spacing. 30th. The independent tapering matrix-bars, each provided with a plurality of spacing surfaces, the row of stop pins for each bar, the series of adjusting pins mounted in the laterally movable frame, the finger keys and connections, whereby they are enabled to project the adjusting pins, the bar V provided with the slides to arrest the backward movement of the adjusting pin frame, the space indicating bar and its connections to project the slides, and the device, substantially as described, to restore said slides connected with all the spacing keys, whereby the operator is enabled to first adjust the stop pins for all the characters in a line and subsequently adjust the intermediate stop pins for the spaces. 31st. In combination with the matrix-bars and stop pins, the laterally movable adjusting pin frame K, the rack bar V, the slides t^3 therein, the shaft provided with the pinion and the two escape wheels k^1, r^1, the detent e^1, the lever u^1 to project the slides rearward, the arm l^1 to restore the slides and engage the detent wheel r^1, and devices, substantially as described, connecting the lever u^1 with the spacing bar U and the arm l^1 with the space keys, as described, whereby the operator is enabled at will to set the machine for the use of spaces of any desired width. 32nd. In combination with the matrix-bars provided with spacing surfaces, the finger keys and intermediate mechanism, whereby the keys are enabled to arrest the bars with the designated characters or spaces at the aligning point, the counting or indicating mechanism substantially as described, to show the aggregate width of the selected characters and spaces, a connection between said mechanism, substantially as described, and those finger keys which represent characters and a separate connection, substantially as described, between said indicating mechanism and the independent space bar U, as described, whereby the aggregate width of the selected characters and intermediate spaces of minimum width may be indicated, and the devices adjusted to bring the characters in position previous to adjusting the devices for bringing the spaces in position so that the operator may effect the spacing or justification of each line after the designation of the characters therein. 33rd. In combination with the perforated matrix bars, the aligning rod arranged to be projected through the series of bars. 34th. In combination with the series of perforated matrix-bars, the aligning rod and automatic mechanism, substantially such as described and shown, for advancing and retracting the same. 35th. The perforated matrix-bars, in combination with the laterally acting clamp and the aligning rod attached to one of said clamps, as described. 36th. In combination with the perforated matrix-bars, the aliguingrod and the clamps having the rod attached, the stripper-plate Y^2, as described and shown, to prevent the bars from moving laterally and bittingly upon the rod. 37th. In combination with the matrix-bars, the aligning-rod, the clamp and the stripper, the stripper retracting rod connected with the clamp and having a limited independent motion, as described. 38th. In combination with the notch matrix-bars, the aligning blade arranged to enter the notches, as described. 39th. In combination with the perforated and notched matrix-bars, the aligning rod, the aligning blade and automatic mechanism, substantially as described, for advancing the rod and the bar in the order named. 40th. In combination, with the matrix-bars and finger-keys and intermediate mechanism, substantially as described, for bringing into action a larger or smaller number of bars, the slide to sustain those bars which are not called into action, and lateral clamping devices acting only on those bars which are in action. 41st The series of independent movable matrix bars, the head P to lift said bars to a common height and lower them in unison, the finger-keys to designate the characters, intermediate mechanism, substantially such as described and shown, adjusted by the keys to arrest the descent of the individual bars, and a lateral clamp acting below the points to which the lower ends of the bars are raised by the lifting-head, whereby the clamp is enabled to act upon those bars which are called into action and permitted to pass beneath those bars, which are not called into action without acting thereon. 42nd. The laterally acting clamps, in combination with the independently movable matrix bars, and mechanism, substantially as described, for lifting the bars above the level of the clamps, whereby the clamps are permitted to pass beneath the bars which remain elevated to act upon those which have been called into use. 43rd. In a machine for producing printing-bars, the combination, substantially as described and shown, of a changeable matrix composed of independent movable lines or series of intaglio characters, and a casting mechanism to co-operate with the selected and aligned characters, whereby the matrix may be caused to present any desired characters in a line and a cast be then taken of all the aligned characters at a single operation. 44th. In a machine for producing printing bars, the combination, substantially as hereinbefore described and shown, of the series of independently movable matrix bars, the series of finger-keys to designate the characters, the stop mechanism actuated by the keys to arrest the individual bars with their designated characters in a common line, the mould extending transversely across the series of bars, and the mechanism for supplying the mould with molten metal. 45th The mould, in combination with the series of matrix-bars to close the same on one side, and the melting pot having a delivery-mouth to close the same on the opposite side. 46th. In a machine for producing printing bars, the combination, substantially as hereinbefore described and shown, of the independently-movable matrix bars, the finger-keys to designate the characters, the intermediate stop mechanism connected with the keys to arrest the motion of the individual bars, the clamps to hold the adjusted bars, the mould extending across the bars and the melting-pot and force-pump, said members organized for joint operation, as described. 47th In a machine for producing stereotype bars, the combination, substantially as hereinbefore described, of the changeable or convertible matrix, the mould co-operating therewith and appliances for melting metal and forcing the same into the mould. 48th. The matrix-bars, in combination with the clamping bar across their rear edges, the sectional mould across their front edges, the lateral clamps and the melting-pot closing the mould on one side and arranged to deliver molten metal therein. 49th In combination with the movable melting pot and movable clamping-bar A^1, the intermediate matrix-bars and mechanism substantially such as shown, to close said members against the bars. 50th. The matrix-bars, the sliding clamping bar, the movable melting pot combined with the levers and links connecting the clamp and pot, as shown. 51st. In combination with the matrix-bars, the clamping-bar A^1, the aligning bar mounted therein and the actuating devices, substantially as described, whereby the aligning bar is advanced previous to the advance of the clamp. 52nd The separable sliding mould, as described, having one of its parts provided with the longitudinal rib to prevent lateral displacement of the casting, and with the stud to carry the casting endwise as the mould is opened. 53rd. In combination with the mould having the sliding top, the ejector e^4 to detach the casting therefrom. 54th. In combination with the two-part separable mould, as described, the vibrating ejector e^4 to detach the cast from the open mould, and the reciprocating rod to deliver the detached cast in an endwise direction. 55th. In combination with the matrix-bars, the shouldered mould-sections and the clamp o^4, p^3, connected to said sections, whereby the width of the assembled matrix-bars is caused to determine the length of the mould. 56th. In an a machine for the production of printing bars, the combination, with automatic driving mechanism, substantially as described, of the independently movable matrix-bars, the finger-keys to designate the characters, the stop-pins to arrest the respective bars, devices connected with the keys to set the stop-pins, the mould, the melting-pot and force-pump and the movable frame, whereby the stop-pins previously adjusted by the connections are first moved into position to arrest the bars, and subsequently restored to their original positions, whereby the casting of one bar and the designation of the characters for another one are permitted to take place at the same time. 57th. In combination with the matrix-bars and the clamping bar A^1, movable to and from the same, the lateral clamps mounted on slides on the bar A^3, as shown. 58th. In combination with the melting-pot, the movable mouth section provided with a wiper to traverse the mouth or delivery part of the pot. 59th. In combination with the movable mould section adapted, as described, to carry the cast, the fixed knife to dress the edge of the bast, whereby the casts are rendered uniform in height and straight on the base. 60th In combination with the matrix bars the pivoted melting-pot provided with the face to close the mould, and with the delivery orifice in said face and mechanism, substantially as described, to effect the rocking motion whereby it is caused to serve the additional purpose of a clamp to hold the bars in position. 61st. In combination with the laterally movable pin frame, the indicating mechanism and the stop pin frame movable forward and backward, the hand-lever M connected therewith by means, substantially as described, whereby the various parts may be instantly restored to their initial positions to permit the commencement of a new line in the event of an error having been committed. 62nd In combination with the indicator rod g^2 and dogs f^2, f^2, the striker provided with arms to trip the dogs, the detent r^2 and the slide q^2 having inclined surfaces to trip the detent and striker and subsequently reset the striker. 63rd. In combination with a mould open on two sides a series of movable matrices grouped in a line against one side of the mould, a pot or reservoir acting against the opposite side of the mould, and a pump to deliver the molten or plastic material into the mould, as described and shown. 64th. In combination with the matrix-bars, mould and melting-pot, the finger-keys to designate the characters, the stop mechanism, substantially as described, between the keys and bars to arrest the motion of the latter, the dogs to sustain the adjusted bars independently of the stop mechanism and the automatic mechanism, substantially as described, for moving the adjusted stops into the path of the bars, and subsequently restoring them to their normal position, whereby the two operations of forming one bar and designating the characters for another, may be carried on simultaneously. 65th. The matrix-bar having therein transverse grooves with the intaglio characters in the bottom, said grooves being of uniform with at the edge of the bar, but of different widths at the bottom, corresponding to the heights of the respective characters. 66th. In combination with the adjusting pins J terminating in different vertical planes, the crank-shaft L arranged in two vertical rows as described. 67th. The series of bars provided with spacing surfaces of different widths, in combination with the stops, substantially as described, adapted to arrest the bars with any one of the spaces at the aligning point, whereby the particular space to appear in be line may be positively determined. 68th. A series of independently reciprocating bars, each provided with a series of characters and a series of spacing surfaces, in combination with a series of stop pins for each bar, one for each character and one for each space, substantially as described and shown, whereby each bar may be positively stopped to present a character or a space at a point of alignment to the series. 69th. The combination of the series of parallel matrix-bars and the mould having its parts mounted, substantially as described, to move transversely of the bars, whereby the removal of the casting is facilitated. 70th. In combination with the sectional mould, the series of independent matrix-bars lying transversely across the face of the mould, and a clamp or pressure device, substantially as described, to urge the bars edgewise toward the mould whereby they may be released for adjustment and then clamped tightly to the mould. 71st. In combination with a mould a series of matrices adapted for arrangement in line, and a series of spacing devices adapted for insertion between the matrices, said matrices and spacing devices adapted to jointly close the face of the mould in order to secure the production of casts bearing relief characters with depressed spaces between them, as described. 72nd. The hereinbefore described method of producing printing bars, consisting in applying a series of matrices, and intermediate spacing devices to close the side of a mould, and delivering into said mould molten or other plastic material.

No. 22,755. Machine for Heading Packing Cans. (*Machine à Fonçer les Boîtes pour Conserves.*)

David Hunter, Alberton, P.E.I., 4th November, 1885. 5 years.

Claim.—1st. The combination, with the piston D and lever F, of the piston-head E, spring ring K and cam bracket J, as set forth for the purpose described. 2nd. The combination of the standard B having ring 3, and piston D having head 2 and lever F, as set forth for the purpose described. 3rd. The combination, with the standard B, of the adjustable arms C, C^1, lever F, piston D, head E, cam bracket J and spring ring K, as set forth for the purpose described