

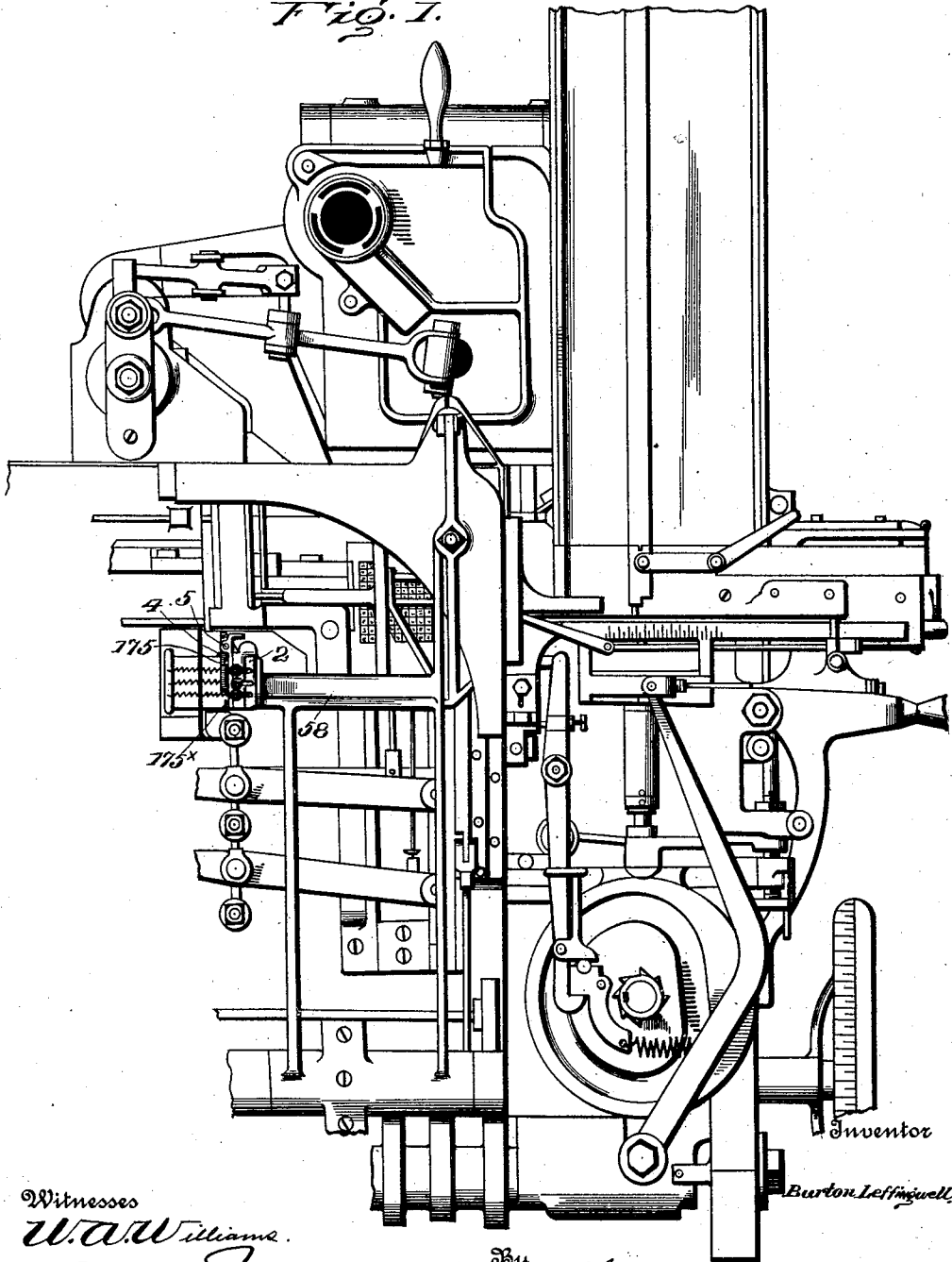
B. LEFFINGWELL.
TYPE CASTING MACHINE.
APPLICATION FILED JUNE 20, 1911.

1,024,514.

Patented Apr. 30, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

W. A. Williams.

Mr. Irvine

By

Church & Church
Attorneys

Burton Leffingwell,
Inventor

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2 SHEETS-SHEET 2.

Fig. 2.

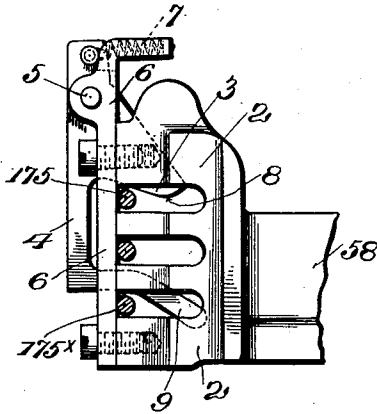


Fig. 3.

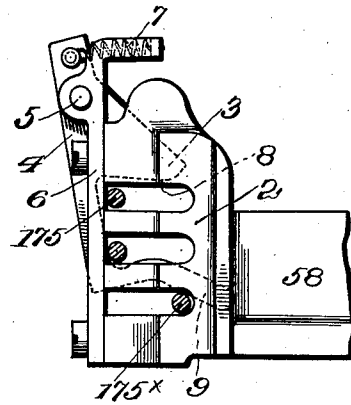


Fig. 4.

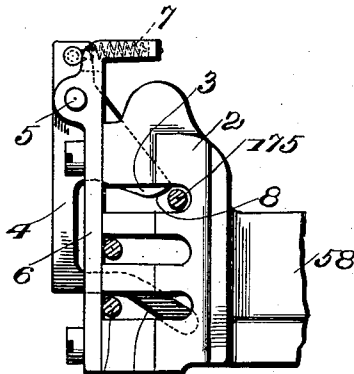


Fig. 5.

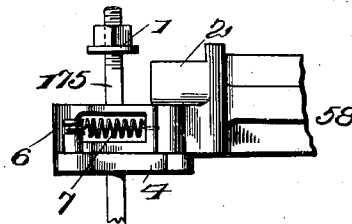


Fig. 6.

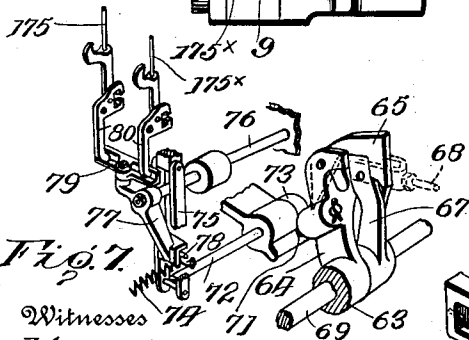
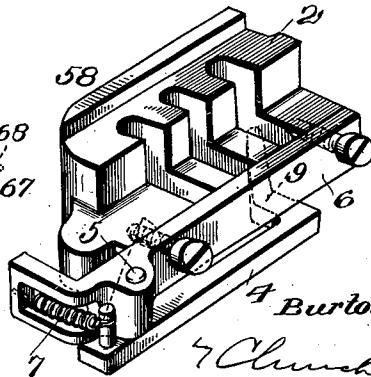


Fig. 7.

Witnesses
W. A. Williams

James J. Williams

Inventor

Burton Leffingwell

Clarence K. Clum

Attorneys

UNITED STATES PATENT OFFICE.

BURTON LEFFINGWELL, OF CLIFTON, PENNSYLVANIA, ASSIGNOR TO LANSTON MONO-TYPE MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF VIRGINIA.

TYPE-CASTING MACHINE.

1,024,514.

Specification of Letters Patent.

Patented Apr. 30, 1912.

Application filed June 20, 1911. Serial No. 634,269.

To all whom it may concern:

Be it known that I, BURTON LEFFINGWELL, a citizen of the United States, residing at Clifton, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Type-Casting 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 part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to pattern controlled automatic type casting and composing machines and consists in improved means for rendering the casting mechanism neutral or inoperative with respect to predetermined portions of the pattern, so that defective or undesired matter incorporated in the pattern during the composition thereof may be entirely omitted from the produced matter at the casting machine.

In the accompanying drawings, illustrating a preferred embodiment of the invention;—Figure 1 is a top plan view of a portion of a type casting machine with the pattern canceling attachment applied thereto; Fig. 2 is an enlarged view of the lifting section of the centering pin lever and associated justification wedge and space designating connections showing the improved retainer or locking member applied thereto; Fig. 3 is a similar view with one justification wedge designating member in its advanced or active position, illustrating the resulting action upon the locking member; Fig. 4 is a similar view illustrating the other justification wedge designating member in active position; Fig. 5 is a side elevation of a section of the centering pin lever and associated designating and locking members. Fig. 6 is a perspective of the retainer or locking member as applied to centering pin lever; Fig. 7 is a perspective of the pump lock out and galley tripping devices.

The same numerals designate like parts in the several figures.

The present invention is specially designed for use in connection with the type casting and composing machine of Patent No. 625,998, dated May 30, 1899, with or without the improvements of Patent No. 700,330, dated May 20, 1902, and in illustrating its application thereto only such parts of the casting machine are shown as are neces-

sary to an understanding of the addition made and its mode of operation, reference being had to said prior patents for a more detailed description of the casting machine proper.

It will suffice for present purposes to indicate the parts of the prior patented machine with which the improvements are more directly connected, such as the centering pin actuating lever 58 and the two justification wedge pivoted trips 175, 175*, and to explain briefly the functions performed by said parts with relation to the machine generally and to the added element.

The action of the casting machine is automatically governed by a record strip or pattern whose serially disposed signals, each comprising one or more perforations, are successively presented to control certain mechanisms in the performance of their assigned functions.

Among the mechanisms subjected to the control of the pattern is that for determining the width of the justification spaces occurring in each line of composition and known as the justification mechanism. This includes two wedges, the major and the minor justification wedges, which are set or adjusted by individual signals preceding the signals representing a line of matter, and are thereafter brought into action in conjunction with the mechanism responding to the justification space signals of the following series representing the line. The machine also includes a positioning or adjusting mechanism adapted to be controlled by the signals of the pattern for adjusting the die case, to present its matrices in predetermined sequence to the mold and to dimension the latter, said mechanism being utilized for adjusting the justification wedges, to which end the justification signals are compounded of adjusting elements or perforations controlling said adjusting mechanism, and designating elements or perforations for the justification wedges, the first determining position or degree of movement and the second the particular wedge to which the adjustment is to be applied.

As no cast is desired during the setting of the justification wedges the machine is equipped with means whereby the coupling up of the designated justification wedge with the adjusting mechanism, in response

to a justification signal, will automatically uncouple the pump mechanism from its actuating devices. This coupling of the justification wedges with the positioning or adjusting mechanism is performed through the agency of the pivoted trips 175, 175*, each of the latter controlling one of the wedges and responding to one of the designating perforations of the justification signals, the arrangement being such that when a signal is presented containing either of said wedge designating perforations the corresponding pivoted trip 175 or 175* will be advanced to bring its head or interponent 1 into line with the engaging shoulder 2 of centering pin actuating lever 58 so that as the latter is elevated the trip will be engaged to elevate its wedge into the sphere of action of the adjusting or positioning mechanism, at the same time operating the cut-out for the pump actuating mechanism. Unless otherwise prevented from so doing, as by the presentation of another signal containing one of the wedge designating perforations, the pivoted trip 175 or 175* will be retracted from engagement with its actuating lever 58 upon the next descent of the latter, thus restoring the pump actuating mechanism to operative condition, with the result that a cast is made for each signal other than a justification signal or one containing a justification wedge designating perforation.

The pump lock out and galley tripping mechanisms of the machine illustrated include a sleeve 63 loosely supported on shaft 69 and carrying arm 64, the latter provided with a pivoted latch 65 for engaging arm 67 connected by link 68 with the pump actuating lever of the machine. Arm 64 carries a spring seated stop pin 71 which contacts with a portion of the frame. Supported in bearings on the main frame and parallel with shaft 69, are two longitudinally movable shafts 72 and 76, of which the last named constitutes the galley trip shaft for starting the galley in motion. Shaft 72 is furnished with a collar 73 located normally to one side of the path in which latch 65 vibrates, but so related thereto that when said shaft is shifted collar 73 will be interposed in the path of the latch 65 as arm 64 is forced backward. The tail of the latch striking collar 73 causes the latch to be withdrawn from engagement with arm 67 during its next movement in a direction to actuate the pump, thereby suspending the action of the latter. A spring 74 serves to hold the shaft 72 retracted with its collar removed from the path of the latch, and a link 75 is arranged to engage the shaft for movement in opposition to said spring. This link 75 is furnished with a pin 78 against which bears an arm 77 carried by galley trip shaft 76, the latter provided with

a controlling pivoted bar 79 opposite the lower ends of the two justifying wedge levers 80, 80. These levers engage bar 79 on opposite sides of its pivot, and when either or both of said levers are actuated to set the justifying wedge or wedges, arm 77 will be advanced and, acting through link 75, will move shaft 72 to start the galley mechanism and at the same time move collar 73 to engage latch 65 and suspend the pump action. It will be seen that the movements of levers 80, to trip the galley and suspend the pump action, are derived from the centering pin lever 58 and transmitted through trips 175, 175*, each of which is coupled with one of said levers 80.

The pattern is composed in the reverse order from that in which it is delivered to the casting machine, the justification signals being formed after, but presented to the casting machine in advance of, the line signals, and it sometimes happens that after the whole or a portion of a line has been composed it becomes necessary or desirable to cancel the same. As is obvious this result can be accomplished in various ways, as, for example, by the addition of one of the justification wedge designating perforations to each of the line signals, so that as each of the latter is presented one of the pivoted trips 175, 175* will be advanced to couple its wedge with the centering pin actuating lever 58 when the latter will operate to positively actuate the cut-out for the pump. This method is objectionable as involving a repunching of the composed pattern, and to avoid this is one of the principal objects of the present invention which consists, primarily, in the addition to the organized machine illustrated in the prior patents referred to, of means under the direct control of the pivoted trips for alternately locking and releasing one of said trips in its advanced or engaging position with relation to its actuating lever 58, the locking being effected by one and its release by the other pivoted trip, so that by the addition of a designating perforation at the end of the series of line-signals to be canceled, instead of in conjunction with each of said signals, the reversed pattern, when fed to the casting machine, will operate through the advance movement of the designated trip, to automatically lock the latter in operative position and render its action effective upon the pump during the passage of the succeeding line-signals and until released by the advance of the other trip incident to the setting of the justification mechanism for the next succeeding line. The means illustrated for effecting this result is exceedingly simple, but none the less effective. It includes a locking member arranged to be automatically engaged by one of the trips, 175, during the forward or engaging move-

ment of the latter, and operating to retain said trip in its engaged position relatively to actuating lever 58, together with means acted upon by the other trip 175* during its forward or engaging movement, and operating directly or indirectly to retract or release said locking member and permit the return of the first named trip to its normal or disengaged position.

10 In the preferred form of embodiment illustrated, the locking member referred to takes the form of the arm or extension 3 of a plate 4, the latter pivotally supported, as at 5, on a bar 6 secured to the actuating lever 58 in rear of the trip-guiding and retaining slots therein. A spring 7 interposed between bar 6 and plate 4 serves to hold the latter in retracted position, as indicated in Fig. 2, with the inner edge of arm 3 intersecting the path of movement of trip 175, said arm terminating in or provided with a retaining shoulder 8 adapted to engage in rear of associated trip 175, when the latter is advanced far enough to contact with 25 shoulder 2 of actuating lever 58. Plate 4 is also furnished with an arm or surface 9 standing normally in the path of the associated trip 175*, through which arm motion is transmitted from said last named trip to locking member 3 in a direction to withdraw the latter from its engaging piston with relation to trip 175. Arm 9 is not provided with an engaging shoulder; on the contrary it is extended in the direction of 35 motion of trip 175* beyond the extreme forward position of the latter, so that under no circumstances will said trip 175* be subjected to a locking action, but will be free at all times to respond to its retracting spring upon the passing away of its designating signal perforation. As thus arranged and applied, it is obvious that whenever, in response to its designating signal, trip 175 is advanced into engagement with 45 actuating lever 58, it will displace arm 3 and permit engaging shoulder 8 to take position in rear of said trip, thereby retaining it in engagement with actuating lever 58, during the passing of succeeding signals, or until released. Such release takes place 50 when trip 175* advances in response to its designating signal, hence it is only necessary that the last of the justification signals pertaining to the next line or section for which type are to be formed, shall contain the designating perforation for trip 175* in order to effect the release of trip 175 and the consequent coupling up of the pump with its actuating mechanism. The result 60 is that the pump lock-out is actuated in response to each signal succeeding that containing the designating perforation controlling trip 175, and so continues until released by a signal containing the designating perforation controlling trip 175*, hence, 65

if said last named signal concludes the justification signals, it will operate to disconnect the pump lock-out from actuating lever 58, and permit the pump to act in response to succeeding line signals in the usual manner. 70

The mechanism described in no wise interferes with sectional line justification according to Patent No. 700,330, in which case the parts are so proportioned and arranged 75 that while the pump lock-out is responsive to either trip 175, 175* acting alone, the galley trip mechanism responds only to the combined action of both of said trips.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a type casting machine such as described, provided with an actuating member, and a plurality of trips responsive to 85 separate designating signals and operating to couple the pump lock-out devices with said actuating member, and in combination therewith, a locking member acted upon by one trip to retain the latter in its advanced 90 or engaging position in relation to the actuating member, and means controlled by the associated trip during its advance to engaging position for retracting said locking member to release the engaged trip. 95

2. In a type casting machine such as described, and in combination with its actuating member and separately movable trips for the pump lock-out mechanism, a locking member for retaining one of said trips in 100 operative relation to the actuating member, and means controlled by the associated trip for releasing the first named trip.

3. In a type casting machine such as described, provided with an actuating member, and a plurality of trips responsive to 105 separate designating signals for individually coupling said actuating member and lock-out mechanism, and in combination therewith, a retainer for one of said trips, and 110 means whereby the engagement of said retainer is effected by the movement of one trip and its disengagement by a movement of an associated trip.

4. In a type casting machine equipped 115 with pump lock-out mechanism, galley trip mechanism, an actuating member and a plurality of controllable trips each operating to couple said pump lock-out and galley trip mechanisms with said actuating member, and 120 in combination therewith, a movable retainer for one of said trips, and means controlled by one trip for effecting the engagement and by the other trip for effecting the disengagement of said retainer. 125

5. In a type casting machine such as described, and in combination with the actuating lever and two pump lock-out controlling trips thereof, a retainer mounted on the actuating lever in position to be displaced by 130

and prevent the return of one trip when advanced to engaging position and to be displaced by the other trip during its advance to release the engaged trip.

- 5 6. In a type casting machine, the combination with the actuating lever and the trips for coupling the pump cut-out devices with said lever, of a locking plate pivoted upon the actuating lever and provided with arms

or engaging surfaces projected into the 10 paths of both trips, one of said arms being equipped with an engaging shoulder located in rear of its associated trip when the latter is in engagement with the actuating lever.

BURTON LEFFINGWELL.

Witnesses:

MORTIMER A. JONES,

SAMUEL A. L. FRAZER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
