(No Model.) 2 Sheets—Sheet 1.

L. K. JOHNSON & A. A. LOW.

TYPE DISTRIBUTING APPARATUS.

No. 264,085. Patented Sept. 12, 1882.

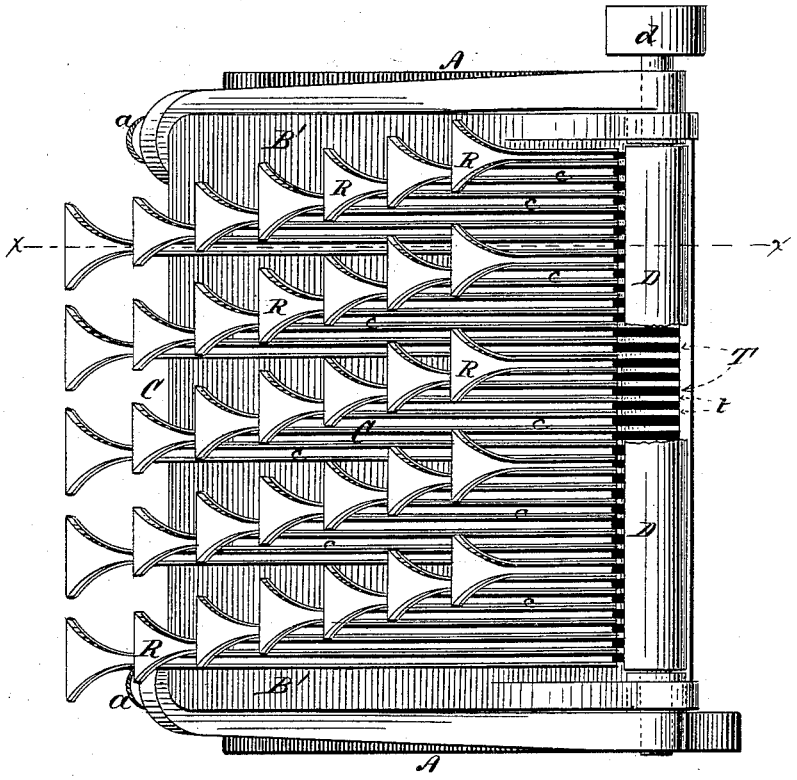

Figure 1.

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(No Model.) 2 Sheets—Sheet 2.

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Figure 2.

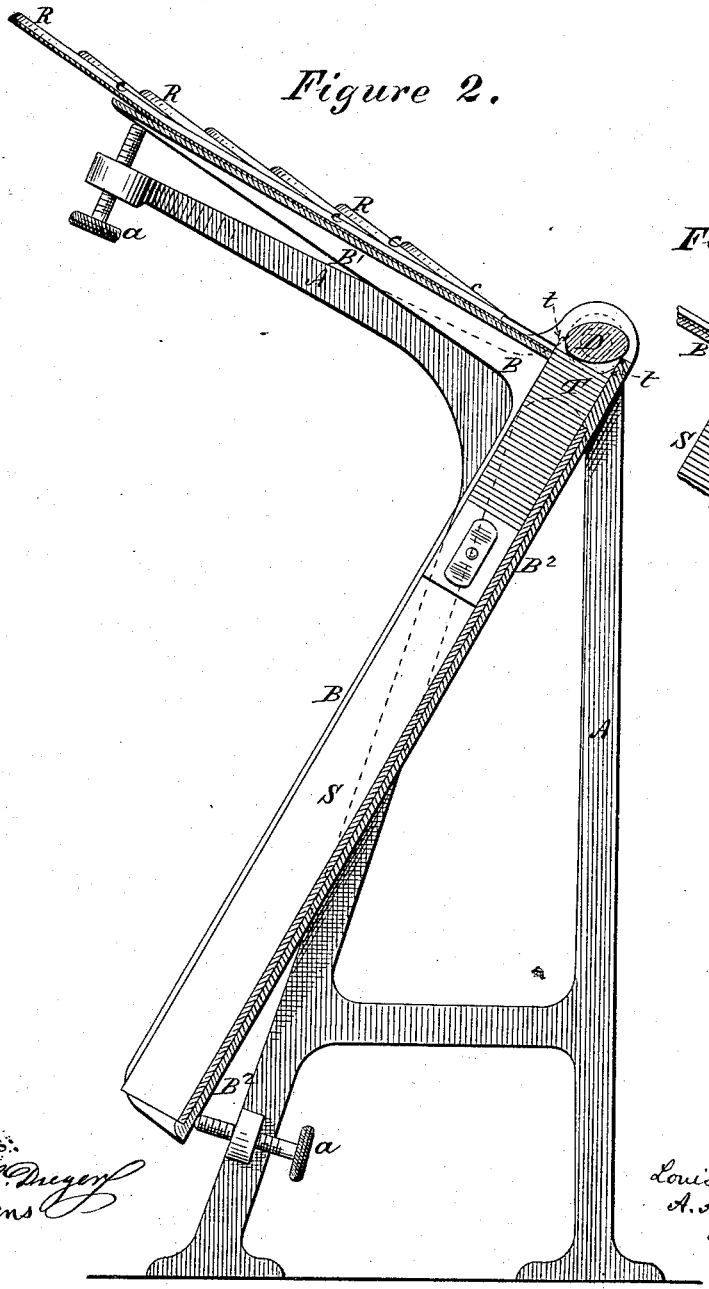
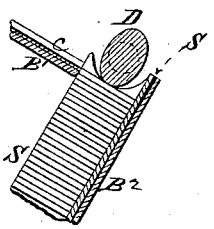


Figure 3.



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UNITED STATES PATENT OFFICE.

LOUIS K. JOHNSON, OF NEW YORK, AND A. AUGUSTUS LOW, OF BROOKLYN, N. Y.

TYPE-DISTRIBUTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 264,085, dated September 12, 1882.

Application filed September 1, 1881. (No model.)

To all whom it may concern:

Be it known that we, LOUIS K. JOHNSON, of the city of New York, county of New York, and State of New York, and A. AUGUSTUS LOW, of the city of Brooklyn, Kings county, State of New York, have invented certain new and useful Improvements in Type-Distributing Apparatus, of which the following is a specification.

Our invention relates to that class of type-distributing apparatus which consists essentially of a series or "case" of inclined conduits, into which the types are dropped by hand in a prescribed manner, and down which they slide by their own gravity and are conducted to their respective containing channels for use in the setting apparatus, said channels being placed for the purpose opposite the respective ends of the conduits.

Our invention consists in the special construction and arrangement, with the bank or case of conduits, of the devices hereinafter described for receiving the types from the lower ends of the same, and for transferring and forwarding them into their respective "setter" or containing channels in such manner that the types are caused to deposit themselves naturally and automatically upon the upper ends of their particular columns, and in position to be acted upon by a depressor situated immediately above the columns of type, which acts intermittently to depress a column of type against the resistance of the friction-slugs or other devices used for sustaining the columns in their channels whenever it encounters a fresh type upon the top of such column, thereby providing for the reception of successive types.

Another feature of our invention consists in making a base or bed upon which the conduits are mounted, adjustable in such manner that the most suitable inclination for the conduits may be accurately attained.

In the accompanying drawings, Figure 1 is a plan of our type-distributing apparatus; Fig. 2, a vertical section on plane of line *x x*, Fig. 1; and Fig. 3, a detail view, showing the operation of the transferring device and the upper end of a setter-channel adapted thereto and to fit against the conduits.

Any number of conduits or channels, *c c*, may be incorporated in one bank or case, C, according to the denominations and styles of types to be used. These conduits may consist of grooves of suitable width and depth formed in a bed plate of sufficient thickness; but we prefer to make them in the form of sheet-metal channels, which may be arranged in any convenient manner upon a bed-plate or frame, B′. This bed-plate B′ forms part of the adjustable rectangular frame B, which is pivoted between the standards A A, and is also formed with the supporting arm or bed B^2 for the reception of the setter-channels S.

At or near its upper extremity each channel or conduit *c* is provided with a "receiver," R, for the reception of type, so formed or connected with the conduit as to guide the type into the latter. This receiver may be formed by simply widening or flaring the channel, as shown in the drawings, or it may be made in any other suitable and convenient manner, the essential feature being to provide a receptacle into which the type may be conveniently and expeditiously dropped by hand, which will guide said type into the conduit by gravity.

For the purpose of economizing space and rendering the case compact and convenient in use, we prefer to arrange the conduits one against another in parallel rows, as shown in Fig. 1, the widened portions or receivers R being raised above and extending over the adjoining conduits. By making the conduits of different lengths the receivers may thus be brought very close together, and arranged relatively to form a bank or case in any manner that may be found most convenient or desirable.

The conduits *c* are inclined at such an angle as to allow the types to gently descend through them by gravity alone. To insure accuracy in attaining the most favorable inclination, the conduits and the bed or frame B′ upon which they are mounted are made adjustable vertically. This adjustment may be accomplished by any of the well-known methods employed for analogous purposes.

In the drawings, the bed-plate B′ is shown as suspended from the standards A A, at its lower end, on an axis common with that of the depressing device D, so that, no matter what the angle may be to which the conduits *c* are set, said depressor D will always bear the same

relative position to them and to the setter-channels S or reservoirs T immediately underneath. As shown, the inclination is effected by means of set-screws *a a*, mounted on the standards A A, which act as adjustable bearings, against which the rectangular frame B, which constitutes the conduit-bed B′ and channel-holder B^2, rests. When the transfer chambers or reservoirs T are employed there is one for each conduit attached to and moving with the rectangular frame B, so as always to maintain positions directly at the ends of but projecting downward at right angles from the conduits *c*. In fact, the side walls, *t t*, of the reservoirs practically constitute continuations of the walls of the conduits, and hold the type against lateral displacement after it has slid between them. These transfer chambers or reservoirs T act as connecting-links between the ends of the conduits *c* and the setter-channels S, which latter are placed temporarily upon the channel bed or holder B^2 immediately under the said transfer-chambers T, so as to form continuations of the same when so placed in position for filling. The transfer-chambers T also act as reservoirs to maintain the level of the columns of type at or near the ends of the conduits, so that the type, descending and leaving the ends of the latter, will drop easily and naturally upon the tops of their respective columns without danger of turning or upsetting. While these transfer-reservoirs T furnish a convenient medium of connection between the conduits *c* and the setter-channels S, they are not absolutely essential, and we prefer in some cases to dispense with them by forming the upper ends of the setter-channels so as to fit to the ends of the conduits *c* and by cutting away their side walls at their upper extremities in a concave arc of a circle to accommodate the action of the transferrer or depressor D, as shown in Fig. 3.

The columns of type are supported in the reservoirs T and in the setter-channels S by friction-slugs *s*, which give way and descend before the pressure of the depressor whenever fresh types are deposited upon the tops of their respective columns.

The depressor D, which may be either reciprocal or rotary in movement, consists essentially of a device that will intermittently descend into the setter-channels S or the reservoirs T, as the case may be, a certain distance to depress the columns of type a sufficient distance to make room for those following.

In the drawings a double eccentric or cam, D, is shown, mounted upon suitable bearings on the standards A A, and provided with a pulley, *d*. Each of the eccentric portions of the cam has a throw equal to the thickness of the largest type to be distributed. The cam is made of sufficient length to extend over all the setter-channels S or reservoirs T, the upper walls of which are formed in a concave curve to allow the eccentric portions of the cam to descend into them to the extent of their throw. By thus adapting the side walls of the setter-channels or of the reservoirs to the action of the depressor we are enabled to employ one that is continuous and uniform throughout its entire length, thereby greatly simplifying and cheapening the construction. It will be noticed that by this arrangement of the depressing device above the reservoirs or setter-channels and of the latter below and projecting from the conduits at right angles we are enabled to arrange the setter-channels while in position for filling directly underneath the conduit-bed B′, thus economizing floor-space and rendering the apparatus compact in structure.

Owing to the comparatively small space into which a large number of the conduits and their receivers may be grouped the operations of hand-distribution may be performed more quickly and with less fatigue than where the old form of printer's case is used, while there is an additional advantage in the fact that the type are all arranged in channels in a prescribed position, from which they may be quickly and conveniently removed during the operations of composition or setting, as when employed in connection with the type-setter's case patented to Louis K. Johnson, August 3, 1880, No. 230,784.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a hand type-distributing apparatus such as designated, the combination, with the conduits *c* and the type-receiving channels T, of the transferring or depressing device D, consisting of the cam D, continuous and uniform throughout its whole length, and occupying a position opposite the lower ends of the conduits *c* and extending over and above the type-receiving channels T, which have their upper walls formed in a concave arc of a circle to allow the descent of the eccentric portions of the cam into them, for the purpose and substantially in the manner herein set forth.

2. In a hand type-distributing apparatus substantially such as herein designated, the conduit-bed B′, adjustable upon the supporting frame or standards A A of the apparatus, for the purpose of accurately attaining the most desirable inclination of the conduits *c*, substantially in the manner and for the purpose described.

3. In a hand type-distributing apparatus substantially such as designated, the rectangular frame or bed-piece B consisting essentially of the conduit-bed B′, and the setter-channel bed B^2, pivoted to the stationary frame or standards A A upon the same axis with the depressor or transferring device D, and adjustable concentrically thereon, for the purpose of preserving the relative arrangement of the parts under all circumstances, substantially in the manner and for the purposes herein set forth.

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