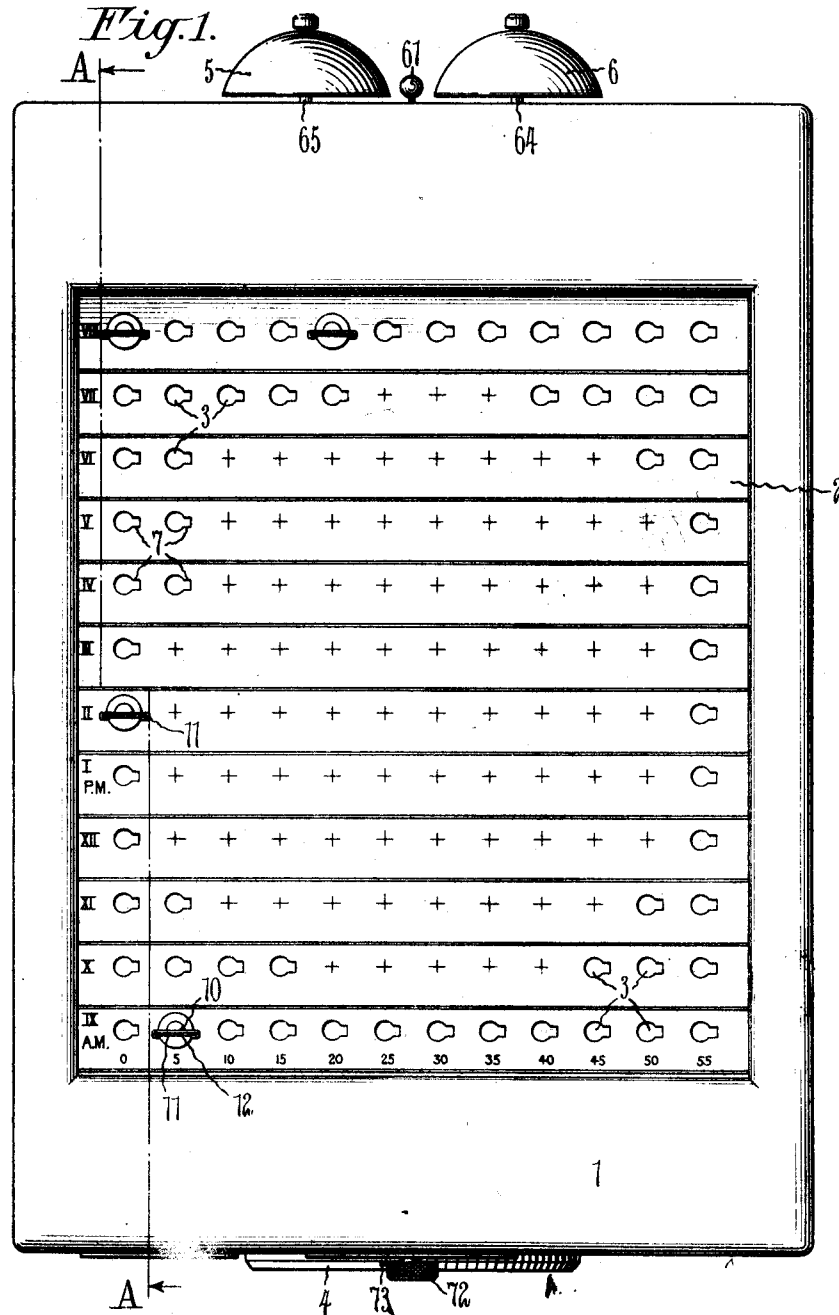


H. E. M. KENSIT.
 AUTOMATIC REMINDER.
 APPLICATION FILED DEC. 20, 1912.

1,089,712.

Patented Mar. 10, 1914.

4 SHEETS—SHEET 1.



Witnesses:
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 George Barry

Inventor:
 Henry Edw. Mondani Kensit
 By Brown & Lusk
 his Attorneys

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4 SHEETS-SHEET 2.

Fig. 2.

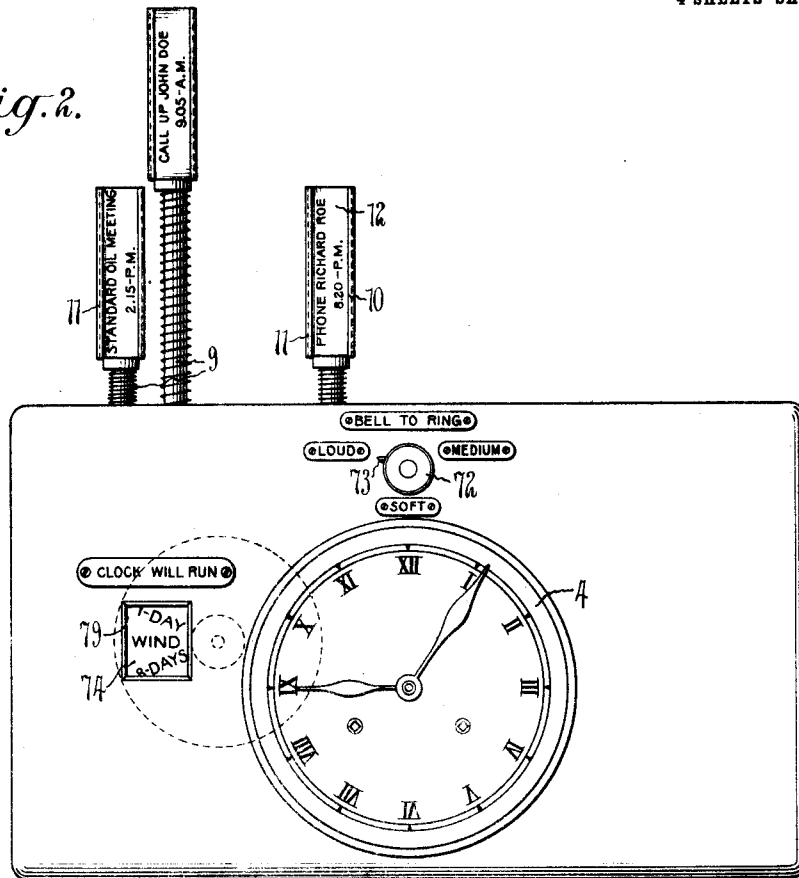
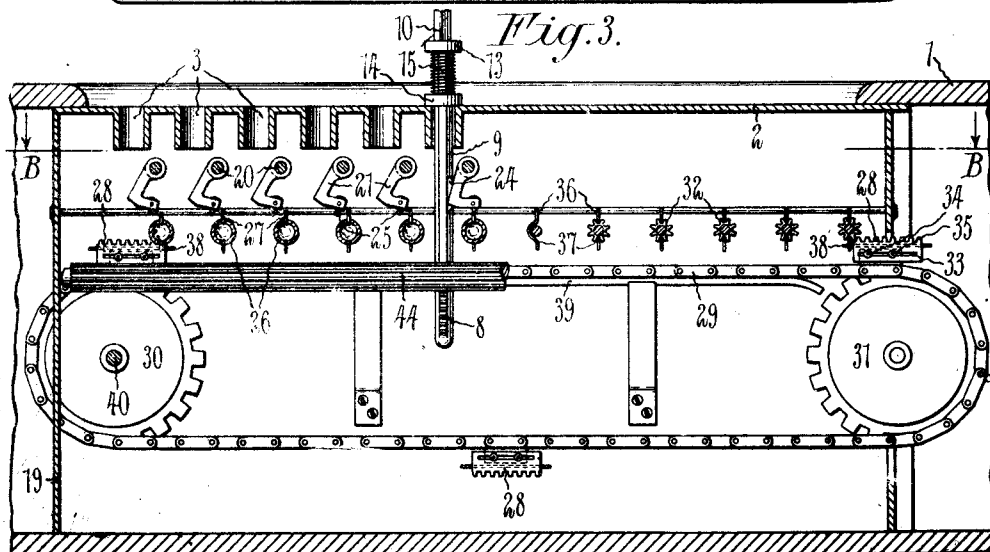


Fig. 3.

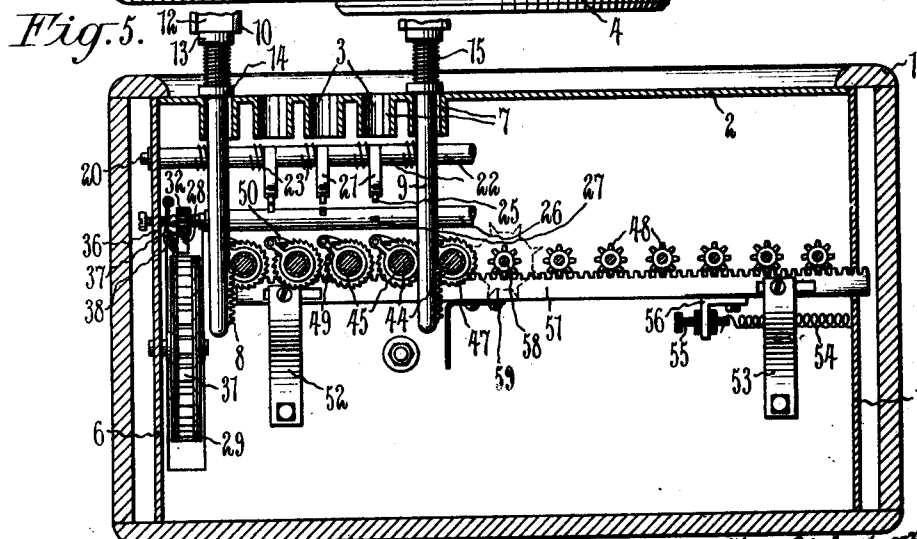


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1,089,712.

4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

Fig. 6.

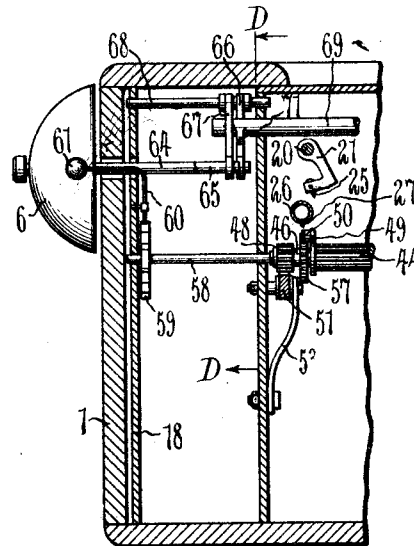


Fig. 7.

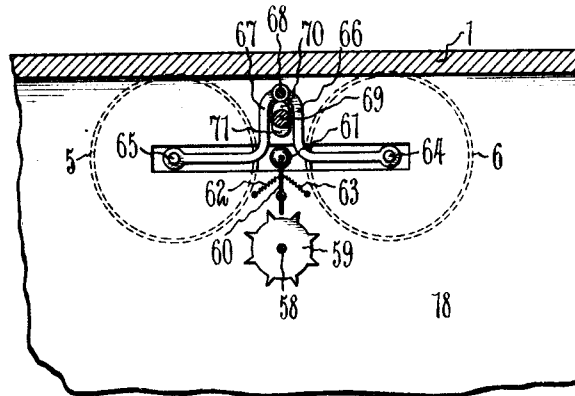


Fig. 8.

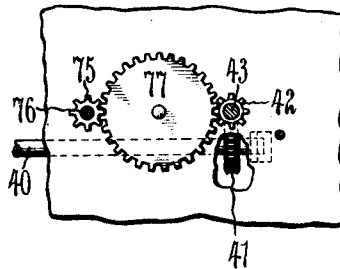
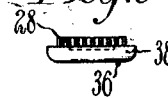


Fig. 9.



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UNITED STATES PATENT OFFICE.

HENRY EDWARD MORDAUNT KENSIT, OF OTTAWA, ONTARIO, CANADA.

AUTOMATIC REMINDER.

1,089,712.

Specification of Letters Patent.

Patented Mar. 10, 1914.

Application filed December 20, 1912. Serial No. 737,873.

To all whom it may concern:

Be it known that I, HENRY EDWARD MORDAUNT KENSIT, a subject of the Crown of Great Britain, and resident of Ottawa, in the Province of Ontario, Dominion of Canada, have invented a new and useful Improvement in Automatic Reminders, of which the following is a specification.

My invention relates to a mechanical reminder adapted to be operated by a time piece to give both a visual and audible signal at any predetermined time within the scope of the instrument.

The object is to provide a simple, accurate and durable instrument of the above character, in which signals may be set and automatically operated entirely independent of one another and at any subdivision of time or at repeated subdivisions of time.

A further object is to provide mechanism of the above character in which the act of setting the instrument for giving a signal at a future time stores the energy for producing the signal when the time arrives.

A further object is to provide for varying the intensity of the audible signal to suit the wishes of the user.

A further object is to provide for keeping plainly before the user the time when the clock or other time piece must be rewound to insure the operation of the desired signal.

With these ends in view, my invention consists in certain features of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

To illustrate my invention, I have chosen a form in which a twelve hour period has each hour subdivided into twelve parts of five minutes each, the mechanism being shown in connection with an eight day clock of well known construction. It will be obvious, however, that the particular number of subdivisions is a matter of choice and that the signaling mechanism may be connected with any special clock movement.

In the accompanying drawings, Figure 1 is a top plan view showing the signal dial plate exposed. Fig. 2 is a front elevation, showing one signal in its announcing position and others in position to be released at the proper times. Fig. 3 is a vertical section from front to rear in the plane of the line A—A, Fig. 1. Fig. 4 is a horizontal

section, partially broken away, in the plane of the line B—B, Fig. 3. Fig. 5 is a transverse vertical section in the plane of the line C—C, Fig. 4. Fig. 6 is a view in detail of the bell ringing mechanism. Fig. 7 is a transverse section through the same, in the plane of the line D—D, Fig. 6. Fig. 8 is a view in detail of the means for operating the winding caution dial, and Fig. 9 is a view in detail, showing the means for releasing a tripping shaft during the engagement of the driving rack therewith.

The mechanism of the reminder is conveniently housed in the same case with the time piece, in the present instance, a clock, the casing being shown as an oblong box, and only so much of the clock work being shown as is necessary to a clear understanding of the operation of the reminder.

In the top portion of the casing 1, there is located a plate 2 provided with twelve rows of slots 3, each row consisting of twelve slots, this arrangement being suitable for operating a reminder at any five minute period throughout twelve hours. At the front end of the casing 1, the clock face 4 is located, and at the back end of the casing, the signal bells 5 and 6 are located. The casing 1 may have a cover, not shown, of any well known or approved form, to protect the slotted plate 2, from dust when the reminder is not in use. Each slot 3 is provided with a lobe 7 for receiving a rack 8 on the stem 9 of a cord support 10, the latter consisting simply of a plate having its opposite edges bent over to form grooves 11, for receiving the opposite edges of a card 12 on which may be written the memorandum to which it is desired to call attention at a certain time. There may be as many of these card holders provided as desired. They are quite similar in construction and any one may be inserted in any slot so that the number actually required would naturally depend upon the greatest number of memoranda likely to be set ready for operation at any one time. Each card holder has thereon a fixed collar 13 and a sliding collar 14, and between these collars, a coil spring 15, the tension of which is sufficient to lift the card holder and sound an alarm, as will hereinafter appear. Side plates 16, 17, and end plates 18, 19 within the casing 1, serve to support the several coöperative parts of the reminder.

Pawl supporting rods 20, one for each

hour series of slots 3, are each provided with twelve pawls 21, depending therefrom spaced apart by sleeves 22 and so located under the tension of their actuating springs 23, that as a card holder stem is inserted into a slot 3 and pushed downward, it will swing a pawl 21 laterally against the tension of its spring 23 and finally when the stem has reached its downward limit, the pawl 21 will spring back into a recess 24 in the side of the stem and thereby lock the card holder against unintentional upward movement with the spring 15 compressed. Each pawl 21 carries at its free end, a pivoted tripping tooth 25, free to swing in one direction toward the position which its coacting card holder stem occupies, and held against a free swinging movement in the opposite direction, so that when it is pressed in the latter direction, it will swing the pawl 21 with it and release the card holder stem which may be at the time locked by the pawl.

Trip shafts 26 are mounted in the side frames 16, 17, one for each hour series of slots, and each provided with twelve tripping lugs or teeth 27 arranged in a spiral line on the surface of the shaft in position to engage one after another, the successive pawls 21 in an hour series. The tripping shafts are rotated in succession and each makes a complete revolution in one hour. The tripping lugs or teeth 27 are so spaced that each will be in position to trip its pawl just five minutes after its predecessor has reached its tripping position, so that a card holding stem may be set in position to be operated at each successive five minutes during each of the twelve hours and each will be released at the moment the clock indicates its particular time, it being understood that the rotation of the tripping shafts is synchronous with the travel of the hands of the clock. The setting of any one or more of the card holder stems in an hour series will not in any manner interfere with the one or more already set, since there is a separate lug on the tripping shaft for each pawl, each pawl, lug, and card holder stem forming a complete unit or set independent of and separate from all other similar sets. When the pawl is not engaged by a stem, its actuating spring swings it into a position where the lugs on the tripping shaft will not engage it.

The several tripping shafts 26 are consecutively rotated by a rack 28 carried by an endless belt or chain 29 on sprocket wheels 30, 31. To give the chain 29 sufficient length and sprocket wheels sufficient size for satisfactory work, three racks of similar construction are located on the endless chain 29 at twelve hour intervals apart, each rack being of sufficient length to rotate a tripping shaft once during an hour. The

racks 28 engage toothed pinions 32 on the tripping shafts, and as a rack completes the revolution of one shaft, it begins the revolution of a succeeding shaft. The racks are made adjustable by means of slot 33 and set screws 34, 35, to set them in the exact desired relation to the pinions on the tripping shafts.

To prevent the shafts 26 from unintentional rotary displacement when not engaged by the rack, a temporary lock is provided consisting, as here shown, of a gravity latch 36, one for each tripping shaft, provided with a lip 37 adapted to swing into position between two consecutive teeth on the pinion 32. A laterally projecting releasing plate 38 on the rack 28, swings the latch 36 to one side and releases the tripping shaft 26 while the rack is engaged with its pinion. A belt or chain guide 39 serves to hold the belt or chain from sagging intermediate of the sprocket wheels 30, 31, and hence holds the rack in positive engagement with each of the successive pinions on the tripping shafts.

The shaft 40 of the sprocket wheel 30, has a worm wheel 41 thereon (see Fig. 8) which is driven by a worm 42, on the main spring shaft 43 of the clockwork (see Fig. 4), to impart motion to the endless belt or chain 29 and hence to the racks 28 for driving the tripping shafts 26.

The mechanism thus far described is complete, so far as the signal for a visual reminder is concerned, and may be used independently of the features to be hereinafter described, if so desired. I prefer, however, to combine with the visual signal, an audible signal to insure the attention of the person interested to the visual signal in the event the person be absorbed in other matters in the immediate vicinity of the reminder or located at the moment in another room within hearing distance. To this end, bell operating shafts 44, one for each series of hourly separated slots, extend transverse to the tripping shafts and are each provided with teeth 45 extending in the present instance, continuously along the surface of the shaft in position to be engaged by the rack 28, on any one of the stems 9 of the card holders when the stems are pushed down into set position and when the stems move upward after having been released by the locking pawl 21 tripped by a lug on the tripping shaft. The bell operating shafts 44 are reduced at their rear ends and have, with the exception of the central shaft, loosely mounted thereon, sleeves 46, each sleeve carrying at one end a ratchet toothed wheel 47 and at its opposite end a pinion 48, (see Figs. 4 and 6). The shafts 44 each have fixed thereon a laterally projecting arm 49 to which is pivoted a pawl 50 in engagement with the ratchet wheel 47. A rack 51, common to the several pinions 48, is allowed a limited sliding movement on its

supports 52, 53, and is returned and held normally at the limit of its sliding movement to the right, (drawing Fig. 5) by the spring 54, one end of which is attached to the side plate 17 and the other to an adjusting screw 55, engaged in a bracket 56, attached to the rack. The central bell operating shaft has its rear end seated in a socket in the hub of the ratchet wheel 57, corresponding to the ratchet wheels 47, the ratchet wheel 57 and its corresponding pinion 48, being fixed to rotate with a spindle 58, carrying a toothed wheel 59 (see Fig. 7), for operating the vibrator 60, carrying the bell hammer 61, and causing the hammer to swing into engagement with the bell. Springs 62, 63, tend to hold the hammer 61 normally in a central position between the bells. The bells 5 and 6 are supported on the rearwardly extended branches 64, 65, of arms 66, 67, hinged on a pintle 68, (see Fig. 6). A rod 69 is provided with spreading cams 70, 71, and extends through to the front of the casing where it is provided with a wheel 72 for rotating it and hence spreading the arms 66, 67, and moving the bells apart from each other to soften the sound. An index on the front of the casing serves, in connection with a pointer 73 on the wheel 72, to determine the setting of the bells to give the desired intensity of sound.

From the above description it will be seen that the rotation of a bell ringing shaft 44, by the downward movement of a stem 9, in setting a card holder for a signal, will cause the pawl 50 to ride idly over the teeth on the ratchet wheel 47, and hence will not operate the pinion 48 and rack 51, to ring the bell, and no matter how many card holder stems are set along the same shaft 44, the one will not interfere with any other. When the stem is pressed home and engaged by the pawl, the rack 8 is below and clear of the shaft 44, so that no matter how many stems are inserted, the shaft 44 is always free to be acted on by an uprising stem. When, however, any stem is released and allowed to spring upward, its rack 8 will turn a shaft 44 in the direction to cause the pawl 50 to engage the ratchet wheel 47 and rotate it and hence the pinion 48, and thus slide the rack 51, and through the spindle 58 and toothed wheel 59, sound the alarm. This action of a released stem on its bell ringing shaft will not interfere with any stem set for a later period along the same shaft, and the rack 51 will have been drawn back to its normal position as soon as the rack 8 on the released stem has passed out of engagement with the shaft.

To warn the person, who depends upon the reminder, of the time the clockwork has to run before running down and hence to insure the action of the signal which may be set, a dial 74 is mounted just back of the

front of the casing and containing the legends 1-Day, 2-Days, etc., up to 8-Days, at equal intervals on its face and between the legends 1-Day and 8-Days, the word Wind in a color distinguishable from the color in which the legends are printed. This dial 74 is rotated in harmony with the clockwork by means of a pinion 75 on its pintle 76, which through an intermediate gear wheel 77, is driven by a pinion 78 on the main spring shaft of the clockwork. An opening 79 through the front of the casing reveals to the observer the successive legends from 8-Days to 1-Day and at this time the caution word Wind. Over the opening 79, the phrase "Clock will run" is placed to make clear the significance of the legends on the dial plate 74.

In practice, assume that the twelve hour period for the reminder begins at 9 o'clock a. m. and ends at 9 o'clock p. m. A card holder has been placed in the slot corresponding to 9 o'clock and five minutes a. m. bearing the reminder "Call up John Doe at 9.05 a. m." and the clock showing the time to be a trifle later than 9.05, the card holder bearing such memorandum has been released and the memorandum is up in position to call a person's attention thereto. The upward movement of such card holder sounded the bells in the manner hereinabove described. A card holder corresponding to 2 o'clock p. m. is shown set to call the person's attention to the memorandum "Standard Oil meeting 2.15 p. m." and this will be released at two o'clock p. m. to enable the interested person to reach the meeting at 2.15. Card holders are also set to be released at 8 o'clock p. m. and 8.20 p. m., the first bearing the memorandum "Theatre engagement" and the latter the memorandum "Phone Richard Roe."

The above are merely samples of a few only of the many memoranda that may be set and automatically released to call attention to different matters throughout the day, and no interference will result if a card holder for calling attention to an earlier matter be set after a card holder calling attention to a later matter, whether the memoranda be set during the same hour period or in different hour periods.

The coil spring on the stem of the card holder is compressed by the downward pressure on the card holder in setting it, the loose collar 14 sliding upward on the stem, and the tension of this spring not only serves to lift the card holder when it is released but furnishes the power to ring the bells by rotating the bell ringing shaft. This relieves the clock work of all stress save only that required to rotate the tripping shafts and these are rotated one at a time and at no one time is more than one releasing pawl engaged by a releasing lug or tooth.

The instrument is suited to a variety of business and professional enterprises and may be manipulated by unskilled as well as skilled help without liability of derangement or breakage.

The term "clockwork" is intended to include any well known mechanism for measuring time.

It is obvious that more or less slots for receiving signal holders may be provided to suit a greater or lesser number of lesser subdivisions of time or greater subdivisions of time or both, and that other changes might be resorted to in the form and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the structure herein shown and described, but

What I claim is:

1. An automatic reminder comprising a plurality of visual signal supports, means for positioning the several supports for giving signals at different periods of time without interference one with another, means for storing signal actuating power by the act of positioning the signals, a clock movement and means operated by the clock movement and synchronously therewith for releasing the signals at the proper times.
2. An automatic reminder comprising a plurality of visual signal supports, means for positioning the several supports for giving signals at different periods of time without interference one with another, audible signals arranged to be operated by the visual signal supports simultaneously with the operating of the visual signals, means for operating the visual signal supports, a clock movement and means operated by the clock movement for releasing the visual signal supports.
3. An automatic reminder comprising a plurality of visual signal supports, means for positioning the several supports for giving signals at different periods of time without interference one with another, means for storing signal actuating power by the act of positioning the signal supports, audible signals arranged to be operated by said stored power simultaneously with the operating of the visual signals, a clock movement and means operated by the clock movement for releasing the said signal supports at the proper times.
4. In an automatic reminder, the combination with a plurality of independent signal supports and means for actuating them, of a plate provided with openings for receiving the supports, means for locking the supports in the openings against unintentional displacement by the action of their actuating means, a clock-work and means under the control of the clock-work for releasing the supports at the desired moment.
5. In an automatic reminder, the combination

with a plurality of independent signal supports each provided with its own actuating means, of a plate provided with openings for receiving the supports, spring actuated locking devices, one for each support, in position to lock the supports in position to operate under the action of their actuating means, a clock-work and means under the control of the clock-work to release the spring actuated locking devices at the desired moment.

6. In an automatic reminder, the combination with a plurality of independent signal supports, each provided with a coil spring for actuating the support, of a plate provided with openings to receive the support, the walls of the openings serving to compress the springs as the supports are inserted in the openings, spring-actuated locking devices for holding the supports in their positions in the openings, a clock-work and tripping mechanism under the control of the clock-work to release the spring actuated locking device at the desired moment.

7. In an automatic reminder, the combination with several independent signal devices each provided with its own actuating spring adapted to be placed under compression as the signal device is set for use, of a slotted plate for receiving the signal devices, swinging pawls in position to lock the signal devices in set position with their actuating springs under compression, a clock-work and a rotary shaft under the control of the clock-work, provided with projections for engaging and releasing any of the pawls at predetermined moments.

8. In an automatic reminder, the combination with several independent signal devices and means for setting them under compression, of swinging locking pawls, one for each signal device, and provided with a tooth free to yield in one direction and held against yielding in the opposite direction, a clock-work and a rotary shaft under the control of the clock-work, provided with releasing lugs or teeth arranged in a spiral line thereon in position to engage the said teeth on the pawls and release the pawls when the latter are in locking position.

9. In an automatic reminder, the combination with visual signal devices each provided with a rack and means for setting them under compression tending to operate them, of an audible signal, toothed gears for transmitting motion from the racks on the visual signal devices to the audible signals, a clock-work and means under the control of the clock-work for releasing the visual signal devices.

10. In an automatic reminder, the combination with visual signal devices, each provided with a rack and means for setting them under compression tending to operate them, of an audible signal, toothed shafts

- each common to several visual signal devices and under the control of the racks. thereon, a rack common to the several toothed shafts, means for transmitting the motion of the toothed shafts to the rack, a device under the control of the rack for operating the audible signal, a clock-work and means under the control of the clock-work for releasing the visual signal devices.
- 10 11. In an automatic reminder, a clock-work and releasing mechanism, visual signal devices arranged to be set under compression and under the control of the clock-work to be released, toothed shafts each common to several visual signal devices and arranged to be rotated by the visual signal devices, a rack common to the several toothed shafts, a ratchet and pawl connection between each of the toothed shafts and the rack whereby the rotation of a toothed shaft in one direction will not operate the rack and its rotation in the opposite direction will operate the rack, an audible signal and signal sounding mechanism under the control of the rack.
- 25

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this sixteenth day of December 1912.

HENRY EDWARD MORDAUNT KENSIT.

Witnesses:

M. C. HENDLY,
A. M. BEALE.