No. 676,908. Patented June 25, 1901.

E. F. NYDAHL & G. A. HARLING.

TYPE DISTRIBUTING MACHINE.

(No Model.) (Application filed May 29, 1900.)

Fig. 2.

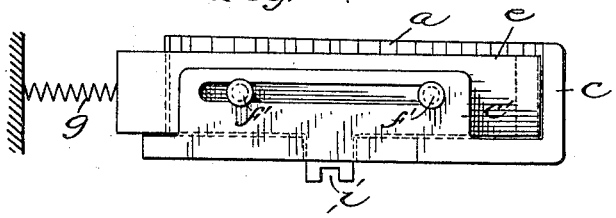


Fig. 1.

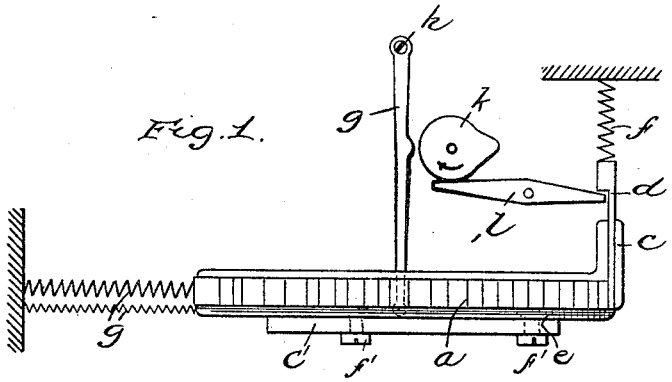


Fig. 3.

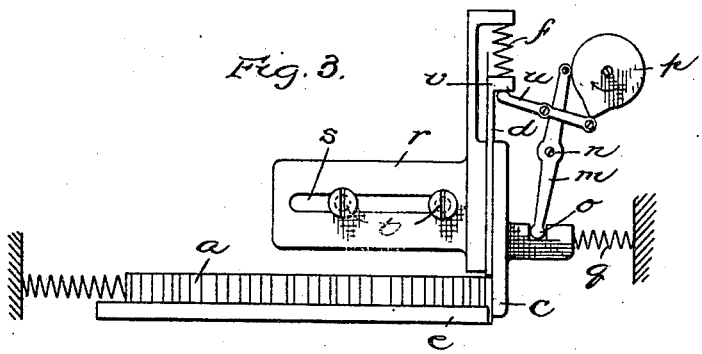
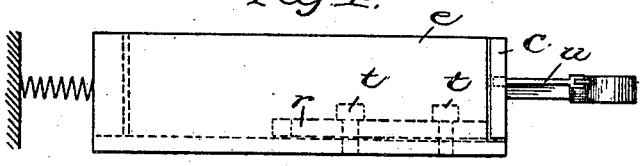


Fig. 4.



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UNITED STATES PATENT OFFICE.

ERNST FREDRIK NYDAHL AND GUSTAF ALEXANDER HARLING, OF STOCKHOLM, SWEDEN.

TYPE-DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 676,908, dated June 25, 1901.

Application filed May 29, 1900. Serial No. 18,441. (No model.)

To all whom it may concern:

Be it known that we, ERNST FREDRIK NYDAHL and GUSTAF ALEXANDER HARLING, engineers, of 11 Norrlandsgatan, Stockholm, Sweden, have invented certain new and useful Improvements in Type-Distributing Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in the apparatus for distributing type described in the prior United States of America patent, dated July 3, 1900, numbered 652,899. In order that a machine constructed in accordance with said prior United States of America patent may act in a satisfactory manner, it is important that the operation of the parts of the apparatus which conduct the type should be certain, while at the same time it is of equal importance that only one type at a time be fed into the machine. The difficulties attending such operations arise partly from the different thickness of the types, which vary between one-half and four millimeters, and partly from the adhesive power prevailing among the types, owing to which a type when being pushed out of the line is disposed to bring with it one or more of the adjacent types.

Our invention has for its object to obviate these disadvantages.

In order that our invention may be readily understood and carried into effect, we will describe the same fully with reference to the accompanying drawings, in which—

Figures 1 and 2 illustrate in plan view and in side elevation, respectively, the arrangement where the type series *a* stands still while the support *e* is moving to and fro. Figs. 3 and 4 show in side elevation and in plan view an arrangement where the support *e* is standing still while the type series *a* is moved.

According to Figs. 1 and 2 the support *e* moves in a guide *c'*, which is connected with the end support *c*. Two guide-screws *f' f'* are secured to the support *c* and run in a longitudinal groove in the guide *c'*, thus forming a guide for the reciprocated supports *e*. The movement is transmitted to the same by means of the one-armed lever *g*, which is pivoted at *h*, while the opposite end of it enters in a fork *i*, projecting downward from the support *e* through the bottom of the guide *c'*. When the cam *k* is moving in the direction of the arrow and actuates the lever *g*, the support *e* is carried to left from the end support *c*, so that the outermost type becomes free for being pushed out by the ejector *d*. The return motion of the support *e* is effected by the helical spring *g'*. When the support *e* has in the described manner been pulled out by the lever *g* and the outermost type becomes free, the ejector is pushed outward by means of the spring *f*, thereby taking with it the released outermost type. The ejector *d* is going back when the cam-disk during its continued rotation is actuating the lever *l*, the one arm of which engages the piston, as shown in the drawings.

According to the construction shown in Figs. 3 and 4 the support *e* is, as already mentioned, stationary and the type-line *a* is caused to move. In this form the end support *c* is given a reciprocating motion by the cam *p* and lever *m*, which is pivoted at *n* and has one end engaging in a fork *o* on the support *c*. The motion outward for releasing the type begins when the cam-disk *p* actuates the lever *m*. The backward motion of the support *c* is effected by means of the spiral spring *q*. The support *c* is guided by the projection *r* on the same, in which the longitudinal groove *s* is made. Through this groove pass guide-screws *t*, which may be secured to the frame of the machine. When the support *c* is moved outwardly, as described, the outermost type becomes free and the ejector *d* is pushed outward, taking with it the type. The backward motion of the ejector is effected by means of the lever *u*, which in its turn is actuated by the cam *p*.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. In a type-distributing machine, a rigid

and a movable supporting member for the type and an expelling-plunger moving at right angles to the line of movement of said supporting member and serving to expel the outermost type when released by the supporting member, and means for alternately operating said movable member and plunger, substantially as described.

2. In combination, a horizontal type-supporting member, a type-line supported thereon with means tending to move it constantly toward the end of the supporting member, an end supporting member, means for reciprocating one of said members in relation to the other member to permit the outermost type to be freed and an expelling-plunger moving at right angles to the type-line with means for operating the same, substantially as described.

3. In combination, a horizontal type-supporting member, a spring-pressed type-line supported thereon, an end supporting member, one of said members being movable in relation to the other, an operating-lever connected with the movable member, an expelling-plunger moving at right angles to the type-line, an operating-lever connected therewith, and a cam for alternately operating both said levers, substantially as described.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

ERNST FREDRIK NYDAHL.
GUSTAF ALEXANDER HARLING.

Witnesses:
TH. WAWRINSKY,
M. GENBERG.