April 12, 1938. H. A. DAVIS 2,113,560

RADIO TIMETABLE

Filed Sept. 11, 1935 2 Sheets-Sheet 1

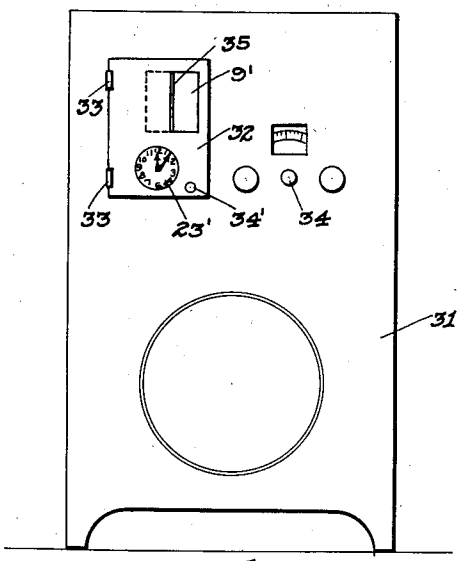


Fig. 6.

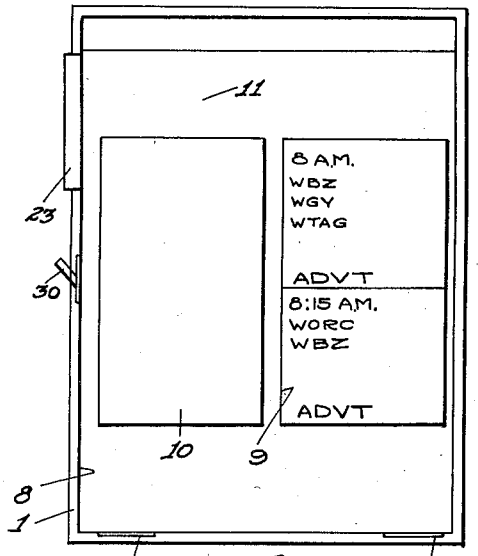


Fig. 1.

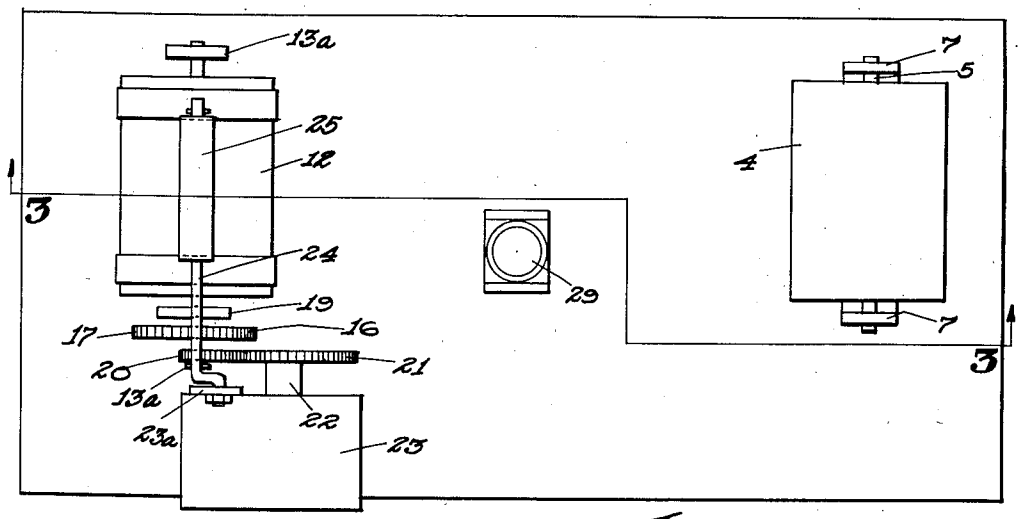


Fig. 2.

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RADIO TIMETABLE

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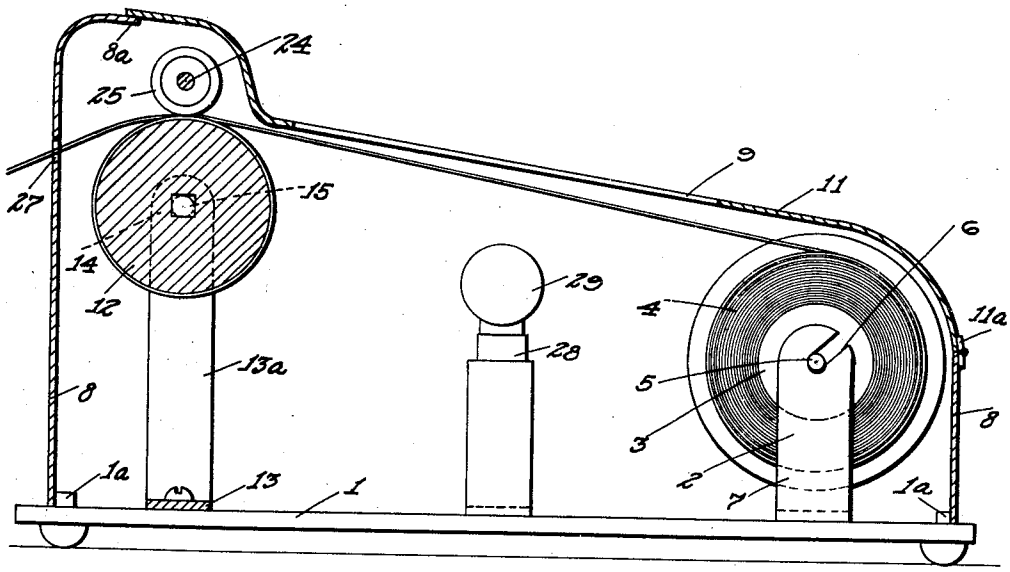


Fig. 3.

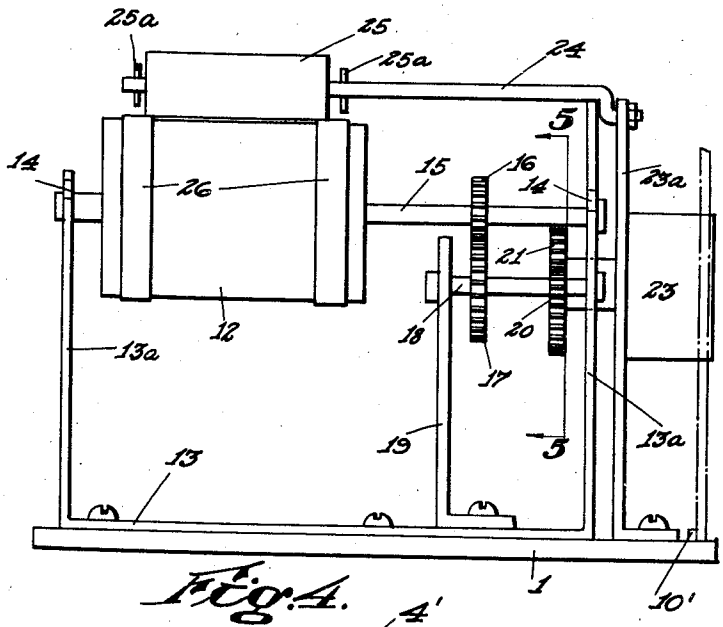


Fig. 4.

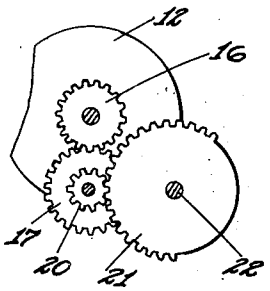


Fig. 5.

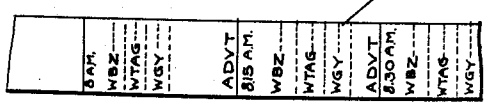


Fig. 7.

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Patented Apr. 12, 1938

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UNITED STATES PATENT OFFICE

2,113,560

RADIO TIMETABLE

Howard Andrew Davis, Boston, Mass., assignor to Radio Time Table Co. Inc., New York, N. Y., a corporation of New York

Application September 11, 1935, Serial No. 40,120

1 Claim. (Cl. 40—30)

The present invention relates to a radio time table which is intended to show the programs on available broadcasting stations for predetermined intervals during the day with the time table always visible for the corresponding portion of the day.

According to the present invention radio programs are printed on a strip of paper with predetermined lengths of the strip allotted to successive intervals of time for each day during the week. The strip is long enough to incorporate, for example, hourly or quarter-hourly programs from eight in the morning until midnight of each of the seven days of the week, and this strip is advanced past an opening through which the strip is visible so that at any predetermined hour the program for that hour may be ascertained. The strip is advanced only during the portion of the day for which the program is printed, thereby reducing the required length of strip for a full week's program.

The objects and other features of the invention will hereinafter more fully appear, reference being had to the accompanying drawings in which—

Fig. 1 is a plan view of a device embodying the invention.

Fig. 2 is a plan view of the device on an enlarged scale and with the cover removed.

Fig. 3 is a vertical section along the line 3—3 of Fig. 2.

Fig. 4 is an end elevation of the device.

Fig. 5 is a fragmentary sectional view along the line 5—5 of Fig. 4, looking in the direction of the arrows.

Fig. 6 is an elevation of the front of a radio cabinet showing the device installed as an integral part thereof.

Fig. 7 is a plan view of a part of the time table or program.

Like reference characters refer to like parts in the different figures.

Referring first to Figs. 1 and 2, the device comprises a base 1 on which is mounted a bracket 2 for supporting a roller 3. A roll 4 of paper carrying the radio program is coiled and positioned on the roller 3. A spindle 5 for the roller 3 engages in slots 6 in the parallel upwardly extending arms 7 of the bracket 2. The slots 6 extend diagonally upward within the arms and are so arranged that a pull on the strip of paper coiled around the roller 3 will tend to draw the spindle 5 into the lower end of the notches in the bracket.

A casing 8 is positioned over the device and has an opening 9 in the upper surface thereof through which the paper strip carrying the radio programs is visible. If desired, in parallel relation to the opening 9, may be arranged a list 10 of broadcasting stations giving the position at which they may be found on the radio, although this is obviously not an essential feature of the present invention. The casing is suitably secured to the base, the latter having a small flange 19 aiding in locating the casing in proper position. The upper surface of the casing consists of a pivoted cover 11 to provide for access to the casing. The cover 11 is supported by hinges 11a, and the opposite end engages a horizontal flange 8a on the casing 8. The printed program may thus be replaced by new weekly programs through the cover 11 without removal of the casing from the base.

For advancing the paper from the roll 4 past the opening 9, a positively driven roller 12 supported by a bracket 13, corresponding substantially to the bracket 2 is provided. The upper end of the arms 13a forming the bracket 13 are each provided with a diagonal slot 14 to receive the rounded ends of the square shaft 15 on which the roller 11 is mounted. A pinion 16 is carried by the shaft 15 between the inner side of the roller 12 and the inner arm 13a, and meshes with a gear 17 on a countershaft 18 journalled in the inner arm 13a and also in the upwardly extending support 19 secured to the bracket 13 or to the base. The shaft 18 also carries a pinion 20 which meshes with a gear 21, Fig. 2, secured to a shaft 22 forming part of a conventional clock 23, the latter having the usual face for indicating the time. The clock is supported on a bracket 23a secured to the base, and the clock face projects through an opening in the casing to be visible at the side thereof. The shaft 22 is so connected with the clock 23 as to provide for rotation of said shaft once every twenty-four hours. This is a usual and well-known clock construction and the gearing by which this rate of rotation of the shaft 22 is procured need not be described.

As a radio is, in general, not extensively used between the hours of midnight and eight o'clock in the morning the time table need not be advanced during this period. In order thus to interrupt the paper advance, (which incidentally reduces the length of paper required for a complete week's program) the gear 21 is mutilated and has the teeth over one-third of its periphery removed. These teeth are removed in the portion which would normally engage with the gear 20 during the hours from midnight until eight

in the morning and accordingly during this period the time table is not advanced. The program as hereinafter pointed out, is printed to indicate at midnight the events for the next few hours.

For more positively holding the time table strip against the roller 12 to assure advance of said strip at the predetermined rate to carry the programs past the opening 9, the inner arm 13*a* of the bracket 13 supports a horizontally extending arm 24 on which is journalled a roller 25 having a bore therethrough materially larger in diameter than the arm 24 to allow for a substantial amount of play between the pins 25*a*. The arm 24 merely engages the upper end of the inner arm 13*a* and is carried by the bracket 23*a* to which it is secured by an offset part of said arm in such a manner as to permit said arm to turn for raising said arm from the feed roller. The roller 12 is preferably provided with spaced belts 26 of suitable frictional material, such as partially cured rubber, which assures a positive advance of the paper carrying the time table. As the strip is advanced, it passes through an opening 27 in the casing 8 and it may be torn off at intervals as desired, the roll being perforated, if desired, for easier tearing.

In order that the program may be readable at night, the device may be illuminated from within, as by the provision of a suitable small electric light socket 28 intended to receive a bulb 29 positioned beneath the opening 9. A suitable switch 30 is secured to the casing for controlling the illumination of the bulb 29 and the bulb may be in the same circuit with the clock 23 if the latter is electric. It is not essential, however, that the clock be electric, as it may readily be a mechanical or spring actuated clock.

Referring now to Fig. 7, the paper strip 4′ carrying the time schedule has the program for each quarter hour, or other predetermined time interval during the day printed for each available station or for each network. As the strip of paper is fed a predetermined distance during each quarter hour, (the gearing being suitably proportioned) the program for each such period must occupy a predetermined length of the paper strip and accordingly where all of the space is not required for programs, suitable advertising may be incorporated to avoid blank areas on the strip. The strip stops its movement at midnight and at this point the program for the next several hours may be printed on the visible portion of the strip. When the strip begins its movement again at an early morning hour, (for example, eight o'clock as above described), the printed program succeeding the program visible at midnight is that for the first half hour during the morning after that time at which the device starts to feed the strip of paper. The opening 9 is preferably of a size to permit the program for two time intervals to be visible at one time.

Although the device has been described as starting and stopping the movement of the paper at predetermined hours, it will be apparent that any more satisfactory hours may be chosen and the program may then be printed accordingly. Moreover, in certain cases, the program may be arranged for longer or shorter periods than one week.

Instead of being a separate device, the invention may be incorporated as an integral part of a radio by being positioned within the cabinet. As best shown in Fig. 6, the front of the radio cabinet 31 has an opening 9′ corresponding to the opening 9 provided in the casing for the device and the mechanism above described is positioned within the radio cabinet on a supplementary support, not shown, secured to a panel 32 forming part of the front wall of the cabinet. The panel 32 is suitably mounted on hinges 33 to permit said panel to be swung outwardly when it is desired to place a new printed program in the device. In this arrangement the clock 23′ is so arranged that the face is visible at the front of the cabinet, said clock projecting through an opening in the panel 32. Since the angle of the clock to the feed roll is different in the arrangement shown, it will be apparent that suitable bevel gearing, or its equivalent, must be provided between the clock 23, and the feed roll which advances the program past the opening 9′. Such an arrangement will be readily apparent and need not be described. In this arrangement the illumination for the portion of the program visible through the opening 9, may be controlled by the same switch 34 that controls the radio, or by a separate independent switch 34′ in the panel 32. The opening 9′ is arranged to be closed by a suitable slide 35 normally hidden beneath the panel 32 and slidable laterally to conceal the opening 9′ when the time table described is not in use. Said slide is supported by suitable guideways, not shown, on the back of the panel 32 in the usual manner.

From the foregoing, it will be apparent that the device contemplates the advance of a paper strip carrying a radio program at a predetermined rate, past an opening through which said strip is visible, so that at any time during that period, the program for that period will be visible. The program may be renewed at the end of each week and each new program is readily positioned in the device by the opening of the cover and the substitution of the newly printed roll on the roller 3. This roller, as will be apparent, is readily removable by sliding the pin 5 radially through the slots 6. The new roll having been positioned on the roller 3 and the latter having been returned to the position shown, the newly printed strip of paper is then advanced in the desired manner by threading the end of said strip between the roller 25 and the large diameter roller 12. It is necessary merely to properly locate the program with respect to the opening 9 when the strip is first threaded.

I claim:

In a device of the class described, the combination with a printed strip giving successively thereon, the radio program for only successive time intervals for a portion of a day, and a clock, of means actuated by said clock for advancing said strip only for the portions of the day for which the program is applicable, said means including a shaft driven by said clock and arranged to rotate once each day, and connections between said shaft and the mechanism for feeding the strip for actuating the mechanism for the same portion of each successive day, the mechanism being inoperative during the remainder of the day.

HOWARD ANDREW DAVIS.