H. DEGENER.

LINE SETTING AND CASTING MACHINE

APPLICATION FILED JULY 21, 1910.

996,568. Patented June 27, 1911.

Fig. 1.

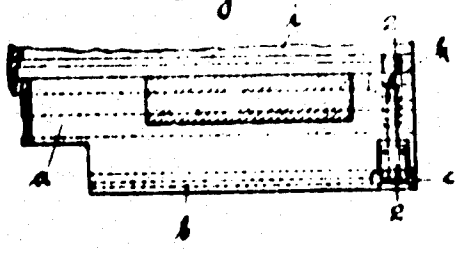

Fig. 2.

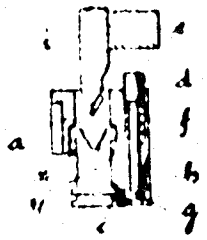

Fig. 3.

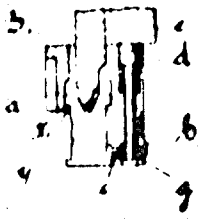

Fig. 4.

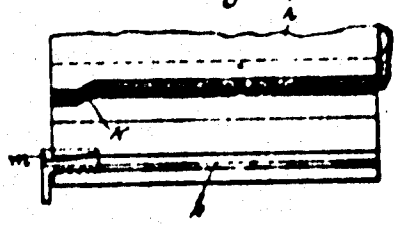

Fig. 5.

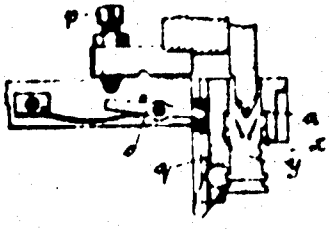

Fig. 6.

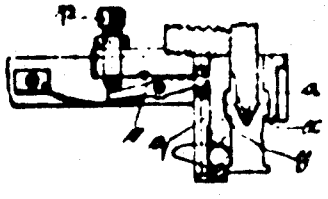

Fig. 8.

Fig. 7.

Witnesses:

Inventor:

996,568. LINE SETTING AND CASTING MACHINE. HEINRICH DEGENER, Berlin, Germany, assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed July 21, 1910. Serial No. 573,074.

To all whom it may concern:

Be it known that I, HEINRICH DEGENER, of 26 Hollmannstrasse, Berlin, German Empire, manager, having invented certain new and useful Improvements in or Relating to Line Setting and Casting Machines, do hereby declare that the following is an exact specification of the same.

In matrix setting and type line casting machines, for the purpose of producing mixed copy, the matrices are caught at different levels. During the casting, the matrices are then standing with their foot- or bottom-edge on bars which, after the casting is completed, are withdrawn in order to bring the matrices with their bottom edge into one plane.

The devices hitherto known have the disadvantage that, owing to the movable bars, it is impossible to avoid a certain inaccuracy in the adjustment of the matrices. It has already been attempted to obviate that disadvantage by the arrangement of a rotatable spindle provided with a groove, or by adjusting the matrices for the distributing process without using any mobility in the said slide, by causing the matrices to pass after leaving the casting carriage and before they are transferred to the conveyer head, on an oblique surface which brings all the matrices, whatever be the height at which they were previously caught, into one plane.

The construction according to this invention has the advantage over former constructions, of economizing the space required for the curved guide behind the casting carriage, and on the other hand of obviating the difficulty of the accurate supporting of the movable parts by arranging in a movable manner only a small portion of the bar holding the matrices in their upper position.

The accompanying drawing shows two constructions according to this invention, namely Figure 1 is a front elevation of the collector carriage. Fig. 2 is a cross section taken of the line 2—2 of Fig. 1, before the holding bar is retracted. Fig. 3 shows the same section after the retraction of the said holding bar. Fig. 4 is a front elevation of the collector carriage the holding bar being formed as a rotatable spindle. Fig. 5 is a side elevation to Fig. 4 and Fig. 6 is also a side elevation after the spindle has been turned. Fig. 7 shows the rotatable spindle alone in a greater scale and Fig. 8 is a side view of Fig. 7 with a portion broken away.

The casting carriage a which carries the matrices to the casting point, and from the casting point to the distributing point, is generally constructed in the well known manner and contains a bar b for holding the matrices in the upper level and ledges x and y for sustaining the upper ears of the matrices standing in the lower level. The bar b is provided in the form of a fixed projection of the casting carriage and only at the point where it is connected to the conveyer head carrying the matrices to the distributer, there is provided a short movable bar c. In the construction shown in the drawing, this bar is withdrawn, during the rising of the casting carriage, as the bolt d strikes a projection e secured to the frame, and is thus shifted downward against the pressure of the spring f and strikes with its foot against a bevel or cam portion g of a movable bar. Owing to the descent of the bolt d, the bar c is thus withdrawn, but when the bolt returns to its raised position, a spring h again advances the movable bar.

It will be clear that the short movable bar can be supported in a very reliable manner. Even when, owing to inaccurate supporting, there is a faulty adjustment of the matrices, this can take place only on a comparatively short portion of the line. The bar i which has a V-shaped section and is arranged on the machine frame above the casting carriage and when the casting carriage a rises upward, engages with the V-like notches of the matrices, can be provided on the portion corresponding to the movable bar portion c, with a beveled portion k, as the withdrawal of the bar portion c takes place during the rising of the casting carriage.

In the construction shown in Figs. 4–8, the movable bar portion is replaced by a spindle m provided with a groove n. The bottom lateral surface of the said groove forms a continuation of the bar b in the casting carriage a, and the upper lateral surface of the groove n is of helical shape. When the casting carriage rises into its upper position, the spindle m is rotated in the known manner by the engagement of the lever o with the screw p by means of the toothed rack q. Owing to the helical upper edge of the groove n of the spindle, the matrices standing on its bottom lateral surface, are then drawn into the bottom position. The other matrices are positively guided into their bottom position during the pushing out of the matrix line from the casting carriage a, as the upper edges of the bottom matrix lugs slide along the upper lateral surface of the groove n. The bar i which engages with the V-shaped notches of the matrices, can also be made partly oblique or curved, in accordance with the shape of the grooves in the spindle b.

The process during the distribution is as follows: During the rising of the casting carriage into the position in which the matrices are to be transferred to the conveyer head, the striking of the bolt *d* against the stop *e*, or of the lever *o* against the screw *p*, causes the movable bar portion *c* to be withdrawn, or the spindle *m* to be rotated. The matrices standing on the bar portion *c*, or on the bottom lateral surface of the groove *n*, fall therefrom by gravity into the bottom position. In the construction shown in Figs. 4–8, they are, moreover, as already stated, partly pulled down, and the whole line is then transferred in the known manner to the conveyer head. The matrices which are within the casting carriage on the left hand side of the movable bar portion *c* or *m* are then still at different levels, and only when they arrive at that portion of the casting carriage in which the movable bar is missing, or has been withdrawn, they all fall into their bottom position. In the construction shown in Figs. 4–8, the adhesion increased by the compression of matrices, taking place during the transfer, is overcome direct by the helical thread of the spindle. In the construction shown in Figs. 1–3, the depression is brought about already by the above mentioned bevel *k* of the bar *i*, but in order to protect the teeth at the V-shaped notches of the matrices, the bar *i* could be widened at the beveled portion to such an extent that it acts on the surface of the matrices or on the upper edges of the upper lugs, by means of a cam projection and thus depresses the matrices.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a matrix setting and line casting machine in combination a casting carriage transporting the line to the casting and to the distributing position and containing means to keep the matrices at different levels the means for holding the matrices in the upper level, consisting of a ledge having two parts, the one being fixed and the other movable and a bar arranged on the machine above the casting carriage and having a beveled face above the movable portion of the said ledge.

2. In a matrix setting and line casting machine in combination a casting carriage transporting the line to the casting and to the distributing position and containing means to keep the matrices at different levels, the means for holding the matrices in the upper level consisting of a ledge having two parts, the one being fixed and the other movable, and a bar arranged on the machine above the casting carriage and having a beveled face above the movable portion of the said ledge, said beveled portion pressing the matrices during their movement above the movable part into the bottom position.

3. In a matrix setting and line casting machine in combination a casting carriage transporting the line to the casting and to the distributing position and containing means to keep the matrices at different levels, the means for holding the matrices in the upper level being formed partly by a ledge fixed on the casting carriage and partly by a rotatable spindle provided with a groove.

4. In a matrix setting and line casting machine in combination a casting carriage transporting the line to the casting and to the distributing position and containing means to keep the matrices at different levels, the means for holding the matrices in the upper level, consisting of two parts, the one being fixed and the other consisting of a spindle provided with a groove, the upper surface being made of helical shape acting upon the upper edges of the bottom matrix lugs, as the matrix line is removed from said elevator.

In witness whereof I have hereunder set my hand in presence of two witnesses.

HEINRICH DEGENER.

Witnesses:

HENRY HASPER,

WOLDEMAR HAUPT.