

No. 652,855.

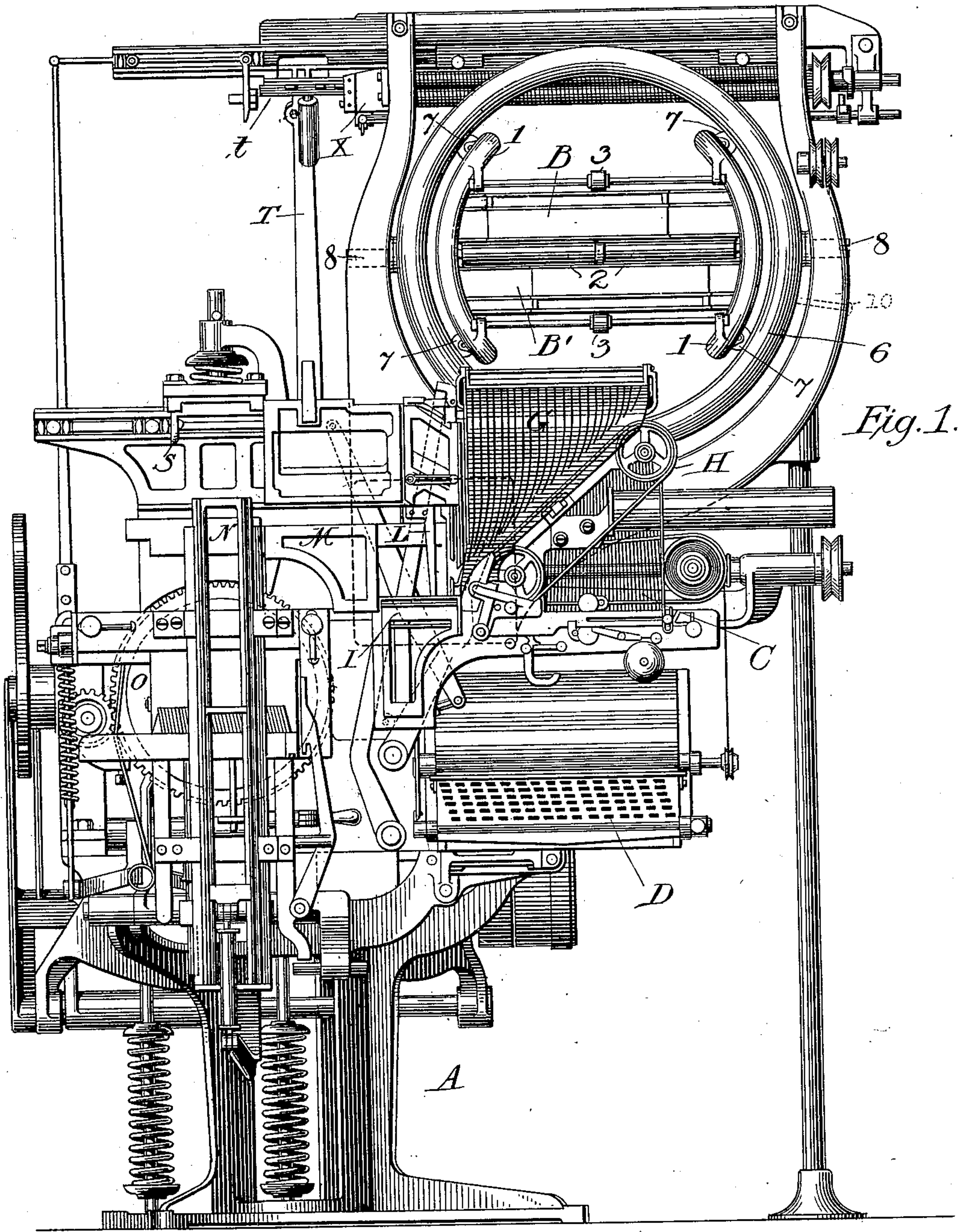
Patented July 3, 1900.

**C. MUEHLEISEN.
LINOTYPE MACHINE.**

(Application filed Apr. 7, 1900.)

(No Model.)

5 Sheets—Sheet 1.



Witnesses:

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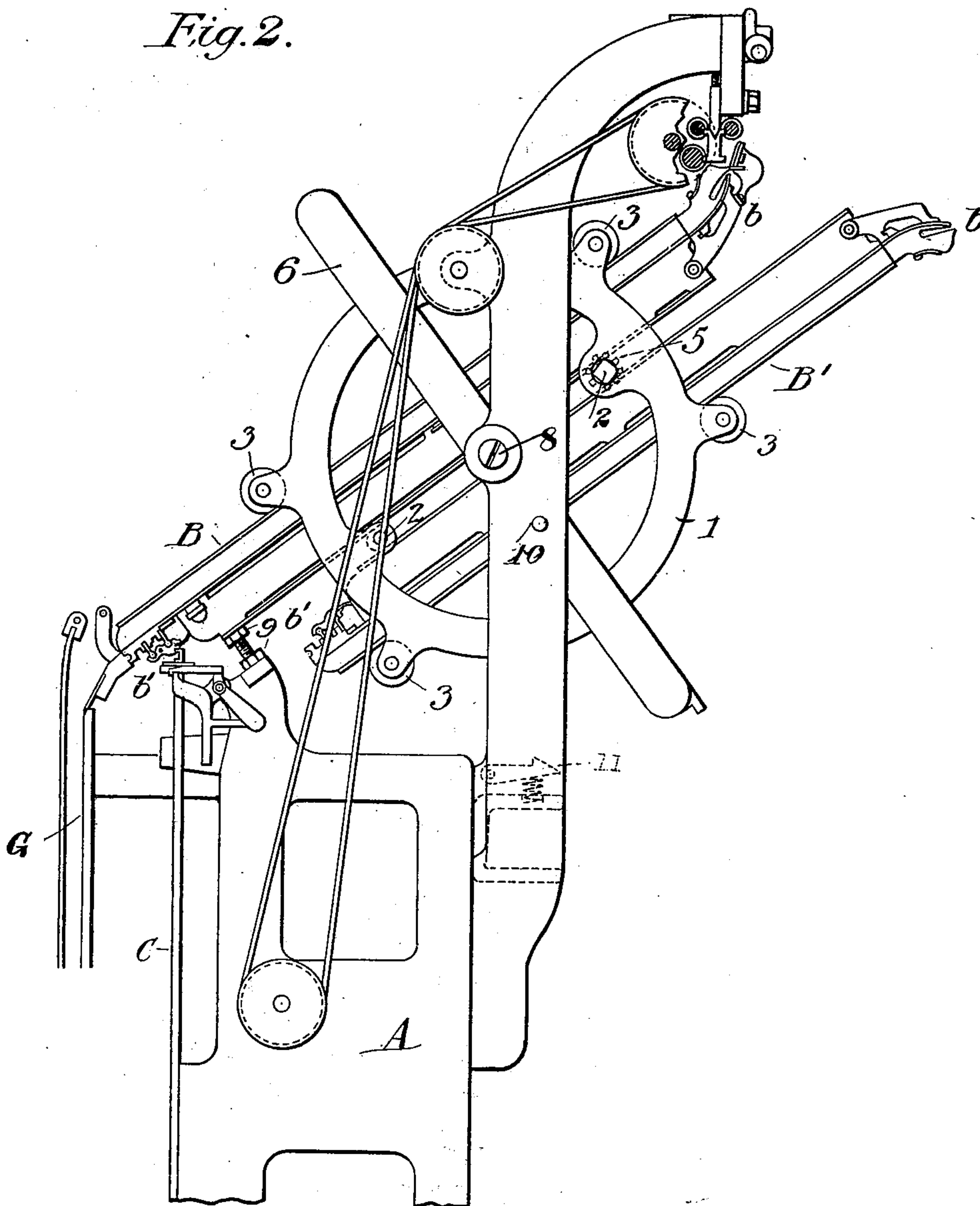
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Fig. 2.



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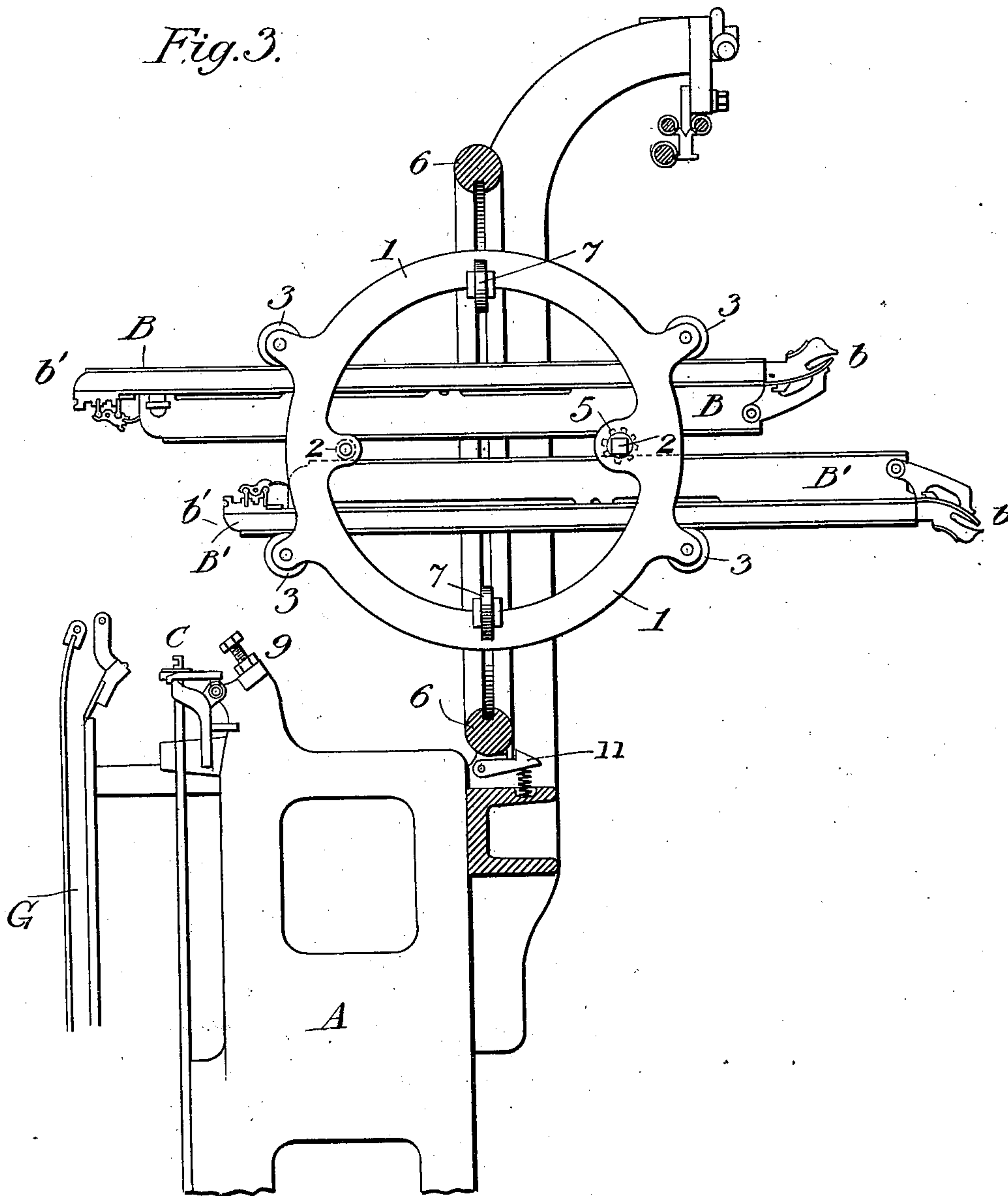
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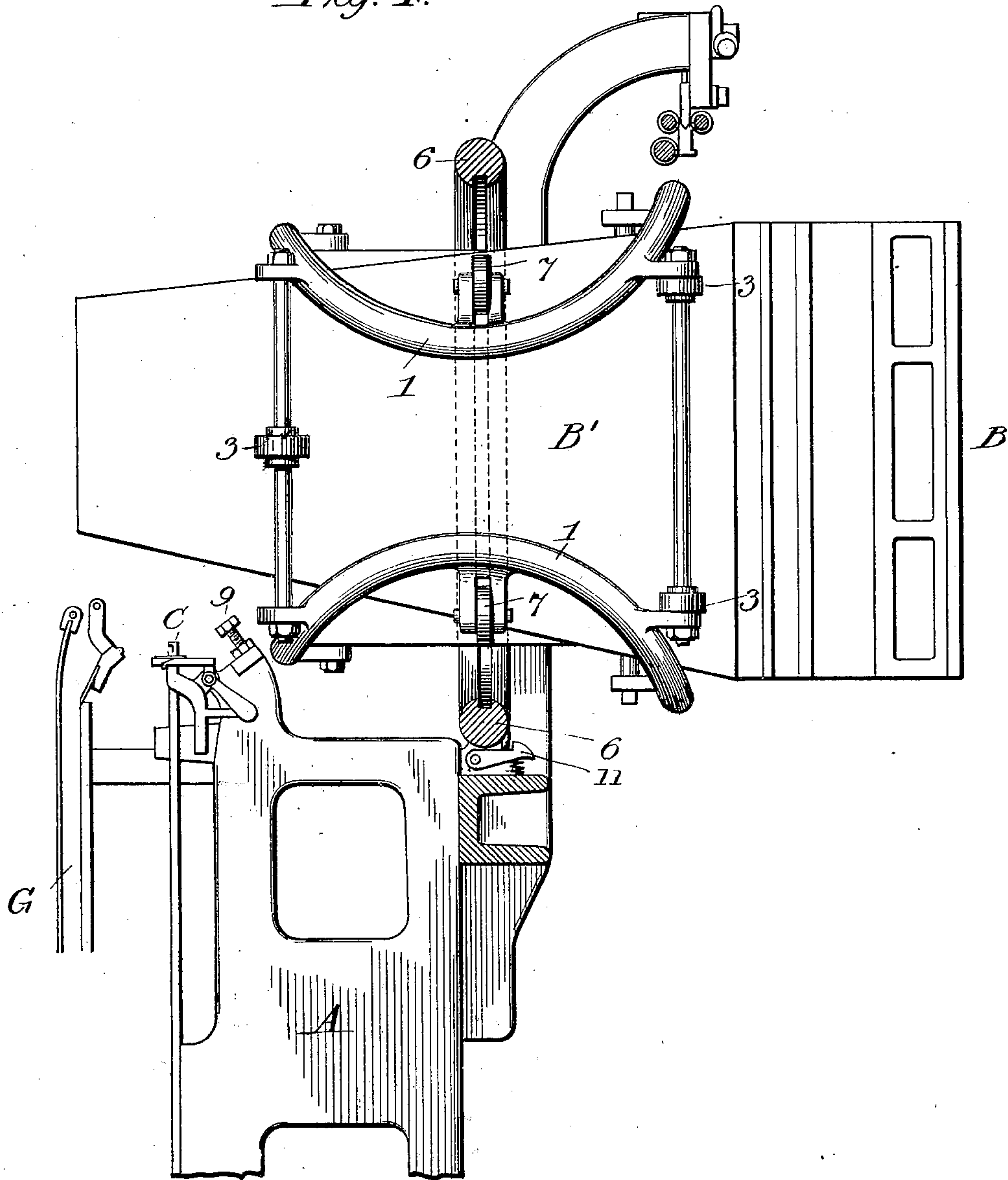
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Fig. 4.



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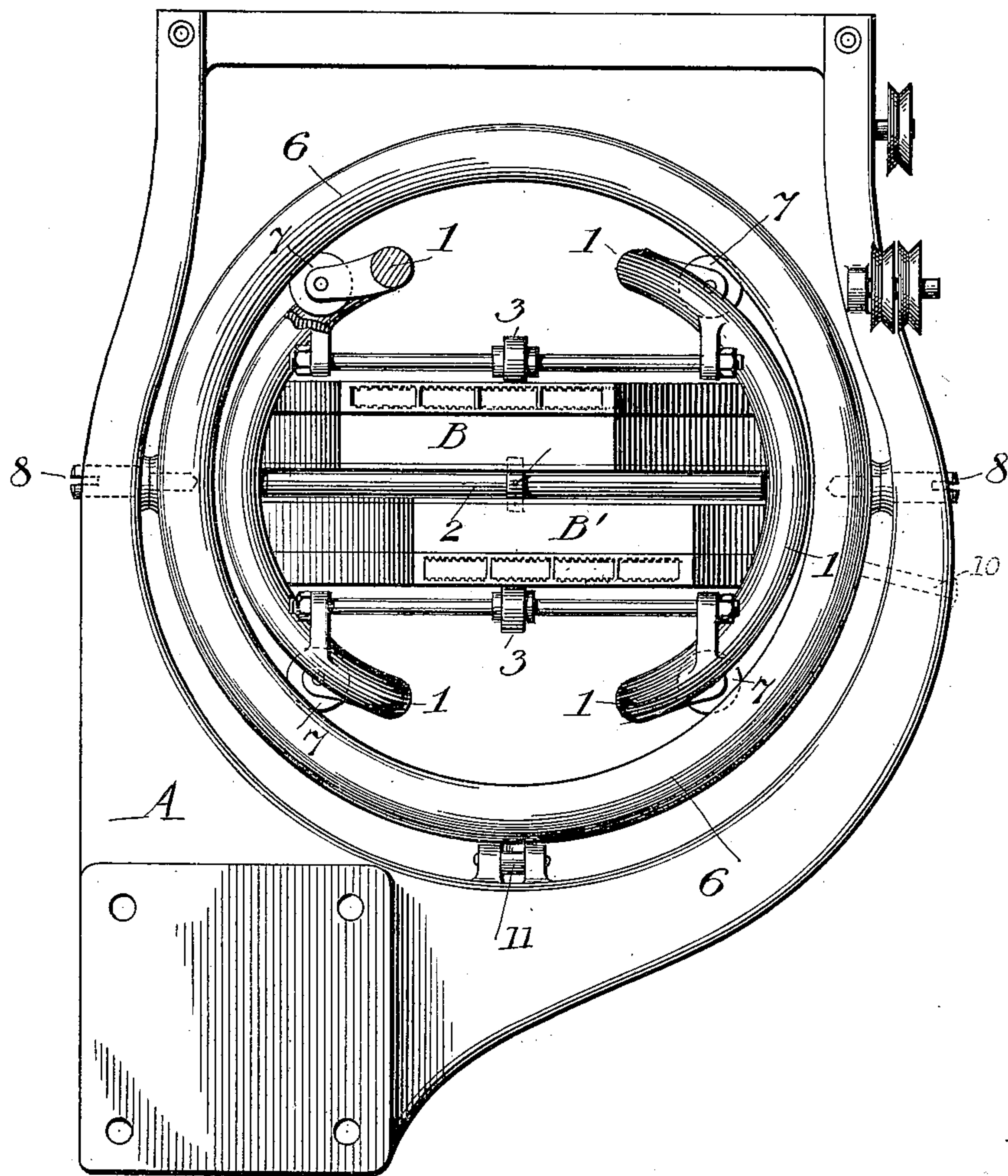
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(No Model.)

5 Sheets—Sheet 5.

Fig. 5.



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UNITED STATES PATENT OFFICE.

CARL MUEHLEISEN, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE
MERGENTHALER LINOTYPE COMPANY, OF NEW YORK.

LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 652,855, dated July 3, 1900.

Application filed April 7, 1900. Serial No. 12,005. (No model.)

To all whom it may concern:

Be it known that I, CARL MUEHLEISEN, of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

The present invention has reference to linotype-machines in which matrices containing the type characters are stored in a magazine, from which they are delivered one at a time in the order in which their characters are to appear in print and to which they are returned after being used by a distributing mechanism.

The object of the invention is to permit the speedy change from matrices representing characters of one style or size to another set or font containing characters of a different style or size; and to this end it consists in the combination of two independent magazines mounted in such manner that they may be instantly reversed, or, in other words, inverted or turned over, in order to permit one or the other to be brought into action and in operative relation to the assembling and distributing mechanisms.

While the invention is applicable in general to machines using matrices or type, I have illustrated in the accompanying drawings details of construction more particularly adapted for use in the Mergenthaler linotype-machine of the present day—such as is represented, for example, in Letters Patent No. 557,000, dated March 24, 1896. With the exception of the magazines and their adjuncts the machine may be in all particulars of ordinary construction.

Figure 1 is a front elevation of the machine provided with my improvement; Fig. 2, a side elevation of the upper portion of the machine with the parts in operative position; Fig. 3, a similar elevation with portions in vertical section, showing an intermediate position of the parts during the reversal of the magazine. Fig. 4 is a similar view showing the parts at a more advanced stage in the reversal. Fig. 5 is a front elevation of the magazines and their supports in the position shown in Fig. 3.

Referring to the drawings, A represents the main frame, and B and B' the inclined magazines in which the matrices are stored, only

one magazine being in operative position at a time.

C is a series of vertical rods controlled by finger-keys D and serving to cause the action of the escapement devices in the lower end of the magazine to deliver the selected matrices one at a time from the lower end of the magazine through the vertical guides or channels G to the inclined assembling-belt H, over which the matrices descend one at a time into the assembling-elevator I, where they are composed in line. When the composition of the line is completed, the elevator I is lifted, carrying the matrices between two fingers L on a horizontal carriage, by which the line is transferred through the intermediate guide or channel M into the first elevator N, by which the matrices are first lowered to the slotted mold in the wheel O and thereafter elevated above the original level to a horizontal shifter S, by which the line is pushed out of the elevator N to the right and into engagement with the bar *t* on the second elevator-arm T, by which the line is lifted to the feed-box X of the horizontal distributor at the top of the machine, this distributor consisting of a toothed bar, from which the matrices are suspended by teeth in their upper ends, and of horizontal screws, causing the matrices to traverse this bar until they reach points over the appropriate magazine-channels, when they are released and permitted to fall into the magazine.

The foregoing parts and the mechanism for supplying the molten metal to the mold may all be constructed in accordance with Patent No. 557,000 and the basic Patent, No. 436,532.

In the ordinary machine there is employed a single magazine B, which is fixed in position when the machine is in operation and removed wholly from the machine and replaced by another magazine containing a different font of matrices when speedy change from one style of type to another is required. I now employ two magazines B and B' as permanent members of the machine. As shown herein, each magazine is of the ordinary construction, comprising parallel top and bottom plates fixed at a suitable distance apart to admit the matrices between them and grooved longitudinally in their proximate faces to re-

ceive and guide the ears of the matrices. At the upper end each magazine is provided with the usual grooved throat or entrance *b* to receive the matrices from the overlying distributor and direct them downward into the magazine-channels. At the lower end each magazine is provided with the usual vibrating escapement *b'* for each channel to effect the release of the matrices one at a time.

10 The matrices enter the operative magazine, as usual, at the upper end and sliding down are discharged one at a time by the corresponding escapements, that they may pass to the assembling devices. Each escapement

15 device is notched or shouldered in the rear edge, as heretofore, to engage with the upper hooked end of the operating bar or rod C, as plainly shown in Fig. 2.

In order that the two magazines may be

20 mounted permanently in the machine without conflicting with the other parts and that they may be brought alternately into operative position, I mount them, as shown, one above the other, with their lower sides or

25 sides which bear the escapements facing each other, or, in other words, so that when one magazine is right side up the other is wrong side up. Each magazine has its delivery end, or end carrying the escapements, arranged

30 adjacent to the receiving end of the other magazine. They are mounted in and arranged to slide forward and backward through a supporting-frame 1, being separated from each other by two horizontal rollers 2 2,

35 mounted in said frame and held inward against the intermediate rollers by outside rollers 3 3 or equivalent guides or confining devices carried by the frame 1, the arrangement being such that when the magazines are

40 out of connection with the operating devices at the bottom and the distributor at the top they may slide endwise in a forward-and-backward direction, and this in order that the magazine which is for the time being lower-

45 most and out of action may be carried clear of contact with other parts in the machine.

The roll 2, by which the magazines are separated, is provided with pinions 5, engaging corresponding teeth on the magazine, so

50 that when a crank is applied and the roller turned one magazine will be shifted rearward, while the other is shifted forward.

The frame 1, in which the two magazines are directly supported, is in turn supported

55 by a frame 6, lying transversely of the machine and having an internal circular opening to receive the frame 1 and admit of its being revolved in a direction transverse to the front of the machine, so that one magazine or the other may be brought to the top preparatory to its being adjusted in operative position. The frame 1 is preferably provided with sustaining-rollers 7, traveling on the in-

60 side of the transverse annular frame 6, in order to reduce the friction; but it is to be understood that these are not necessary elements of the construction. The outer sustaining-

frame 6 is provided with and sustained by horizontal trunnions 8, lying parallel with the front of the machine and sustained in the

70 main frame, these trunnions permitting the two frames to be tipped or rocked in a fore-and-aft direction, so that the magazines supported therein may be tipped from the inclined position, in which they operate, to a

75 horizontal position, as represented in Figs. 3 and 5.

From the foregoing it will be observed that the magazines are capable of three movements—first, a sliding motion, one forward

80 and the other backward; second, the tipping motion around the journals 8 as a center, so that the magazines may assume a horizontal position, and, third, a rotary motion from right to left in order to invert or reverse the

85 magazine.

In action the upper magazine is in use, its upper end or entrance-mouth standing, as usual, immediately under the distributor X to receive the matrices, while its lower end

90 is in position to deliver into the channels leading to the assembler and with the escapement devices in engagement with rods C. When the lower magazine is to be brought

95 into operative position, the rods C are disengaged from the escapements, the magazines tipped up to a horizontal position, as shown in Fig. 3, the pinions 5 turned to slide the upper magazine backward and the lower mag-

100 azine forward, after which the frame 1 is revolved within frame 6 to carry the upper magazine down and bring the lower magazine B' to the top, after which the magazines are tipped down to the original inclination and the proper connections made with the upper

105 magazine.

The proper position of the operative magazine may be secured by the usual set-screws 9 under its lower end or otherwise. Locking

110 devices of any suitable character may be employed to hold the parts in their operative positions. For instance, the frame 6 may be held from tipping by means of a locking-pin 10, inserted through the side of the main frame, or by any equivalent locking device.

115 The rotation of the frame 1 within the outer frame is impossible when the operative magazine rests on the supporting-screws 9 under its lower corners. During the reversal of the

120 magazines the frame 6 may be held in the required vertical position by a latch 11 in the main frame or by other suitable means.

The essence of my invention resides in mounting two magazines in revoluble supports, so that they may be inverted at will,

125 and it is manifest that the details of construction may be widely modified without departing from the limits of my invention.

While the longitudinal sliding motion of the magazines is necessary in the commercial

130 linotype-machines of the present day in order that the under magazine may be kept out of contact with the main frame and other parts, it is obvious that such sliding motion

is unnecessary when the invention is used in a machine having its frame cut away to give the necessary clearance when the magazines are reversed.

5 I believe myself to be the first to provide a linotype or other machine for composing type matrices or dies with two distinct magazines adapted for reversal or inversion, so that either one may be brought into operative po-
10 sition and the other at the same time carried out of the way to an inoperative position.

The word "inversion" appearing in this specification and in the claims following is used in its ordinary signification—that is to
15 say, as indicating magazines which are capable of being turned over in order that one side or the other may be brought uppermost.

Having described my invention, what I claim is—

20 1. In a linotype or kindred machine, two magazines mounted for inversion therein.

2. In a linotype-machine, in combination with a distributor and a composing mechanism, two intermediate parallel magazines, and
25 supports permitting said magazines to be inverted, whereby one or the other may be brought into operative position.

3. In a linotype-machine, two magazines mounted to slide endwise in relation to each
30 other, in combination with supports adapted

to permit the magazines to be tipped from an inclined to a horizontal position and also to permit them to be inverted.

4. In a linotype-machine, the combination of a supporting-frame 6, mounted on hori- 35 zontal axes, a secondary frame 1 revoluble within the frame 6 at right angles to its axes, and two magazines sustained and movable endwise within the frame 1, substantially as described. 40

5. In a linotype-machine having a distributing mechanism and a composing or assembling mechanism, two flat intermediate re- 45 versely-arranged magazines, and supports permitting one magazine or the other to be brought into operative relation to the distributing and composing mechanisms.

6. In a linotype-machine, two flat parallel magazines provided with escapement devices on their proximate faces, and revoluble sup- 50 porting devices for said magazines, allowing either magazine to be brought uppermost at will.

In testimony whereof I hereunto set my hand, this 24th day of February, 1900, in the 55 presence of two attesting witnesses.

CARL MUEHLEISEN.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.