

Dec. 28, 1943.

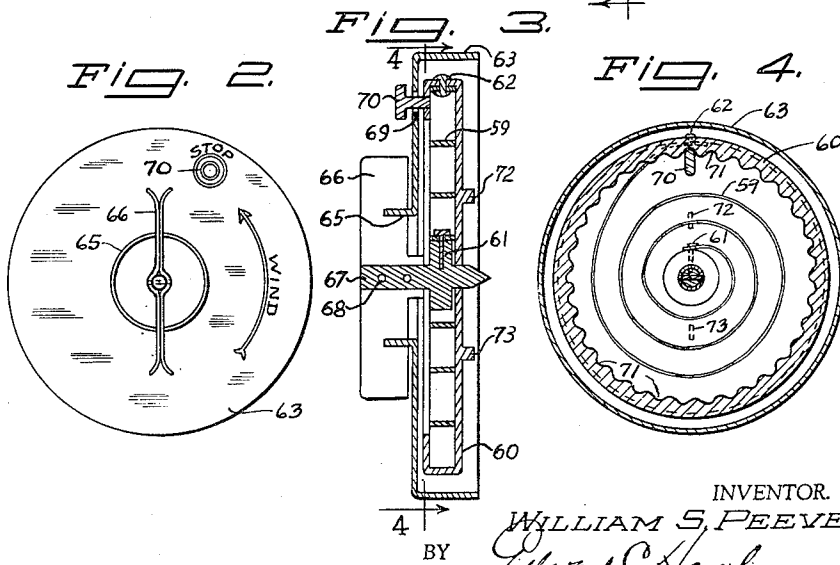
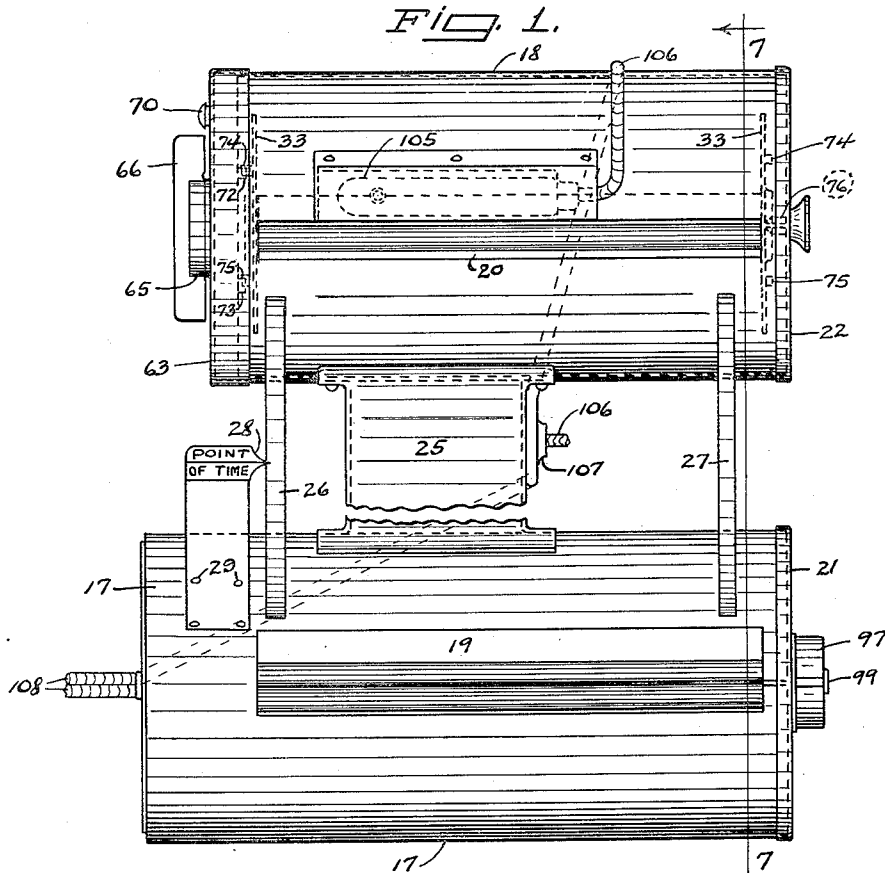
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2,337,621

TIMING DEVICE FOR SCRIPT READING

Filed March 20, 1941

4 Sheets-Sheet 1



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FIG. 5.

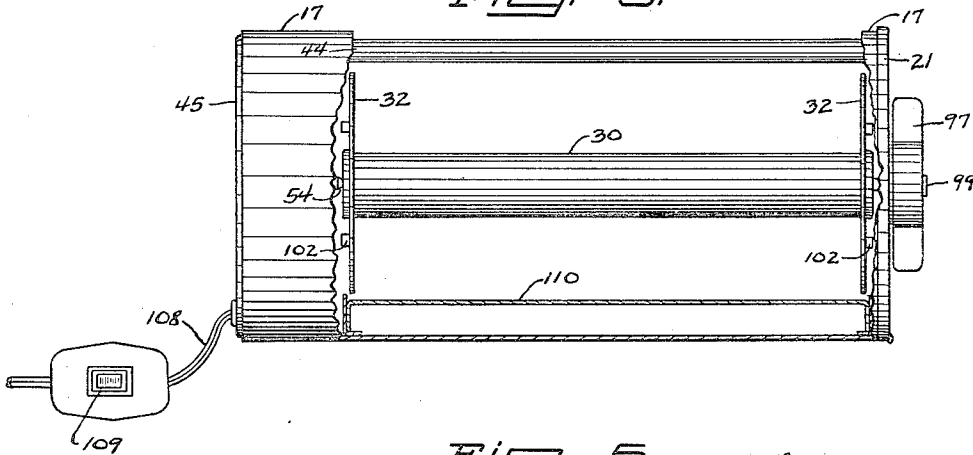


FIG. 6.

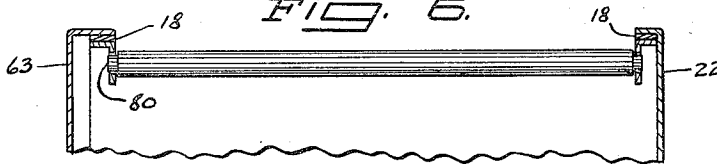


FIG. 7.

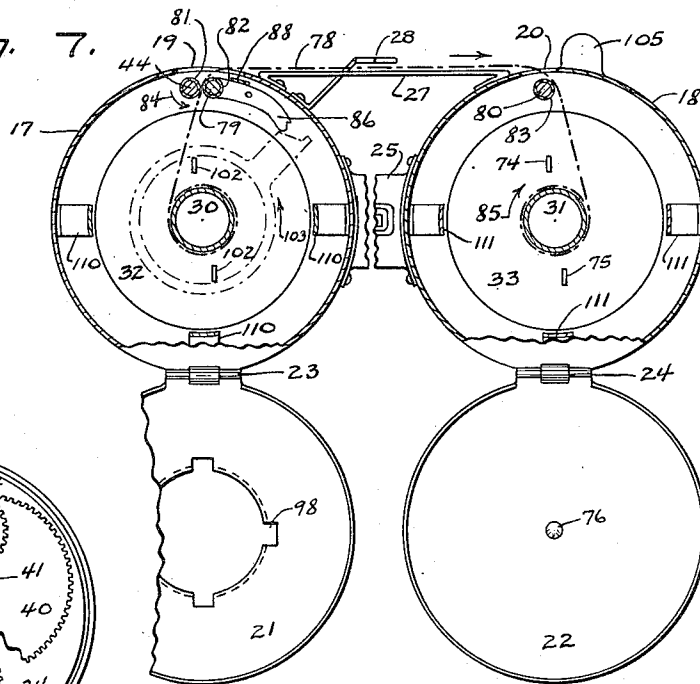
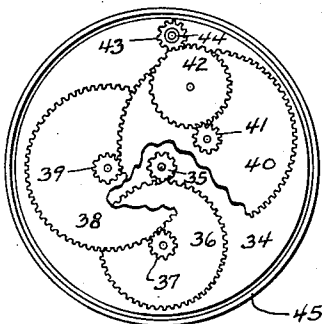


FIG. 8.



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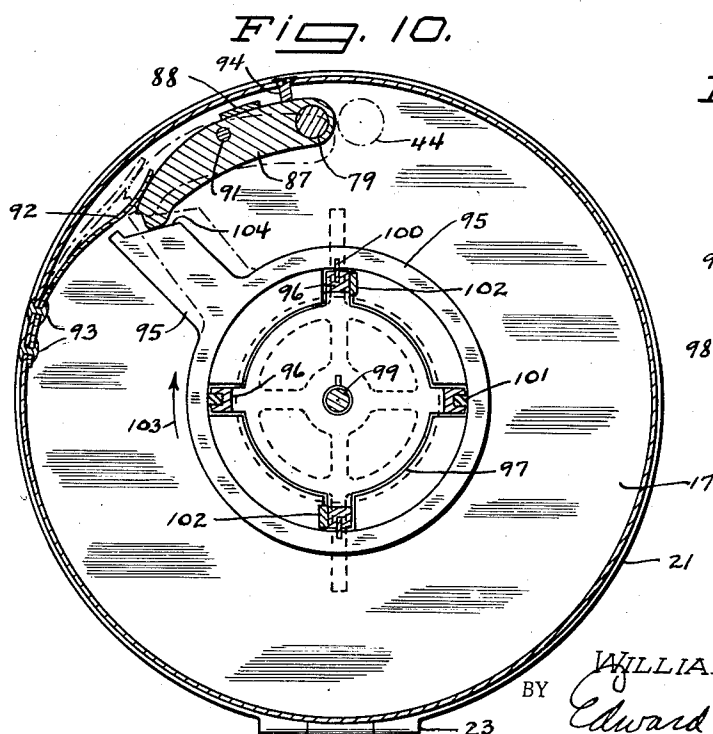
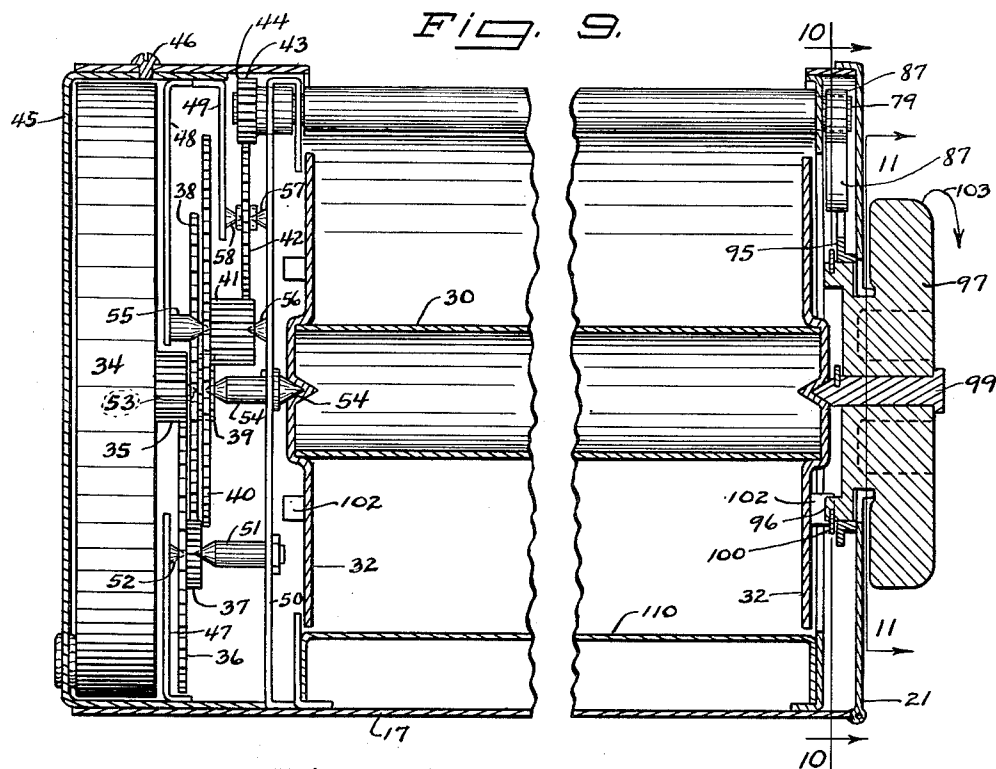
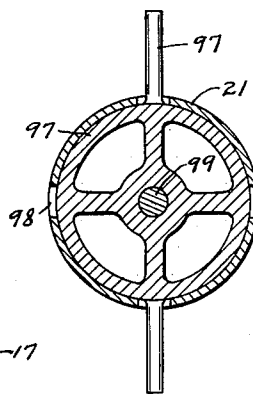


Fig. 11.



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FIG. 12.



FIG. 13.

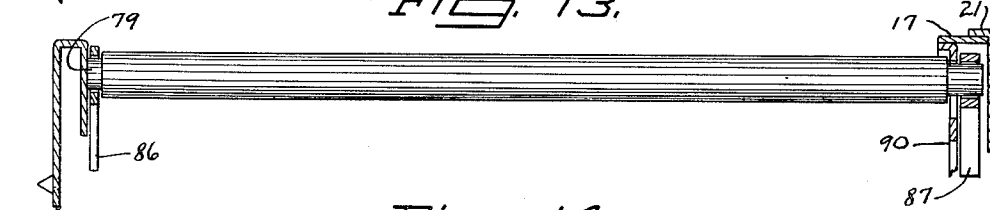


FIG. 14.

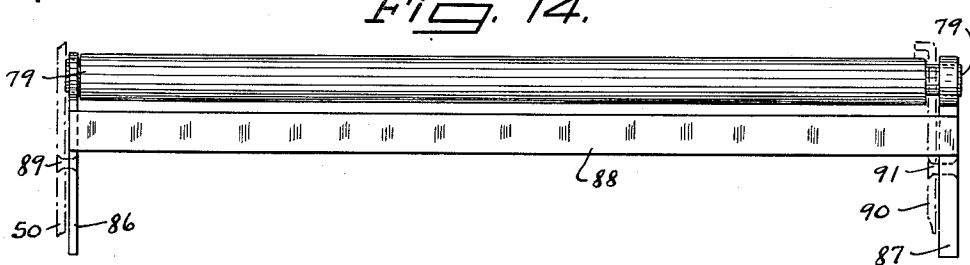
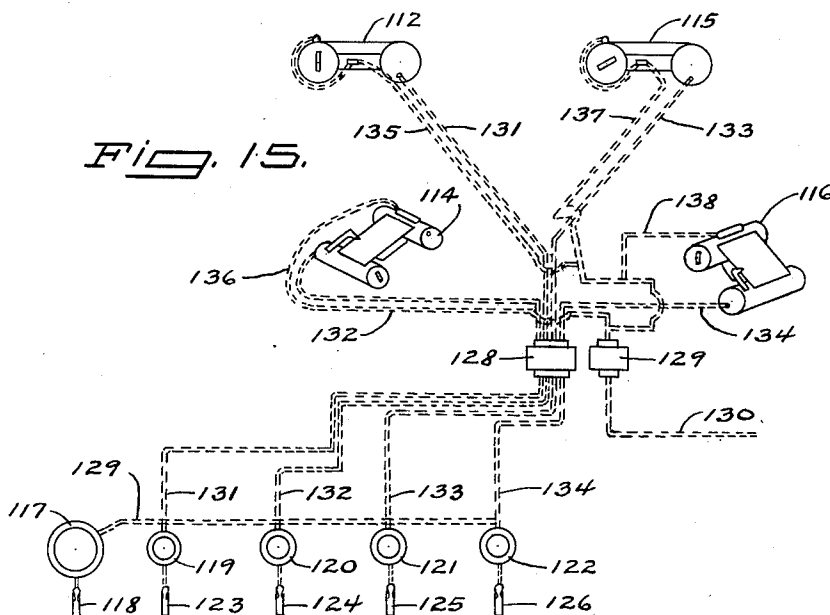


FIG. 15.



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UNITED STATES PATENT OFFICE

2,337,621

TIMING DEVICE FOR SCRIPT READING

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Application March 20, 1941, Serial No. 384,357

2 Claims. (Cl. 40—31)

This invention relates to a new and useful improved script reading timing device that is adapted for use in radio broadcasting and all other types of scrip reading.

It is an object of the present invention to provide a specially constructed device of the character described that can be made miniature in size and operated and controlled in an exceptionally simple manner.

It is another object of the invention to provide two spools for carrying script tape and means for automatically conveying the tape from one spool to the other and past a time indicator.

It is another object of the invention to control the conveying of said tape by the combination of an electric motor and a mechanical motor.

It is another object of the invention to provide means for producing a continuous pulling tension on the tape while it is being unwound from the primary spool.

Another object of the invention is to provide means for conveying the tape past a time indicator at a constant unchanging speed and to also provide means for enabling the speed to be changed if desired.

Another object of the invention is to provide improved means for controlling the device in a manner that will enable the reading to be rehearsed.

The invention further consists in the particular combination, construction and association of the different parts, such as described in the following specification, and possesses various other objects and features of advantage which will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a top plan view of the device and particularly shows two elongated cylindrical housings, one a primary housing from which the tape is drawn, and the other a secondary housing into which the tape is conveyed;

Fig. 2 is an outer end view of a cap that fits on the left end of the secondary housing;

Fig. 3 is a central vertical sectional view of said cap and a mechanical motor that is mounted therein;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3, looking in the direction of the arrows, and shows a coiled spring and the preferred construction of the mechanical motor;

Fig. 5 is a longitudinal side elevational view of the primary housing with a portion of the housing wall broken away to show a specially constructed spool for carrying the tape and one of the rollers that is provided for controlling the tape;

Fig. 6 is a view showing the manner in which an idler roller is mounted in the secondary housing;

Fig. 7 is a fragmentary end sectional view taken on the line 7—7 of Fig. 1, looking in the direction of the arrows, illustrating the manner in which the tape travels from the primary housing to the secondary housing and past the reading point of time, and showing in elevation the lids that are hinged to the lower right ends of said housings;

Fig. 8 is an inside plan view of a cap that is mounted on the left end of the primary housing, said cap containing the electric motor and reducing gears for imparting revoluble movement to the spool in said housing;

Fig. 9 is a central longitudinal enlarged broken sectional view of the primary housing, spool therein, and spool winder in the right end thereof, showing in elevation the electric motor and reducing gears in the left end thereof;

Fig. 10 is a vertical sectional view taken on the line 10—10 of Fig. 9, looking in the direction of the arrows;

Fig. 11 is a vertical sectional view taken on the line 11—11 of Fig. 9, looking in the direction of the arrows;

Fig. 12 is a longitudinal view of the driven roller shaft and illustrates the manner in which the same is revolubly supported in the primary housing and provided with a pinion that is capable of engaging with the gears driven by the electric motor;

Fig. 13 is a longitudinal side elevational view of the adjustable shaft and illustrates the manner in which the same is revolubly supported on a pair of adjusting levers that are mounted in the primary housing;

Fig. 14 is a top plan view of said adjustable shaft and levers and illustrates the manner in which the levers are connected together; and

Fig. 15 is a diagrammatic view, illustrating a plurality of the script timing devices and the controls for separately operating the same.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 17 designates the primary housing and the numeral 18 the secondary housing, both of which are preferably made of sheet metal and cylindrically formed and provided with slots 19 and 20, respectively, through the cylindrical walls thereof, as shown in Figs. 1 and 7. Covers 21 and 22 are hinged, respectively, to the right ends of said housings 17 and 18 by suitable hinges 23 and 24, respectively, and an intermediate member or handle 25 is provided for holding the housings together, as shown in Figs. 1 and 7. A pair of suitable guides 26 and 27 extends over both of said housings for carrying the tape from one housing to the other and are fastened to the cyl-

indricial walls thereof by being soldered or riveted in any suitable manner. An indicator 28 is riveted to the cylindrical wall of the primary housing 17 by rivets 29 and is arranged on the left side thereof and adjacent to and above the guide 26 and has an arrow shaped pointer for designating the reading point of time that the script is to be read when the tape is being conveyed from the primary housing to the secondary housing over said guides 26 and 27.

Two spools are provided for carrying the tape and are revolubly mounted in housings 17 and 18. The spools are similar in construction and each has a hollow metal shaft 30 and 31 and discs 32 and 33, respectively, that are formed to fit onto the ends of the hollow shafts, as shown in Fig. 9, and can be rigidly fastened thereto in any suitable manner. Both discs for both spools have concentric bearing receiving points, as shown in Fig. 9, to enable said discs to be revolubly supported on suitable pointed pins in their respective housings. An electric motor 34 is provided to unwind the tape that is on the spool in the primary housing. As it is desirable to revolve said spool between six and seven revolutions per minute, it becomes necessary to provide a series of reduction gears to reduce the speed from the motor. In Figs. 8 and 9 there is illustrated a series of gears for accomplishing said reduction. The speed is reduced from motor pinion 35 through gear 36, pinion 37, gear 38, pinion 39, gear 40, pinion 41, gear 42 to pinion 43 that is keyed to the roller shaft 44. It will be particularly observed that pinions 37, 39, and 41 are fixed concentrically to gears 36, 38 and 40, respectively. The said gears and pinions are self-contained in a case 45 that fits into the left end of the primary housing 17 and is held in position therein by a screw 46. The numerals 47, 48, and 49 designate bearing supports that are fixed into the case 45, and the numeral 50 designates a bearing support that is fixed into the primary housing 17. The various gears and pinions are recessed concentrically to receive pointed bearing pins that are fixed to their respective bearing supports. The gear 36 and the pinion 37 are supported on pins 51 and 52, gear 38 and pinion 39 on pins 53 and 54, gear 40 and pinion 41 on pins 55 and 56, and gear 42 on pins 57 and 58.

As hereinbefore stated, one of the objects of the present invention is to provide a mechanical motor for revolving the spool in the secondary housing to produce a continuous pulling tension on the tape when it leaves the primary housing. A preferred type of such mechanical motor is illustrated in Figs. 3 and 4 and consists of a coiled spring 59, the inner coiled end of which is fixed to the pointed bearing pin 67 by pin 61 and the outer coiled end fixed to the outer periphery of the housing 60. The specific construction employed for revolving the housing 60 by the coil spring 59 is conventional, functioning the same as the coil spring winding mechanism which operates a standard coil spring controlled clock by a rivet 62. The coiled spring housing 60 is mounted into a cap 63 that covers the left end of the secondary main housing 18 and which is keyed thereto by a metal screw 64. The said cap 63 has a circular rim 65 formed onto the front face thereof for carrying a winding key 66 that is slotted to fit onto said rim and is fastened to the spring housing 60 by pin 67 that extends therethrough and is riveted to said winding key by rivets 68. Said cap is formed with a slot, as shown at 69 in Fig. 3, to receive a control

key 70 that is adapted to fit into any one of the various notches 71 that are formed around the inner periphery on the front face of the coiled spring housing 60. When the control key 70 is set in the upper portion of the slot 69 and into one of the notches 71, as shown in Figs. 3 and 4, the coiled spring housing 60 will be locked to the cap 63 and stopped. When said control key 70 is moved to the lower portion of the slot 69 and below said notches 71, the spring housing 60 will be free from the cap 63 and will be revolved by the coiled spring 59. The cap 63 has two lugs 72 and 73 on its rear face that are adapted to engage with two lugs 74 and 75 that are provided onto the outer face of discs 33 that form the spool in the secondary housing 18. It will thus be seen that said spool will revolve in synchronism with the coiled spring housing 60. It will also be noted that said spool is revolubly supported onto the pointed pin 67 that is fastened to the spring housing 60 and the pointed pin 76 that is fixed concentrically into the lid 22 of the secondary housing.

In Fig. 7 there is illustrated in heavy dot-and-dash outline the script tape 78 that is wound around the spool shaft 30 in the primary housing 17 and which leads therefrom to the spool shaft 31 in the secondary housing 18. Two roller shafts 44 and 79 are provided in the primary housing 17 for controlling the speed that the tape is unwound from the spool in said primary housing. The shaft 44 has a pinion 43 that is fixed onto the outer end thereof by pin 77 and is revolubly mounted into the primary housing, as shown in Figs. 1, 7, and 12. The roller shaft 79 is revolubly mounted into the primary housing, as shown in Figs. 1, 7, and 13. An idler roller shaft 80 is revolubly mounted into the secondary housing, as shown in Figs. 1, 6, and 7. All of said roller shafts 44, 79, and 80 are provided with flexible bushings 81, 82, and 83, respectively. These bushings can be made from rubber, leather or any suitable flexible material. From the foregoing it will be readily seen that the script tape 78 is squeezed between the roller shafts 44 and 79 and will be unwound from the spool shaft 30 when the roller shaft 44 is revolved in the direction of arrow 84, and said tape will be kept tightly pulled over the idler roller shaft 80 by the resiliently operated mechanical motor that revolves the spool shaft 31 in the direction of the arrow 85. The script tape will thus be conveyed past the reading point of the time indicator 28 at a constant unchanging speed.

When doing various types of script reading, it often becomes necessary to rehearse. It thus becomes necessary to rewind the script tape on the spool in the primary housing. Means for rewinding said spool in the primary housing is illustrated in Figs. 9, 10, 13 and 14. The roller shaft 79 is revolubly supported in two levers 86 and 87 that are connected together by a bar 88, as shown in Fig. 14. Said levers extend in opposite ends of the primary housing, the lever 86 being pivoted to the supporting member 50 by pin 89 and lever 87 being pivoted to the supporting member 90 by pin 91. The levers are curved, as shown in Fig. 10, and a curved spring 92 is fastened to the primary housing's cylindrical wall by rivets 93 and is applied against the lower end of the lever 87 to resiliently hold the roller shaft 79 in its uppermost and normal position. A pin 94 limits the upper movement of said levers. An adjusting member 95 is provided and is revolubly supported on a plurality of lugs 96 that are formed

on the spool winding member 97 that is constructed as shown in Figs. 9, 10, and 11. The lid 21 of the primary housing has a plurality of slots 98 for admitting the lugs into the housing. A pointed pin 99 extends through said winding member for supporting the spool on one end, and a pointed pin 54 supports said spool on the opposite end. Pins 100 are provided into lugs 96 for holding the adjusting member 95 thereon. Resilient friction members 101, that can be made of rubber, leather or suitable springs, are provided into two of the lugs 96 for producing friction against the adjusting member to cause it to turn with the winding member 97. Lugs 102 are provided on the outer face of the spool disc 32 and arranged thereon to engage with the lugs 96 of winding member 97, as shown in Figs. 9 and 10.

It will be readily understood that in order to rewind the tape, it must be freed between roller shafts 44 and 79. When it is desired to accomplish this result, the winding member 97 is turned in the winding direction, as shown by arrow 103 in Figs. 7, 9, and 10. The friction members 101 fit sufficiently tight against the inner periphery of the adjusting member 95 to cause said adjusting member to turn. This causes the top angle end 104 of said adjusting member 95 to lift the lower end of lever 87, which will lower the front end of said lever that carries the roller shaft 79, as shown in Fig. 10, and thus free the tape between the two roller shafts. It will be noted that the adjusting member 95 locks against the end of the lever 87, which limits its movement to a short distance, and that a continued turning of the winding member 97 will revolve the spool in the primary housing and wind the tape thereon. After the desired amount of rewinding has been accomplished and the script tape returned to its proper place in relation to the reading point of the time indicator 28, the winding member 97 is then turned back a short distance, which tightens the roller shafts 44 and 79 against the tape and places the device back in order for the continued operation. Whenever the script tape is rewound on the spool in the primary housing, it unwinds the tape on the spool in the secondary housing and winds the coiled spring 59 in the mechanical motor.

The numeral 105 designates an electric light, the numeral 106 the light cord, and the numeral 107 a switch for the same. The numeral 108 designates the electric motor cords, and the numeral 109 the electric motor switch. The numerals 110 and 111 designate guides in the spool housings for facilitating the insertion and removal of the spools in said housings.

In Fig. 15 there is illustrated a plurality of the script reading timing devices 112, 114, 115, and 116 and the electric controls for operating the same. The numeral 117 designates the master rheostat, and the numeral 118 the master switch. The numerals 119, 120, 121, and 122 designate individual rheostats for timing devices 112, 114, 115, and 116, respectively. The numerals 123, 124, 125, and 126 designate electric switches for rheostats 119, 120, 121, and 122, respectively. The numeral 127 designates the motor control jack, and the numeral 128 the light control jack. The numeral 129 designates the master rheostat electric circuit, and the numeral 130 the master electric light circuit. The numerals 131, 132, 133, and 134 designate individual electric circuits that

lead from rheostats 119, 120, 121, and 122 to and through the motor control jack 127 to the devices 112, 114, 115, and 116, respectively. The numerals 135, 136, 137, and 138 designate electric light circuits that lead from the electric light control jack to devices 112, 114, 115, and 116, respectively.

The electric switches 118, 123, 124, 125, and 126 are all connected to a master circuit that is connected to an electric source of supply (not shown). The various circuits shown in Fig. 15 are indicated in dotted lines to readily distinguish said circuits from the other devices illustrated.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A device for timing script reading comprising a frame, a pair of spools revolubly mounted thereon and arranged in parallelism with each other, said spools being provided for carrying a piece of script tape that is wound around both spools and is led from one spool to the other, a reading time indicator between the spools, a pair of roller shafts revolubly mounted onto the frame and arranged in parallelism with each other and the spools, said roller shafts being adapted to squeeze the tape when the tape is inserted between said shafts, an electric motor for revolving the roller shafts to unwind tape from one of the spools, a revoluble member supporting and engaging the other spool to wind the unwound tape onto that spool, means for adjusting the roller shafts to free the tape between said shafts, and means for rewinding the tape onto the spool from which tape has been unwound.

2. A device for timing script reading comprising a primary housing and a secondary housing, a handle connecting the housings together, a spool revolubly mounted in the primary housing, a similar spool revolubly mounted in the secondary housing, said spools being arranged in parallelism and provided for carrying a length of script tape that is wound around both spools and extends from one spool to the other, a slot in each of said housings for enabling the tape to run therethrough, a pair of roller shafts revolubly mounted in the primary housing and arranged in parallelism with each other and the spools, said roller shafts being adapted to receive the tape from the spool in the primary housing, a pair of flexible bushings mounted on said roller shafts to squeeze the tape when it is inserted between said bushings, means for revolving said shafts to unwind the tape from the spool in the primary housing, means for winding the unwound tape onto the spool in the secondary housing, manually controlled means for rewinding the tape onto the spool from which tape has been unwound, said manually controlled means being capable of adjusting the roller shafts to free the tape between said shafts and capable of enabling the shafts to return to their normal positions.

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