

tion. with the insulated switch T, of cam W and spring X, all arranged and operating as herein set forth. 10th. In an electric arc lamp, the telescopic hood B, as and for the purposes described.

## No. 27,344. Electrical Weighing Scale.

(*Pont à bascule électrique.*)

William R. Smith (co-inventor with Albert L. Washburn), New York, N.Y., U.S., 4th August, 1887; 5 years.

**Claim.**—1st. The combination of a weighing scale, a vertically-sliding independent rack, an indicator actuated by the rack, and connecting mechanism between the scales and rack, whereby the movement of the rack is controlled. 2nd. The combination of a weighing scale, an independent rack, an indicator actuated by the rack-connecting mechanism between the scales and rack, whereby the movement of the rack is controlled, and tripping mechanism for releasing the rack. 3rd. The combination of a weighing scale, an independent rack, an indicator actuated by the rack, connecting mechanism between the scales and rack, tripping mechanism for releasing the rack, and stop mechanism, substantially for the purpose set forth. 4th. The combination of a weighing scale, a moving frame, a vertically sliding independent rack, and indicating mechanism actuated thereby. 5th. The combination of a weighing scale, a moving frame, an independent rack, indicating mechanism actuated thereby, trip mechanism for releasing and stop mechanism for stopping the rack, substantially as set forth. 6th. The combination of a weighing scale, a moving frame indicating mechanism, an independent rack and electrically operated releasing mechanism. 7th. The combination of the chute section, adapted to receive a coin or smaller metallic piece, and having insulated electrical conductors, a weighing machine, having its indicator disconnected from the main portion of the weighing mechanism, a stop on said main portion to limit the movement of the indicator, when released, a latch for securing said indicator at the zero point, and electrical connections between said chute section, substantially as described and for the purpose specified. 8th. The combination of the chute section D and latch, having secured thereto a moving side that projects into the path through the chute far enough to stop a coin of a given size, in combination with the lever *c* pivoted to said chute section, with one end abutting against the outer face of said moving side, and locking it against moving a direction to enlarge the passage through said chute section, substantially as described and for the purpose specified. 9th. The combination of the moving frame *b*, having the shelf or bracket *i*, mechanism for operating said frame, the vertically sliding rack *f* adapted to engage said shelf or bracket *i*, the pointer shaft and pinion *h, g*, and the tripping latch *k* for engaging said rack, substantially as described and for the purpose specified. 10th. The combination of the frame, having the shelf or bracket *i*, mechanism for operating said frame, the vertically sliding rack *f*, pointer shaft and pinion *h, g*, the tripping latch *k* for engaging said rack, the electro-magnet in juxtaposition with said latch, the chute section D and suitable connections with the magnet for supplying the electric circuit, substantially as described and for the purpose specified. 11th. The combination of the chute, section D having the moving side *n*, the lever *o*, the rack *f*, the arm P and the movable frame *b* of the weighing scales, substantially as described and for the purpose specified. 12th. The combination of an indicator, its operating pinion and rack, the main portion of the weighing mechanism disconnected from said rack, a stop secured to and moving with said main portion of the weighing mechanism to limit the movement of the indicator rack when released, and a tripping latch for holding the indicator at zero, when engaged therewith, and for releasing said rack when disengaged therefrom, substantially as described and for the purpose specified. 13th. The combination of a weighing machine, having an indicator, a latch holding the parts that operate the indicator, the electro-magnet in juxtaposition with said latch, the chute section D and suitable connection with the magnet for supplying the electric current, substantially as described and for the purpose specified. 14th. The combination of a weighing machine, a rack indicating mechanism, electrical releasing mechanism, and a coin receiver, whereby the releasing mechanism is actuated. 15th. The combination of a weighing machine, a rack-indicating mechanism, electrical releasing mechanism, a coin receiver, whereby the releasing mechanism is actuated and stop mechanism. 16th. The combination of a weighing machine, indicating mechanism, connecting mechanism between the weighing machine and indicating mechanism, whereby the latter is actuated, electrical releasing mechanism and a coin receiver, whereby the releasing mechanism is actuated. 17th. The combination of a weighing scale, indicating mechanism, a rack connecting mechanism between the rack and indicating mechanism, and means for suspending the rack after the weight on the platform has carried down frame *b*, and connecting mechanism with frame *b*, substantially as described. 18th. The combination of weighing scales, spring and connecting mechanism, a vertically moving rack independent of the motion of the weighing spring, connecting mechanism with the rack and indicating mechanism, substantially as set forth. 19th. The combination of weighing scales, indicating mechanism, connecting mechanism between the weighing machine and the indicating mechanism, connecting mechanism between the weighing machine and the indicating mechanism, whereby the latter is actuated, retaining mechanism, electrical releasing mechanism, and a coin receiver, whereby the releasing mechanism is actuated, substantially as described and hereinbefore set forth.

## No. 27,345. Machine for Producing Type Bars. (*Machine à faire les barres de caractères.*)

The National Typographic Company of West Virginia (assignees of Ottmar Mergenthaler, Baltimore, Md.), U.S., 4th August, 1887; 5 years.

**Claim.**—1st. In a machine for forming type-bars or matrices for type-surfaces, a melting pot or mould, a series of matrices composing mechanism, and means, substantially as described, whereby the matrices assembled for one line may be maintained in position at

an intermediate point, separated from those before and after them. 2nd. In a machine for producing type-bars or matrices, the composing fingers, a series of matrices or dies, finger-keys, and mechanism, substantially as described, actuated by finger-keys for delivering the matrices to the composing mechanism. 3rd. In combination, with a continuously-operating composing mechanism, and a series of matrices or dies, rails or guides, to receive successive lines of matrices, and means, substantially as described, whereby one line may be advanced upon said guides away from those following after, thus permitting the separate groups or lines of matrices to be kept distinct from each other. 4th. In a machine for forming type-bars, a series of matrices having letters or characters in positive form therein, and mechanism, substantially as described, for assembling said matrices in line with their characters in view of the operator, whereby he is enabled to inspect the line previous to its delivery to subsequently acting mechanism, to the end that errors therein may be corrected. 5th. The matrix, formed with the suspending shoulders *b*, and reduced in width above the same, to produce the shoulders *c* and *d*. 6th. The matrix, provided with the suspending shoulders *b*, upper shoulders *c* and an under-cut notch in the upper end. 7th. The matrix plate, provided with sustaining or suspending shoulders, and with an intaglio character in one of its vertical edges. 8th. The matrix, provided with suspending shoulders at its upper end, and with a notch or shoulder *f* in the lower end, substantially as and for the purpose described. 9th. The series of matrix plates, provided with sustaining shoulders *b* of uniform size, and with upper shoulders *c, c, d, d*, differing in the extent of their separation in matrices representing different characters. 10th. In a mechanism for assembling and distributing matrices, a series of upright magazine tubes grouped closely together in line at their lower ends, but separated at their upper ends, substantially as and for the purposes described. 11th. In a magazine for matrices, the combination of the two vertical plates, each provided with grooves arranged in pairs, brought together at the upper and lower ends, but separated at intermediate points, with intermediate division-plates seated therein, whereby two partitions are permitted between each matrix-tube or passage, and the next, and the tubes separated toward their upper ends. 12th. The magazine tubes, in combination with automatic periodically-actuated detents, common to the series of tubes, whereby the matrices are released, so that they may escape when free from resistance thereunder. 13th. The magazine tubes and the automatic periodically-actuated dogs or detents to release the matrices therefrom, in combination with finger-keys and escapement keys actuated by the finger-keys, and provided with dogs or detents to receive the matrices from the magazine and carry them positively downward. 14th. In combination, with a magazine to hold the matrices, one upon another, detents or dogs to engage the bottom matrix and retain the same in the magazine, and a vertically movable key or receiver located beneath the mouth of the magazine, and provided with automatic dogs or detents to receive and hold the matrix as it falls from the magazine, and then discharge the same downward as the key descends. 15th. The magazine to hold the matrices one above another, and the fixed rails to sustain the matrices as they are discharged from the magazine, in combination with dogs to hold the matrices in the magazine and the vertically-movable escapement keys *C*, provided with automatic means to receive the matrices and transfer them positively one at a time to the rails. 16th. In a mechanism for assembling matrices, the stationary parallel rails to sustain the matrices, and the endless belt provided with fingers to advance the matrices successively to one end of the rails. 17th. In combination, with the matrix-sustaining rails, the endless belt provided with yielding spring-supported fingers to advance the matrices. 18th. The combination, substantially as described and shown, of the magazine tubes, the periodically-actuated dogs or detents to retain the matrices therein, the escapement keys to transfer the matrices to the assembling mechanism, and the automatic device to prevent the descent of the keys during regular intervals, and to hold down in the meantime those keys which have been already depressed. 19th. In combination with the escapement keys to transfer the matrices, the automatic rising and falling bar to lift the keys to their normal positions. 20th. In combination with the travelling assembling devices, the escapement-keys to deliver the matrices thereto, and the springs to sustain the keys normally in an elevated position, whereby collision between the descending and the laterally-moving matrices is prevented. 21st. In combination with the matrix-sustaining rails, and the conveying or assembling belt, the rotary arms *I* to advance the matrices one at a time as they are presented by the belt. 22nd. In combination with the matrix-sustaining rails, the pawls and the sliding support for the pawls, whereby they may be moved lengthwise of the rails to advance the assembled matrices. 23rd. In combination with horizontal matrix-supports, and a carrier to advance the matrices thereover, the constantly rotating arms to advance the matrices, and the pawls to engage the matrices as they are delivered thereto by the arms. 24th. In combination with horizontal rails or supports whereon the matrices are advanced and assembled in line, a series of independent space-bars and overhead devices, substantially as described, for dropping said bars one at a time into the accumulating line of matrices. 25th. The stationary rails *D* adapted to sustain the matrices, in combination with the elevated rails *N* adapted to sustain the space-bars in position to descend therefrom to the lower rails, whereby the matrices are permitted to pass beneath the space-bars and the latter permitted to descend to the stationary rails between the matrices. 26th. In combination with the space-bar supports *N*, the vertically-reciprocating slide adapted to engage the space-bars and transfer them one at a time to the line of assembled matrices. 27th. In combination with the space-bars, their sustaining rails and the slid *m*, the spring to depress the slide and the cam to elevate the same. 28th. The slide *m* to deliver the space-bars, its depressing-spring, its elevating cam and the detent-lever *b* to prevent the descent of the slide, in combination with the roller, the slide thereon to trip the detent-lever, and the slide-adjusting device connected with the space-key whereby the depression of the key causes the slide to trip the detent and permit the slide *m* to add a space-bar to the line of matrices. 29th. In combination with the matrices and their sustaining-rails, the clamp to act on the edges of the aligned matrices, and the two jaws movable therewith and also movable to