

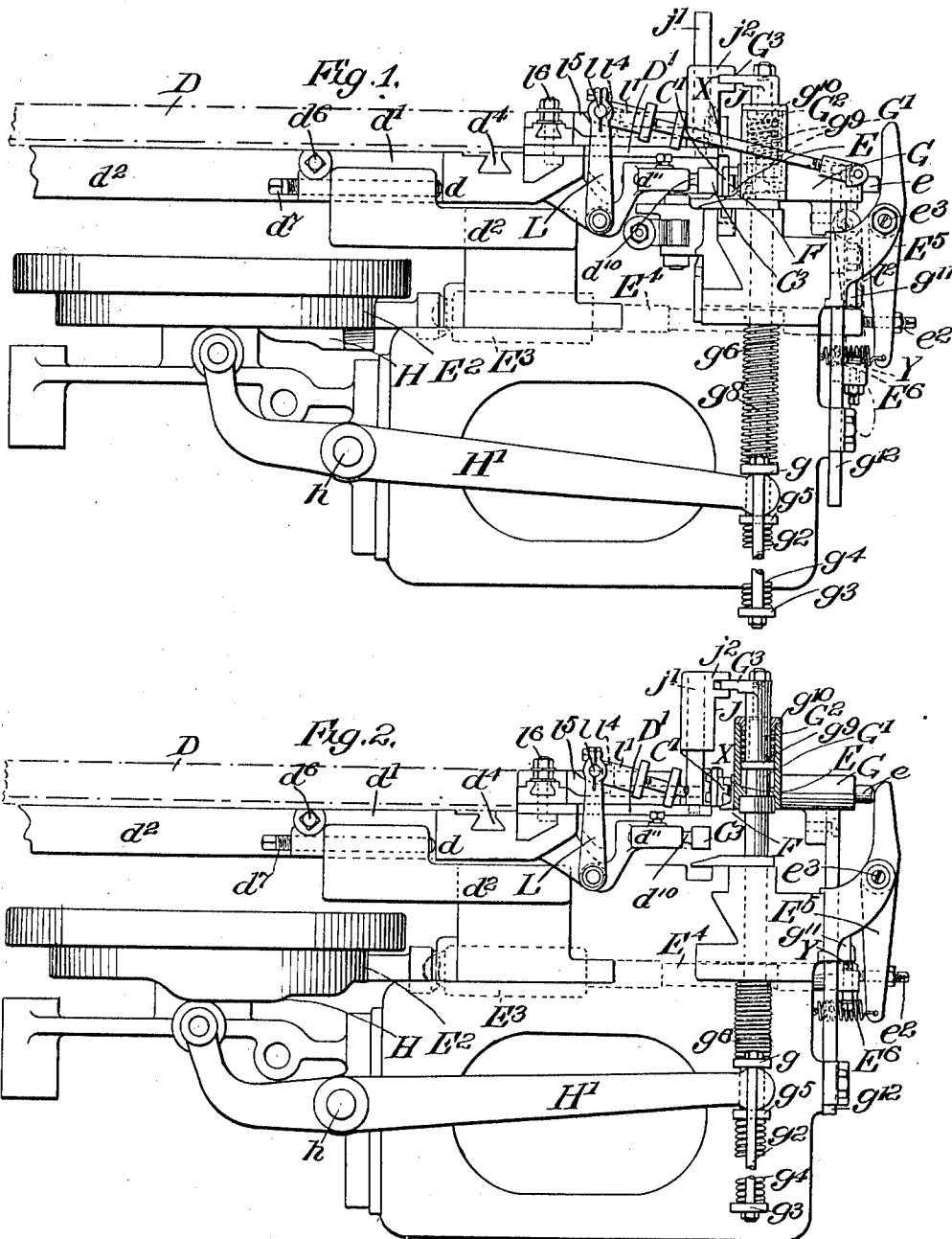
F. H. PIERPONT.

MACHINE FOR THE CASTING AND COMPOSING OF SINGLE TYPES IN SEMITIC LANGUAGES.
APPLICATION FILED APR. 11, 1911.

1,061,560.

Patented May 13, 1913.

5 SHEETS—SHEET 1.



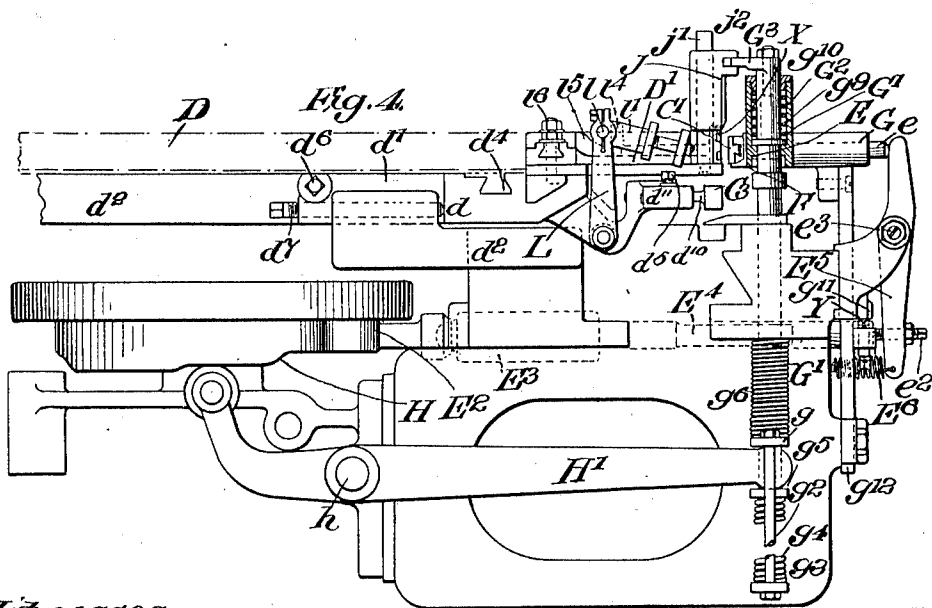
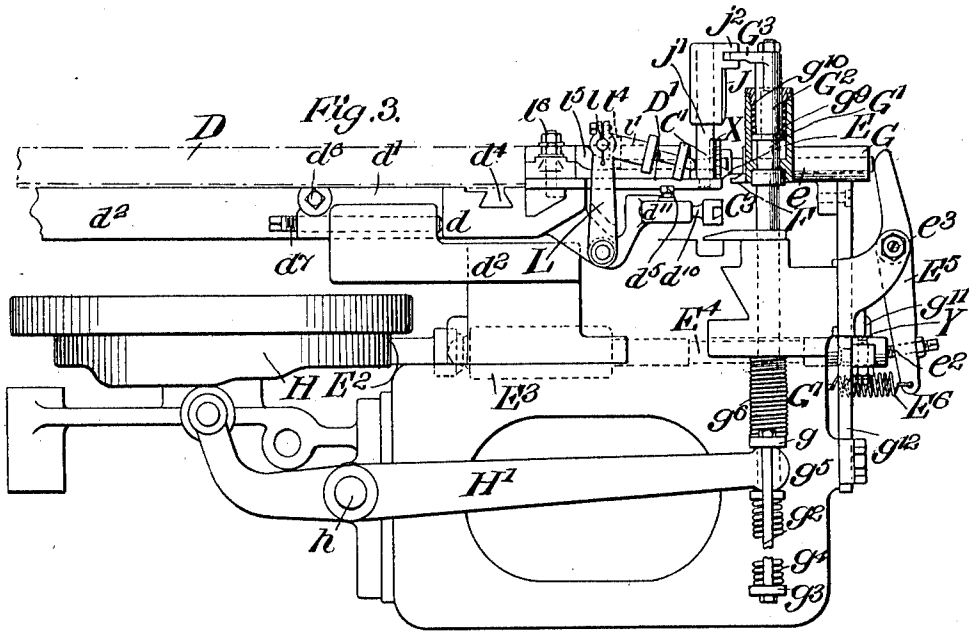
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5 SHEETS—SHEET 2.



Witnesses

John M. Munn
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INVENTOR

F. H. Pierpont

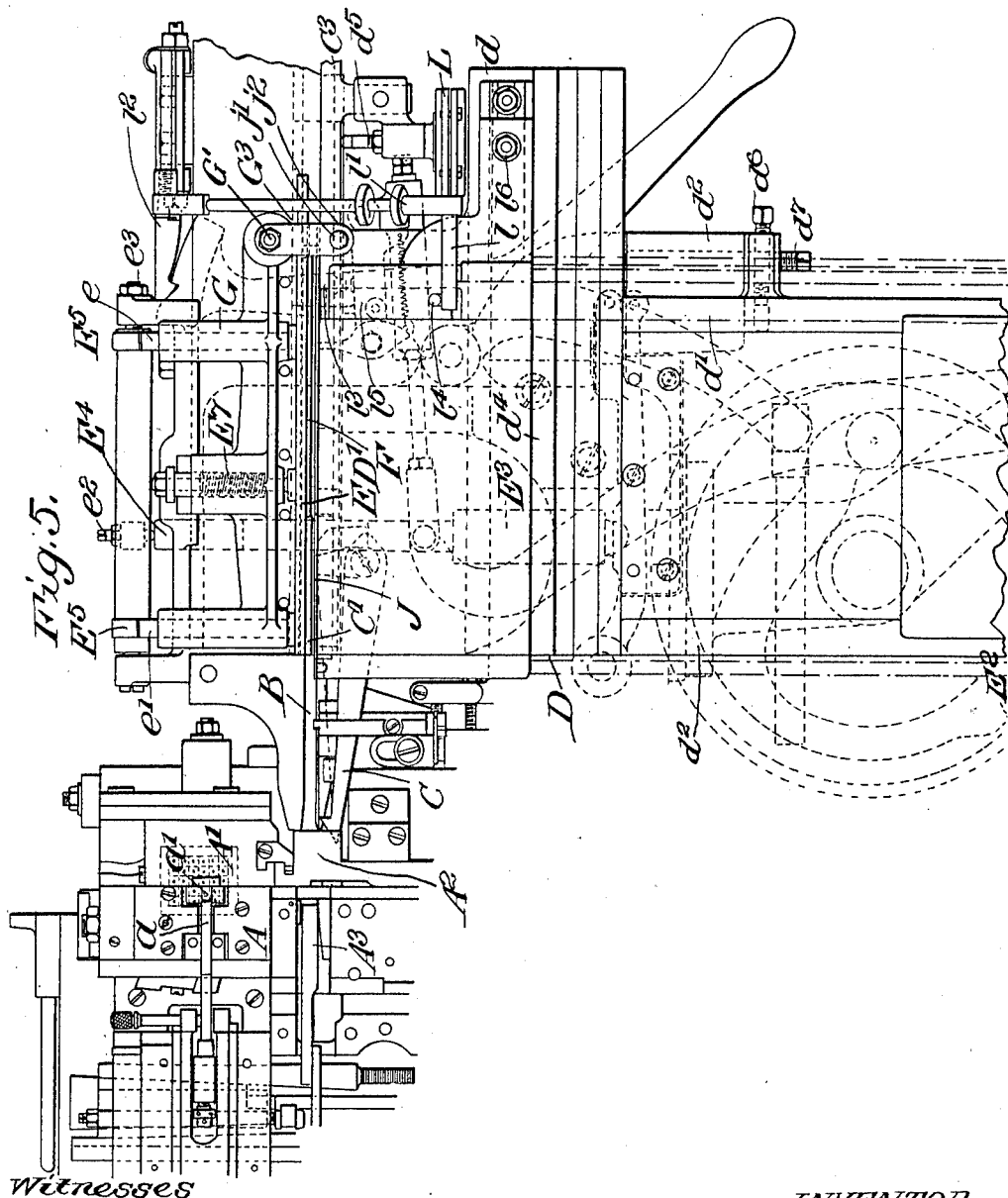
By *Church & Church*
his Attorneys.

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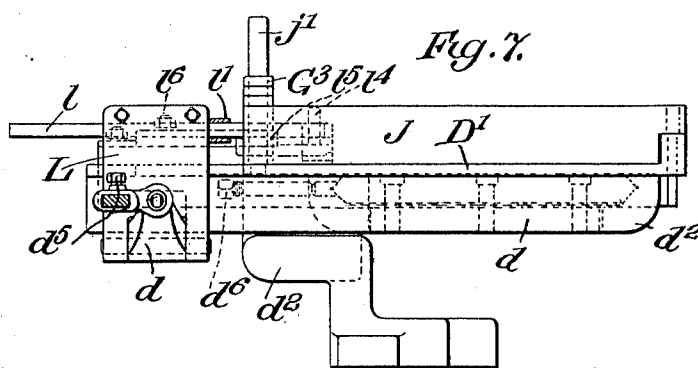
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6 SHEETS--SHEET 4.



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5 SHEETS—SHEET 5.

Fig. 8.

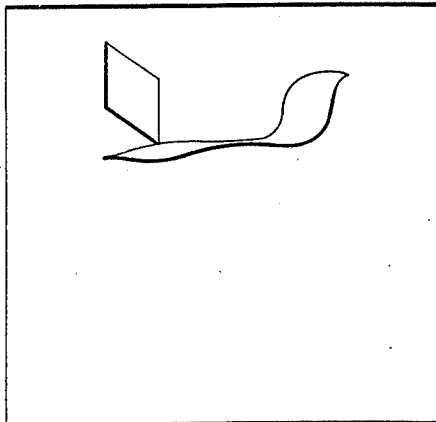
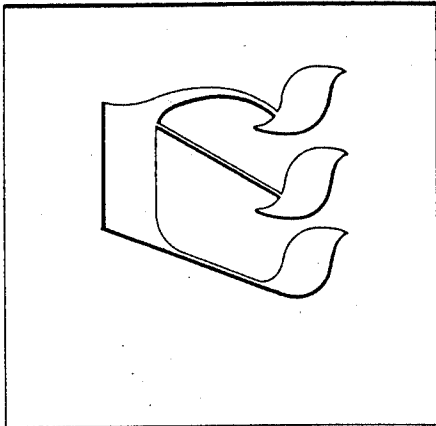


Fig. 10.

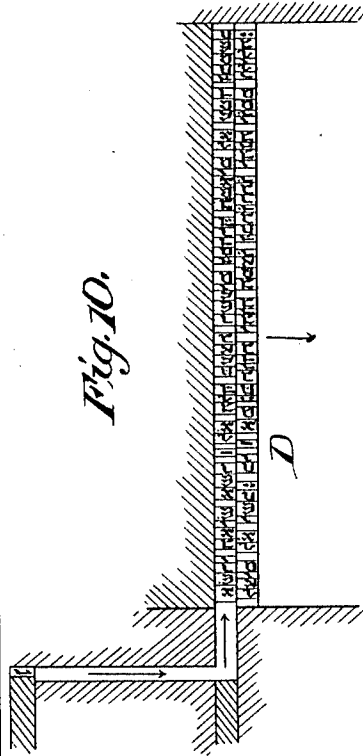
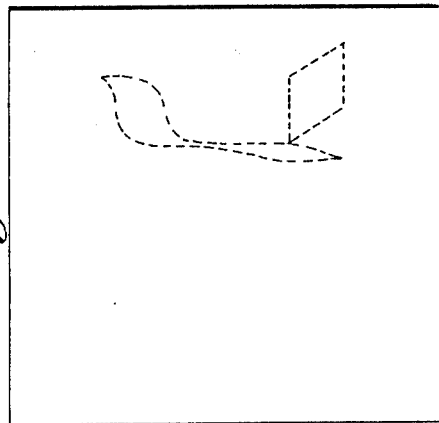


Fig. 11.



אשר תאיש אשר לא הלך בשעתי רשעים וזרע תבואה לא עמד ובמשכ
לבים לא ישב: כי אם: מחזות יתח הפזו אחרותו יתח יוםם ולילה:

Witnesses

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UNITED STATES PATENT OFFICE.

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TO LANSTON MONOTYPE MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA,
A CORPORATION OF VIRGINIA.

MACHINE FOR THE CASTING AND COMPOSING OF SINGLE TYPES IN SEMITIC
LANGUAGES.

1,061,560.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed April 11, 1911. Serial No. 620,391.

To all whom it may concern:

Be it known that I, FRANK HINMAN PIERPONT, residing at Salford, Horley, in the county of Surrey, England, have invented a certain new and useful Improvement in Machines for the Casting and Composing of Single Types in Semitic Languages; 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 and letters of reference marked thereon.

This invention relates to the casting and composing of single types in Semitic languages, the types after casting being assembled in justified lines which are then arranged in column form in a galley.

In the Semitic group of languages or the group of languages to which Hebrew and Arabic belong, the matter, while reading from the top to the bottom of the page, as in English and European languages, reads from the right to the left hand end of the line.

According to this invention the matter is cast in the order reverse to composition from matrices upon which the characters are placed in the same position, as, but inverted and reversed from, an English character; that is to say, the character while justified in relation to the same two edges and occupying the same position on the matrix body as an English character, is turned in a horizontal plane through 180°; mechanism is provided for assembling the successively cast types side by side in a line with the first cast type leading, and mechanism for delivering the lines successively into a galley with the bottom of the character in advance.

As embodied in a machine of known construction for casting and composing matter in English and European languages and which casts the matter in order reverse to composition, the galley extends in the opposite direction to that in which the galley for English matter extends, and it is placed conveniently upon a different level from the line assembly channel, mechanism being provided in accordance with this invention for conveying the lines of type singly from one level to the other and for operating the galley rule or gate.

Referring to the accompanying drawings:

Figure 1 is an elevation of a portion of a single type-casting machine embodying the present invention. Figs. 2, 3 and 4, are similar views partly in section and showing the mechanism in different positions assumed in the cycle of operations. Fig. 5 is a plan view of Fig. 1, showing the apparatus in position on the casting machine. Fig. 6 is an end view of part of the apparatus, Fig. 7 is a plan view of Fig. 6. Fig. 8 shows two Hebrew matrices in inverted plan. Fig. 9 is a plan of one of the matrices of Fig. 8, showing the position of the character on the body. Fig. 10 is a diagram showing Hebrew matter as produced by the machine, and Fig. 11 shows a print taken from the matter of Fig. 10.

Referring to the arrangement illustrated in Figs. 1 to 7, wherein the invention is shown embodied in a well-known single type casting and composing machine such as forms the subject matter of British Letters Patent No. 8633 of 1899 and No. 8981 of 1901 (United States Patents 625,998 of May 30, 1899 and 674,375 of May 21, 1901) it is convenient to refer here briefly to the parts of these machines more intimately connected with or coöperating with mechanism embodying the invention. These parts comprise a two way movable die case equipped with a series of matrices, means for bringing any one of the latter to a common casting or centering point, a mold A provided with one or more mold-dimensioning and type ejecting members *a* working in the mold cavity *a'*; a cross block *A'*; a type carrier *A*² which conveys the types from the mold to the entrance of the line channel B; an ejector blade *A*³ for delivering the type from the carrier *A*² into the line channel B; and a line hook C and movable line support C' by which the completed line is conveyed along the line channel to the position opposite the entrance to the galley D. The construction and operation of the parts referred to do not differ from those described in the specification of the before mentioned Letters Patent and do not call for further description here.

It should be noted that the line pusher, galley support and trip mechanism of the prior patented machine are omitted or re-

moved for the accommodation of the alternative form about to be described.

In the present embodiment of the invention the galley D is mounted on an adjustable frame d and is placed at a higher level than the line channel B. The frame d has
5 secured to it a slide d' and is adjustably secured to a frame d^2 , the latter detachably secured to the bed or main frame of the machine.

10 D' is a plate secured to the frame d and forms a permanent entrance to the galley, being disposed between the inlet to the galley D and the line delivery mechanisms.

15 The type X when ejected from the mold cavity a' by the blade a is conveyed to the left hand end of the line channel by the carrier A^2 and delivered therefrom into the channel by the pusher A^3 , and when a line
20 has been completed, the line hook C is automatically advanced and operated in a known manner to convey or move the assembled line of types to a position in line with the entrance to the galley D which, in
25 the present instance, is situated above the level of the channel B. The line of types while being conveyed to the galley entrance by the line hook is supported at one end by the movable line support C' and along one
30 side by a stationary bar or block C^3 , Fig. 1, adjustably secured in brackets on the frame d and on the opposite side by a plate or bar E which reciprocates between the levels of the galley and the line channel as hereinafter described. The types in the line
35 channel rest upon a plate F carried by or forming part of a lifting frame G which also carries the aforesaid plate E. The frame G is connected to a rod or pillar G'
40 by which it is raised and lowered between the levels of the line channel B and the galley D, and these movements are controlled from a cam H through a lever H' , which has one of its ends in engagement with the
45 cam, is pivoted at h and has its other end disposed below a collar g . The movement of the lever H' to raise the rod G' is transmitted through the collar g to two rods g^2 secured to a collar g^3 and through a spring
50 g^4 to a collar g^5 on the rod G' . The downward movement of the frame G when released from the lifting movement of the cam is controlled by a spring g^6 interposed
55 between a collar g on the rod G' and the machine frame.

The rod G' is made in two parts adjustably screwed together, the adjustment being controlled conveniently by a check nut
60 g^8 , Fig. 1. The upper end of the rod G' passes through a sleeve G^2 on the frame G and between the upper end of the sleeve and a collar g^9 on the rod is disposed a spring g^{10} which forms a yielding connection between the frame and the rod, allowing
65 the latter to move upward after it has

raised the frame and the shelf carrying the type to the level of the galley D. The extent of movement allowed to the frame is determined by a projection g^{11} on the frame which is adapted to engage an adjustable
70 stud Y on the rod g^{12} connected to frame G. The rod G' after raising the frame G to bring the line of types to the level of the galley continues to move upward to raise the galley rule or gate J and allow the line
75 of types to be moved into the galley. The rule J is mounted to slide on pins j' one carried by the plate D' and the other by the rule and the rod G' is provided with a projection G^3 which engages a lug j^2 on the rule J. During this latter movement the
80 frame G is maintained at its upper position by the engagement of rod G' and the compression on the spring g^{10} . For convenience collar g^9 and projection G^3 are constructed as parts of a sleeve detachably secured to the upper end of rod G' and constitute in effect a part of said rod.
85

The plate E acts as a line pusher and is provided with pins $e e'$ sliding in bearings
90 on the frame G. It is moved forward relatively to the frame to deliver the line of type into the galley, by a cam E^2 . A rod E^4 capable of moving longitudinally in suitable bearings is provided with a spring box
95 E^3 one end of which bears against the cam, and the other end bears against an adjustable stud e^2 mounted on lever E^5 which is fulcrumed at e^3 and bears against pins $e e'$ connected to the column pusher plate E.
100 The lever E^5 is returned by a spring E^6 and the column pusher is returned by a spring E^7 . The plate or bar C^3 is adjustably secured to frame d as by being provided with a stem d^{10} of angular section fitted to
105 a socket d^{11} on frame d and secured by a set-screw d^5 . The slide extension d' of frame d is received in guides in frame d^2 , and said frame $d d'$ is adjusted, to accommodate type of different point size, by means of a set screw
110 d' in frame d^2 engaging frame d the parts after adjustment being held firmly in position by clamping screw d^6 in frame d^2 engaging extension d' . The line support C' is carried and guided in a slot in the plate E.
115

Mounted upon the frame d is a lever L carrying at its upper end a rod l on which is fulcrumed one end of an adjustable link
120 l' connected at its other end to a latch or trip lever l^2 controlling a clutch or bolt shifting gear on the main driving shaft of the machine. Should a line of types of abnormal length be delivered, then one or more of the
125 end types will pass in front of a sliding piece l^3 mounted in the galley frame, and as the plate E advances these types will move the piece l^3 so that a pin l^4 thereon will bear against the rod l and thereby operate link l' to actuate the trip and stop the machine in a known manner. The bearing l^5
130

for the sliding piece l^3 is adjustably secured to the frame by means of a screw nut l^6 to allow a sufficient range of adjustment for various column widths. The galley proper D has a bar which fits into a slot d^4 in the frame d . The line hook C is controlled from the signals in the record-strip in the usual manner and so likewise are the cams for lifting the frame G and operating the line pusher E.

The rod or pillar G' corresponds in location with the actuating rod for the galley blade or rule of the prior patented machine and when the present attachments are removed it receives said galley blade and operates as heretofore. In the present instance both the rule J and frame G are detachably coupled together and with this rod or pillar G', so as to be readily applied to or removed therefrom, by means of the sleeve to which collar g^0 and projection G^3 are applied, said sleeve being confined to the reduced upper end of the rod or pillar by a detachable fastening means, such as a nut. The threaded end of sleeve G^2 against which spring g^{10} takes its bearing when disengaged from said sleeve permits the withdrawal of the sleeve containing said collar g^0 and projection G^3 .

Having thus described my invention what I claim as new is:—

1. In the casting and composing of typographic matter in Semitic languages the combination with a mold and a series of matrices having the characters positioned thereon with their feet to the right of the line of delivery of the type from the mold, of mechanism for ejecting the type from the mold, mechanism for assembling the type side by side to form a line, and mechanism for delivering the lines successively to a galley with the feet of the aligned characters leading, substantially as described.

2. In the casting and composing of typographic matter in Semitic languages, the combination with a mold, a series of matrices having the characters positioned thereon as described, a line channel and a line carrier therein, of a galley situated at a different level to the line channel and having a vertically movable rule, a line supporting and lifting mechanism automatically operated to raise the line to the galley and to lift the galley rule and a line pusher carried on the line lifting mechanism and automatically operated to deliver the lifted line into the galley.

3. In a type casting and composing machine provided with a mold containing dimensioning and ejecting means, and a series of matrices the characters whereof are positioned with their feet to the right of the line of delivery from the mold, and in combination therewith, means for assembling successive type in a line, a galley, and mechanism for delivering successive lines into the

galley with the feet of the characters in advance.

4. In a type casting and composing machine equipped with a series of matrices, a mold provided with type ejecting means, and mechanism for assembling the type in line, and in combination therewith, a galley mechanism including the following elements, to wit; a galley; a line channel below the galley and extending across the mouth thereof, said channel comprising a fixed wall beneath the galley entrance, a vertically and laterally movable wall opposite and parallel with said fixed wall; and a vertically movable line support or plate; and means for elevating said line support and for reciprocating the movable wall both vertically and laterally.

5. In a galley mechanism for type casting and composing machines, the combination of the following elements, to wit, a line assembling channel provided with a vertically movable line support or plate and two opposed parallel walls the one fixed and the other vertically and laterally movable; a galley with its entrance above the fixed wall of the line channel; and means for vertically reciprocating the line support and movable wall of the line channel and for reciprocating the latter horizontally opposite the entrance to the galley.

6. A galley mechanism for type machines including in combination, the following elements, to wit; a horizontal galley; a line assembling channel located at a lower level than the entrance to the galley and comprising a fixed side wall, an opposed parallel vertically and horizontally movable side wall and an underlying vertically movable line supporting plate; a movable support for the end of the line carried by said vertically and horizontally movable side wall and a trip mechanism located to one side of the entrance to the galley and controlling the driving mechanism, said trip mechanism being arranged to be acted upon by the type contained in the line channel or by the movable support for the line.

7. In a galley mechanism for application to type casting and composing machines containing a mold, a series of matrices and line assembling devices, the combination of the following elements, to wit; a supporting frame with means for detachably securing it to the casting machine; a line assembling channel carried by said frame and comprising a vertically movable line support and two parallel sustaining walls, the one fixed and the other movable both vertically and laterally; a galley detachably secured to said frame above and to one side of the line channel; and actuating devices adapted to be coupled with the driving mechanism of the type casting machine for

elevating the line support and the movable sustaining wall of the line assembling channel to the level of the galley; and for advancing said sustaining wall to transfer the assembled line into the galley entrance.

8. A galley mechanism adapted for application to a type casting and composing machine, the latter equipped with a series of matrices, a mold, type assembling devices, and a movable rule actuating rod or pillar, the same including, in combination, the following elements, to wit; a frame with means for detachably securing the same to the casting machine; a galley detachably applied to said frame; a rule supported on said frame at the entrance to the galley; a bar mounted on said frame below the galley entrance and forming a sustaining wall of the line assembling channel; a movable frame with means for detachably coupling the same with the rule actuating rod or pillar and carrying a plate or ledge forming the bottom of the line assembling channel and a bar or plate constituting the other sustaining wall of said channel, said last named bar or plate being movable transversely of the line channel upon its supporting frame; and means for coupling the last named frame with the rule at the entrance to the galley.

9. In a galley mechanism for type casting and composing machines, the combination of the following elements, to wit; a galley; a line assembling channel extending across the entrance to the galley below the plane thereof and provided with a vertically and laterally movable sustaining wall remote from the galley and a vertically movable line supporting plate or ledge; a vertically movable blade at the entrance to the galley; and actuating devices coupled with said galley blade, line support and sustaining wall.

10. In a galley mechanism for type cast-

ing and composing machines, the combination of the following elements, to wit; a galley; a line assembling channel extending across the entrance to the galley but at a lower level and provided with a vertically movable line supporting plate or ledge and a vertically and laterally movable sustaining wall; a movable blade or gate at the entrance to the galley and actuating mechanism for said galley blade, line support and sustaining wall including means for positively arresting and holding the line support at the level of the galley entrance.

11. In a galley mechanism for type casting and composing machines provided with a galley and a line supporting channel below the entrance to the galley including a line support and a laterally movable sustaining wall mounted upon a vertically movable frame, and in combination therewith, an actuating rod, a yielding coupling between said rod and said vertically movable frame, and means for positively arresting said vertically movable frame at opposite extremes of its movement to insure register with the type assembling devices and the galley entrance.

12. In a galley mechanism for type casting and composing machines, the combination of the following elements, to wit; a galley, a line channel below the galley entrance including a supporting plate and a laterally movable sustaining wall mounted upon a vertically movable frame; means for positively arresting said movable frame with the supporting plate in register with the bottom of the galley entrance; and means for advancing said sustaining wall toward the galley.

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Witnesses:

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