

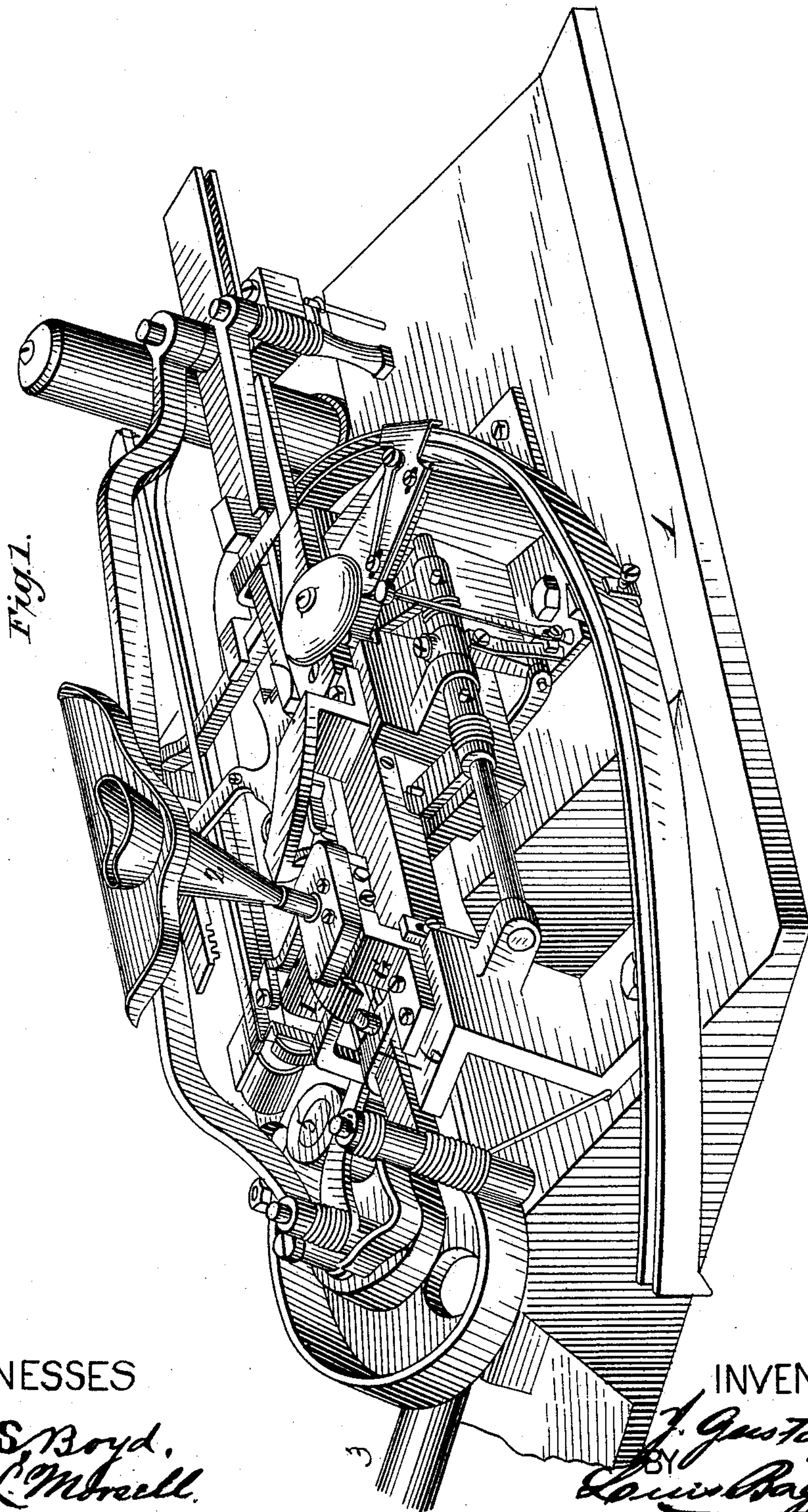
(Model.)

2 Sheets—Sheet 1.

J. GUSTAFSON.
APPARATUS FOR SETTING TYPE.

No. 428,906.

Patented May 27, 1890.



WITNESSES

W. S. Boyd.
A. L. Merrill.

INVENTOR

J. Gustafson
BY *Lawrence R. Bagge & Co.*

ATTORNEYS

(Model.)

2 Sheets—Sheet 2.

J. GUSTAFSON.
APPARATUS FOR SETTING TYPE.

No. 428,906.

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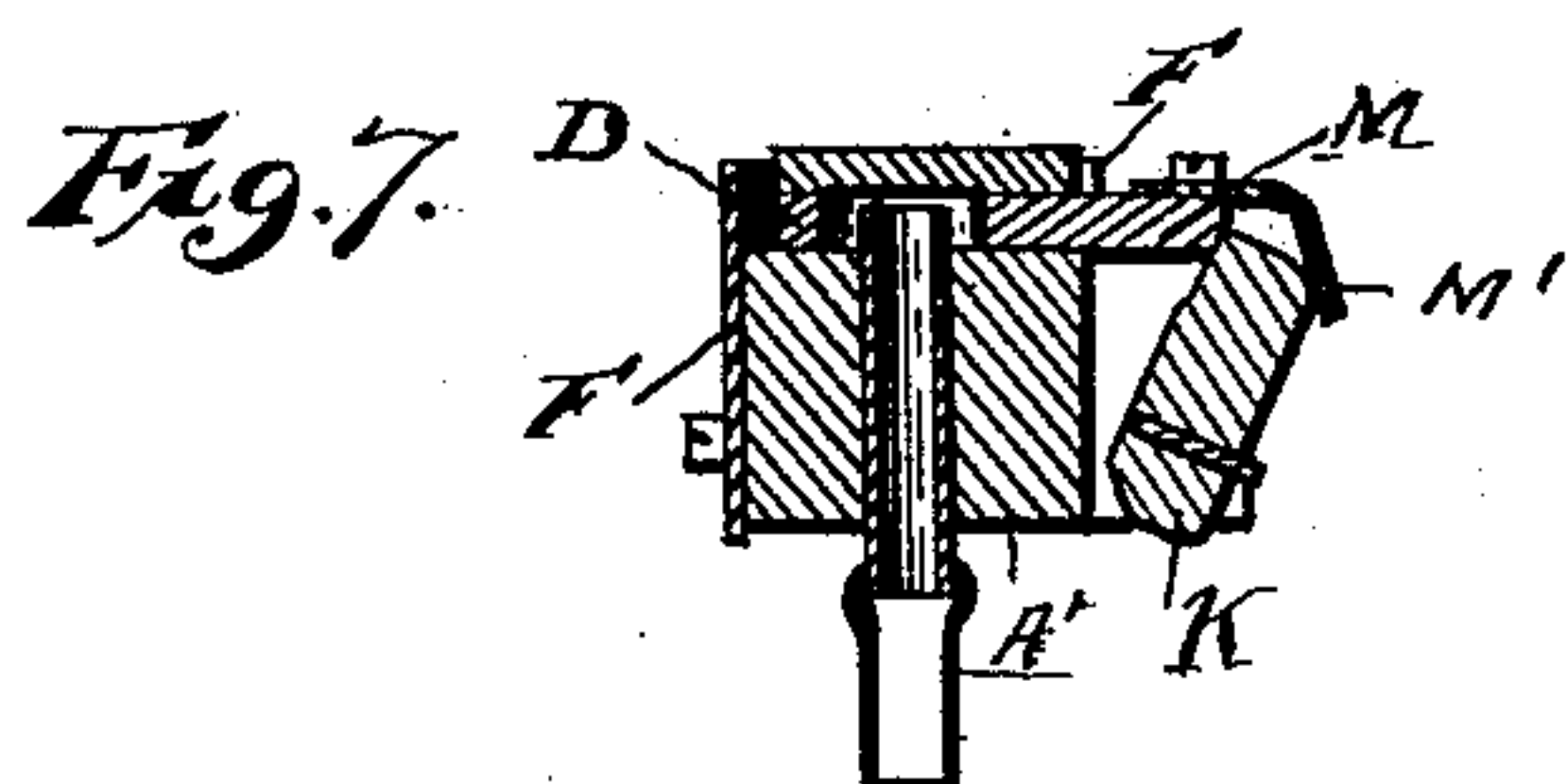
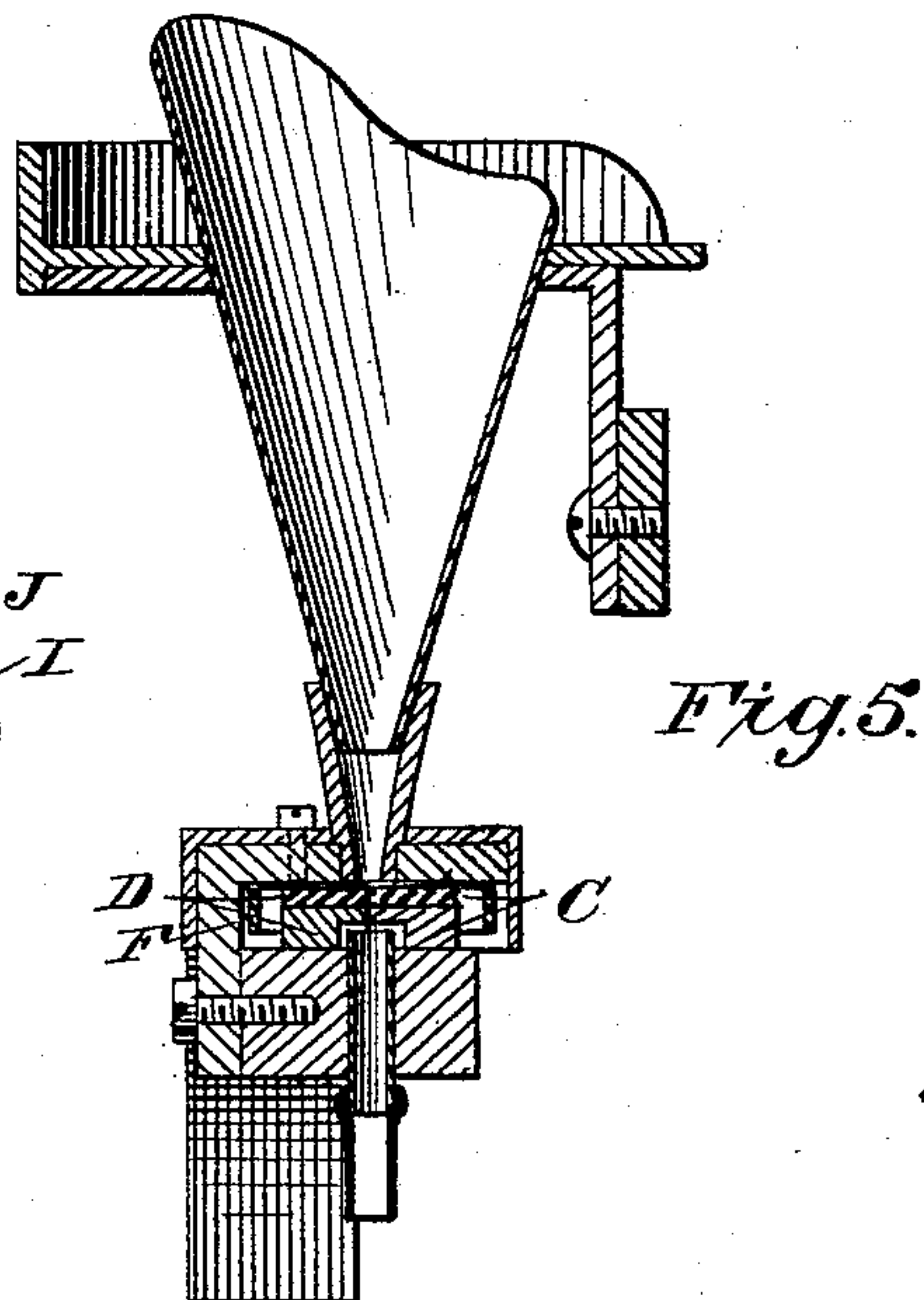
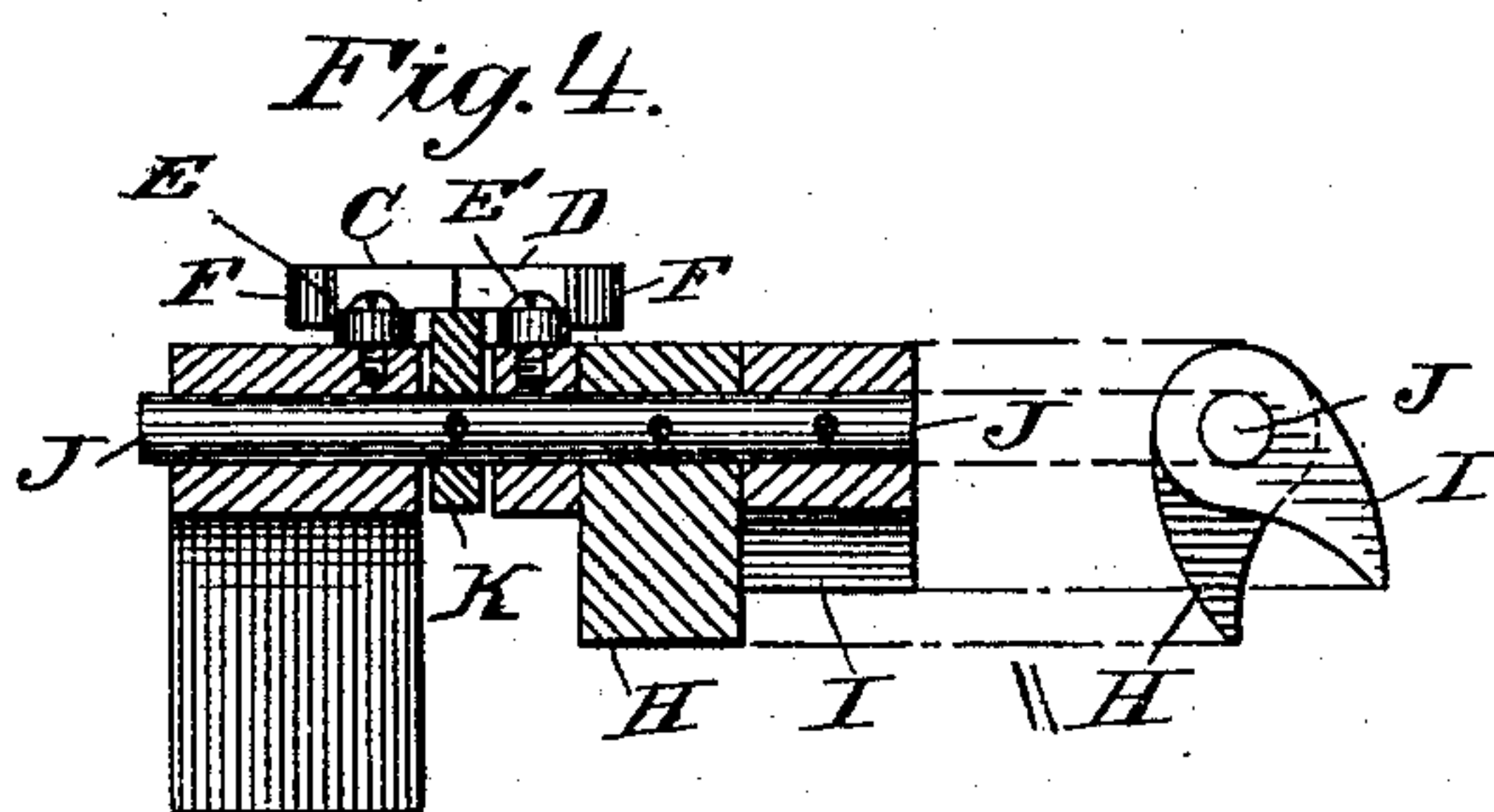
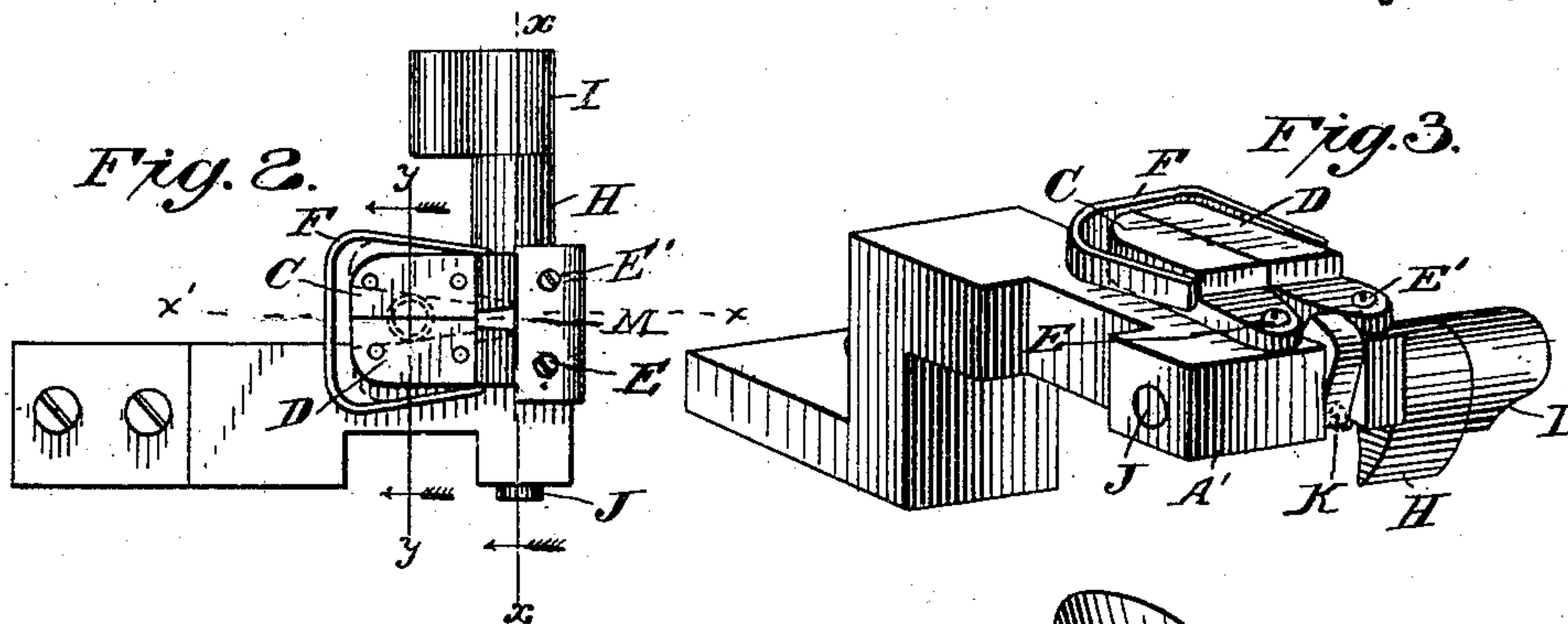
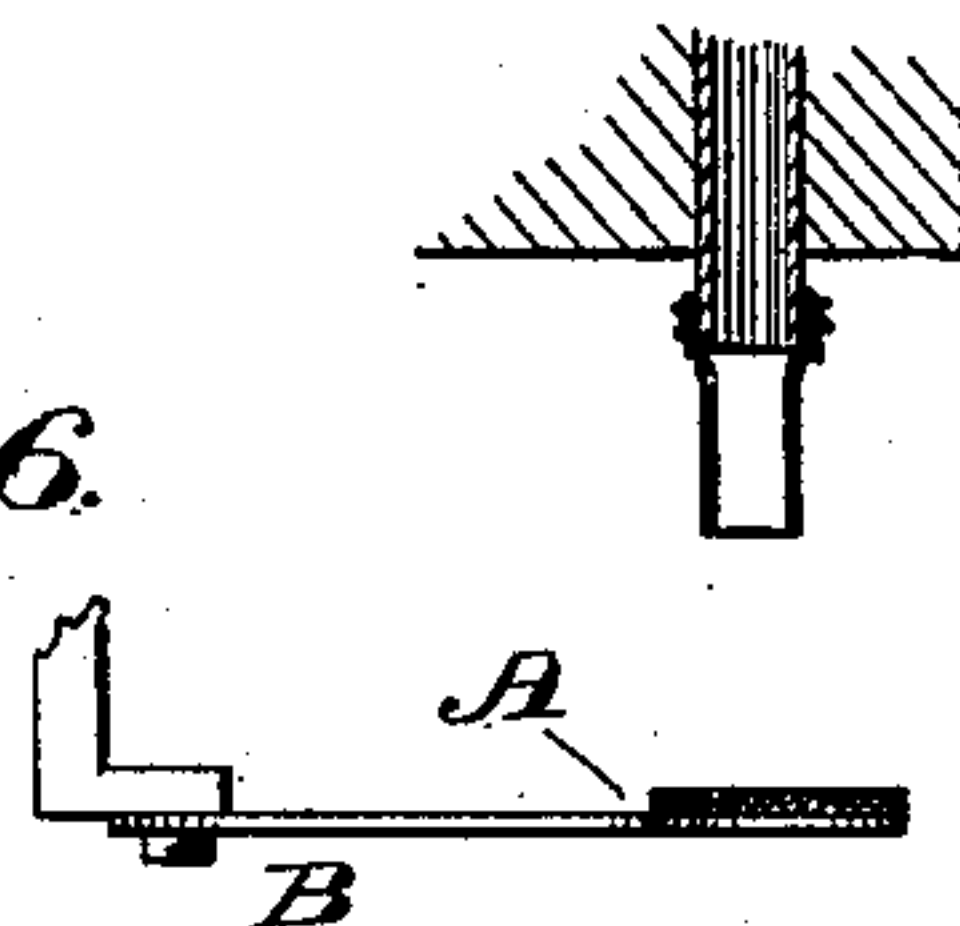


Fig. 6.



WITNESSES:

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INVENTOR

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BY
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN GUSTAFSON, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE LAGERMAN TYPOTHETER COMPANY, OF SAME PLACE.

APPARATUS FOR SETTING TYPE.

SPECIFICATION forming part of Letters Patent No. 428,906, dated May 27, 1890.

Application filed January 30, 1888. Serial No. 262,313. (Model.)

To all whom it may concern:

Be it known that I, JOHN GUSTAFSON, a subject of the King of Sweden, residing in the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Machines for Setting Type; and I do hereby 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, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to improvements in type-setting machines, and is designed as an improvement upon the invention set forth and claimed in Letters Patent No. 362,751, granted May 10, 1887, to Alexander Lagerman. The machine disclosed in said Letters Patent is placed in close proximity to an ordinary printer's case, and is provided with a funnel-shaped hopper, into which the compositor throws the type as he takes them from the cases. The type thus fed to the hopper issue lengthwise from the bottom thereof and strike the end of a delicately-poised lever, the tilting or tipping of which actuates an electro-magnet, which causes a cam-shaft to be operated. This cam-shaft in turn, by means of suitable connections, actuates a pusher-arm, which carries the type from beneath the hopper and feeds it to devices by which it is delivered to the type-gutter. Four motions are given to the pusher-arm—that is, it first moves forward, carrying the type with it, then a lateral movement, then backward, and then laterally to starting-point, when it stops and the cam-shaft remains stationary until the electro-magnet is operated by another type striking the end of the tripping-lever. The object in giving a lateral movement to the pusher-arm before beginning its return-stroke was, that it might not interfere with any type issuing from the hopper, and the object of stopping the same at the end of its stroke was to enable the type to become properly seated on the lever before the said arm advanced, thus avoiding any liability of injury to the type or machine.

There are other features of construction embraced in the Lagerman patent; but as the present invention has no relation thereto it is not deemed necessary to more particularly refer to them.

The object of the invention is to dispense with the electro-magnet and connections illustrated in said patent, whereby an intermittent movement is given to the pusher-arm, and to provide means whereby the type are automatically and intermittently fed from the hopper by the movement of the pusher-bar; and the invention consists in the novel construction and combination of parts, as will be more fully hereinafter described, and definitely pointed out in the claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a perspective view of a Lagerman machine with my improvements applied thereto. Fig. 2 is a detail plan view of the mechanism for feeding the type from the hopper, the top or cap plate protecting the same being removed. Fig. 3 is a perspective view of the same, the guide-plate being removed. Fig. 4 is a vertical sectional view through the axis of the bar which carries the cams that operate the spring-actuated gate on line *xx*, Fig. 2. Fig. 5 is a vertical transverse section through the hopper, cap, or covering-plate and spring-actuated gate; and Fig. 6 is a sectional detail view of the yielding bed or support which receives the type as it emerges from the gate. Fig. 7 is a section on line *xx*, Fig. 2.

In the said drawings the reference-numeral 1, Fig. 1, designates the frame of the machine; 2, the hopper; 3, the main driving-shaft, which receives motion from any suitable motor. 5 is the cam-shaft, which actuates the cams and connections by which the four-motion movement is given to the pusher-arm 6.

A, Fig. 6, designates a plate or disk covered with leather, rubber, cloth, or any equivalent material, and attached to a flexible or yielding arm or bar B, the fixed end of which may be attached to any part of the frame of the machine below the hopper. As a type is fed from the hopper it drops upon plate A and

remains there in a vertical position until moved forward by the pusher-bar. Upon a plate A', located directly under the open lower end of the hopper, is a platform composed of two separate parts, (denoted, respectively, by the letters C and D,) each part forming the wing of a gate and pivoted upon a screw or pin E and E'. A spring F is so placed and arranged that by its tension it will force the free ends of the two wings or gates C and D together, and thus close the exit from the lower part of the funnel; and it follows that as a type is dropped through the funnel it will be intercepted by and received upon the platform formed by the two gates C and D when the same are in their normal or closed positions. When, however, during the operation of the machine, when the time arrives when the type should be moved forward for the purpose of feeding it to the other parts of the machine, a pin or stud G, Fig. 1, rising upwardly from the pusher-arm 6, engages first a cam H, and subsequently, on the return-stroke, another cam I, in such a manner as to rock the shaft J, upon which the cams H and I are respectively fixed; and by this rocking or tilting motion of shaft J a tongue or wedge K, which is fastened upon and projects laterally from said shaft and at right angles thereto, is pushed in between the free ends of the pivoted gates C and D in such manner as to force or spread them apart, thereby allowing the type resting endwise upon said gates to drop through the aperture thus formed and be deposited endwise upon the yielding disk or plate A, which is arranged below the gate, and is ready to be fed forward by the pusher-arm 6. The cams H and I are in different longitudinal planes—that is to say, cam I is behind cam H, so that in the forward movement of the pusher-bar 6 the pin G will actuate cam H, and on its return-stroke will actuate cam I by reason of the lateral movement given to said arm. Thus on its forward stroke the pusher-arm will open the gates to allow a type to be fed from the hopper, and on its return-stroke will close the same. In order to limit the backward movement of the wedge or tongue K, I employ a guide piece or plate M, secured to plate A' by the screws E E', and having its rear free end bent downwardly, forming a tongue M', against which the wedge K strikes in its return or backward movement, thus preventing the shaft J, with which it is rigidly connected, from being rotated too far when the pin G strikes one of

the cams. This pin strikes a quick sudden blow, and if no means were provided for limiting the movement of the shaft it might be turned so far, and with it the cams, that the latter would not come in contact with the pin G in its forward movement.

From the foregoing it will be seen that I dispense entirely with the electro-magnet and connections for causing the cam-shaft, cams, and dependent parts to be intermittently actuated, so that said devices and the pusher-arm have a continuous movement. It will also be seen that means are provided for intermittently feeding the type from the hopper. Otherwise the construction is identical with that of the Lagerman machine.

Having thus described my invention, what I claim is—

1. The combination of the pivoted spring-actuated gates, the rock-shaft, the two cams upon the same, and the wedge-shaped tongue adapted to enter between and open said gates, substantially as described.

2. The combination of the spring, the pivoted gates, and the reciprocating wedge or tongue, substantially as and for the purpose set forth.

3. The combination of the spring, the pivoted gates, the reciprocating wedge or tongue, the rock-shaft, and the cams for operating it, substantially as described.

4. The combination of the hopper, the pivoted gates, the rock-shaft, the cams on the rock-shaft, the pusher-bar, and the pin for actuating the cams, substantially as described.

5. The combination, with the hopper, the pivoted gates, the rock-shaft, and the cams thereon, of the pusher-bar, the pins fixed thereto, and the plate below the gates adapted to receive and support the type endwise until pushed forward by the pusher-bar, substantially as described.

6. The combination of the spring, the pivoted gates, the reciprocating wedge or tongue, the rock-shaft, the cams for operating it, and the plate located above the gates for limiting the movement of the wedge or tongue, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JOHN GUSTAFSON.

Witnesses:

LOUIS BAGGER,
FRANKLIN H. SMITH.