

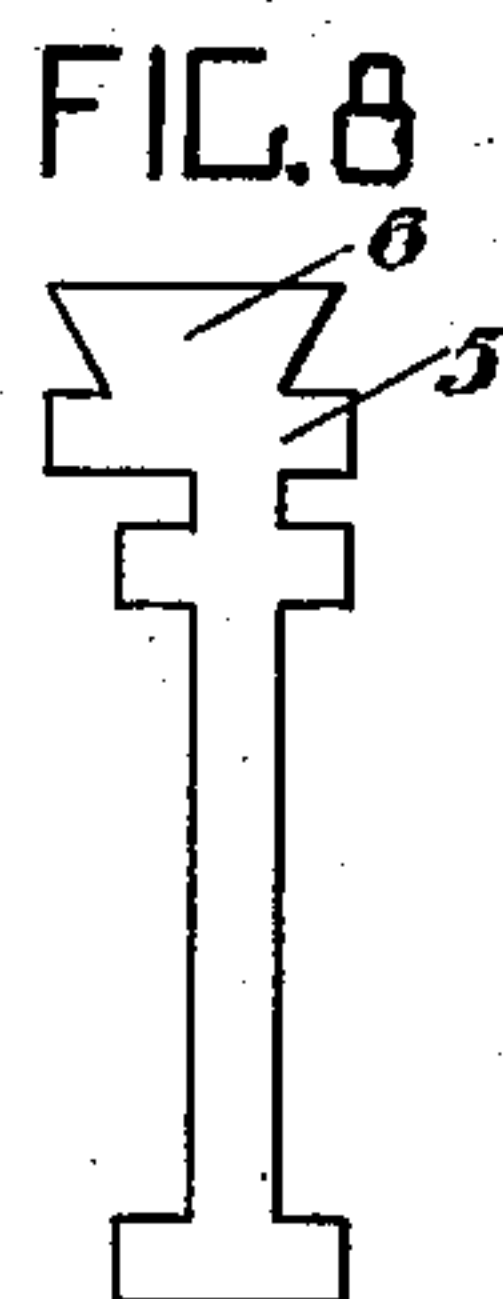
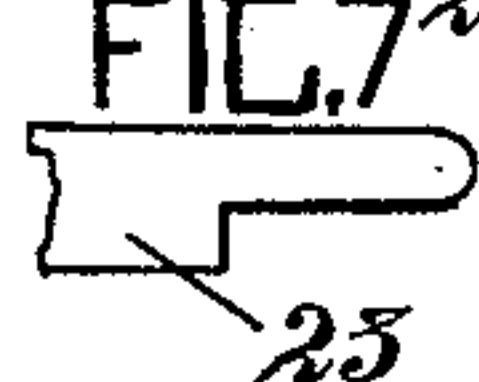
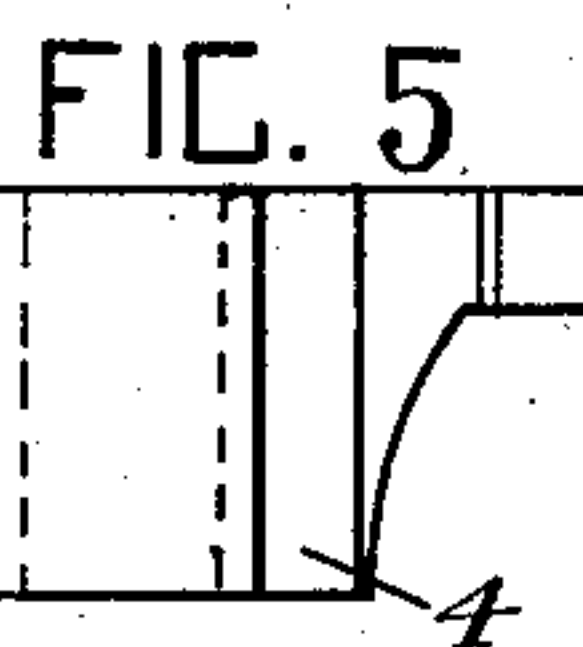
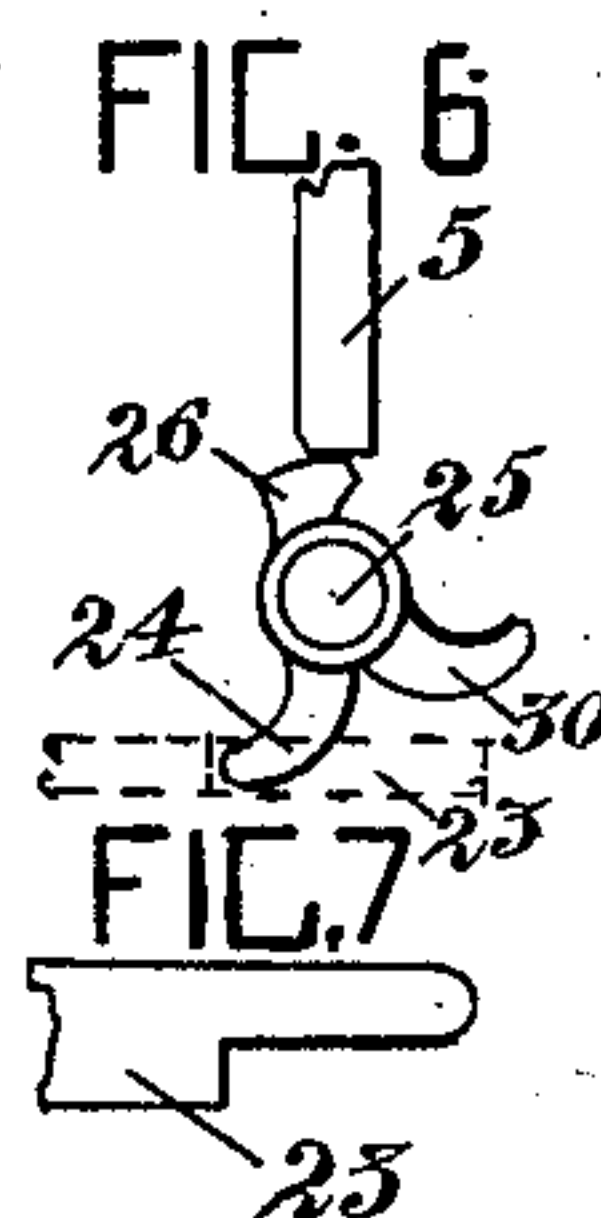
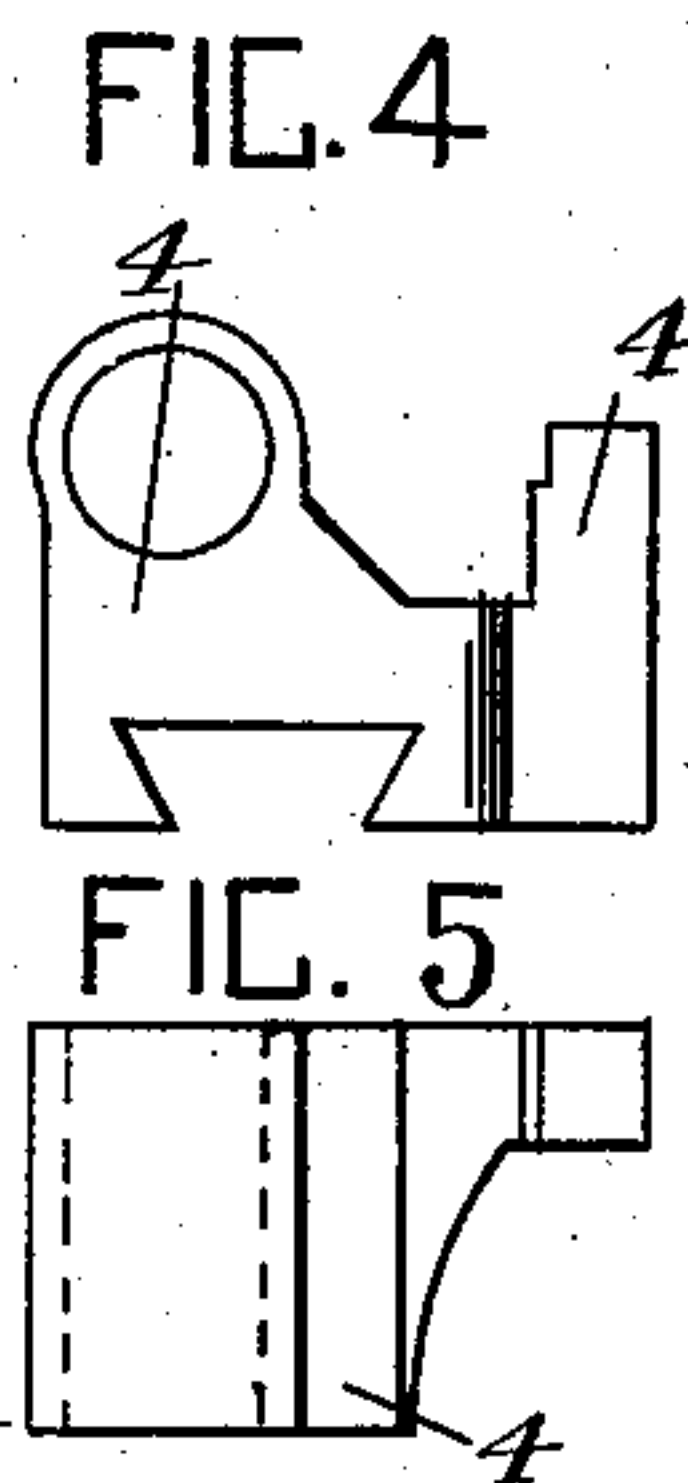
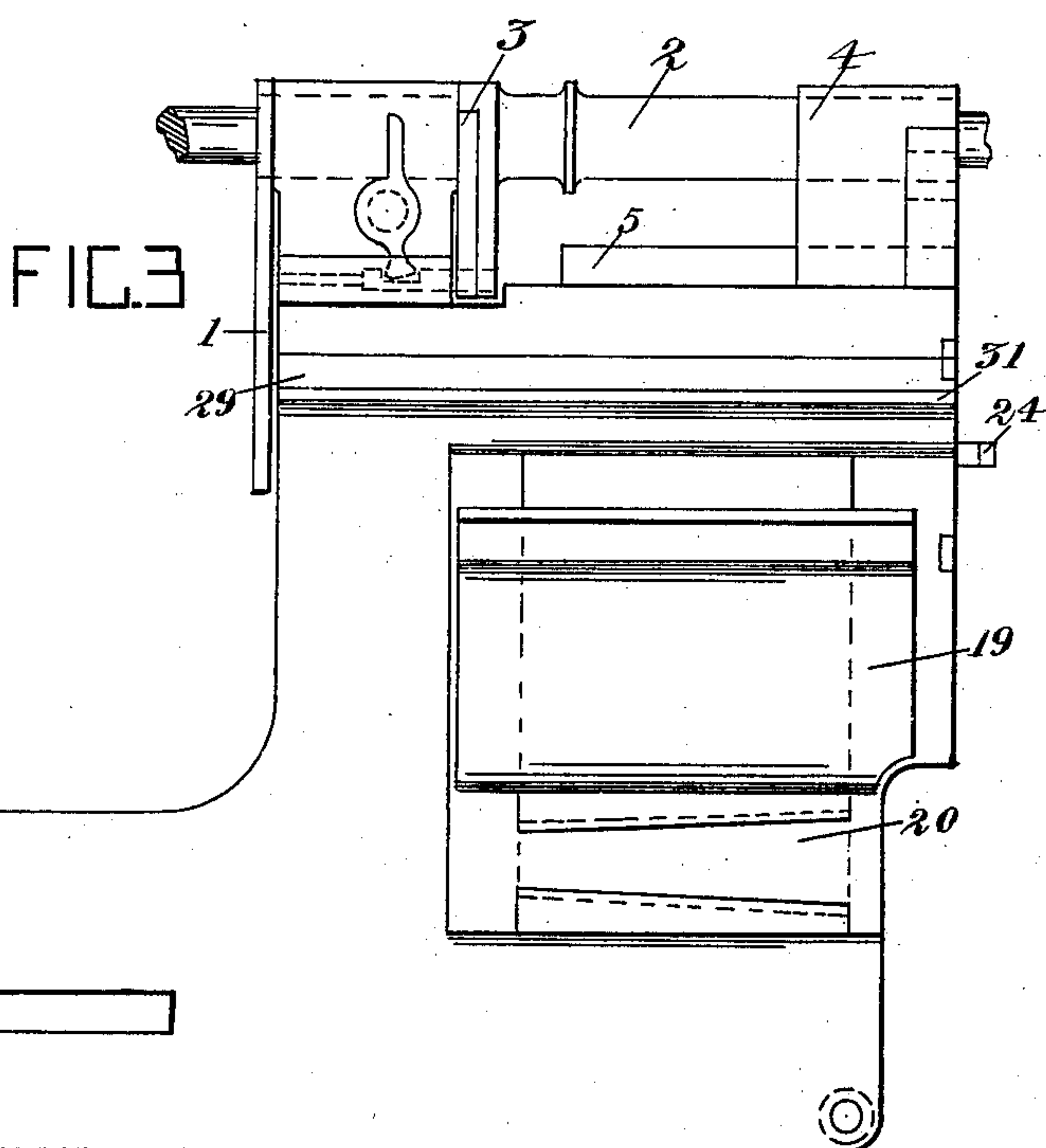
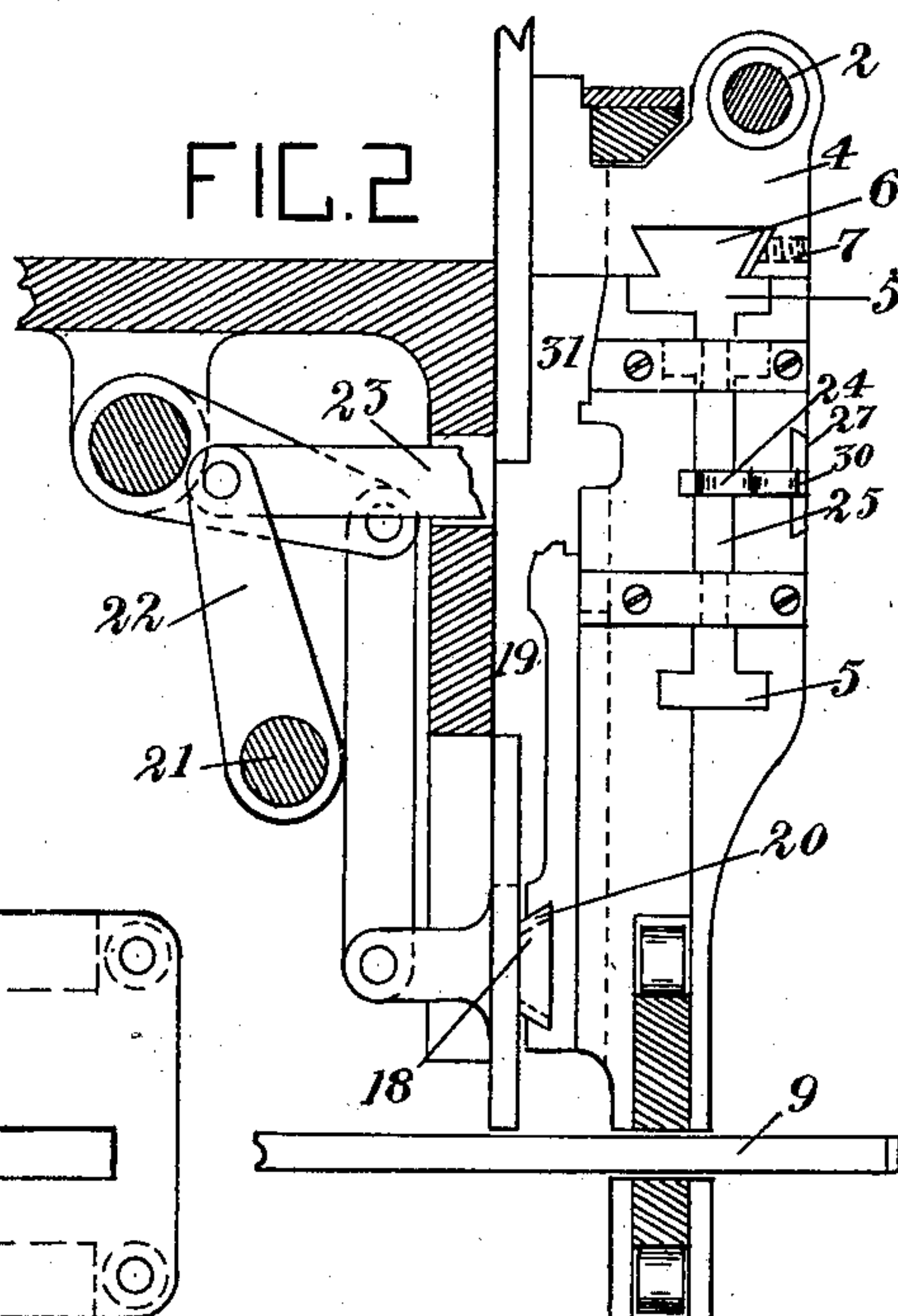
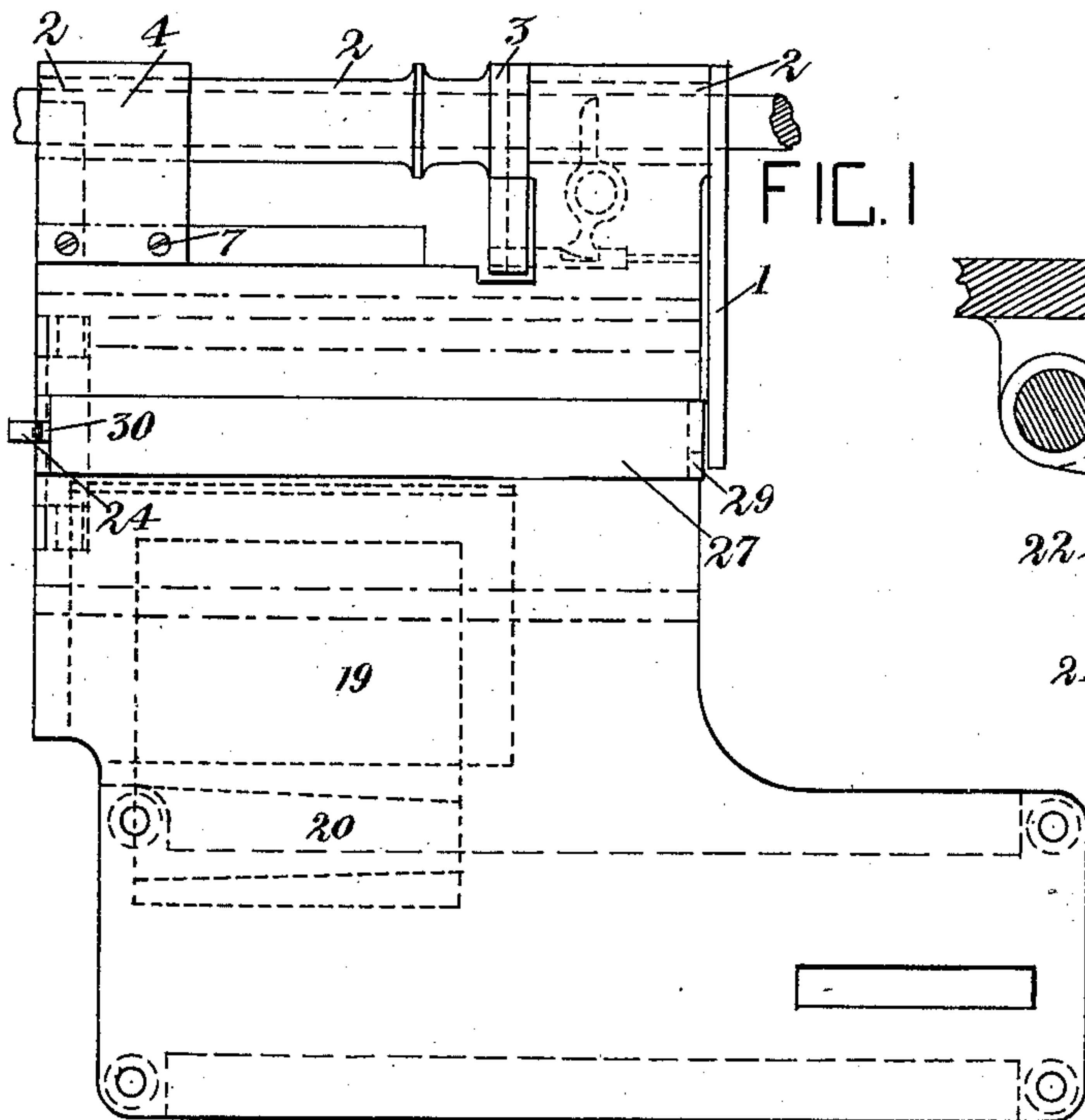
No. 734,437.

PATENTED JULY 21, 1903.

W. S. SCUDDER.  
LINE CASTING MACHINE.  
APPLICATION FILED SEPT. 28, 1901.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses  
W. S. Guest  
L. F. Brock

Inventor  
W. S. Scudder  
by C. F. Peckham  
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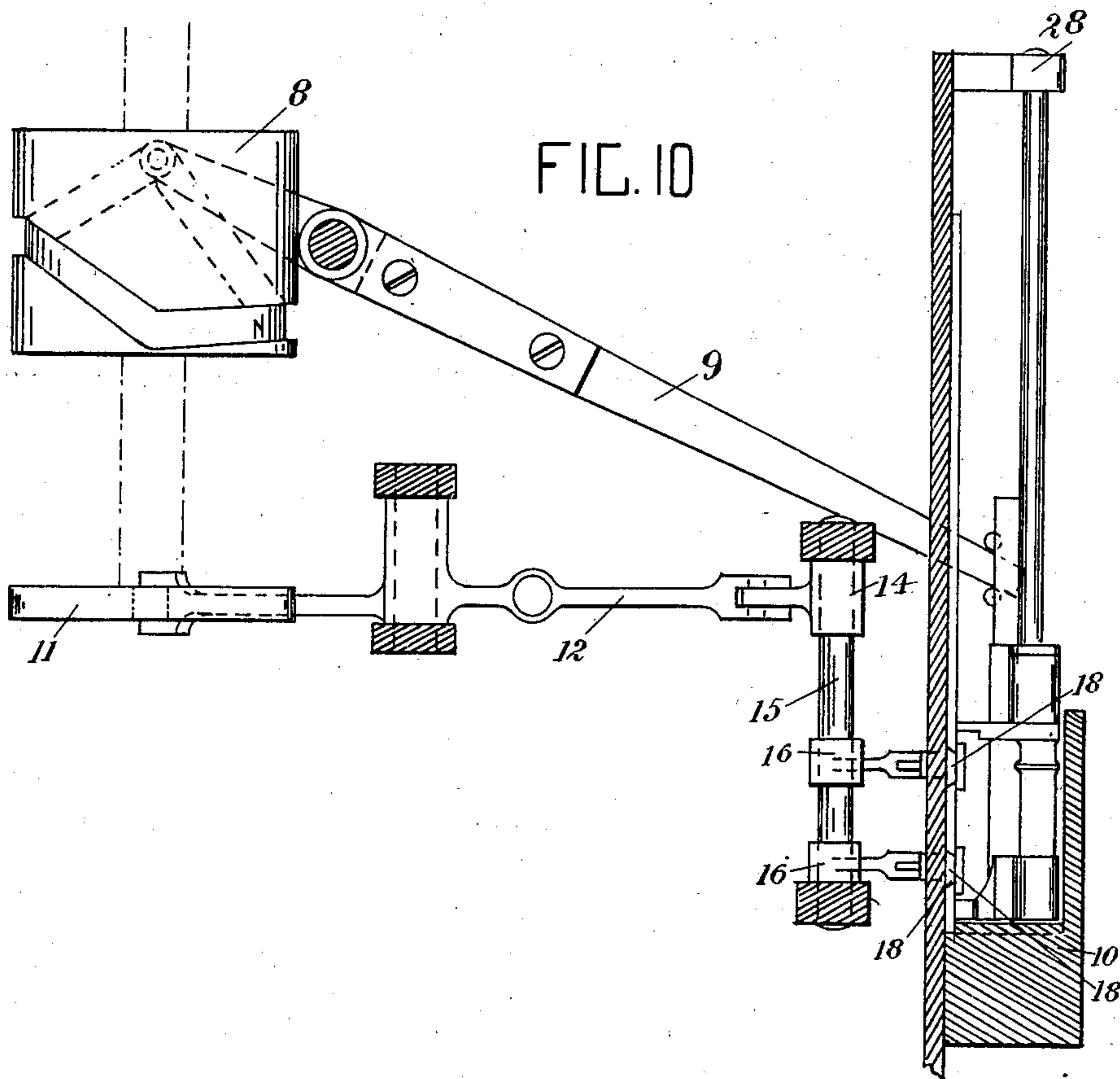
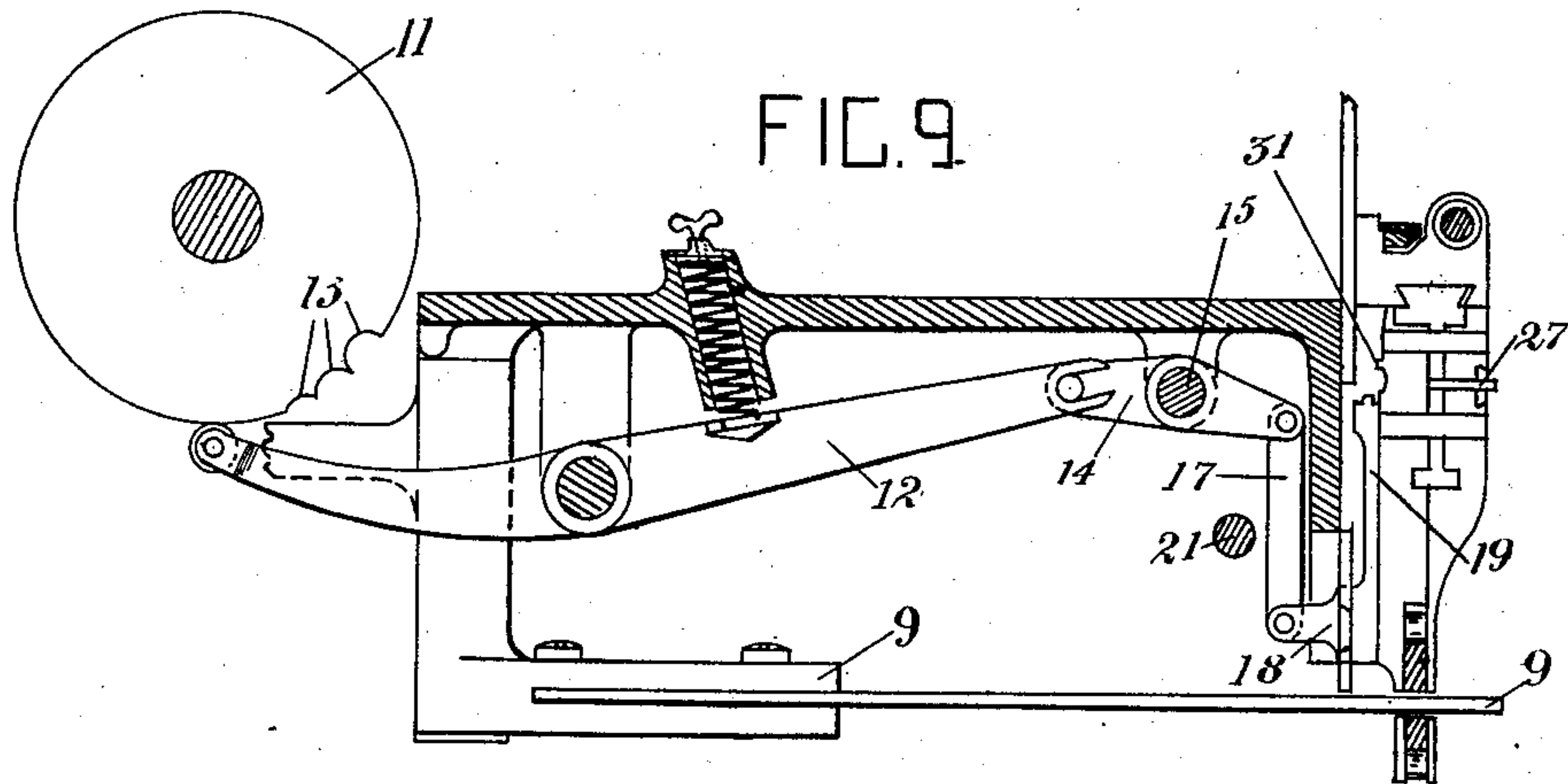
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NO MODEL.

3 SHEETS—SHEET 2.



Witnesses

W. J. Guest  
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3 SHEETS—SHEET 3.

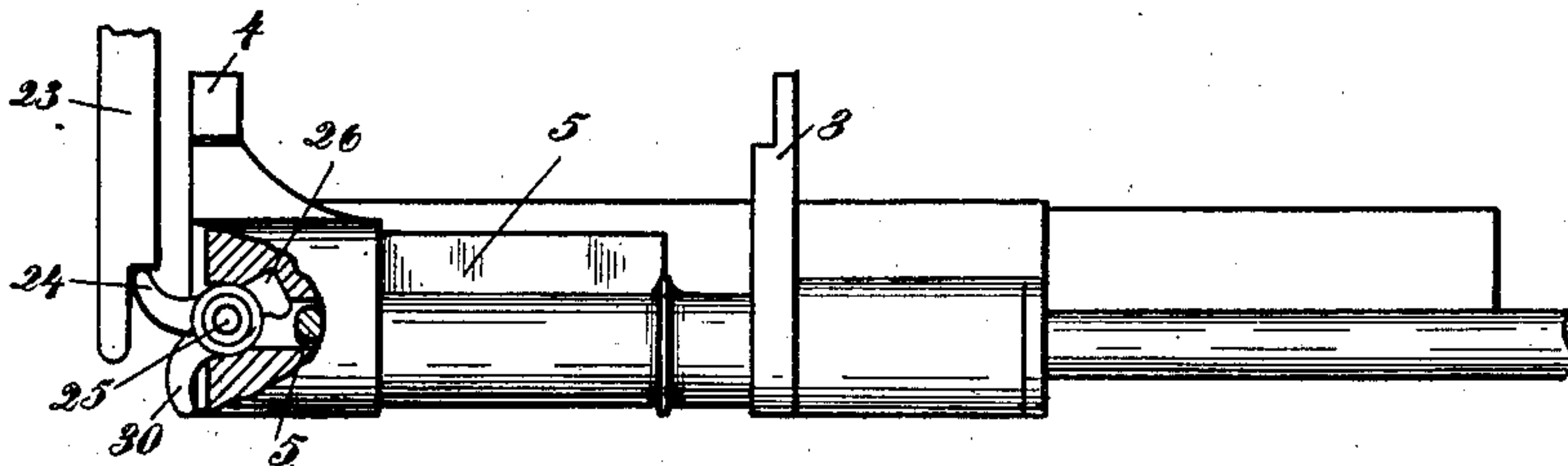
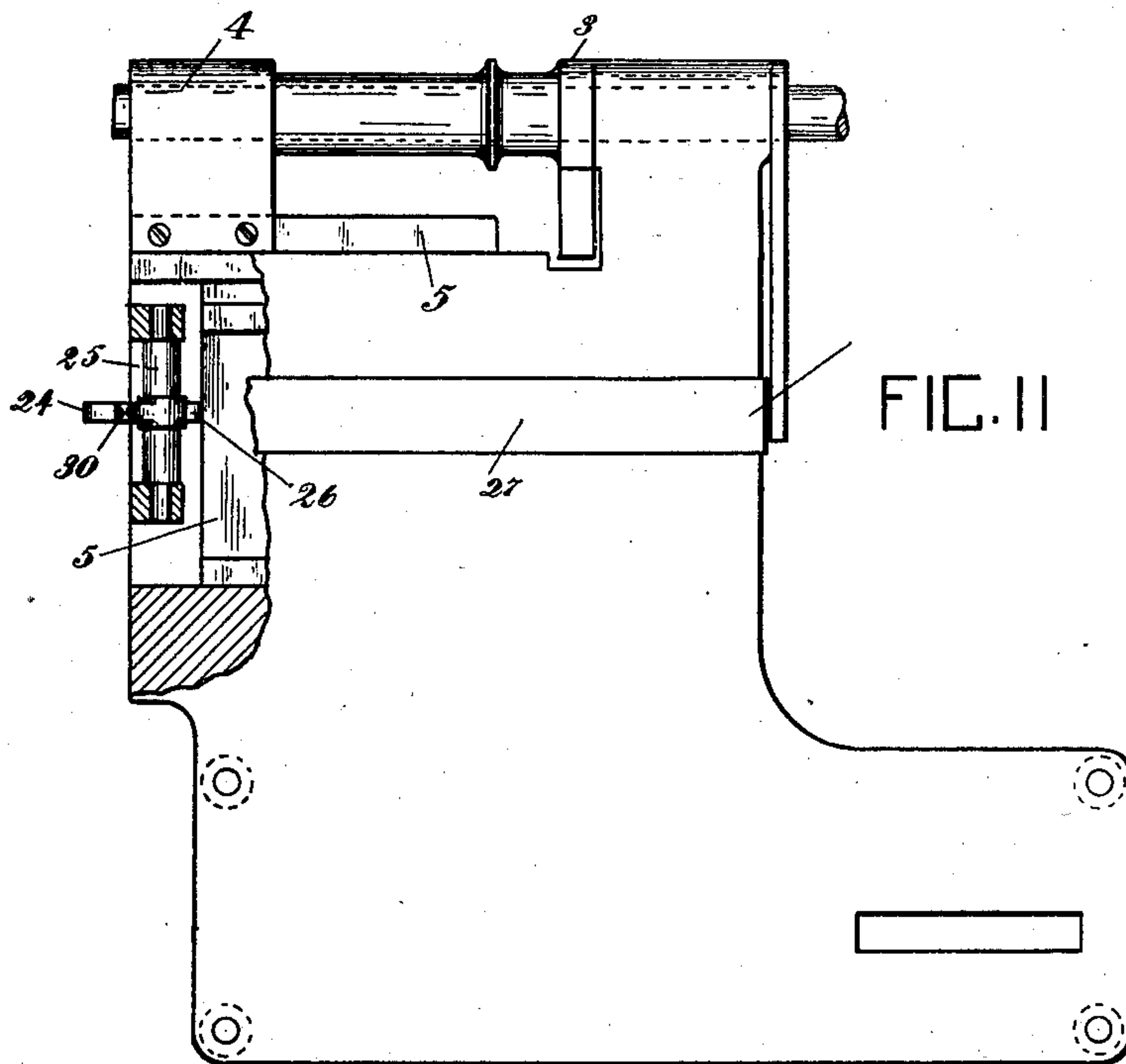


FIG. 12

Witnesses

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H. L. Lumbly

Inventor

W. S. Scudder  
by C. H. Riches  
his attorney



# UNITED STATES PATENT OFFICE.

WILBUR S. SCUDDER, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE MONO-LINE COMPOSING COMPANY, OF WASHINGTON, DISTRICT OF COLUMBIA, A CORPORATION OF WEST VIRGINIA.

## LINE-CASTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 734,437, dated July 21, 1903.

Application filed September 28, 1901. Serial No. 76,938. (No model.)

*To all whom it may concern:*

Be it known that I, WILBUR STEPHEN SCUDDER, a citizen of the United States, and a resident of Brooklyn borough, city of New York, State of New York, temporarily residing in Montreal, Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Line-Casting Machines, of which the following is a true, clear, and exact specification.

My invention relates to that class of machines known as the "monoline," which is described fully in my Letters Patent of the United States No. 506,198, dated October 3, 1893, and No. 605,141, dated June 7, 1893.

The main features of my new invention are embodied in a "line-carriage," in which I have arranged a mechanism for rapidly adjusting the carriage to any desired length of line, a ledge to be an integral part of the carriage, which heretofore has occupied a separate position in the machine and which I have now connected to the carriage as a part of the justification mechanism. In the monoline-machine the line-carriage plays a very important part, its present duties being to grasp the assembled line of matrix-bars and adjustable steel word-spacers, convey the line from its point of assemblage to a position where a separate mechanism will act on the pendent part of the steel-spacers to justify the line until it completely fills the predetermined limit in the carriage, convey the now justified line still further to a position for casting the line-bar, after which it returns with the line to the mechanism for distribution. The work of the line-carriage determines the length of line or measure which the machine may be setting, and a mechanism which will enable the operator to readily and quickly adjust the carriage to any desired measure will greatly enhance the capabilities of the machine. It has been further determined that the justification of the line occurring at a place so remote from the position where the line is reproduced by casting gives rise to serious troubles, the principal of which is an inability of the locking-up mechanism to even the face of the matrix-bars as the line

is brought to it after it has been tightly justified. To obviate this, I have removed the operating mechanism of the justification to a position in front of the vise and directly in contact with the locking-up arrangement and have made the justifying-shoe a part of the line-carriage, by which the adjustable part of the spacers are driven. I am enabled by this change to effect justification at the same time and in conjunction with those other parts in such a manner as to secure the proper alinement of the characters. After the line has been cast the carriage is slightly loosened, the alining-bar is withdrawn from its contact with the matrix-bars and spacers, and the depressor, acting on the matrix-bars, levels their body parts in a shoe provided with a ledge which is to prevent the matrix-bars from falling to the floor. The line-carriage then returning conveys the now loosened line to the distributor, the shoe and ledge extending out a sufficient distance to enable this operation. In the present machines the loosened matrix-bars as they pass out toward the distributor drag along the ledge of the shoe and frequently become disarranged by frictional contact with the same. My new line-carriage has a ledge which is a part of the carriages and moves with it, and the loosened matrix-bars are carried by it to the distributor.

For a full understanding of my invention reference is had to the accompanying drawings, forming part of this specification, in which like symbols indicate the same parts, and wherein—

Figure 1 is a front view of the line-carriage. Fig. 2 is an end view of the line-carriage and adjoining parts. Fig. 3 is a back view of the line-carriage. Fig. 4 is a detail end view of the sliding jaw of the line-carriage. Fig. 5 is a plan view of the sliding jaw. Fig. 6 is a plan view of the release for loosening the line. Fig. 7 is the end of the detent for operating the release. Fig. 8 is an end view of the moving-plate to which the sliding jaw is attached. Fig. 9 is an end view illustrating the motions for operating the line-carriage and justification. Fig. 10 is a plan view showing the



same. Fig. 11 is a front view of the line-carriage with a portion of it broken away to illustrate the release of the moving plate. Fig. 12 is a plan view of the line-carriage to further illustrate the release.

I have illustrated only those parts of a line-casting machine to which my invention relates as and in connection with the monoline-machine, the parts illustrated combining with and coacting with the machines described in the Letters Patent heretofore mentioned.

Upon the completion of the line in process of assemblage in the usual manner the operator, by a lever placed at the right of the keyboard, locks the line into the line-carriage. The lever mentioned operates against the finger 1, which is an integral part of the shaft 2, of which the swinging jaw 3 is also a part. Pushing the finger 1 ahead swings the jaw 3 up to close the line between it and the sliding jaw 4. The sliding jaw 4 is attached to the moving plate 5 by means of a dovetail 6 in order that it may be moved along the same to adjust the line to the measure determined upon. The sliding jaw 4 also encircles the shaft 2 of the swinging jaw 3, but loosely, in order that it may be moved freely along the dovetail 6 on the top of the moving plate 5. Screws 7 are also provided that as the sliding jaw 4 is moved into position it may be locked on the dovetail 6. In this manner I can secure a quick adjustment of the sliding jaw 4, which limits the line being composed, the swinging jaw 3 being fixed. As the line is locked in the carriage in the manner described, the machine automatically, by means of the cam 8 and the lever 9, moves the line-carriage out and toward the locking-up and casting mechanisms. As a point behind the vise 10 is reached the justifying-cam 11 operates on the end of the spring-tensioned lever 12 by allowing it to enter the depressions 13 in the cam 11. Motion being conveyed in this manner through the lever 12 to the lever 14 on the justifying-shaft 15 a short quick movement is imparted to the two crank-arms 16 upward, and the links 17, being connected to the tapered dovetailed slides 18, cause those parts to give a series of upward movements, governed by the number of depressions 13 in the cam 11. At the rear or back of the carriage I have placed the justifying-plate 19, which is provided with a tapered dovetail 20. As the line-carriage with its line moves into and behind the vise 10, the tapered dovetail 20 moves onto and connects with the tapered dovetailed slides 18 and temporarily becomes a part of the justifying mechanism. As motion is imparted to the tapered sliding dovetailed blocks 18 in the manner which has been described the justifying-plate 19 is caused to vibrate in unison therewith and in this manner to act on the spacers to justify the line. This motion of justifying taking place in concert with the locking up of the line of matrix-bars and spacers will effect a more thorough means of perfecting the line for

reproduction. After the line has been cast the succeeding operation is to loosen the line and prepare it for distribution. This is done by taking from the present auxiliary shaft 21 by means of the lever 22 and the detent 23 a forward action, which action is in turn imparted to the arm 24, causing the short upright shaft 25 to rotate slightly and move the projection 26 from behind the moving plate 5, to which the sliding jaw 4 is attached, allowing the moving plate 5 to move sufficiently to slacken the pressure of the sliding jaw 4 against the justified line. Sufficient motion is thus imparted to the sliding jaw 4 to loosen the line, so that the succeeding actions of withdrawing the aligning-bar and the depression of the body parts of the matrix-bars can be effected. As the carriage is returned to its normal position to receive the next line the plate 27, which is dovetailed in the front of the carriage, comes in contact with the bracket 28, which, acting on its end 29, pushes the plate 27 against the arm 30, attached to the upright shaft 25, causing it to rotate slightly in the opposite direction from that heretofore imparted and in turn bring the projection 26 back and in under the moving plate 5, thus resetting that plate to a given position, and in turn the sliding jaw 4 is also replaced in a fixed position.

On the back of the carriage and made a part of it is the ledge 31, which is opened out slightly at its receiving end in order that the matrix-bars and spacers may freely enter it as the carriage is returned to receive its next line. The work of this ledge 31 is as follows: After the line has been cast the depressor acting on the body part of the matrix-bars pushes them from the position they have heretofore occupied to bring their proper character into play downward to a common level. To prevent their falling to the floor, the ledge 31 is placed at a proper height to receive them, and the matrix-bars all having been brought to the level of the ledges carries them as the carriage moves toward the distributor.

While I am quite aware that I am not the first to bring or place the justifying of the line in contiguity with the vise, mold, and other parts, yet in line-casting machines of the model of the monoline I believe I am first to have made a part of the carriage an essential part of the justifying arrangements and to have designed a movement to effect a proper and satisfactory justification at the locking-up point of the machine. I believe the method of providing an adjustable sliding jaw through the medium of a moving plate of substantial character and the means of locking and unlocking the same will greatly enhance the efficiency of the machine and that the doing away with the shoe or ledge which is now a fixed part of the machine will greatly benefit the matrix-bars and general working of the machine.



Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

5 1. In a line-casting machine the combination of a line-carriage, fixed and movable jaws for the line-carriage, and a matrix-bar-supporting ledge carried by the line-carriage, substantially as specified.

10 2. In a line-casting machine the combination of a line-carriage, fixed and movable jaws for the line-carriage, and a laterally-moving plate carried by the line-carriage arranged to permit of the adjustment of the position of the movable jaws, substantially as specified.

15 3. In a line-casting machine the combination of a line-carriage, a laterally-moving plate carried by the line-carriage arranged to permit of the adjustment of the position of the movable jaw, and mechanism to actuate the moving plate to cause the movable jaw to release its pressure on the matrix-bars after the line has been cast, substantially as specified.

4. In a line-casting machine the combination of a line-carriage, fixed and movable jaws for the line-carriage, a vertically-movable justifying-plate carried by the line-carriage, substantially as specified.

5. In a line-casting machine the combination of a line-carriage, fixed and movable jaws for the line-carriage, a vertically-movable justifying-plate carried by the line-carriage, and an actuating mechanism to engage and actuate the justifying-plate at the point of casting, substantially as specified.

6. In a line-casting machine the combination of a line-carriage, fixed and movable jaws for the line-carriage, a justifying-plate carried by the line-carriage arranged to be actuated at the point of casting to justify the line to be cast, substantially as specified.

Toronto, September 23, A. D. 1901.

W. S. SCUDDER.

In presence of—

C. H. RICHES,  
J. O'KEEFE.