April 16, 1935. E. S. WESSBORG 1,998,063

PRINTING APPARATUS AND TYPE

Filed Sept. 29, 1933 2 Sheets-Sheet 1

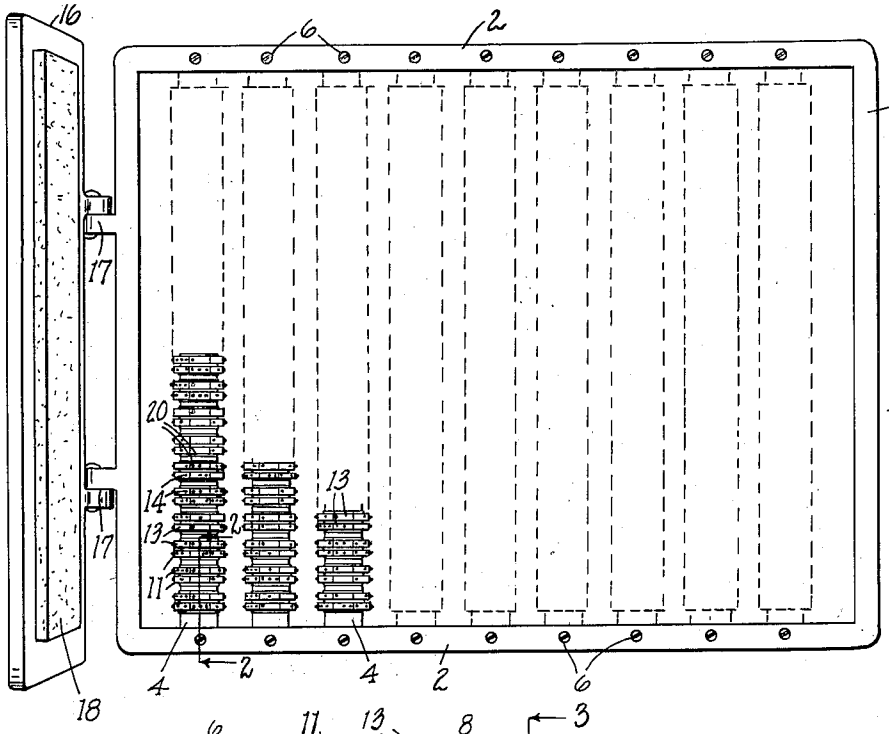

Fig. 1

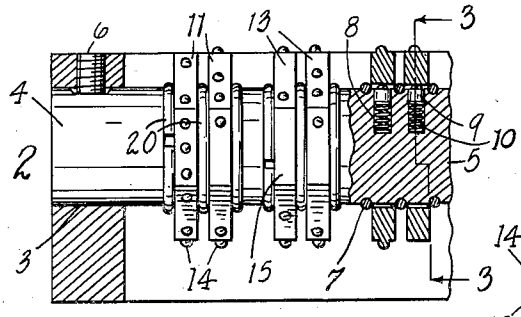

Fig. 2

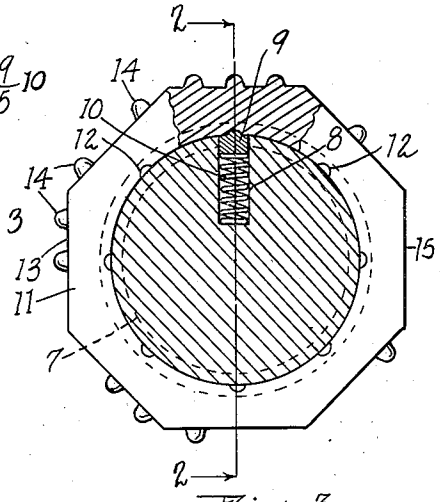

Fig. 3

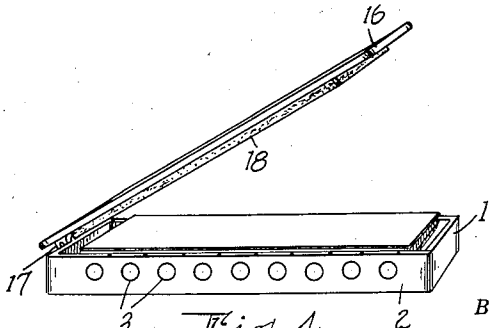

Fig. 4

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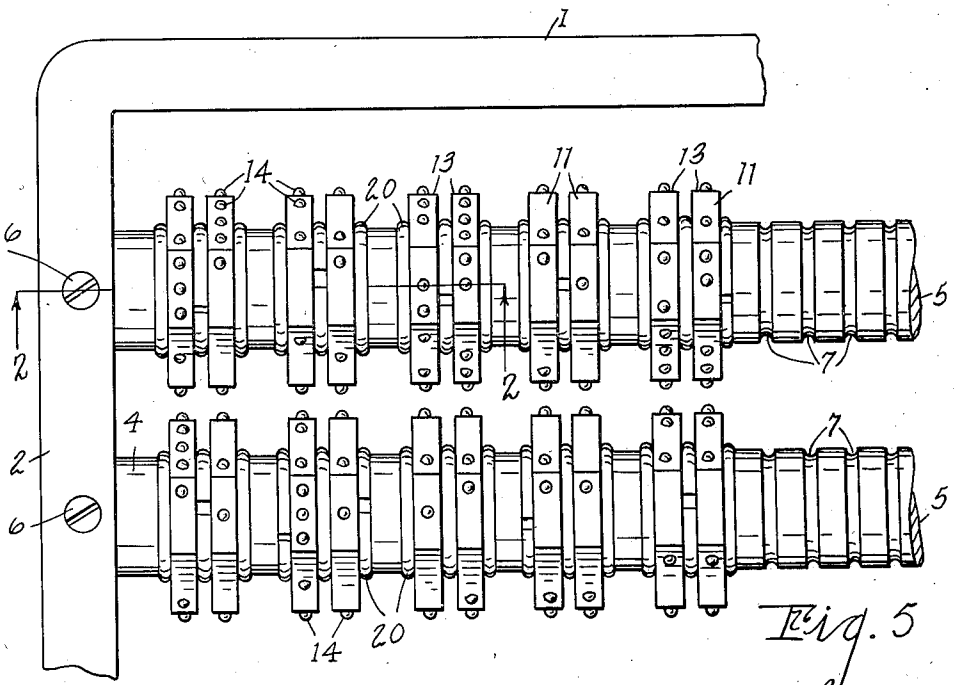

Fig. 5

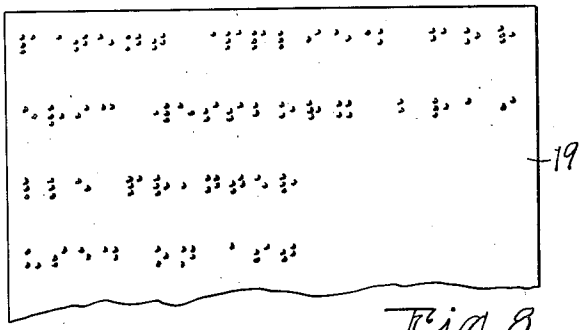

Fig. 8

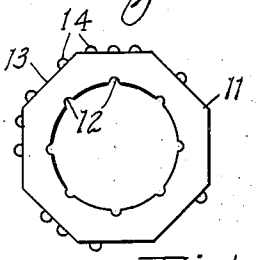

Fig. 6

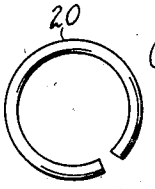

Fig. 7

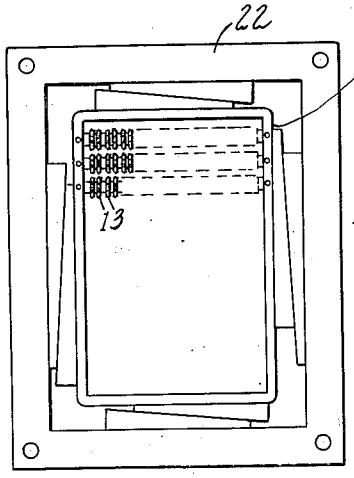

Fig. 9

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UNITED STATES PATENT OFFICE

1,998,063

PRINTING APPARATUS AND TYPE

Eric S. Wessborg, Saginaw, Mich.

Application September 29, 1933, Serial No. 691,528

8 Claims. (Cl. 101—18)

The main objects of my invention are:

First, to provide an improved device for printing Braille or raised characters for the blind.

Second, to provide a device of this character which is well adapted for pocket use in taking notes and writing letters in Braille.

Third, to provide Braille printing apparatus of this character, which is simple and economical in its parts and may be manipulated by the blind as well as others.

Objects relating to details and economies of my invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a fragmentary top plan view of a Braille printing device embodying the features of my invention.

Fig. 2 is an enlarged fragmentary view partially in section on a line corresponding to line 2—2 of Figs. 1, 3, and 5.

Fig. 3 is an enlarged detail section on a line corresponding to line 3—3 of Fig. 2.

Fig. 4 is a perspective view of the device in operation, a sheet being shown in place to receive an impression when the platen, which in the embodiment illustrated constitutes a cover, is closed.

Fig. 5 is an enlarged fragmentary top plan view with the platen open.

Fig. 6 is a view in side elevation of a type wheel.

Fig. 7 is a view in side elevation of a spring type retaining clip.

Fig. 8 is a fragmentary plan view of a sheet printed in Braille.

Fig. 9 is a top plan view of the device associated with a printing chase.

Referring to the drawings, numeral 1 indicates a type-high rectangular frame the side members 2, 2 of which are provided with opposed openings 3 for receiving the ends 4 of the equi-spaced parallel transverse rods 5. The rods are secured in position in the frame by the screws 6. The rods are provided with equi-spaced annular grooves 7 and radial bores 8 positioned between the grooves. Pawls or detents 9 are disposed in the bores and are actuated by the compression springs 10.

Octagonal type wheels 11 are arranged between the annular grooves on the rods in coacting spaced pairs as illustrated and have internal recesses 12 coacting with the detents for locating selected faces 13 of the type wheels in a common plane at the top of the frame. The faces of the wheels are provided with Braille printing indicia 14 and blanks 15 positioned so that by revolving the type wheels of each coacting pair any desired character may be formed in Braille.

A platen 16 which constitutes a cover is hinged to the top of the frame at 17, 17 in such manner that the soft rubber pad 18 disposed on the inner side thereof coacts with the Braille printing indicia in printing a sheet 19 disposed thereon. Thus arranged, the platen protects the indicia or type when the device is not in use.

The type wheels 11 are positioned on the rods 5 by means of the spring clips 20 engaging the grooves 7. The type wheels are thus arranged in vertical and transverse rows within the frame and are free to be revolved as desired.

Referring to Fig. 9, there is illustrated a Braille printing device 21 of my invention set up and locked in a conventional printing chase 22. Since the frame and type of the Braille printing device 21 is exactly type-high, the device may be readily used with the conventional chase 22. In this case, the platen of the device as shown in Fig. 1, for example, is removed for obvious reasons.

By means of my improved device, any number of Braille sheets or copies can be produced easily and accurately. Further, the device makes it possible to print Braille books, letters, etc. directly from the type in conjunction with ordinary printing equipment and with either cylindrical or platen presses.

By means of the revolving type wheels which automatically lock in adjusted position, it is easy for blind operators to manipulate the same to form Braille characters. One face of the type wheel is blank so that blank spaces and lines may be formed if desired. The device is adaptable for writing letters as well as for printing books and as many duplicate copies may be made as desired.

The device is valuable as a means of teaching blind people to learn to read Braille inasmuch as they can revolve the wheel until the desired character is formed. Further, the device is practical for pocket use as well as for printing and desk use for the blind. Errors in set up can be easily corrected.

I have illustrated and described my improvements in an embodiment which I have found very practical. I have not attempted to illustrate or describe other embodiments or adaptations, as it is believed this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A device of the class described comprising in combination a rectangular frame, equi-spaced transverse rods on said frame and provided with equi-spaced annular grooves and spring actuated detents positioned between the grooves, octagonal type wheels arranged between said grooves on said rods in spaced pairs and having internal indentations coacting with said detents for locating selected faces of the type wheels in a common plane, spring clips engaging said grooves for positioning the wheels on said rods, Braille printing indicia and blanks on the faces of said wheels, a platen hinged to the top of said frame, and a soft rubber pad disposed on the inner side of said platen for coaction with the Braille printing indicia in printing a sheet disposed thereon, said platen constituting a cover to protect said indicia when the device is not in use.

2. A device of the class described comprising in combination a rectangular frame, transverse rods on said frame and provided with annular grooves and spring actuated detents positioned between the grooves, type wheels arranged between said grooves on said rods and having internal indentations coacting with said detents for locating selected faces of the type wheels in a common plane, clips engaging said recesses for positioning the wheels on said rods, Braille printing indicia and blanks on the faces of said wheels, and a platen hinged to the top of said frame, said platen constituting a cover to protect said indicia when the device is not in use.

3. A device for the blind of the class described comprising in combination a frame, equi-spaced transverse rods on said frame and provided with equi-spaced annular recesses and spring actuated detents, octagonal type wheels arranged between said recesses on said rods in spaced pairs and having internal indentations coacting with said detents for locating selected faces of the type wheels in a common plane, spring clips engaging said recesses for positioning the wheels on said rods, and Braille printing indicia and blanks on the faces of said wheels.

4. A device for the blind of the class described comprising in combination a frame, transverse rods on said frame and provided with spring actuated detents, type wheels arranged on said rods in spaced pairs and having internal indentations coacting with said detents for locating selected faces of the type wheels in a common plane, means for positioning the wheels on said rods, and Braille printing indicia and blanks on the faces of said wheels.

5. A device for the blind of the class described comprising in combination a frame, transverse rods on said frame, type wheels arranged on said rods in spaced pairs, means for locating selected faces of the type wheels in a common plane, means for positioning the wheels on said rods, and Braille printing indicia and blanks on the faces of said wheels.

6. A device of the class described comprising in combination a frame, rods on said frame, type wheels arranged on said rods, means for locating selected faces of the type wheels in a common plane, means for positioning the wheels on said rods, Braille printing indicia and blanks on the faces of said wheels, a platen hinged to said frame, and a pad disposed on the inner side of said platen for coaction with the Braille printing indicia in printing a sheet disposed thereon, said platen constituting a cover to protect said indicia when the device is not in use.

7. A device of the class described comprising a frame, a plurality of rods disposed in uniformly spaced parallel relation on said frame, polygonal type wheels having Braille printing indicia on their faces rotatably mounted on said rods in coacting pairs for independent adjustment, and a platen provided with a pad mounted on said frame to be closed upon the type and constituting a cover when closed.

8. A device for the blind of the class described comprising in combination a support, a plurality of polygonal type wheels rotatively mounted in coacting pairs and having Braille indicia on their faces, the Braille indicia on the faces of the coacting pairs of types being positioned so that by adjusting the coacting type wheels various combinations thereof may be had, and means for yieldingly holding the type wheels in their adjusted positions.

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