Aug. 24, 1937. J. W. HAMILTON 2,091,146

BRAILLE CLOCK

Filed May 6, 1937 2 Sheets-Sheet 1

Fig. 1.

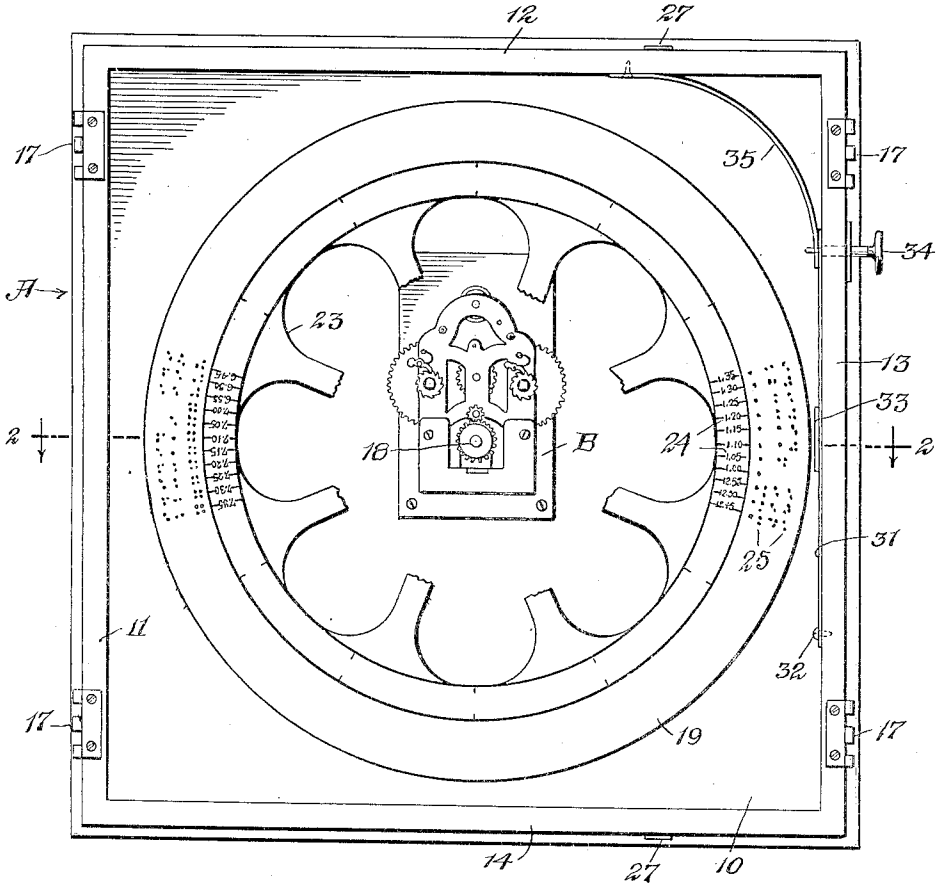


Fig. 2.

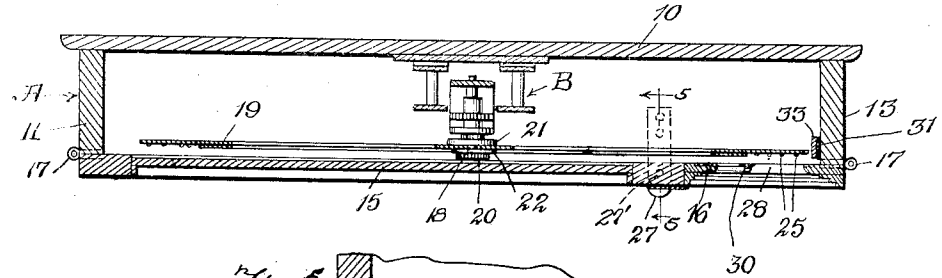
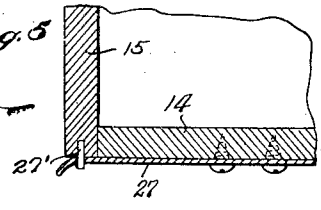


Fig. 3



WITNESSES

INVENTOR

J. W. Hamilton

BY

Munn Anderson & Liddy

ATTORNEYS

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Filed May 6, 1937 2 Sheets-Sheet 2

Fig. 3.

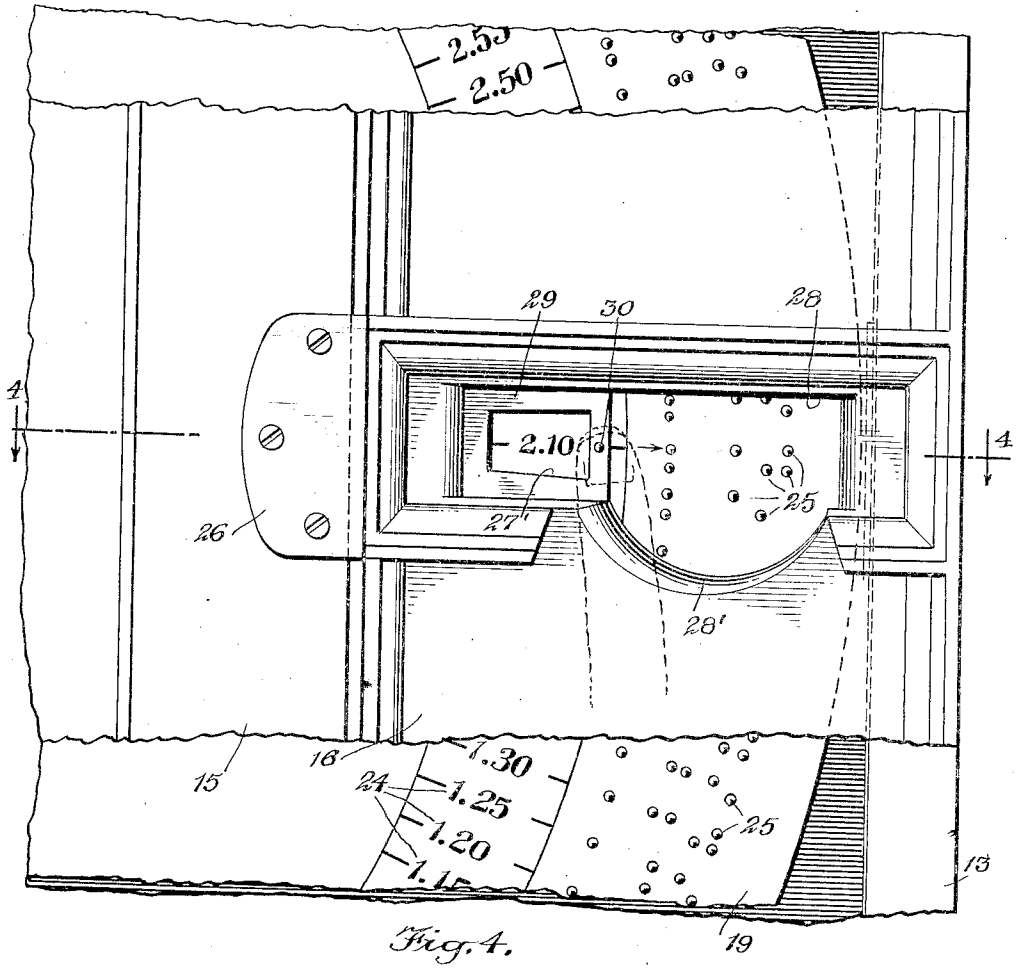
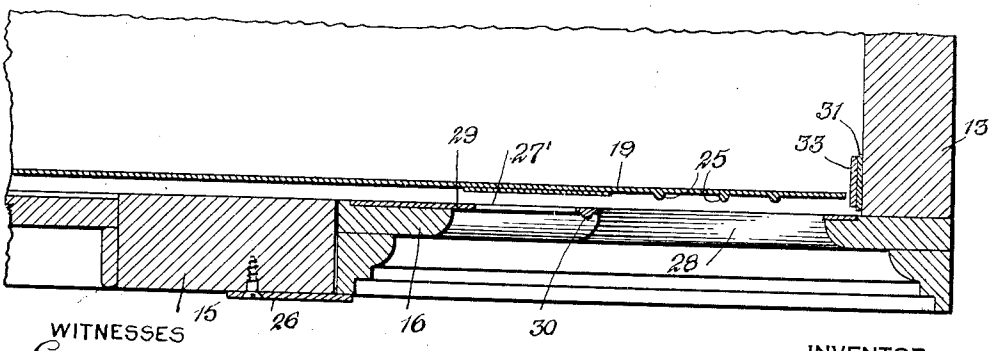


Fig. 4.



WITNESSES

Geo. W. Taylor

Lee Foster

INVENTOR

J. W. Hamilton

BY

Munn Anderson & Liddy

ATTORNEYS

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BRAILLE CLOCK

John W. Hamilton, Rochelle Park, N. J.

Application May 6, 1937, Serial No. 141,044

7 Claims. (Cl. 58—127)

This invention relates to Braille clocks, the object of the invention being to provide a clock which enables the user to ascertain the time by the sense of touch, thus providing a clock which is adapted for use by the blind.

The invention embodies many novel features of construction and combinations and arrangements of parts, all of which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Fig. 1 is a view mainly in elevation partly broken away illustrating my improved clock with the covering doors removed;

Fig. 2 is a view in section through the clock, the view being taken on the line 2—2 of Fig. 1, the doors of the clock being shown in this figure;

Fig. 3 is a fragmentary broken view in elevation on an enlarged scale;

Fig. 4 is a view in section on the line 4—4 of Fig. 3; and

Fig. 5 is a fragmentary view in section on the line 5—5 of Fig. 2.

The reference character A is employed to indicate generally the casing of my improved clock, which is illustrated as of general rectangular shape although, of course, it may be of any shape desired. The casing A includes a back plate 10 to which four side pieces 11, 12, 13, and 14 are fixedly secured. The front of the casing comprises a pair of hinged doors 15 and 16, the door 15 being appreciably larger than the door 16, and these doors are connected, respectively, to the side walls 11 and 13 by hinges 17.

Within the casing and fixedly secured to the back wall 10 thereof is a clock mechanism indicated generally by the reference character B. This clock mechanism may, of course, take any form desired, the driven shaft or arbor 18 of which mechanism is caused to make a complete revolution once in twelve hours. On this shaft or arbor 18 is secured my improved disk 19, and it is to be understood that I use this term in its broadest application and, of course, it may embody a complete disk, or an open-work disk, or merely a ring with any suitable means operatively connecting the same to the shaft 18. I have shown as a securing means a clamping nut 20 which is screwed on to the outer end of the shaft 18 and functions to clamp the disk between rings 21 and 22 on the shaft. I have also shown the disk as having openings 23 in its central portion which permit access to the clockwork B.

The disk 19 is divided into one hundred and forty-four parts, each part or section representing five minutes of time, and on the disk in a circular series removed from the outer edge thereof, I provide Arabic numerals as shown at 24, indicating hours and minutes, and in radial alignment with said Arabic numerals I provide around the outer portion of the disk, raised dots 25 which constitute standard Braille numerals, the numerals, of course, corresponding with the Arabic numerals.

The door 15, as above stated, is appreciably larger than the door 16 and is provided with a plate 26 which overlaps the edge of the door 16, and spring catches 27 are provided to operatively engage pins 27' projecting from the top and bottom edges of the larger door 15 when in closed position and thus maintain both doors in their closed relationship. The smaller door 16 is provided with two window openings 27' and 28 in radial alignment with each other. The window opening 27' exposes the Arabic numerals 24 and the window opening 28 exposes the Braille numerals 25. The window opening 27' is preferably formed by a small metal frame 29, which on its outer portion and at the center thereof is provided with a raised dot 30, which I term a dot of orientation. The window opening 28 exposing the Braille numerals is preferably larger than the window opening 27', and the lower wall of said opening 28 is preferably curved and suitably beveled, as indicated at 28', to permit the fingers of the hand to engage the Braille numerals at an acute angle, thus allowing the operator to expose the most sensitive portion of the finger tips to the Braille numerals.

31 indicates a brake which comprises a strip of metal secured at its lower end, as shown at 32, to the inner face of wall 13, and is provided intermediate its ends with a brake shoe 33 normally spaced from the edge of the disk 19 but adapted to be moved into contact therewith to momentarily stop the turning movement of the disk. As a means for operating this brake, I show a push button 34 operatively connected to the free end of the strip 31 and extending outside of the wall 13 so that by an inward pressure on this push button 34 the brake can be applied. 35 represents a spring which is fixedly connected to the wall 12 and engages the spring 31 to hold the brake normally away from the disk.

The operation is as follows:

To ascertain the time of day the finger is moved so that it locates the dot of orientation 30, and then the fingers are moved to the right to

feel the Braille numerals which are either in alignment with the dot 30 or nearest to such alignment, thus enabling the blind to ascertain the time. During this operation of feeling the dots, the operator preferably moves the push button 34 inwardly so as to cause the brake to engage the disk 19 and momentarily hold the same against turning movement while feeling the Braille numerals. It has been found by actual experience that this momentary stopping of the disk does not affect the proper action of the clock in keeping good time.

While I have illustrated and described what I believe to be the preferred embodiment of my invention, it is obvious that various slight changes may be made with regard to the form and arrangement of parts without departing from my invention, and hence I do not limit myself to the precise details set forth but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

I claim:

1. A Braille clock, including a casing, clockwork mechanism in the casing, and a disk operatively connected to the driven shaft of the clockwork mechanism, said disk having on its face a circular series of Arabic numerals and in radial alignment therewith a circular series of raised dots constituting Braille numerals, said casing having radial aligned window openings exposing said numerals in succession.

2. A Braille clock, including a casing, clockwork mechanism in the casing, and a disk operatively connected to the driven shaft of the clockwork mechanism, said disk having on its face a circular series of Arabic numerals and in radial alignment therewith a circular series of raised dots constituting Braille numerals, said casing having radial aligned window openings exposing said numerals in succession, said casing having a raised dot of orientation which is located between the circular series of Arabic and the circular series of Braille numerals.

3. A Braille clock, including a casing, clockwork mechanism in the casing, a disk operatively connected to the driven shaft of the clockwork mechanism, said disk having on its face a circular series of Arabic numerals and in radial alignment therewith a circular series of raised dots constituting Braille numerals, said casing having radial aligned window openings exposing said numerals in succession, and a manually operated brake adapted to engage the edge of the disk and momentarily stop the same.

4. A Braille clock, including a casing, clockwork mechanism in the casing, a disk operatively connected to the driven shaft of the clockwork mechanism, said disk having on its face a circular series of Arabic numerals and in radial alignment therewith a circular series of raised dots constituting Braille numerals, said casing having radial aligned window openings exposing said numerals in succession, said casing having a raised dot of orientation which is located between the circular series of Arabic and the circular series of Braille numerals, and a manually operated brake adapted to engage the edge of the disk and momentarily stop the same.

5. A Braille clock, including a casing, clockwork mechanism in the casing, a disk operatively connected to the driven shaft of the clockwork mechanism, said disk having on its face a circular series of Arabic numerals and in radial alignment therewith a circular series of raised dots constituting Braille numerals, said casing having radial aligned window openings exposing said numerals in succession, hinged doors constituting the front of the casing, one of said doors having aligned window openings therein, one of said window openings preferably larger than the other and exposing the Braille numerals, a frame outlining the smaller opening exposing the Arabic numerals, and a dot of orientation on the frame located between the Arabic numerals and the Braille numerals.

6. A Braille clock, including a casing, clockwork mechanism in the casing, a disk operatively connected to the driven shaft of the clockwork mechanism, said disk having on its face a circular series of Arabic numerals and in radial alignment therewith a circular series of raised dots constituting Braille numerals, said casing having radial aligned window openings exposing said numerals in succession, hinged doors constituting the front of the casing, one of said doors having aligned window openings therein, one of said window openings preferably larger than the other and exposing the Braille numerals, a frame outlining the smaller opening exposing the Arabic numerals, and a dot of orientation on the frame located between the Arabic numerals and the Braille numerals, the window opening exposing the Braille numerals having its lower wall curved and beveled so as to permit the fingers of the hand to engage the Braille numerals while located at an acute angle.

7. A Braille clock, including a casing, clockwork mechanism in the casing, a disk operatively connected to the driven shaft of the clockwork mechanism, said disk having on its face a circular series of Arabic numerals and in radial alignment therewith a circular series of raised dots constituting Braille numerals, said casing having radial aligned window openings exposing said numerals in succession, hinged doors constituting the front of the casing, one of said doors having alined window openings therein, one of said window openings preferably larger than the other and exposing the Braille numerals, a frame outlining the smaller opening exposing the Arabic numerals, a dot of orientation on the frame located between the Arabic numerals and the Braille numerals, a plate on the larger door overlapping the smaller door, and spring catches on the casing normally engaging the larger door to hold the latter in closed position.

JOHN W. HAMILTON.