

No. 700,341.

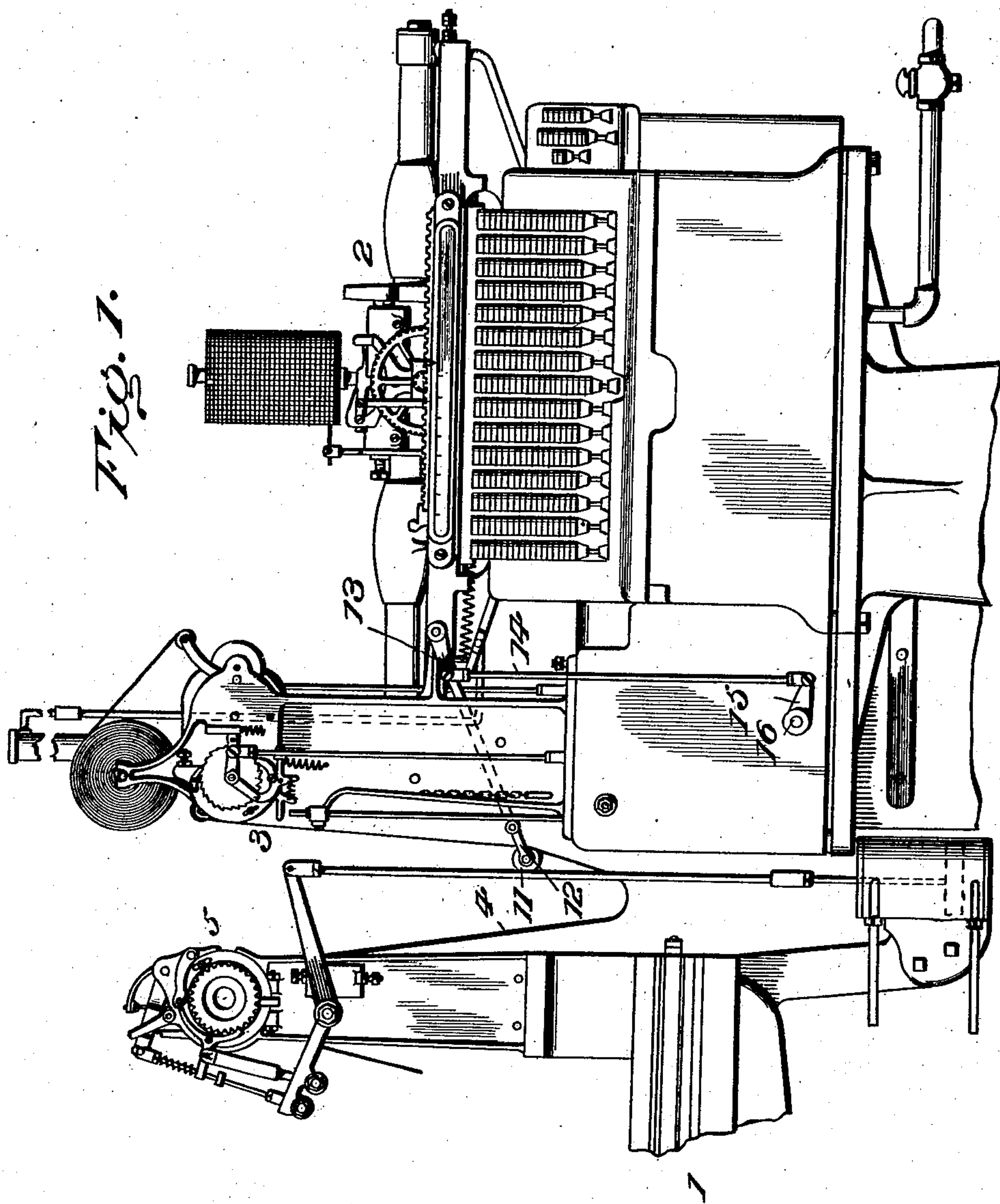
Patented May 20, 1902.

T. LANSTON.
TYPE COMPOSING MACHINE.

(Application filed Feb. 3, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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Witnesses

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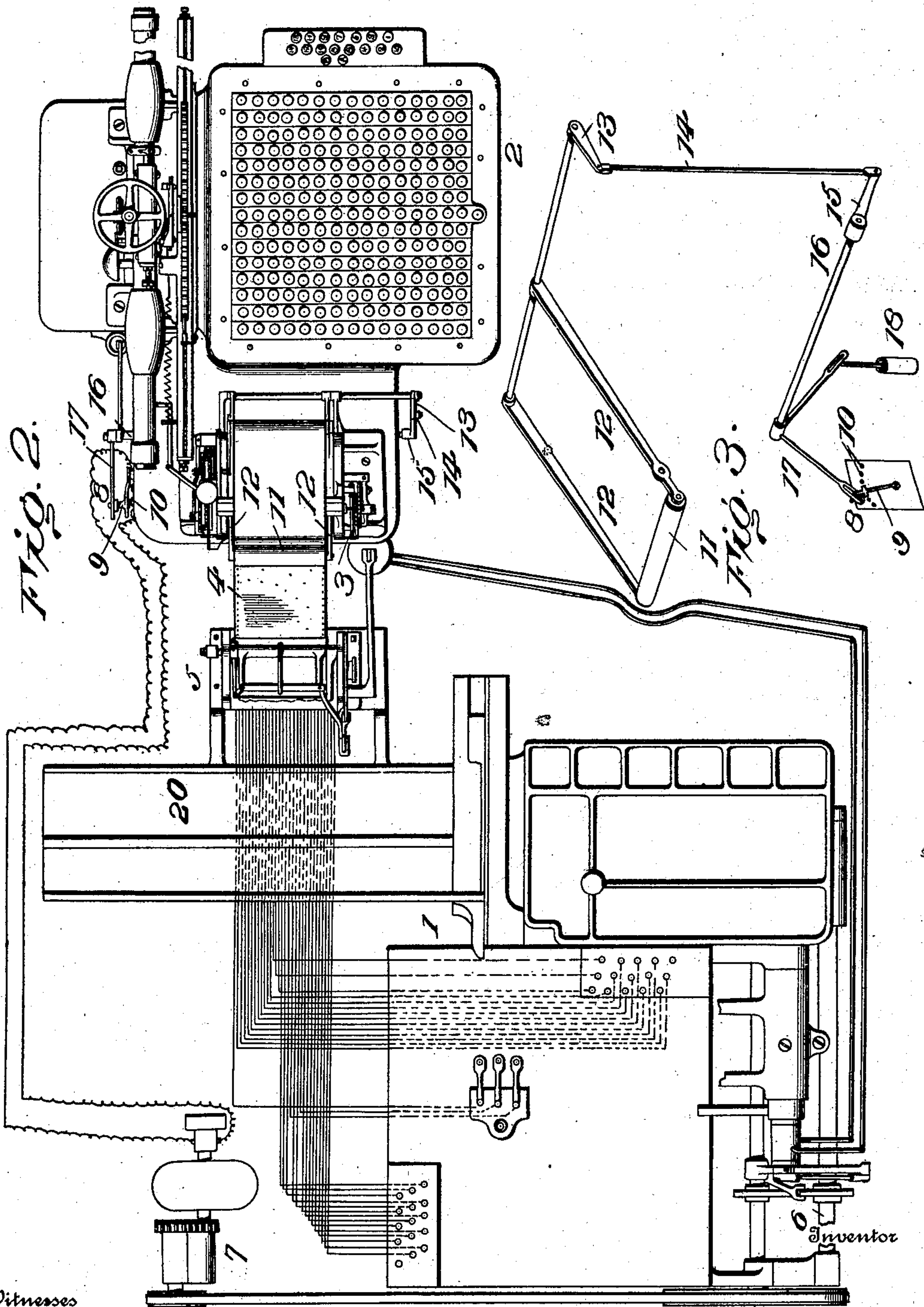
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UNITED STATES PATENT OFFICE.

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TYPE-COMPOSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 700,341, dated May 20, 1902.

Original application filed March 6, 1901, Serial No. 50,170. Divided and this application filed February 3, 1902, Serial
No. 92,468. (No model.)

To all whom it may concern:

Be it known that I, TOLBERT LANSTON, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Type-Composing Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures of reference marked thereon.

This invention relates to that class of automatic type-composing mechanisms in which the selection of the characters is governed by a controller or record-strip provided with appropriate signals or perforations—as, for example, in the Lanston system for the production of justified lines of type. As heretofore generally practiced said system involves the use of two distinct and separate mechanisms, the one for composing the controller—that is, applying the selected signals in proper sequence—and the other for composing and assembling the type in justified lines, said type-composing mechanism being provided with devices for interpreting and responding to the signals of the controller. In the controller-composing mechanism the type-signals are formed in the order of composition and the aggregate width of the several types is measured to determine the justification-fraction, after which the justification-signals are formed, the latter occupying a position in rear of the type-signals for the line; but in the type-composing machine the justification-signals are required to operate in advance of the type-signals to set the justification devices for the line. Consequently the controller as it comes from its composing mechanism is not adapted to be delivered directly to the type-composing machine, but must be reversed, so that the justification-signals will precede the type-signals of each line, with the result that the matter is composed and assembled in the reverse order of composition. To avoid this reversal of the controller and to enable the functions of the two composing mechanisms to be united in a single machine, the controller-composing mechanism has been

so changed and its action modified that the justification-signals, although produced, as before, subsequent to the type-signals for each line, instead of being located in rear, are located in advance of said type-signals, so that the controller as it leaves its composing mechanism is in condition to be delivered directly to the type-composing mechanism.

The novel features of this improved controller-composing mechanism form the subject of an application filed March 6, 1901, Serial No. 50,170, of which this is a division.

In this new machine the controller and type composing mechanisms are united in a single machine and each is provided with a separate feeding device for advancing the controller; but as one of these mechanisms is manually controlled, whereas the other is automatic and power-driven, it is not practicable to synchronize the actions of the two feed mechanisms without thereby limiting the capacity of the machine. Consequently the feed mechanisms are made independent in action, so they may operate simultaneously or dissimultaneously upon the controller and at the same or different rates of speed. Under these conditions the operator is at liberty to proceed with the composition of signals while the type-composing mechanism is either in or out of action, and when in action he is permitted, if able, to compose at a speed in excess of the feeding rate of the type-composing mechanisms; but if, as is frequently the case, the composing of the controller is arrested or the rate of production falls below that of consumption at the type-composing mechanism there is danger that the controller will be broken, torn, or otherwise seriously damaged or disarranged.

The object of the present invention is to harmonize the workings of the two mechanisms thus connected through the controller or record-strip and to prevent accidental rupture of the latter should the speed of the type-composer exceed that of the operator at the controller-composing mechanism, to which end the invention consists in supplying a speed-controller for the type-composing mechanism and in regulating or governing the ac-

tion of said speed-controller through the agency of the controller or record-strip itself, so that whenever the surplus strip between the two feed devices is taken up or reduced to a predetermined amount the speed-controller will be actuated to diminish the speed of the type-composer and reduce the rate of consumption to that of the supply, and in case the supply is cut off, as when the controller-composing mechanism is arrested, the speed-controller will be actuated to stop the type-composing mechanism or the feed thereof before a rupture of the controller can be effected, all as hereinafter more fully described, the novel features being set forth in the claims.

In the accompanying drawings, Figure 1 is a front elevation of the controller-composing mechanism and a portion of the type-composing mechanism as arranged for conjoint action. Fig. 2 is a top plan view of the combined machine, the type casting or composing mechanism being represented diagrammatically. Fig. 3 is a side elevation of the speed-controlling devices.

Similar numerals in the several figures indicate the same parts.

For purposes of illustration the present invention is shown as applied to a combined controller-composing and type-casting machine, of which the type-composing element 1 is that of Patent No. 625,998, while the controller-composing element 2 is the keyboard forming the subject of the before-mentioned application, Serial No. 50,170, of 1901, to which reference is made for a more detailed description. Suffice it to say for present purposes that the controller-composing mechanism or keyboard 2 is one competent to produce the type designating and justification perforations or signals by the manipulation of appropriate keys, that it is furnished with feeding devices 3 for advancing and delivering the record-strip or controller 4, and that the justification-signals although produced after the series of type-signals representing a line of composition are located in advance of said type-signal.

The type-composing mechanism 1 is provided with a controller-feed 5, a justification mechanism responding to the justification-signals, and a type-making and line-assembling mechanism responding to the type-signals to produce successive type and assemble them in justified lines according to the signals contained in the controller. All the movements of said type-composing mechanism are derived from a main shaft 6, driven from a suitable motor, such as the electric motor 7.

To the type-composing machine or its motor, preferably the latter, is connected a speed-controller competent to vary the speed of the machine and to arrest the motion of the latter. Thus in the example illustrated involving the use of an electric motor the speed-controller may take the form of a rheostat or equivalent device 8, of any suitable form or construction, provided with a movable mem-

ber, such as switch-arm 9, adapted to engage successive contacts 10, and thereby regulate the speed of the motor by varying the resistance of the main or of a shunt circuit.

Intermediate the feeding devices of the two composing mechanisms 1 and 2 and in position to be engaged by the controller is a roller 11, carried by an arm 12, which latter is connected to switch-arm 9 through suitable transmitting devices, such as crank-arm 13, rod 14, arm 15, shaft 16, and arm 17, the latter slotted to receive a pin on the switch-arm 9. A dash-pot 18, connected to shaft 16 through arm 19, serves to regulate the movements of the connecting devices. The connections are such that when arm 12 is in one extreme position the speed-controller will register maximum, and when in the opposite extreme position it will register zero, thereby bringing the type-composing mechanism to rest. Intermediate the two extremes the speed will vary from maximum to zero in proper proportions. Thus so long as the loop of controller lying between the two feeding mechanisms exerts no pressure upon roller 11 the type-composing mechanism will continue in operation at maximum speed; but when from any cause, such as the stoppage of the controller-composing mechanism or the operation of the latter at a speed inferior to that of the type-composing mechanism, the slack is taken up and sufficient tension placed upon the controller to cause a displacement of roller 11, the latter acting through the speed-controller will effect a gradual reduction in the speed of the type-composing mechanism, and in case the tension is not in the meantime relaxed will eventually cause a stoppage of the type-composing mechanism, and thus prevent destruction of the controller. A skilled operator may be able to manipulate the controller-composing mechanism more rapidly than the type-composing machine can consume the same, in which event he can gradually accumulate a supply sufficient to enable him to leave the machine for a short interval and attend to other matters without thereby interrupting or in any manner interfering with the composition of type and with the assurance that if detained too long the type-composing mechanism will be automatically slowed down and finally brought to a standstill before damage is done to the controller or disturbance produced at the feeding devices. This is a feature of considerable importance, for should the controller be broken or thrown out of position it would result in the production of a false record, affecting one or more lines of composition and a corresponding loss of time and material at the type-composing mechanism.

By locating the feed of the type-composing mechanism in proximity to the galley 20, onto which the lines of type are delivered in column form, and arranging the controller-composing mechanism in front, so as to deliver the controller directly to the type-composing

mechanism, the operator at the controller-composing mechanism is enabled to supervise the running of the type-casting mechanism without change of position, thereby saving time and diminishing the cost of operation.

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

10 1. In a machine such as described, the combination with a controller-composing mechanism and a type-composing mechanism, of a speed-controller acted upon by the controller or record-strip and acting upon the type-
15 composing mechanism; substantially as described.

2. In a composing-machine containing a controller, a controller-composing mechanism, and a type-composing mechanism the latter
20 governed by the signals of the controller and in combination therewith a speed-controller for the type-composing mechanism and actuating devices therefor engaged by the controller for varying the speed of the type-com-
25 posing mechanism, substantially as described.

3. In a composing-machine such as described, the combination of the following elements, to wit; a manually-operated controller-composing mechanism; a power-driven auto-
30 matic type-composing mechanism; a controller connecting the said composing mechanisms; and means operated upon by the controller for varying the speed of the type-composing mechanism; substantially as de-
35 scribed.

4. In a composing mechanism such as described, the combination of the following ele-

ments, to wit; an automatic type-composing mechanism; a controller governing said type-composing mechanism; a controller-compos- 40
ing mechanism arranged to deliver the controller directly to said type-composing mechanism; a speed-controller for the type-composing mechanism; and a governing member
45 for said speed-controller engaged by the controller at a point intermediate said controller-composing and type-composing mechanism; substantially as described.

5. In a composing-machine such as described, the combination of the following ele- 50
ments, to wit; type-composing mechanism; an electric motor therefor; controller-composing mechanism; a speed-controller, such as a rheostat, connected to said motor; and a control system or mechanism for said speed-con- 55
troller in position to be acted upon by the controller or record-strip; substantially as described.

6. In a composing-machine such as described, the combination with a type-compos- 60
ing mechanism governed by a controller and provided with feed devices for the latter located in proximity to the galley, of a controller-composing mechanism delivering the controller directly to the feed devices of the 65
type-composing mechanism and located in front of the latter so that the operator at the controller-composing mechanism may supervise and superintend the running of the type-composing mechanism.

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