

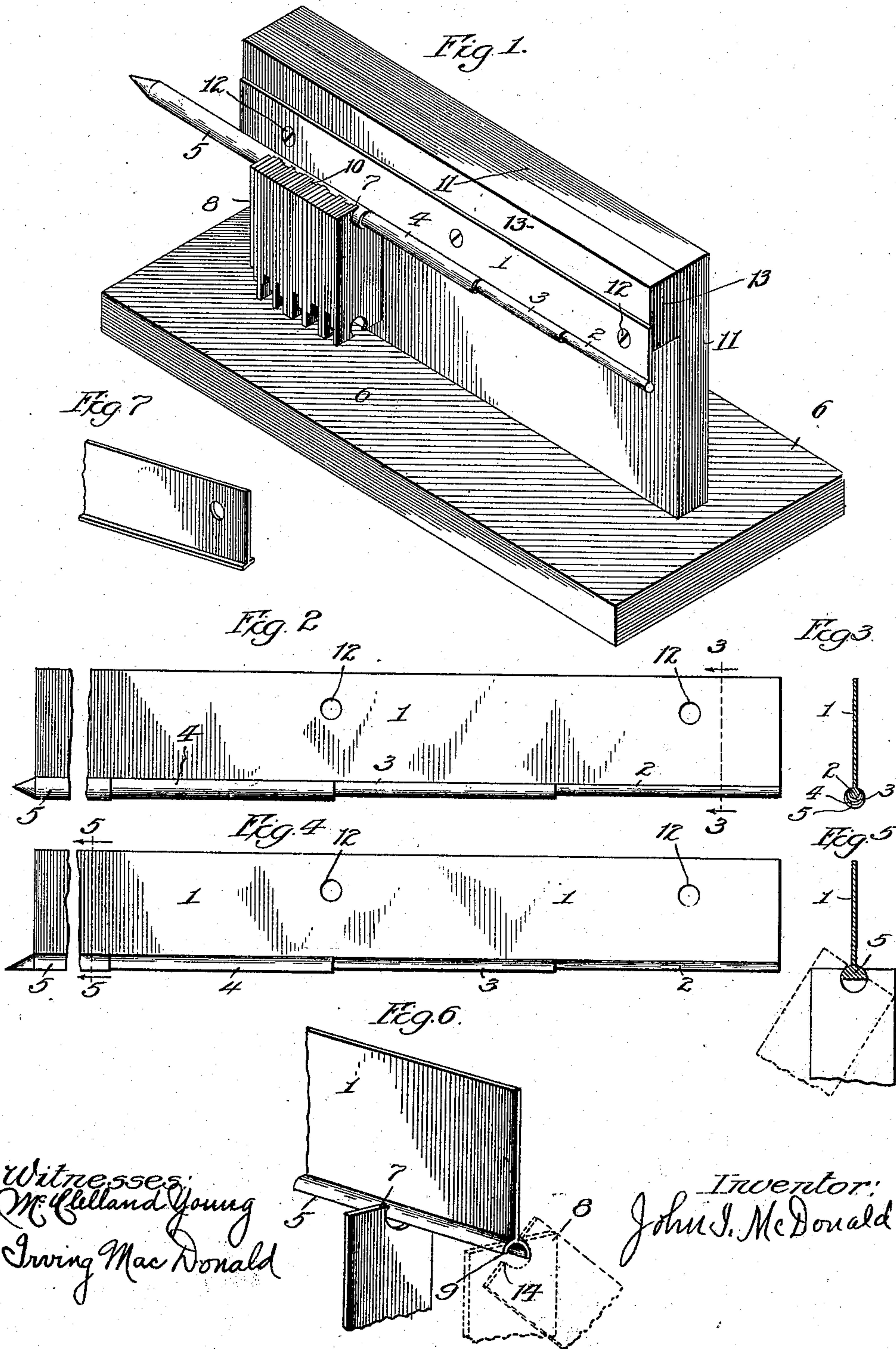
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HOLDER AND SEPARATOR FOR STORING AND SEPARATING PRINTERS' MATERIALS.

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919,916.

Patented Apr. 27, 1909.



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UNITED STATES PATENT OFFICE.

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HOLDER AND SEPARATOR FOR STORING AND SEPARATING PRINTERS' MATERIALS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN I. McDONALD, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Holders and Separators for Storing and Separating Printers' Materials, of which the following is a full, clear, concise, and exact description.

My invention relates to the art of printing, and has for its object the separating of rules, borders, spacings, leads, and like printers' materials, which have been promiscuously assembled, into their respective classes. To those familiar with the art of printing it is well-known that the said classes of printers' materials are separated with considerable difficulty and a great deal of labor. I provide a means of rapidly and accurately separating these devices into their respective classes by means of a separator which is adapted to be used in connection with slotted printers' materials of varying lengths. In carrying out my invention, I provide such materials with recesses in both their end portions, such recesses being provided in the transverse edges of the leads or the like to modify the contour thereof symmetrically with respect to a middle line extending longitudinally of each lead, and symmetrically with respect to a middle line extending transversely of each lead, the entrances to said recesses being smaller than their bases, whereby overhanging projections or horns are provided for engagement with the separator, the recesses themselves being readily alined. As is well-known, such printers' materials are divided into classes, such as rules, borders, spacings, leads, etc. I provide each such class with an entrance opening or neck to its recess characteristic to that class of material only. The class of material known as borders or rules is divided into subclasses according to face, each face being given a neck also characteristic to that subclass only. In other words, the entrance opening or neck to the recess of the material of each class and subclass has a different and distinctive diameter.

More specifically, my invention consists of a holder or separator upon which such materials are threaded, and by means of varying cross-section of the holder or separator corresponding to varying-sized entrance openings to the slots of such classes and sub-

classes of printers' materials, such materials may be very rapidly and efficiently separated.

My invention will be more readily understood by reference to the accompanying drawing, wherein—

Figure 1 is a perspective view of the preferred form of my invention, showing the material assembled upon the separator; Fig. 2 is a front view of the separator; Fig. 3 is a sectional view on line 3—3 of Fig. 2; Fig. 4 is a modified form of the separator; Fig. 5 is a sectional view on line 5—5 of Fig. 4; Fig. 6 is a detail perspective view of another modification of the separator which enables individual pieces of material to be removed from any portion of the separator; and Fig. 7 is another modification of the separator.

Like parts are designated by similar characters of reference throughout the several views.

Referring to the drawing, Fig. 1 shows a separator of my invention used in connection with a wooden table or platform 6 having an upright extension 11 erected thereon. Secured to this upright extension is an overhanging block 13 to which the separator is attached by means of screws 12. Said table, upright and block form a supporting table. 1 designates a plate cast at one end in the form of a bead, preferably a circular rod, different portions of which have different diameters, as 2, 3, 4, 5, the diameter of each of which is slightly less than the entrances to the recesses of the particular class of materials such portion is adapted to separate.

The mode of operation is as follows:—The material 8 to be separated into classes is threaded upon the holder at the end 5 which is of sufficient diameter to engage with and retain all classes, the horns or projections 7 of the recesses engaging with the holder. The material is then moved along to the portion of the holder 4 which has a less diameter than that of the portion 5 which it has just left, and the horns 10 of the class of material having the largest entrance openings to its recesses or slots will not engage the portion 4 of the holder, but will be disengaged therefrom, thereby causing the material comprising that class to drop to the platform 6, where such material may be collected. This operation is repeated, each succeeding class being disengaged or released as the material is moved to each suc-

ceeding portion whose diameter is less than the portion it has just passed over. I preferably construct the top of the supporting surface of the separator proper in a straight line, such construction greatly facilitating the passage of the materials along the separator. It is obvious that this process can be reversed and the class of the smallest entrance openings to its recesses can be separated first if desired.

When used in the manner illustrated in Fig. 1 a very efficient separating action is obtained, the operation of which I will briefly describe. The material, after having been threaded as before on the separator at the end 5 which is preferably pointed, the relative position of the material and the holder is changed, so that the material is suspended at the portion 4, where separation takes place. The class to be separated at this point in falling is arrested by the face of the table 6 and does not fall a sufficient distance to clear the lower ends of the classes retained, thus alining the slots of the lower end, when a rod is inserted in the alined lower slots and the class withdrawn.

Fig. 4 illustrates a modified form of my invention in that the separating portion proper is in the form of a semi-circle, the edges of which lie in a horizontal plane.

Fig. 6 illustrates a modification of my separator constructed in the form of an arc or segment 5, the chord subtended by which lies out of a horizontal plane, or in other words the lower edges of said segments lie in different horizontal planes. With this construction the piece 8 may be removed from the portion of the holder 5 by a rotary movement, such piece being removed when its horn or projection 14 disengages or clears the edge 9.

Fig. 7 shows a separator or holder, the separating portion proper being in the form of a flange extending angularly from the lower edge of the plate on each side thereof.

In each type of separator shown in the drawings the longitudinal plate 1 is mounted horizontally with its edges in a vertical plane, and the lower edge is provided with a flange. Such flange in Figs. 1 and 2 and 3 is in the form of a circular bead. In Figs. 4 and 5 and 6 said flange is in the form of a semi-circular bead.

I do not wish to limit my invention to a structure comprising a separator of varying diameter or cross-section on which the separation of all classes takes place, as I may carry out my invention by using a separate selector for each class, each selector varying in cross section according to the particular class it is adapted to separate. With this construction, the material would not be suspended, but would be placed on a platform with all the slots in one end of the material alined. The class having the smallest neck

to its recess would first be withdrawn by a selector of slightly greater diameter than the diameter of such neck. This operation would be repeated with each successive class of material.

It will be understood that the term "printers' materials" as used in the claims is a generic term including rules, borders, spacings and like printers' materials.

I claim:—

1. The combination with various classes of printers' materials provided at their ends with slots having restricted openings, the material of each class having the same-sized openings which differ in size from the openings in the other classes, of a separator therefor comprising a supporting frame, a plate secured at its upper longitudinal edge to said frame, said plate extending longitudinally in a horizontal direction with its upper and lower edges in substantially the same vertical plane, and a flange extending from the lower edge of said plate to form a support for said printers' materials, said flange being of varying cross-section corresponding to the varying sizes of the entrance openings to said slots.

2. The combination with a horizontally suspended separating rod of varying cross-section, of slotted printers' materials, the various classes of which have various-sized entrances to their slots corresponding to the varying cross-sections of said separator, said printers' materials being thereby adapted to be suspended on said rod and released therefrom by being moved to a section of the rod corresponding to the size of the class to be released, and a stop secured below the lower edges of said suspended materials at a sufficient distance to engage and stop each such class as it drops from said separating rod before it clears the lower edge of the classes of material retained, and thereby to permit of a tool being inserted in the alined slots of the lower end, whereby such class is withdrawn.

3. The combination with a separator for printers' materials, said separator comprising a supporting frame, and a plate secured at its upper longitudinal edge to said frame, said plate extending longitudinally in a horizontal direction with its upper and lower edges in substantially the same vertical plane, said plate being provided at its lower edge with a bead of varying cross-sectional area, of printers' materials having slots in their ends adapted to receive said bead, the entrance openings to said slots being of varied sizes that will adapt one portion of said bead to form a support for all of said material, and to successively release said material into classes corresponding to the entrance openings to said slots as the relative positions of the material with respect to the bead is changed.

4. A separator for distributing printers' materials consisting of a longitudinal support having an arc-shaped supporting surface, the chord subtended by said arc lying out of a horizontal plane, and said separator having different sections of its supporting surface of different cross-sections.

5. The combination with a horizontally disposed longitudinal support for printers' materials, said support being divided into a plurality of sections each of different cross-sectional area, said sections varying in cross-sectional area by graduated steps, and each section being of a length to support a plurality of printers' materials, of printers' materials having slots in their ends adapted to re-

ceive said support, the entrance openings to said slots being of varied sizes that will adapt one of said sections to form a support for all of said materials and to successively release said materials into classes corresponding to the entrance openings to said slots as said materials are successively shifted from one section to another of smaller cross-sectional area.

In witness whereof, I, hereunto subscribe my name this 26th day of December, A. D. 1907.

JOHN I. McDONALD.

Witnesses:

IRVING MACDONALD,
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