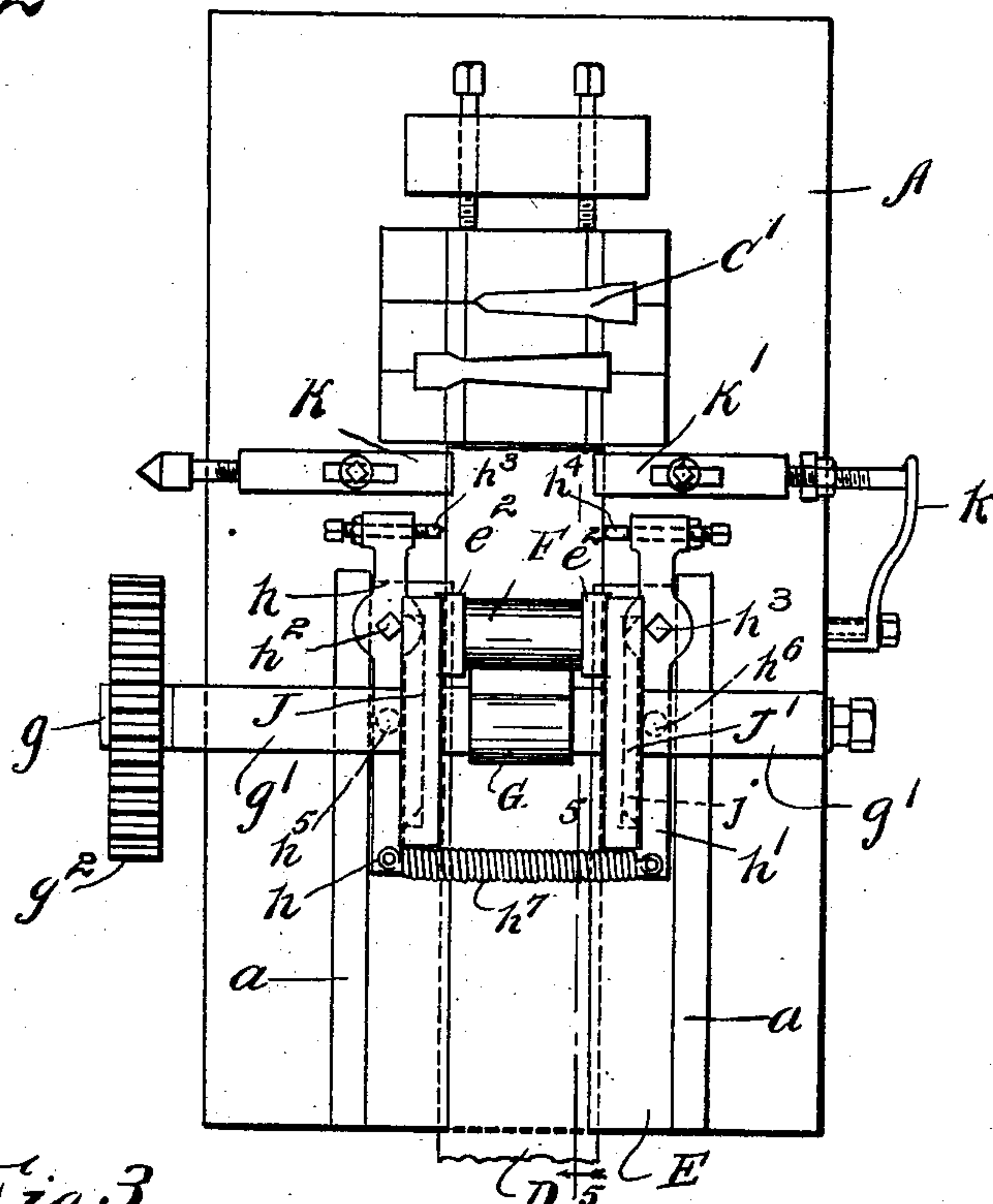


Fig. 3

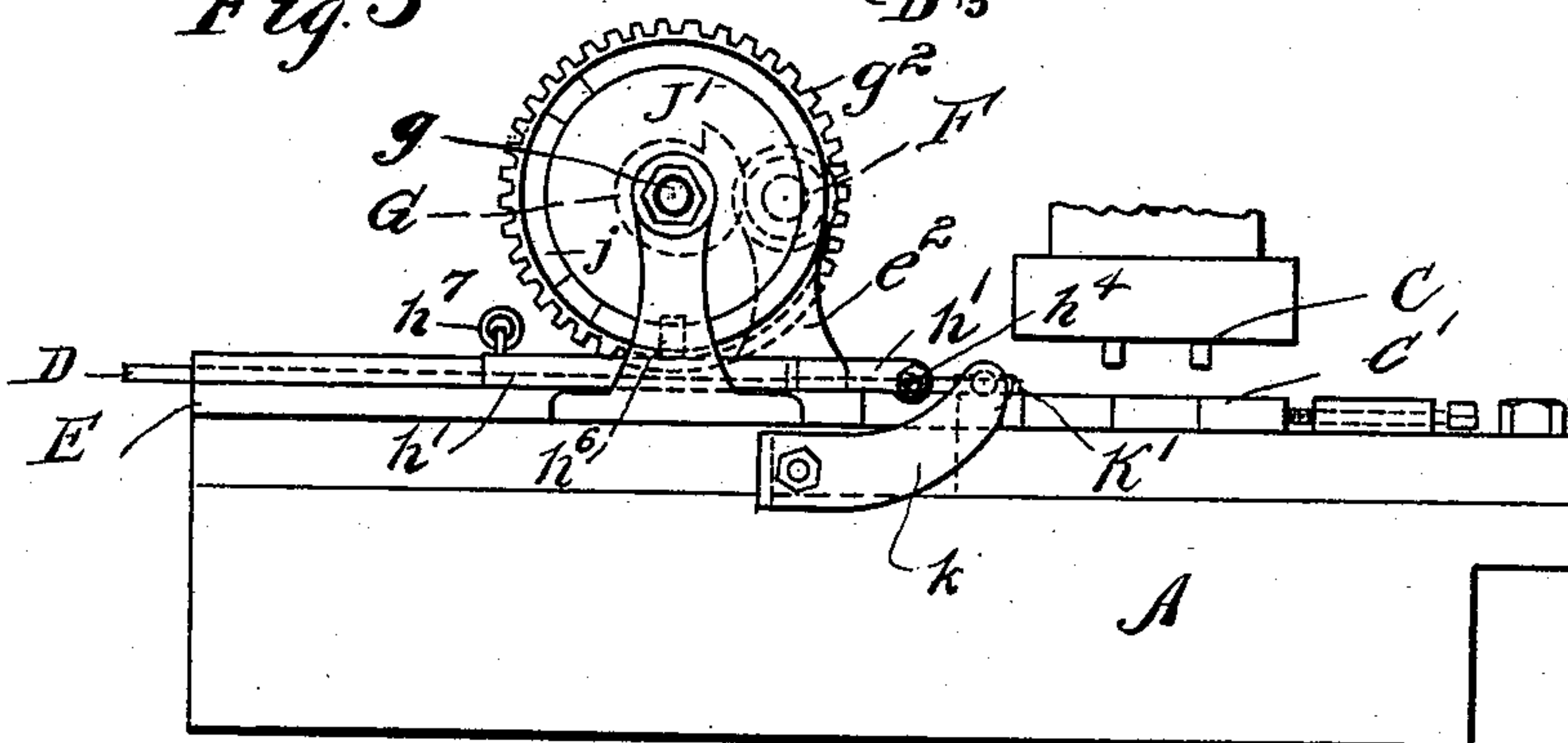
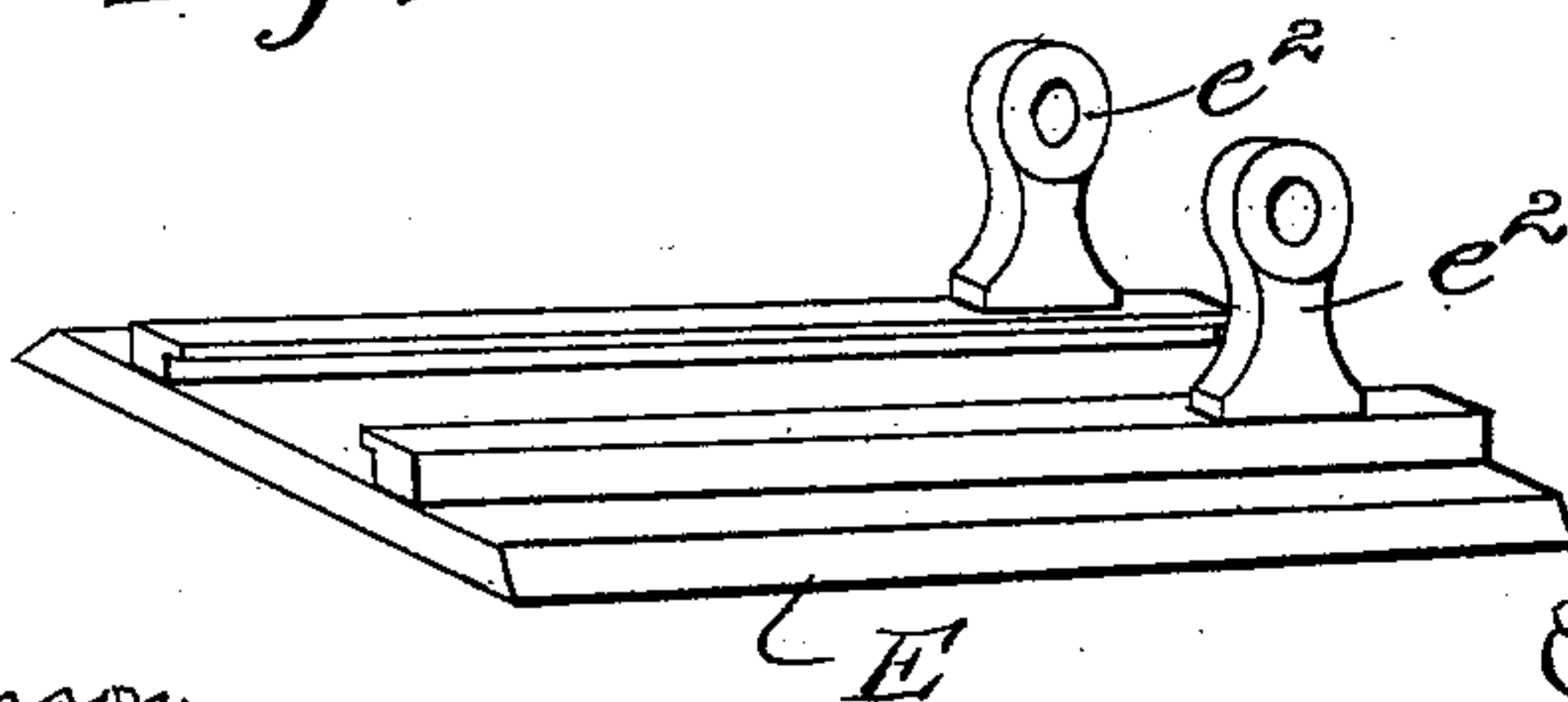


Fig. 4



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UNITED STATES PATENT OFFICE.

EMERICH SCHWARZ, OF CHICAGO, ILLINOIS.

NAIL-MACHINE.

SPECIFICATION forming part of Letters Patent No. 705,450, dated July 22, 1902.

Application filed March 22, 1902. Serial No. 99,547. (No model.)

To all whom it may concern:

Be it known that I, EMERICH SCHWARZ, a subject of the Emperor of Austria-Hungary, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Nail-Machines, of which the following is a specification.

This invention relates to machines for making horseshoe-nails; and it consists more particularly in the stock-feeding apparatus used in connection therewith. Its objects are to provide a device for the purpose of feeding the stock that will be simple in construction and durable in operation and will feed the stock forward the desired amount in a positive and efficient manner.

In the accompanying drawings, illustrating this invention, Figure 1 is a side view of a nail-punching machine with stock-feeding device embodied in this invention. Fig. 2 is a plan view of the stock-feeding device. Fig. 3 is an end view of the same, showing a portion of the nail-punches. Fig. 4 is a detail of the feeding-carriage. Fig. 5 is a sectional view taken on line 5 5 of Fig. 2.

A represents the frame of a nail-punching machine adapted to punch out horseshoe-nails.

B is the main driving-shaft, provided with a drive-pulley *b*.

C represents the nail-punch, which may be operated by the main shaft in any well-known manner, this not being a part of the present invention.

The stock D, from which the nails are punched, is preferably a ribbon of steel having the edges somewhat thicker than the central portion. It is desirable to feed this stock forward automatically at each stroke of the punch a distance to correspond with the exact width of the nail, and for this purpose I have provided the feeding device shown.

E is the feeding-carriage, which is mounted to reciprocate in suitable ways *a* in the main frame and is normally held in a retracted position by a spring or springs *e*, secured to lugs *e'* in said carriage and fastened at the opposite ends to projections *a'* on the frame. Standards *e²* on the carriage carry a roller F, which is adapted to engage with a cam G on a counter-shaft *g*, mounted in bearings *g'* on the main frame. The counter-shaft is driven

from the main shaft B by any suitable means, such as the train of gears *g²*, *g³*, and *b'*.

A pair of gripping-levers *h h'* are pivoted at *h² h³* on the feeding-carriage E. These are provided at one end with adjustable gripping-jaws *h³ h⁴*, which are adapted to engage the stock, and at the other side of the fulcrum with small rollers *h⁵ h⁶*. A spring *h⁷*, secured to the ends of the levers *h h'*, tends to hold the jaws normally away from the stock. The rollers *h⁵ h⁶* engage with face-cams J J' on the shaft *g*. These cams are cut away at *j* to allow the spring to open the jaws, but during the remainder of the revolution press the rollers *h⁵ h⁶* apart and cause the jaws to engage the stock.

Immediately forward of the feeding-carriage is a clamping device to prevent the stock from being drawn back when the carriage retracts. This consists of a pair of adjustable jaws K K', mounted on the main frame. One of these, K, is held rigidly, while the other, K', is pressed by a spring *k*, as shown. Next to this device is the die C', which coöperates with the punch C to form the nails.

The operation of this invention is as follows: The stock being in position for the punch to operate, it descends and punches out the nails. As the punch rises the cams J J' release the rollers *h⁵ h⁶*, thereby releasing the stock. Simultaneously the cam G allows the springs to draw the carriage back a distance corresponding to the length of stock to be fed. The cams J J' then engage the rollers *h⁵ h⁶* and spreading them apart cause the jaws to engage the stock. At the same time the cam G engages the roller F and moves the carriage forward, the jaws holding the stock until the punch operates. Then the operation is repeated.

This feeding device may be applied to various forms of machines, and I do not wish to limit my invention to the use herein described or the exact construction shown; but

What I claim, and desire to secure by Letters Patent, is—

1. In a feeding device, the combination of a pair of pivoted levers, stock-gripping jaws at the ends of said levers, means for operating said levers to cause the jaws to engage the stock, a spring holding the jaws normally disengaged, a carriage upon which said le-

vers are pivoted and means for reciprocating said carriage.

2. In a stock-feeding device, the combination of a reciprocating carriage, levers pivoted to said carriage provided with adjustable stock-gripping jaws at one end, rollers on said levers, a pair of cams mounted on a revoluble shaft and adapted to engage said rollers, and means for reciprocating said carriage.

3. In a stock-feeding device, the combination of a reciprocating carriage, a spring tending to hold said carriage in a normally retracted position, standards on said carriage carrying a roller, a cam mounted on a revoluble shaft held in relatively fixed bearings and adapted to engage said roller to move the carriage forward, and stock - gripping mechanism on said carriage.

4. In a feeding device the combination of

a frame, a reciprocating carriage mounted in said frame, a spring holding said carriage in a normally retracted position, a pair of levers pivoted on said frame, adjustable stock-gripping jaws on said levers, rollers on said levers, a spring connecting the ends of said levers, standards on said carriage carrying a roller, a shaft mounted over said carriage in bearings on said frame, a pair of cams on said shaft engaging the rollers on said levers, a third cam on said shaft engaging said roller on the reciprocating frame, means for turning said shaft, and a spring-pressed clamp forward of said feeding apparatus adapted to engage the stock substantially as described.

EMERICH SCHWARZ.

Witnesses:

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