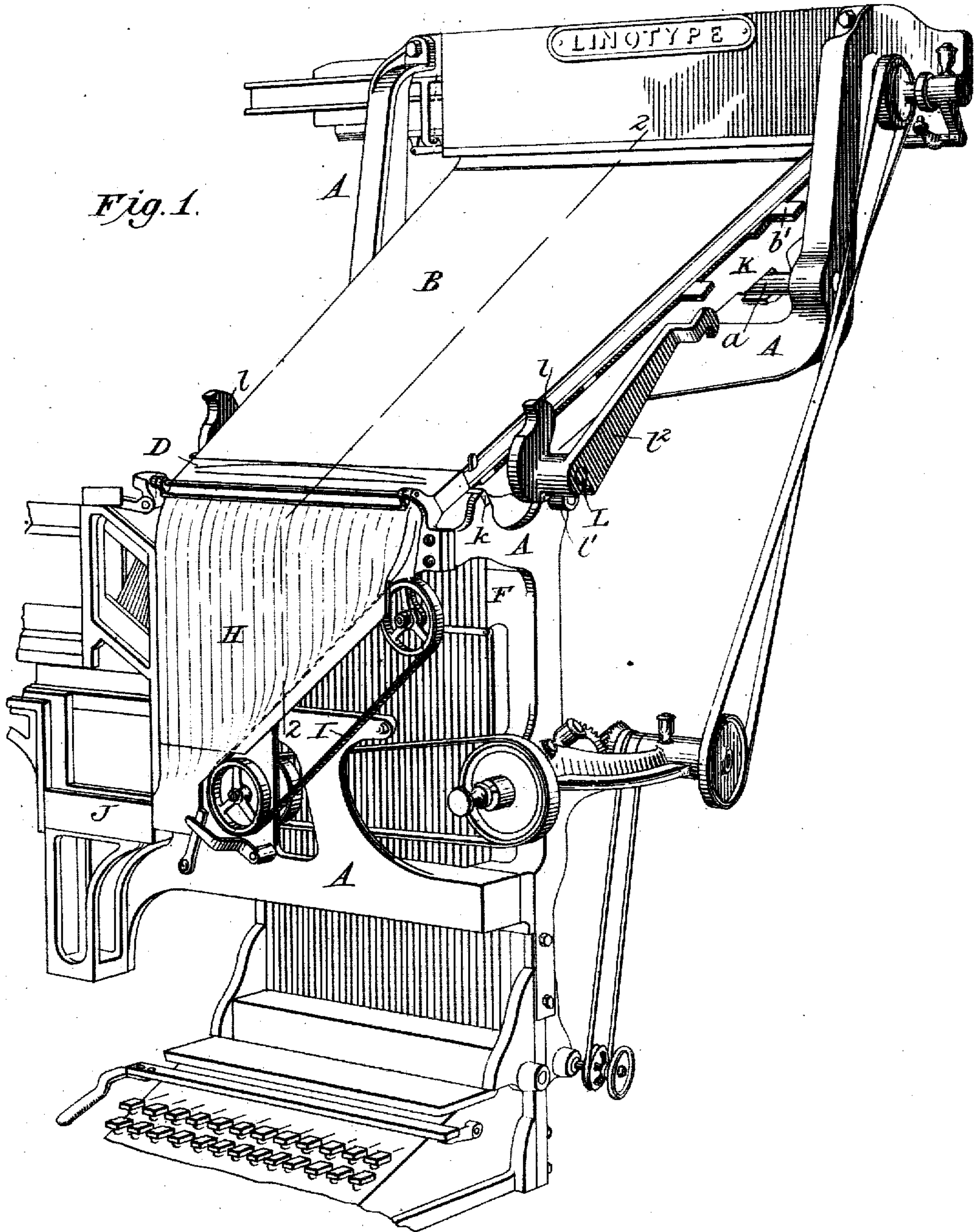


No. 814,542.

PATENTED MAR. 6, 1906.

T. S. HOMANS.
LINOTYPE MACHINE.
APPLICATION FILED SEPT. 9, 1905.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 2.
ON LINE 2-2

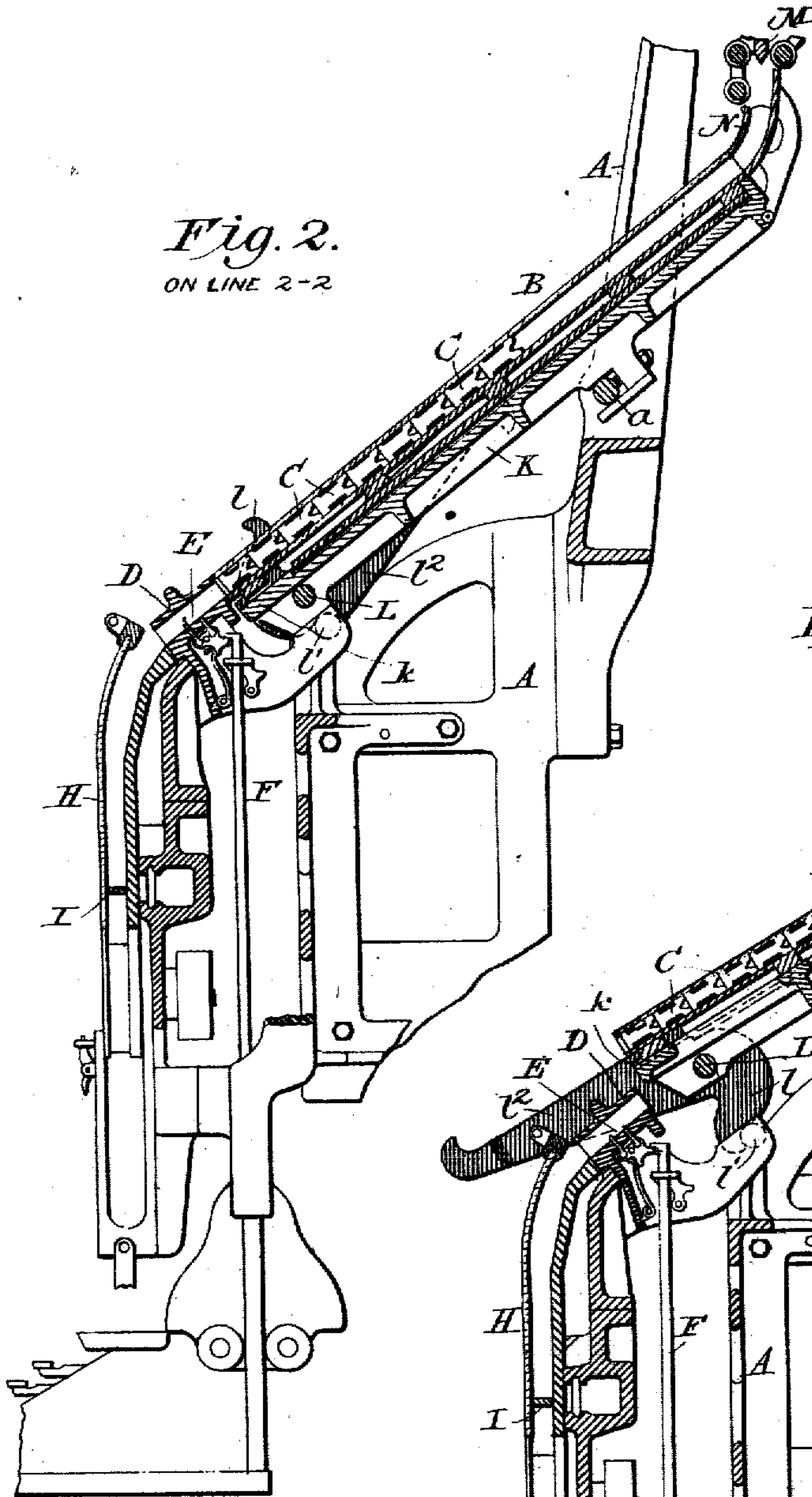
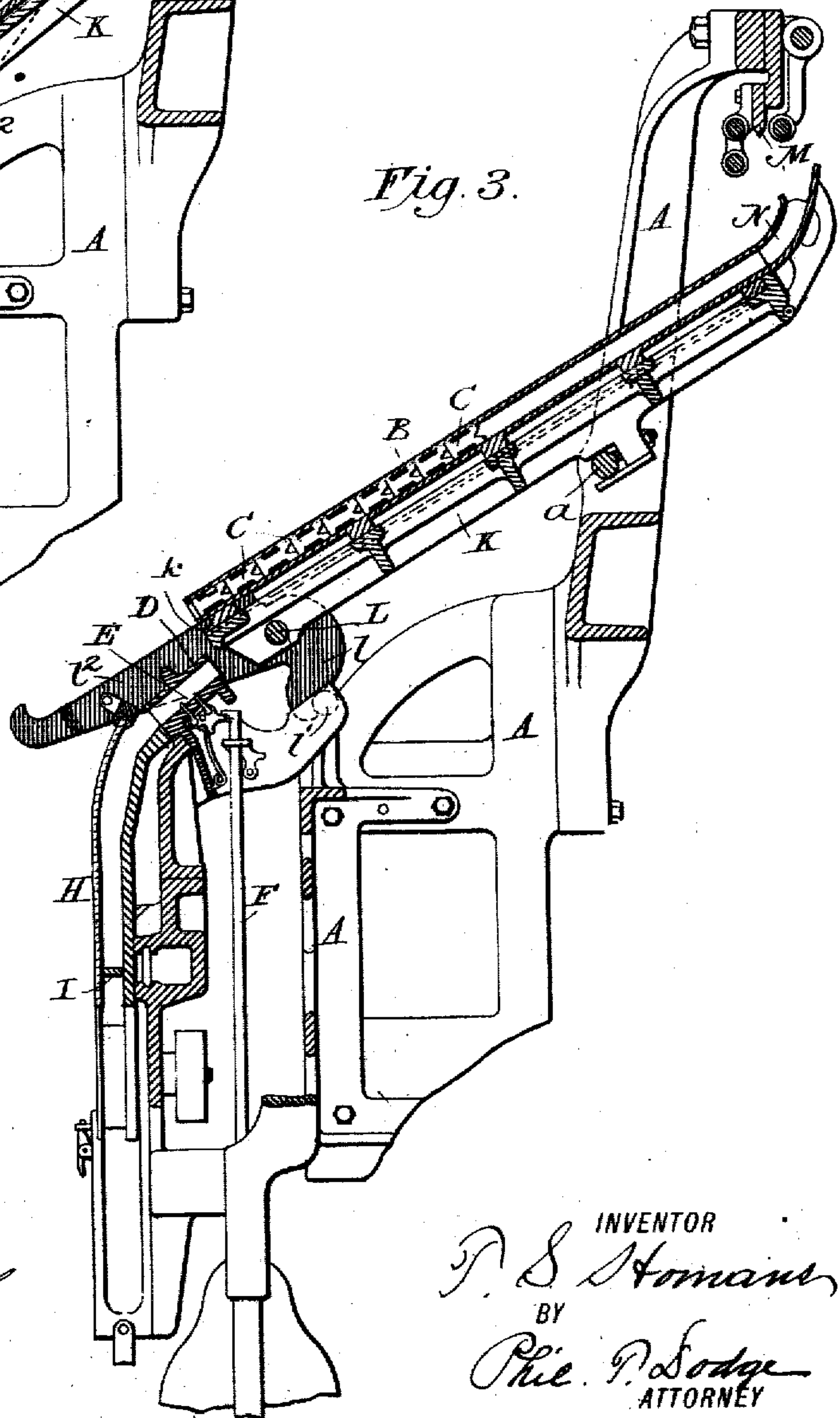


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 5.

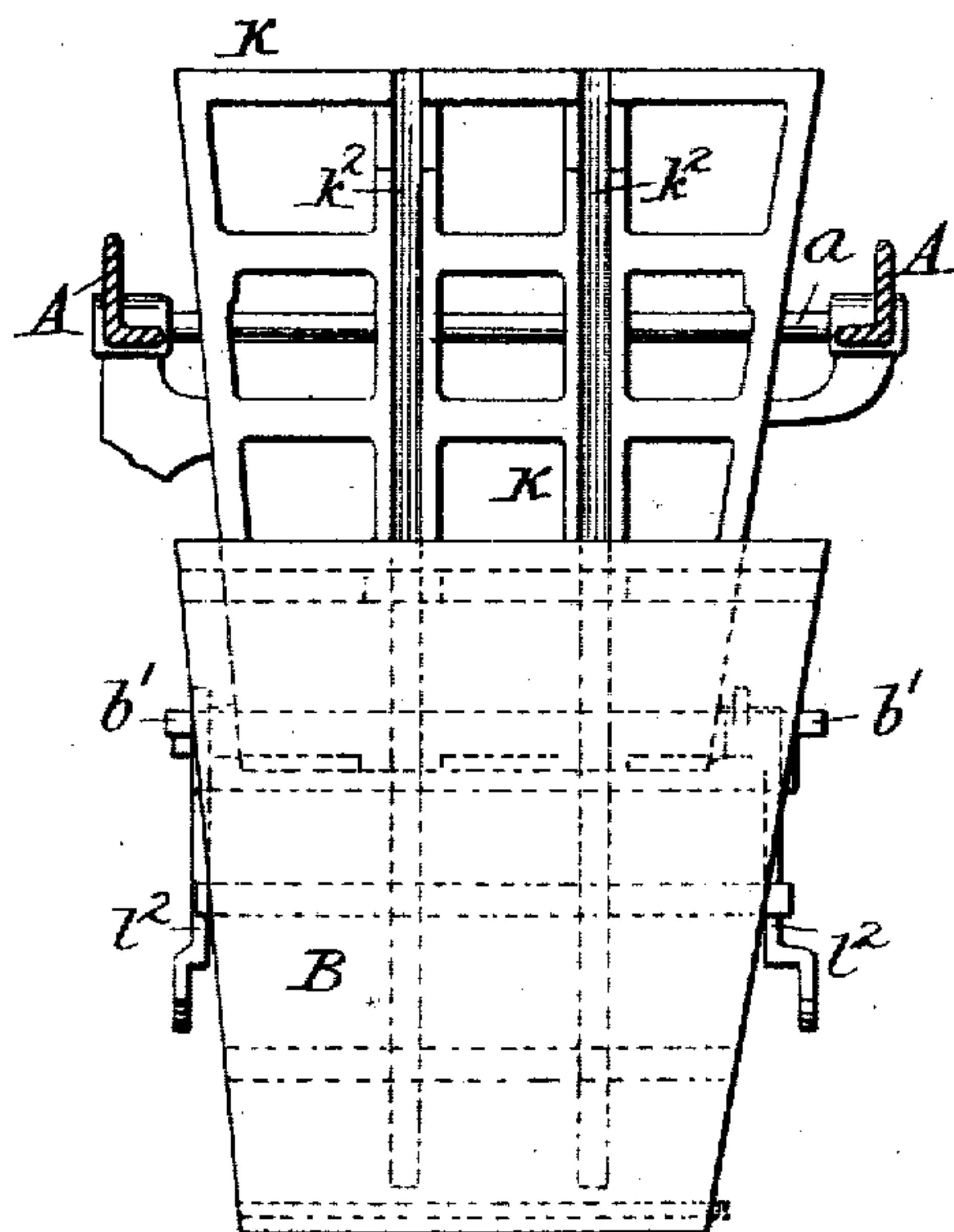
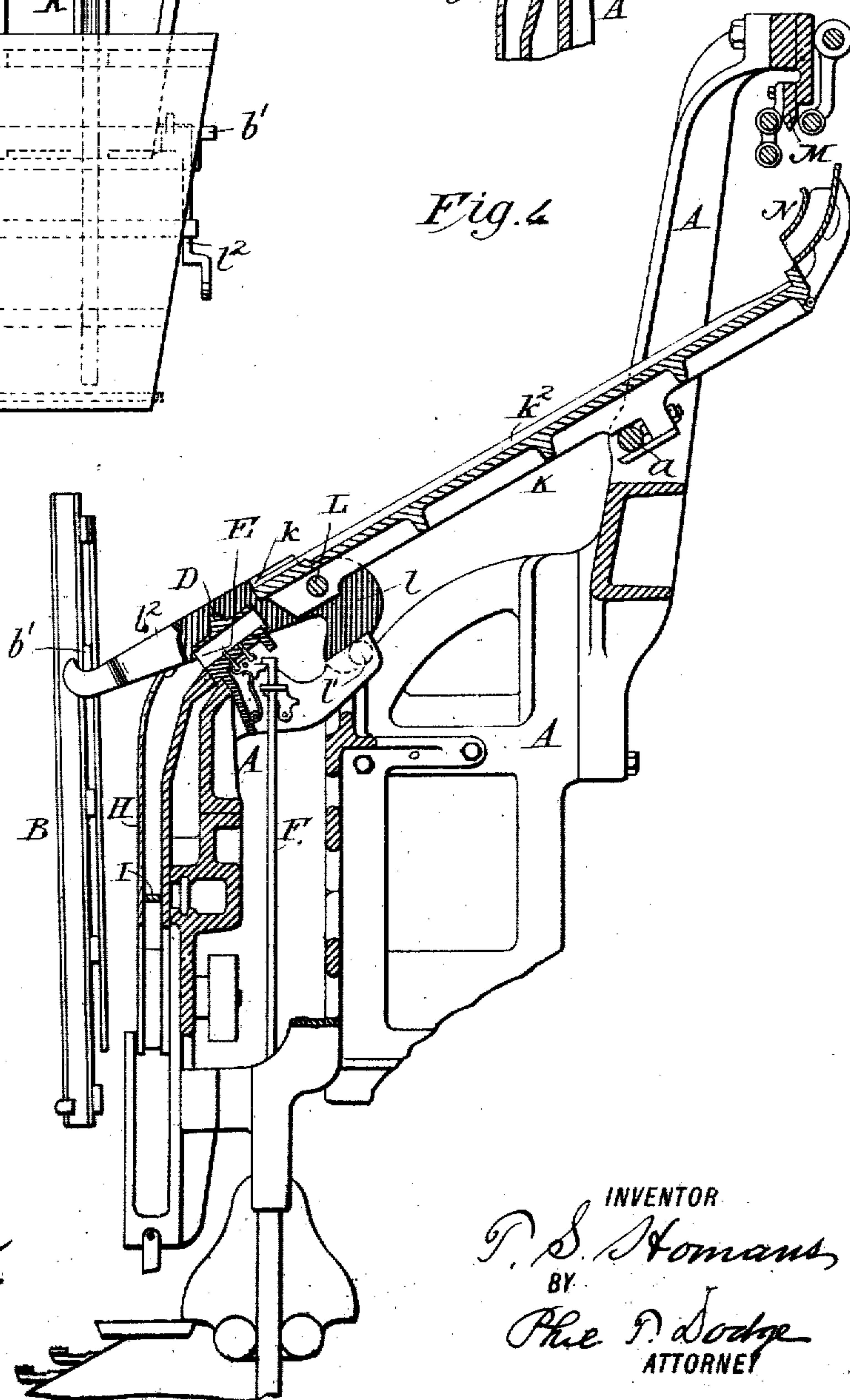


Fig. 4



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UNITED STATES PATENT OFFICE.

THOMAS S. HOMANS, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINOTYPE-MACHINE.

No. 814,542.

Specification of Letters Patent.

Patented March 6, 1906

Application filed September 9, 1905. Serial No. 277,650.

To all whom it may concern:

Be it known that I, THOMAS S. HOMANS, of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

My invention has reference to linotype-machines of the general organization represented in Letters Patent of the United States No. 557,000, wherein circulating matrices are carried in an inclined channeled magazine mounted on the top of the machine.

By means of the finger-key mechanism the matrices are released from the magazine in the order in which their characters are to appear in print and the released matrices mechanically assembled in line with spacers, the composed line transferred to a magazine in which the slugs or linotypes are cast against them, and the line thereafter lifted and the matrices transferred through a distributing mechanism to the upper end of the magazine.

In order to adapt the machine to produce type-faces different in size or style, it is customary to remove the magazine and replace the same by another containing the matrices for the required face. Heretofore it has been the practice to remove the magazine with the base-frame in an upward and rearward direction, the operation requiring the efforts of two attendants.

The aim of the present invention is to facilitate the removal and replacing of the magazine; and it consists in a construction and arrangement of parts whereby the magazine may be readily removed and applied at the front of the machine. To this end means are provided for raising or lowering the forward end of the magazine and supporting the same while it is withdrawn in a forward and downward direction, and finally suspending it temporarily at the front of the machine, so that it may be easily removed. The same parts serve to facilitate the application of the magazine by a reverse procedure. With the exception of the parts immediately associated with my improvement the machine may be in all respects of ordinary construction.

Referring to the drawings, Figure 1 represents the upper portion of a linotype-machine with my improvement incorporated therein. Fig. 2 is a longitudinal vertical sec-

tion of the same on the line 2 2 with the parts in operative position. Fig. 3 is a similar section with the forward end of the magazine elevated preparatory to its removal. Fig. 4 is a similar section with the magazine suspended at the front of the machine. Fig. 5 is a top plan view of the magazine partly removed, together with the base-frame and the front supports or suspending devices. Fig. 6 is a vertical section illustrating an alternative or modified construction.

In the drawings, A represents the rigid main frame; B, the inclined channeled magazine wherein the matrices C are stored; D, the channeled escapement-bar fixed on the frame and forming a downward continuation of the main frame, so that the matrices may pass therethrough subject to the control of the usual pivoted escapements E, which are in turn controlled by the vertical bars or reeds F, connecting with the finger-key mechanism, as usual in linotype-machines, the arrangement being such that whenever the key is actuated a matrix containing a corresponding character will be released and permitted to pass forward and downward through the front guide-plate H to the assembling-belt I, by which it is added to the line of matrices in the assembling-elevator J in a manner well understood by those skilled in the art.

My magazine, which is preferably constructed, as usual, with two parallel plates channeled longitudinally in their inner faces to receive and guide the edges of the matrices, is removably seated upon and sustained by the rigid underlying base-frame K. This base-frame is mounted near its upper end to rock on the cross-bar a, fixed rigidly in the main frame. When the parts are in normal position, the lower end of the frame K bears rigidly on the main frame and supports the lower end of the magazine in operative relation to the escapement-bar E for the purpose of lifting the lower end of the frame K and the magazine thereon, so that the latter may be withdrawn from the front of the machine. A rock-shaft L is passed transversely through the lower end of the frame K and provided at each end with a cam l, bearing on a stud or roller l' on the side of the main frame. These cams l are continued beyond the shaft L and fashioned into arms l'. When the parts are

in normal position, the cams l and arms l^2 extend rearward alongside the base-frame K, as shown in Fig. 1, and are inactive.

When the magazine is to be removed, the arms l^2 are turned forward and downward until they assume the positions shown in Figs. 3 and 4, the effect being to turn the rock-shaft L and the cams l , so that the latter bearing on the studs l' lift the lower end of the frame L until the magazine is raised and supported above the escapement-bar, as shown in Fig. 3. The magazine is provided on its under side with transverse stiffening-bars, one of which is seated normally behind a shoulder k on the base-frame to prevent the magazine from sliding forward. Another of the cross-bars near the upper end of the magazine is extended beyond the edges of the same, as shown at b' . In removing the magazine after its lower end has been elevated the attendant raises its lower extremity clear of the shoulder k , after which he permits it to slide downward and forward over the base-frame K until the ends of the bar b' , riding over the arms l^2 , are arrested upon their forward hooked ends, as shown in Fig. 4, whereupon the magazine is permitted to swing down until it assumes a vertical position, as shown. When thus suspended, the magazine may be readily grasped at its edges by the attendant standing in front of the machine and lifted therefrom.

In applying a magazine to the machine the operator holding it in an erect position passes it between the arms l^2 and permits the ends of bar b' to rest thereon, as in Fig. 4, after which he swings the forward end of the magazine upward and pushes it bodily rearward and upward over the base-frame K until the end drops behind the shoulder K. The arms l^2 are thus turned upward and backward to their original position, thereby causing the cams to lower the base-frame and magazine to their operative positions. The magazine is usually constructed of greater width at the upper than at the lower end. In order, therefore, to prevent it from shifting laterally during its forward and backward movement, the base-frame is provided with one or more longitudinal guides k^2 , preferably in the form of grooves, as shown, and the magazine adapted to engage with these guides. In the form shown the magazine has longitudinal ribs or bars on the under side to enter the guiding-grooves.

The essence of the invention lies in the employment of a vertically-movable support for the magazine and in the combination thereof with means for removing such support and with means for sustaining and supporting the magazine when partly withdrawn. It is understood that the details may be variously modified without departing from the scope of my invention.

Instead of forming the escapement-bar D

separate from the magazine and fixing it permanently on the main frame it may be attached to or made a part of the magazine, as shown in Fig. 6. In such case the other parts may be of the construction shown in the preceding figures, so that when the magazine is lifted and withdrawn in a forward direction the escapements will be carried with it. In this construction it will be observed that each magazine is provided with its own escapements instead of being operated in connection with escapements common to a series of magazines.

The machine is provided, as usual, with the distributor-bar M and attendant parts fixed on the main frame over the upper end of the magazine. To distribute the matrices therein, the usual channeled throat N is employed. This throat instead of being fixed to the main frame is hinged to the upper end of the frame K.

Having described my invention, what I claim is—

1. In a linotype-machine, the combination of a main frame, an inclined magazine-supporting frame mounted to move vertically at its lower forward end, a magazine mounted on said supporting-frame and independently removable in a forward direction, and means for sustaining the end of the supporting-frame at the delivery end of the magazine above its normal position, whereby the magazine may be supported and guided while being removed and applied at the front of the machine.

2. In a linotype-machine, a main frame, a supporting-frame for the magazine movably mounted in the main frame, a magazine detachably applied to the supporting-frame, and removable in a forward direction and mechanism for lifting the free end of the supporting-frame, whereby the end of the magazine may be moved from its operative position preparatory to its removal from the machine.

3. In a linotype-machine, a main frame, a magazine-supporting frame arranged in an inclined position and mounted to turn on a horizontal axis, a magazine mounted on said frame and removable at the front of the machine, means for raising the forward end of the frame and the magazine thereon, and an escapement-bar fixed on the main frame and forming a continuation of the magazine when the latter is in operative position.

4. In a linotype-machine, a main frame, escapement devices secured thereon to control the delivery of matrices, a detachable magazine, a magazine-supporting frame, jointed to the main frame to permit vertical movement of the delivery end of the magazine to and from the operative position, and mechanism for effecting the movement of the supporting-frame.

5. In a linotype-machine, the combination

of the main frame, the magazine B, removable at the front of the frame, the magazine-supporting frame K, mounted to swing upward and downward at the delivery end, and
5 cams *l*, to lift and sustain the frame K.

6. In a linotype-machine, the combination of the main frame, the magazine adapted to be withdrawn endwise therefrom, and arms *l*² pivoted to swing forward and backward
10 and adapted in their forward positions to sustain the detached magazine.

7. In a linotype-machine, the main frame, the removable magazine, and the movable magazine-supporting frame K, in combination with a rock-shaft L, provided with means
15 to raise and sustain the frame K and also with means to suspend the magazine.

8. In a linotype-machine, the combination of the main frame, the detachable magazine, the magazine-supporting frame K, mounted
20 to swing upward and downward, the cam *l*, arranged to raise and sustain said frame, and arms *l*² adapted to sustain the magazine when moved from its operative position.

9. In a linotype-machine and in combination with a main frame, an inclined magazine removable endwise in a forward direction, a movable frame whereon the magazine is seated,
25 means for moving the said frame from its normal position and means for horizontally guiding the magazine during its movement to and from the operative position.

10. In a linotype-machine and in combination with a main frame and a magazine removable therefrom, arms for temporarily sustaining the magazine, said arms pivoted to
35 turn forward beyond the front of the frame, substantially as described.

11. In a linotype-machine, a main frame, a vertically-movable frame therein, a magazine detachably applied to the movable frame, and movable magazine-supporting arms adapted to form a continuation of the magazine-supporting frame to facilitate the
45 application and removal of the magazine, substantially as described.

12. In a linotype-machine and in combination

with the independently-removable magazine, its supporting-frame, K, mounted to swing upward and downward at the lower
50 end, and the magazine throat or entrance, N, jointed to the movable frame; whereby the removal of the magazine independently of the throat is permitted and proper operative relation of the parts insured when the magazine is in place.

13. In a linotype-machine, the combination of an inclined magazine independently removable at the front of the machine, a vertically-movable support for the magazine, and
60 means for sustaining the magazine as it is withdrawn from said support; whereby its removal is facilitated.

14. In a linotype-machine, the combination of a main frame, a vertically-movable
65 frame thereon, a magazine removably mounted on the movable frame, and means extending in advance of the movable frame to assist in supporting the magazine as it is removed and applied.

15. In a linotype-machine, in combination with the main frame having the fixed matrix-channels H, an inclined independently-removable magazine arranged to deliver the matrices into said channels, means for supporting the magazine and for lifting its end
75 clear of the channels H, and means extending forward of the magazine-support adapted to suspend the magazine during the course of its removal from or application to the machine.

16. The linotype-magazine provided with a longitudinal guide to control its movement to and from the machine, and with supporting devices at its two opposite edges whereby
85 it may be suspended endwise.

In testimony whereof I hereunto set my hand, this 28th day of August, 1905, in the presence of two attesting witnesses.

THOMAS S. HOMANS.

Witnesses:

W. H. RANDALL,

L. B. MOREHOUSE.