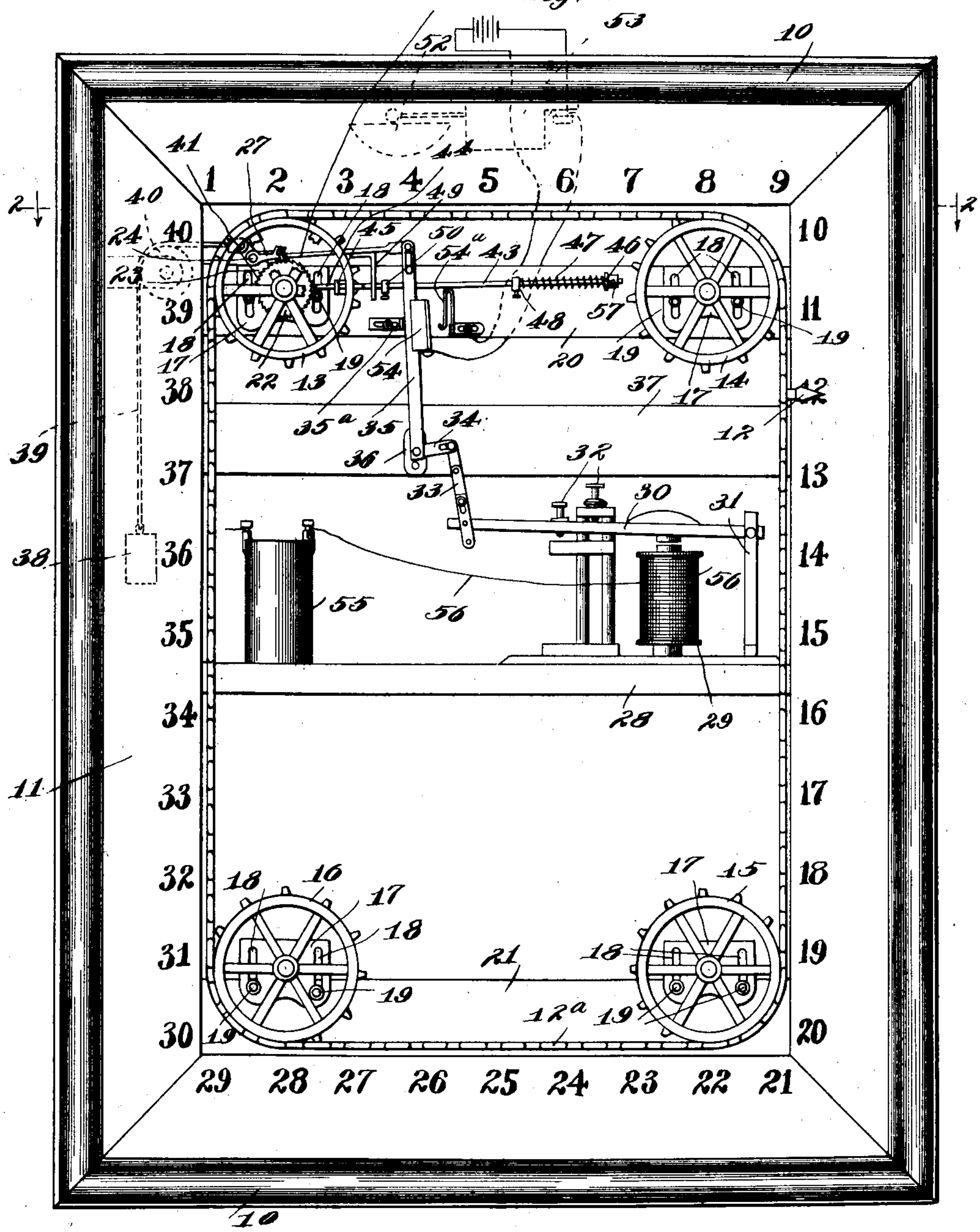
I. J. BRADSHAW.
ANNUNCIATOR.
APPLICATION FILED APR. 7, 1910.

997,956. Patented July 18, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 5.

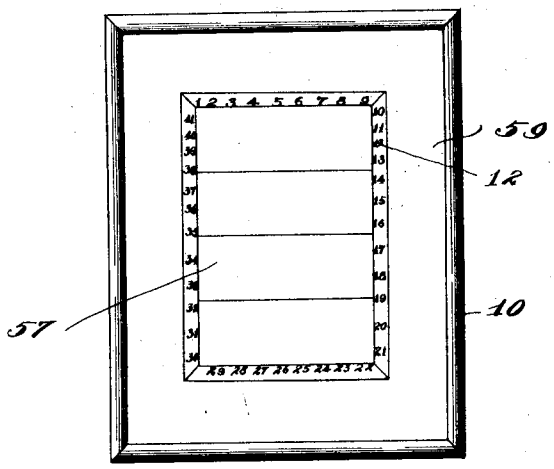


Fig. 3.

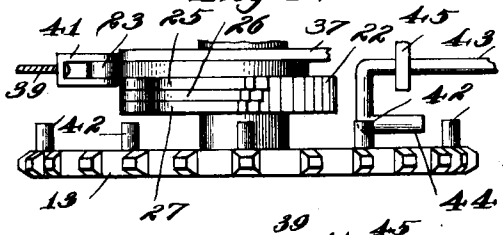
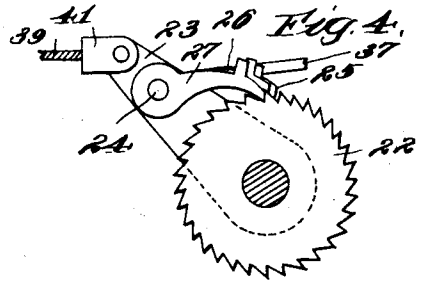


Fig. 4.



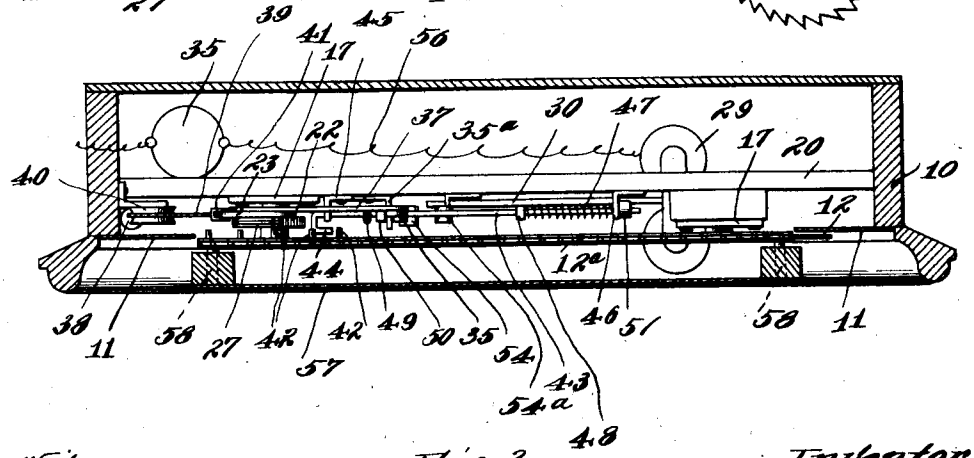


Fig. 2.

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ANNUNCIATOR.

997,956. Specification of Letters Patent. Patented July 18, 1911.

Application filed April 7, 1910. Serial No. 553,903.

To all whom it may concern:

Be it known that I, IRA J. BRADSHAW, a citizen of the United States, residing at Waukegan, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Annunciators, of which the following is a specification.

My invention relates to an annunciator and has for its object to provide an annunciator suitable for use in a barber shop, for example, to indicate the order in which the customers are entitled to be served, although the device might obviously be put to other uses which shall comprise the certain novel devices, constructions and arrangements to be hereinafter described and claimed.

A further object of the invention is to provide an annunciating device operating to produce a series of visual indications, accompanied, if desired, by audible signals, which shall be of suitable form and construction to be hung on the wall of the shop where it is placed and which shall provide, if desired, a space or surface, or spaces or surfaces, suitable for advertising purposes adjacent the means employed for producing the visual indications.

A preferred form and construction of the device is shown in the accompanying drawings, wherein—

Figure 1 is a front elevation of an annunciator, constructed in accordance with my invention, with the cover or sheathing removed so as to show the arrangement and construction of the several operating parts. Fig. 2 a sectional plan taken on line 2—2 of Fig. 1 but showing the front cover or sheathing in place. Fig. 3 a detail plan view of the ratchet and pawl mechanism used for imparting movement to the indicating member. Fig. 4 a side elevation of the same, and Fig. 5 a front elevation of an annunciator similar to the one shown in the preceding figures, except that space for advertisement is provided outside of the series of indicating characters, as well as inwardly of the same.

Like characters of reference indicate like parts in the several figures of the drawings.

Referring to the drawings, 10 designates a frame which may be like the ordinary picture frame, within which is the rectangular member 11, on the surface of which are a series of indicating characters, here shown as the numerals 1 to 40 inclusive.

12 designates an indicating member or pointer which is attached to a carrier, in the arrangement of the indicating characters shown, to an endless carrier shown as a chain 12^a; this chain being supported on sprocket wheels 13, 14, 15 and 16, which are mounted on the plates 17 having slots 18 for the set screws 19, which screw the plates to the cross pieces 20 or 21, as the case may be; this arrangement permitting an adjustment of the positions of the wheels to give the proper tension to the chain 12^a. Obviously, it is not absolutely essential that each of the sprocket wheels should be so adjustable.

The sprocket wheel 13 has secured thereto the ratchet wheel 22, and on the axle of this sprocket is loosely mounted the pawl carrier 23 having a spindle 24 on which are mounted a plurality of pawls 25, 26, 27 of different lengths. This arrangement permits the use of a ratchet wheel having relatively large teeth, while preventing the possibility of lost motion between the pawl and the ratchet which might result in failure of the pointer 12 to register with the indicating characters.

Arranged preferably on the cross piece 28 of frame 10 is an electromagnet 29 of a familiar sort having an armature 30 pivoted at one end to the standard 31, the movements of which are limited by the usual stop-screws 32, 32. Armature 30 is connected by means of the link 33 with a crank 34 on a lever 35, fulcrumed on a plate 36 on cross-piece 37 of frame 10, the lever 35 being connected with pawl carrier 23 by means of link 37^a. The pawl carrier is retracted by any suitable means, for example, by means of the weight 38 attached to a cord 39 which runs over a sheave 40 and is attached to a link 41 on the end of the pawl carrier 23.

Preferably, stop mechanism is provided for limiting the forward movement of the sprocket 13. This is not essential because the throw of the armature is limited but it is desirable in order to prevent the impulse of the pawl mechanism from throwing the sprocket and carrier chain too far. To this end the sprocket 13 is formed on the back with a series of stop lugs 42, and a stop rod 43 having the hooked end 44 is arranged to move in guides 45, 46 on the cross piece 20 of frame 10, the hooked end of the stop rod

being normally held out of the path of the stop lugs 42 by a spiral spring 47 interposed between the guide 46 and a collar 48 on the rod. The link 37 carries a fork 49 which comes into engagement with a collar 50 on rod 43 toward the end of the throw of the ratchet and pawl mechanism, and gives a longitudinal movement to the stop rod 43 which brings its hooked end 44 under one of the stop lugs 42 on sprocket 13. The back throw of stop rod 43 is limited by a collar 51 on the end of the stop rod, and of the lever 35 by a stop 35ª.

Preferably, I associate with the mechanism above described for producing the visible indications, mechanism which produces a corresponding succession of audible signals. For example, an electric bell 52 may be provided, the battery circuit 53 of which is closed by means of a contact 54 which is arranged on the lever 35 so as to come against a contact 54ª located on the cross piece 20 of frame 10.

55 designates the battery for magnet 29. The circuit, indicated at 56, connecting the magnet 29, and its battery may be closed by any suitable circuit-closing mechanism which may be operated at any point or points in the room in which the annunciator is located. This mechanism is not shown as it forms in itself no part of my invention.

Preferably, the various mechanisms for operating the pointer 12 are covered and this covering or sheathing used for advertising purposes. In Fig. 2 I have shown in section a cover or sheathing 57 secured to the cross pieces of the frame 10 by means of the screws 58.

In the form of device shown in Fig. 5, additional space for advertising purposes is provided outside of the indicating characters, this space being designated by the numeral 59.

The operation of the device, as above constructed, is as follows: When customers enter the shop they are given checks or tickets bearing numbers corresponding to the indicating numbers on the annunciator. As soon as one customer has been served and the barber is ready for another, he closes the battery circuit of the electromagnet 29 by means of the push button or other circuit-closing device provided for that purpose, which device may be located adjacent the barber's chair. The energization of magnet 29 rocks the crank 34 and lever 35, and thereby operates the ratchet and pawl mechanism to give a forward movement to sprocket wheel 13 and consequently to carrier 12ª. The movement of the carrier is so calculated that the pointer 12 is moved from one of the indicating numerals to the next. Lost motion is prevented by the multiple construction of the pawl. The forward movement of the sprocket and of the carrier and pointer is limited by the engagement of one of the stop lugs 42 with the stop rod 43, which latter is moved into place at the end of the forward stroke of the ratchet and pawl mechanism. When the device is provided with the bell, the battery circuit of the latter is closed by the coming together of contacts 54 and 54ª, brought about by the tilting of lever 35.

It is obvious that where there are a number of barbers in the same shop, there may be an arrangement of circuits whereby each chair will have its circuit-closing device for operating the annunciator.

As the sprockets 13 for the carrier chain are free to move forward, except as stopped by the stop bar, the pointer may be moved by hand, if desired. For example, it may be so moved to the indicating character 1 at the beginning of the day.

As modifications will readily suggest themselves to those skilled in the construction of mechanisms of this general class, I do not limit myself to the particular devices, constructions, instrumentalities, arrangements, and form and proportion of parts shown, except as these particulars may be made limitations on certain of the claims hereof.

I claim:

1. In an annunciator, the combination with a succession of indicating characters, of an indicating member, a flexible carrier for the same, a wheel on which said carrier is mounted and which drives the same, a ratchet and pawl mechanism to give intermittent movement to said wheel, the back of said wheel being provided with a plurality of stop lugs, and a rod having a hook on one end arranged back of said wheel and adapted to be shifted longitudinally by said ratchet and pawl mechanism so as to bring the hook into the path of said stop lugs to prevent overthrow.

2. In an annunciator, the combination with a succession of indicating characters, of an indicating member, a chain on which said indicating member is carried, a sprocket wheel for the chain provided on the back side with stop lugs, a ratchet wheel rigid with said sprocket wheel, a pawl, an electromagnet, a link mechanism actuated by the electromagnet to operate the pawl, a stop rod provided at one end with a hook slidably mounted back of said sprocket wheel, and means on said link mechanism which engages with said stop rod and moves the hook thereof into the path of said stop lugs.

3. In an annunciator, the combination with a rectangular frame provided with an indicating surface on which are arranged a succession of indicating characters, of an endless chain arranged within said indicating surface and provided with a pointer,

sprocket wheels on which said chain is mounted, and mechanism for moving the pointer from one of said characters to the next comprising a ratchet wheel rigid with one of said sprockets, a lever, a pawl pivoted to said lever and adapted to engage with the ratchet wheel, an electromagnet, link mechanism actuated by said magnet for rocking said lever so as to cause the pawl to rotate the ratchet, means for returning the lever to its initial position, and means operated by said link mechanism for preventing the overthrow of said ratchet and pawl mechanism.

4. In an annunciator, the combination with a rectangular frame provided with an indicating surface on which are arranged a succession of indicating characters, of an endless chain arranged within said indicating surface and provided with a pointer, sprocket wheels on which said chain is mounted, and mechanism for moving the pointer from one of said characters to the next comprising a ratchet wheel rigid with one of said sprockets, a lever, a pawl pivoted to said lever and adapted to engage with the ratchet wheel, an electromagnet, link mechanism actuated by said magnet for rocking said lever so as to cause the pawl to rotate the ratchet, means for returning the lever to its initial position, means operated by said link mechanism for preventing the overthrow of said ratchet and pawl mechanism, an electric bell, a battery and circuit for the same, and a pair of contacts which are adapted to be brought together by the operation of said link mechanism for closing the battery circuit of the bell.

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