

No. 746,415.

PATENTED DEC. 8, 1903.

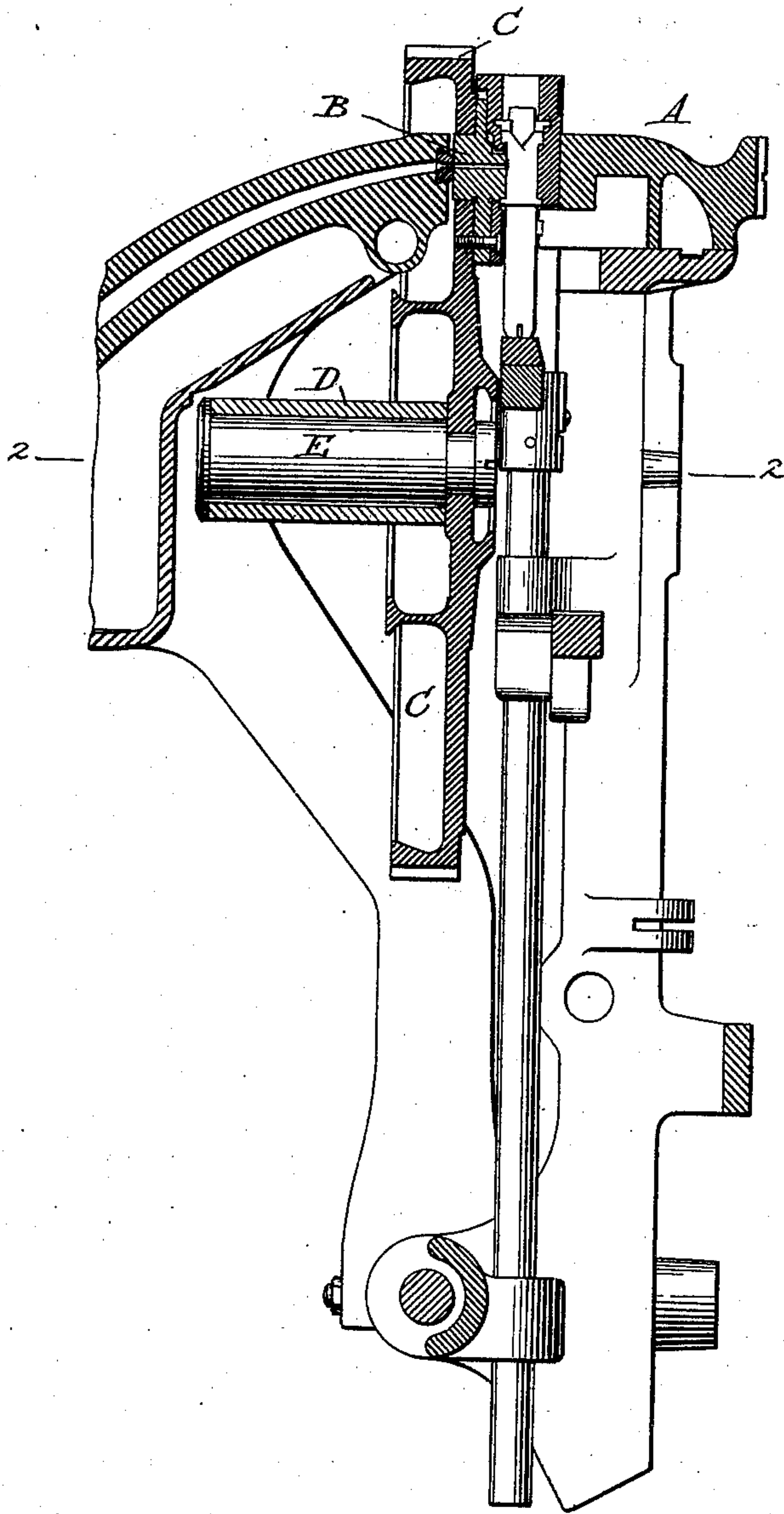
J. K. VAN VALKENBURG.
LINOTYPE MACHINE.

APPLICATION FILED JULY 28, 1903.

NO MODEL.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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Frank L. McGee

J. K. Van Valkenburg Inventor
by *Phil. T. Sodge* Attorney

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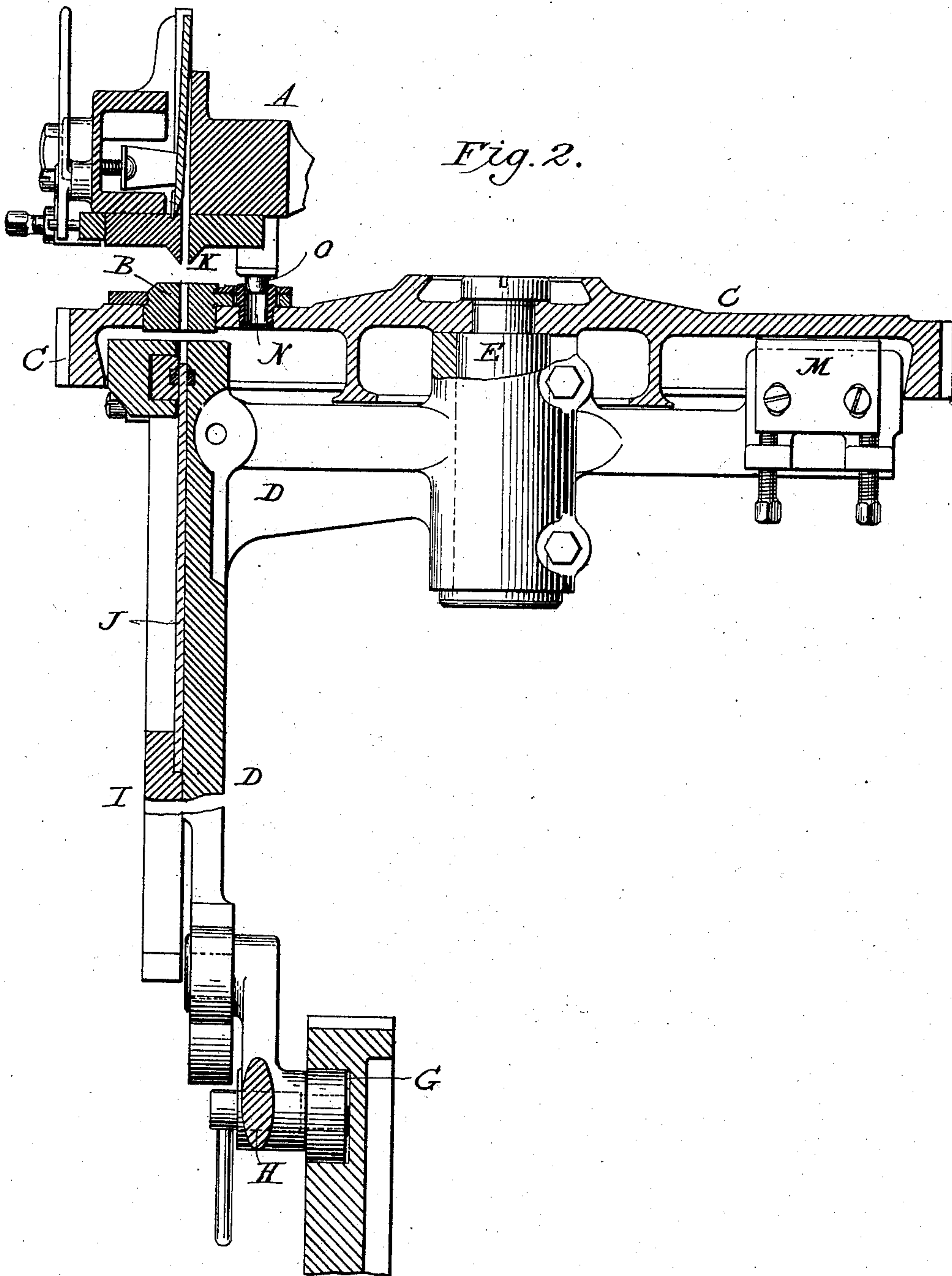
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4 SHEETS—SHEET 2.



Witnesses

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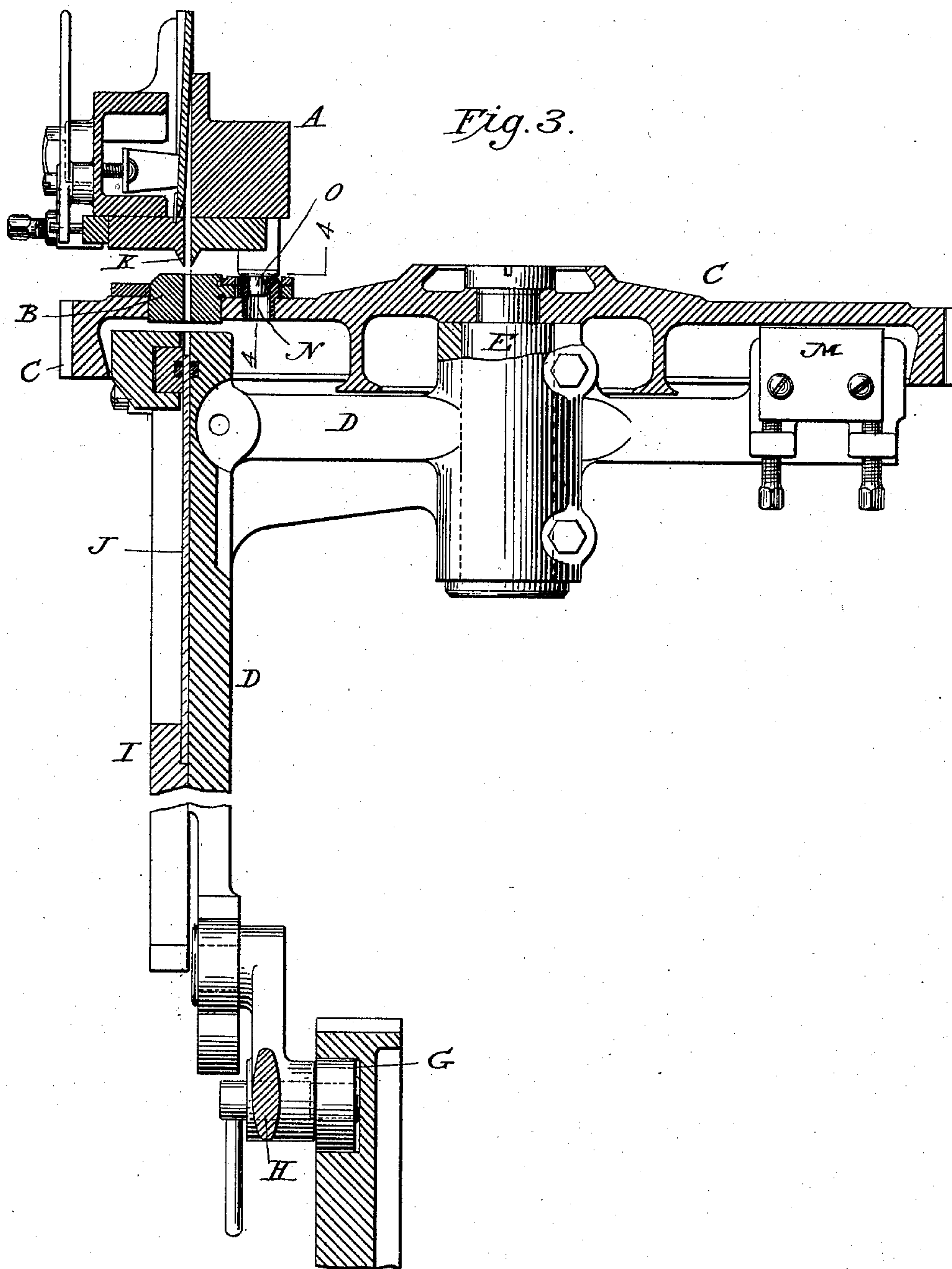
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4 SHEETS—SHEET 3.



Witnesses

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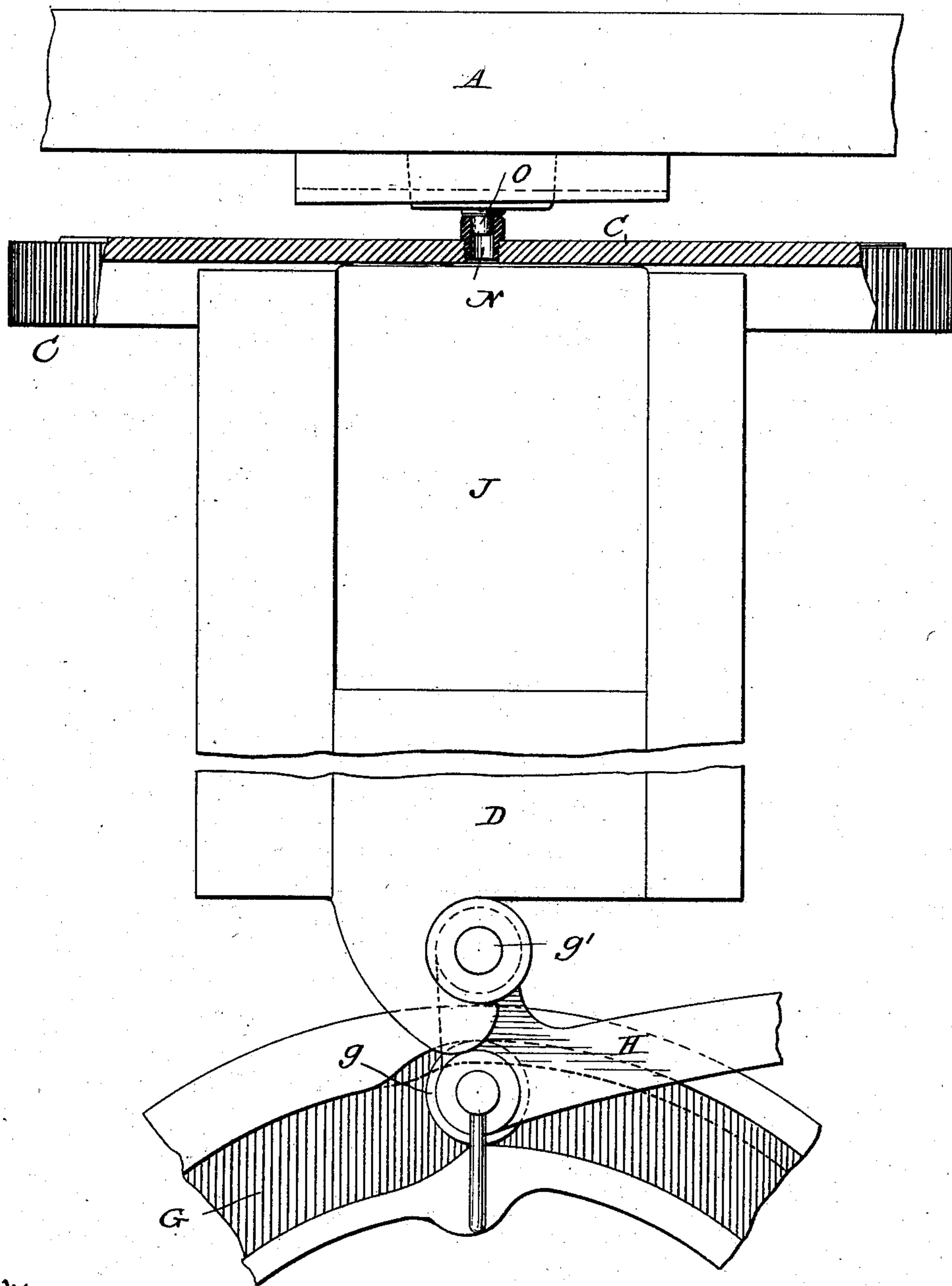
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APPLICATION FILED JULY 28, 1903.

NO MODEL.

4 SHEETS—SHEET 4.

Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES K. VAN VALKENBURG, OF ELMIRA, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 746,415, dated December 8, 1903.

Application filed July 28, 1903. Serial No. 167,350. (No model.)

To all whom it may concern:

Be it known that I, JAMES K. VAN VALKENBURG, of Elmira, county of Chemung, and State of New York, have invented a new and
5 useful Improvement in Linotype-Machines, of which the following is a specification.

My invention has reference more particularly to an improvement in the Mergenthaler linotype-machine, such as is represented in
10 Letters Patent Nos. 436,531 and 436,532. In machines of this class individual matrices, assembled or composed in line, are presented by a supporting device known as the "first
15 elevator" in front of a slotted mold, which is closed tightly against the matrices, so that the slug or linotype cast in the mold will have the type characters formed in relief on its forward edge by the matrices. The mold is
20 secured rigidly in a vertical disk, mounted to turn on an arm projecting laterally from a horizontal slide, moved forward and backward by a cam, so that before the casting operation the mold is driven forward tightly against the matrices and after the casting
25 operation retracted therefrom in order to draw the characters on the contained slug out of the matrices, after which the disk is given a partial revolution in order to bring the mold in front of the ejector-blade, which
30 serves to drive the slug or linotype out of the mold and between trimming-knives into a receiving-galley at the front. Heretofore it has been customary after the mold-disk has been retracted and rotated to move it forward
35 again in order to bring the mold as near as possible to the knives between which the outgoing slug is driven. It has been found, however, that for want of suitable support at the front the disk was liable to yield in a forward direction if, as sometimes happened,
40 the slug adhered firmly in the mold.

The aim of the present invention is to give the mold-disk a rigid support at the front during the ejection of the slug. To this end
45 I modify the cam by which the mold-slide is actuated, so that in the second forward movement the mold is carried slightly beyond the original line, so that a surface on the mold-disk adjacent to the mold is brought firmly
50 against a rigid support or bearing.

Figure 1 is a vertical section through the mold-disk and adjacent parts of the linotype-machine, showing the mold in position to co-operate with the matrices. Fig. 2 is a horizontal section through the same on the line 55 2 2. Fig. 3 is a similar section showing the mold in position for the ejection of the slug and advanced beyond the position shown in the preceding figures that it may receive solid support during the ejection of the slug. Fig. 60 4 is a vertical section on the correspondingly-numbered line of Fig. 3 looking toward the left.

Referring to the drawings, A represents the rigid frame of the machine, B the slotted
65 mold in which the slug or linotype is cast, and C the vertical mold-carrying disk, which is provided in the present instance with two molds for slugs of different sizes, so that one or the other may be brought into action. 70

D is the horizontal slide mounted in the main frame and having at the front the laterally-extending arm in which the pivot or journal E of the mold-disk is secured.

G is the vertical cam, grooved in its side
75 face to engage a roller *g* on the upright lever H, pivoted in the main frame and acting through a stud *g'* thereon on the slide D for the purpose of moving the slide, the disk, and the mold forward and backward. 80

I is a horizontal slide mounted in the main frame and carrying at its forward end the ejector-blade J, which advancing from the rear serves to drive the slug or linotype out of the mold and between the trimming-knives
85 K in the ordinary manner.

The mold is rotated intermittingly, as usual, so as to present the mold in a horizontal position during the casting operation and thereafter carry it around past the stationary base-knife M until it finally assumes a vertical position in front of the ejector. 90

The mold-disk is provided with hardened thimbles or bushings N, screwed firmly into its face, which slide forward over fixed studs
95 O on the main frame in order to hold the disk from turning and keep the mold in exact alinement with the matrices or the ejector, as the case may be.

Heretofore the groove in the cam G has 100

been of such form that the mold was moved forward after the casting operation the same distance it was advanced against the matrices before the casting operation. When the parts
 5 were in the ejecting position, there was nothing to directly support the mold against forward movement and the disk was liable to spring and allow the mold to go forward whenever the ejector acting against the slug
 10 was subjected to excessive resistance. To overcome this difficulty, I make the groove in the cam G of such form that when the mold is moved forward the second time in the ejecting position it is carried forward beyond the
 15 casting-plane and until the bushing N bears at its front end solidly against the shoulder on the fixed stud O. In this manner the disk is given a very rigid support immediately adjacent to the mold and the mold supported
 20 so that it cannot spring or yield in a forward direction.

While I prefer to employ the stud and the sleeve as the means of thus supporting the disk, it is manifest that the only essential re-
 25 quirement is that the cam shall carry the mold forward until the disk at a point adjacent to the mold is brought to a solid bearing against a support on the frame.

It will be manifest to the skilled mechanic
 30 that the details may be variously modified in this regard without departing from the limits of my invention or changing the mode of action.

Having described my invention, what I
 35 claim is—

1. In a linotype-machine, a mold-carrying disk, a rigid disk-support, in combination with means for advancing the disk to force the mold against the line of matrices, and for sub-
 40 sequently advancing the disk a greater distance against a rigid disk-support, whereby

forward movement of the mold is prevented during the ejection of the slug or linotype.

2. In a linotype-machine, the slide and the mold-carrying disk mounted thereon, in combination with a cam G, acting to advance the mold to one position preparatory to the casting operation, and to a different position preparatory to the ejection of the slug, and a rigid support against which the disk is seated when
 45 in the ejecting position.

3. In a linotype-machine and in combination with the mold and a movable support therefor, an operating-cam constructed with portions of different radii, whereby it is adapted to advance the mold to different positions for the casting and the ejection of a slug, respectively.

4. In a linotype-machine, the mold, its supporting-disk provided with bushing, and the slide carrying said disk, a rigid support for the front of the disk, in combination with a cam acting to carry the parts forward until the bushing is seated firmly against a rigid support, substantially as described.

5. In a linotype-machine, the main frame having a shouldered stud O thereon, and the elevator to support the matrix-line, in combination with the mold and rotary mold-carrying disk, the horizontal slide supporting said
 65 disk, and the cam G, constructed as shown, to carry the mold forward against the matrices, and to carry it forward a greater distance preparatory to the ejection of the slug.

In testimony whereof I hereunto set my
 70 hand, this 7th day of July, 1903, in the presence of two attesting witnesses.

J. K. VAN VALKENBURG.

Witnesses:

EDGAR DENTON,
 HENRY URQUHART.