

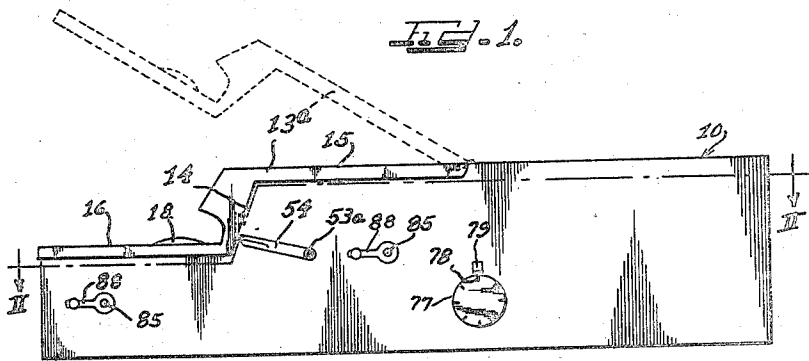
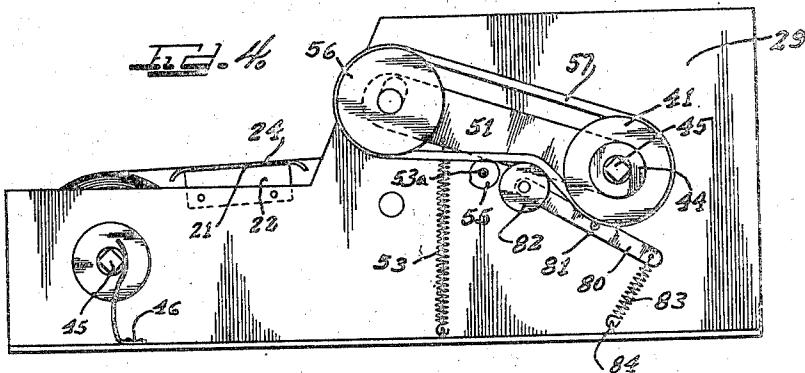
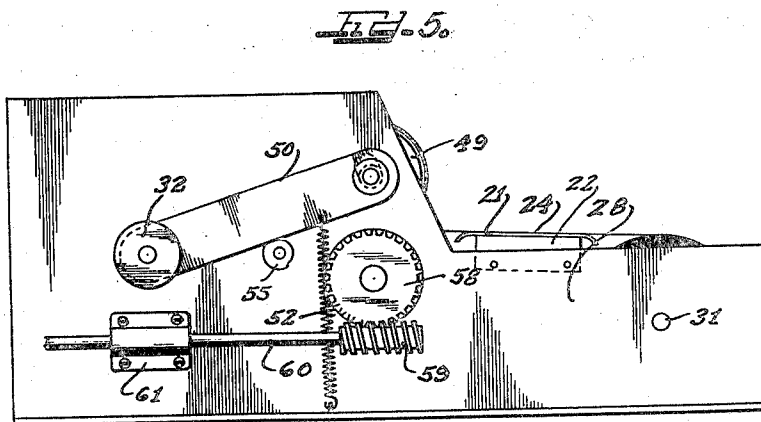
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R. J. COLIN
SCRIPT TIMING DEVICE

Filed May 8, 1936

2,116,507

3 Sheets-Sheet 1



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May 10, 1936.

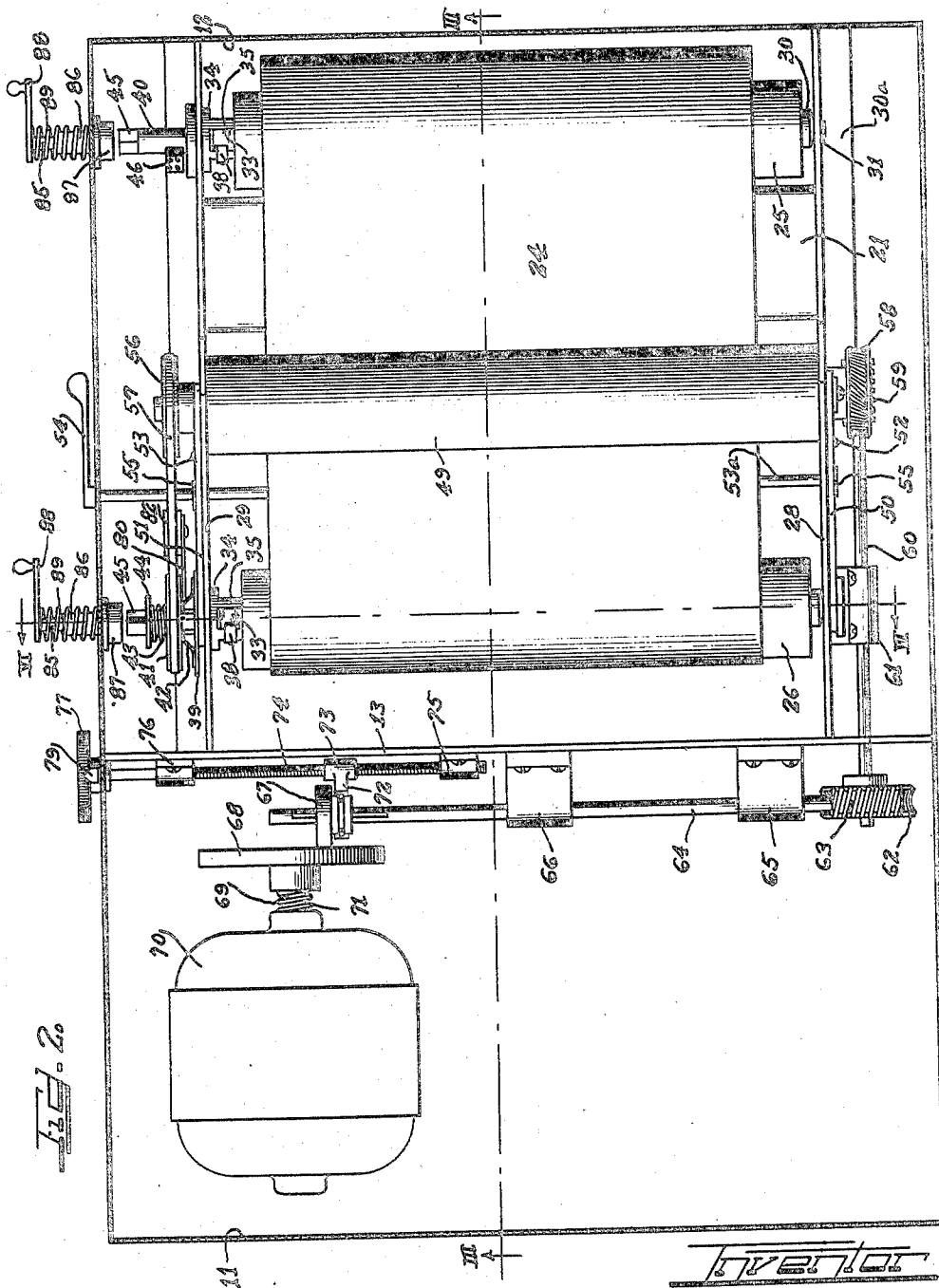
R. J. COLIN

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SCRIPT TIMING DEVICE

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3 Sheets-Sheet 2



by Charles W. Field Att'y.

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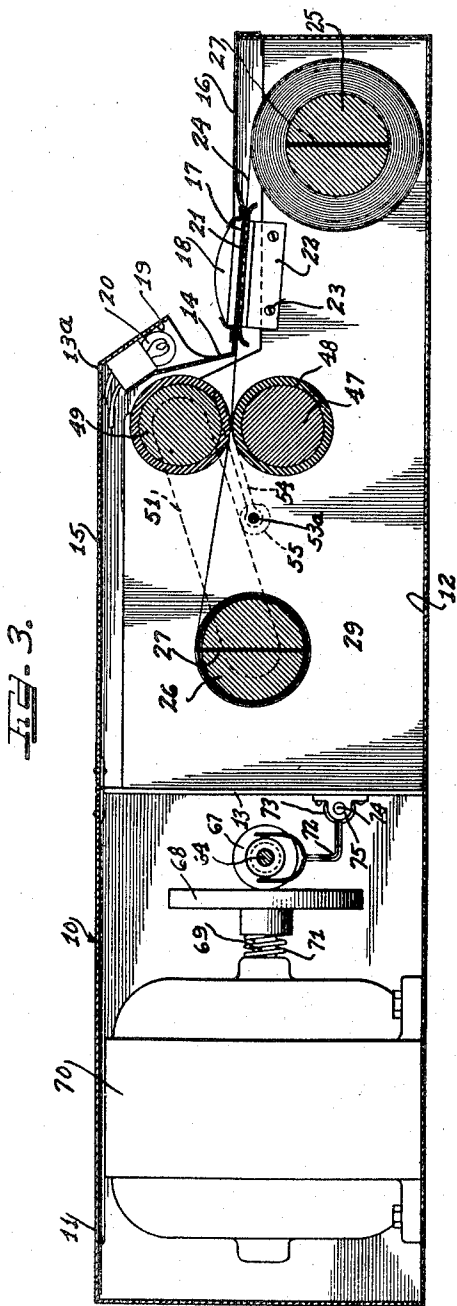
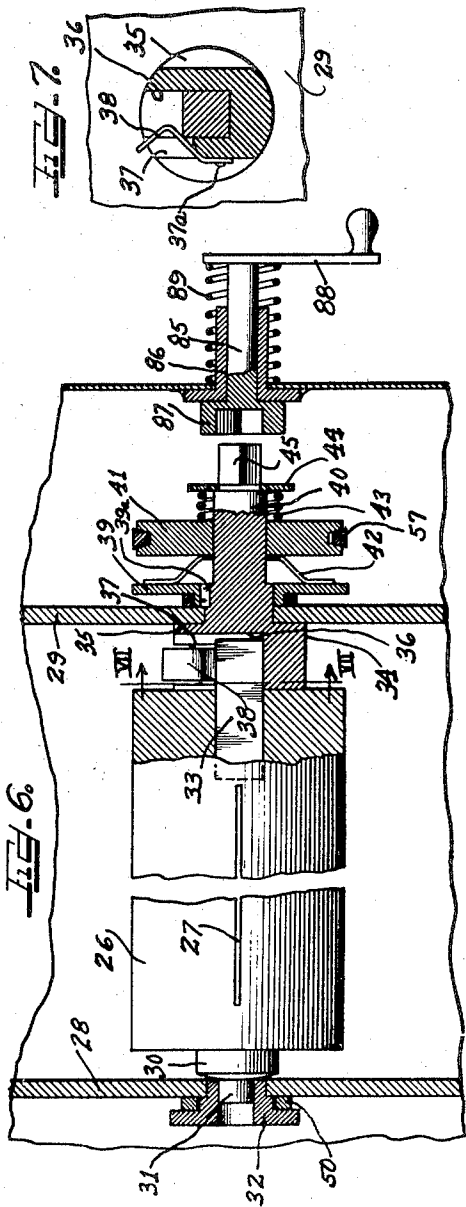
R. J. COLIN

2,116,507

SCRIPT TIMING DEVICE

Filed May 8, 1936

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,116,507

SCRIPT TIMING DEVICE

Ray Jay Colin, Chicago, Ill.

Application May 8, 1936, Serial No. 78,536

5 Claims. (Cl. 40—31)

The present invention relates in general to a timing device and is more particularly concerned with an improved device for timing the script of a speaker or the like, whereby a speaker may be assured that this speech will be concluded at a predetermined time or that the speech will be delivered within the time allotted therefor.

While the herein described invention has been considered primarily in its use in connection with the deliverance of a speech or address, it will be readily apparent to one skilled in the art that the invention is not to be specifically limited to such use as it may be utilized with equal facility for other purposes, such, for example, as for timing the rendition of a musical score and the like.

In radio broadcast stations, programs are arranged to run for a predetermined period of time. It is imperative that a given program be started exactly on time and terminated exactly at the end of the time which has been set aside or allotted therefor. This means that every portion of the program must be carried out according to a definite time schedule.

The present practice, for example, where a speech is to be delivered, is to time the speaker before hand so that a general idea may be gained as to the time it will take the speaker to deliver the speech. Such a procedure is at most a makeshift and makes it difficult to prepare a definite time schedule, since a speaker during the actual broadcast may talk faster or slower than when his speech was initially timed. Consequently, the entire schedule may be thrown off with the result that some parts of the program might have to be omitted or other numbers might have to be added in order to fill up the time allotted for the program.

With a view to rectifying the foregoing condition, the present invention contemplates a device for timing the script or musical score of a speaker or musician so that the speech, music, or the like will be completed more exactly at the scheduled time.

A further object is to provide a script timing device of such construction that the script may be continuously moved at a predetermined speed, this speed being at all times under the control of the speaker.

A further object is to provide a device of the class described which enables the entire speech of the speaker to be printed on a strip of paper or other material which may be longitudinally moved at a predetermined speed, this speed being

dependent upon the time allotted to the speaker for his speech.

A still further object resides in the provision of a device which will obviate the necessity of a speaker having to thumb through a plurality of sheets of paper containing his speech, as the speech is delivered, but which will on the other hand successively present the script lines to the view of the speaker at a speed which will assure the speech being delivered within the time allotted. With such a device, the speaker's mind is not distracted from his speech, and there is no possibility of the speech being interrupted by the dropping of papers or the like.

It is also an object to provide a device of the character described which is simple of construction, easy of operation, and efficient in operation.

In accordance with the general features of the invention, it is proposed to provide a portable device which in its broad conception includes a casing having a viewing window through which the speaker may observe the longitudinal movement of a strip of indicia bearing material which is moved at such a speed as to assure that the speech or address will be delivered within an allotted interval of time.

The entire speech is printed on the longitudinally movable strip and wound on a feed roller. From the feed roller, the strip is wound onto a take-up roller as the speech is being delivered.

A novel driving arrangement is provided by using a driving roller which is connected to power means such as an electric motor, the driving roller being arranged to be engaged by the strip of material, when the strip is pressed into engagement therewith by means of another roller which is supported for movement towards and away from the drive roller. For convenience, cam means are provided for controlling the position of the pressing roller so that movement of the strip may in cases of emergency be discontinued by the speaker at will.

As a further feature of the invention, a digitally operable button or dial is mounted externally of the casing in a convenient position for manipulation by the speaker to vary the speed of the indicia bearing strip. This button or dial is connected to a speed change mechanism, in this case a disk drive, which may be actuated to increase or decrease the speed of movement of the driving roller and consequently the strip of material, whenever it is desired to speak faster or slower.

Other objects and features of the invention will more fully appear from the following de-

tailed description taken in connection with the accompanying drawings which illustrate a single embodiment thereof, and in which:

Figure 1 is an elevational view of a script timing device embodying the principles of the herein described invention;

Figure 2 is an enlarged horizontal section taken through the device for showing the cooperative relationship of the associated parts thereof, the section being taken substantially on the line II—II of Figure 1;

Figure 3 is a longitudinal section through the device, taken substantially on line III—III of Figure 2;

Figure 4 is a detail view showing the driving connection for the take-up roller;

Figure 5 is a similar view showing the details of the driving connection for the driving roller;

Figure 6 is a fragmentary sectional view taken substantially on line VI—VI of Figure 2 in order to show the details of the mounting and drive for the take-up roller; and

Figure 7 is a fragmentary sectional view showing the removable connections for the take-up roller, taken substantially on line VII—VII of Figure 6.

As shown on the drawings:

As shown in Figure 1 on the drawings, the device of the present invention is housed in a box-like casing generally indicated at 10. This casing is separated into two transversely extending compartments 11 and 12 by a partition 13. The compartment 11 has the power mechanism therein for driving the script moving mechanism which is housed in compartment 12.

Compartment 12 is provided with a hinged cover 13^a which is pivoted for swinging movement along a line substantially coinciding with the partition 13. The cover for this compartment is vertically offset as shown at 14 to provide spaced parallel surfaces 15 and 16, the former normally lying in the plane of the top of the power compartment and the latter being disposed below the surface 15.

The surface 16 is provided with a rectangular opening 17 extending transversely of the cover to form a window which is fitted with a magnifying glass 18. The offset portion 14 of the cover is formed to define a hood 19 under which an illuminating medium such as an electric light 20 is supported for illuminating the view through the magnifying glass 18.

Directly below the window in the cover, there is disposed a platform 21 having its lateral edge portions downwardly deflected a small amount to form rounded edges. This platform is deflected at its ends to form depending end portions 22 to enable securing the platform to vertical frame members, which may be accomplished by screws 23.

The platform 21 is spaced a slight distance from the undersurface of the cover defining the window in order to permit a strip 24 of indicia bearing material, such as paper or the like, on which may be printed the speech of a speaker, to pass over the platform between the window and the platform's upper surface.

On opposite sides of the window, there is disposed a feed roller 25 and a take-up roller 26. These rollers are provided with slots 27 to permit the ends of the indicia bearing strip to be threaded into the rollers so that when the rollers are turned, the strip will be unwound from the feed roller and wound on the take-up roller.

The feed roller and take-up roller are rotatably

mounted in spaced frame members 28 and 29 which are inwardly spaced from the sides of the casing and extend longitudinally of the compartment 12. Each of these frame members is outwardly deflected along its bottom edge portion to form a right angled flange 30^a which is riveted or otherwise secured to the bottom of the casing.

The feed roller and take-up roller are of similar construction so that they may be used interchangeably. Referring to Figure 6, the take-up roller, for example, at one end is provided with a circular short shaft 30 having a contracted extension 31 which is removably disposed for rotation in a bearing 32 supported on the frame member 28.

The opposite end of the roller is similarly provided with a short shaft 33 which is of square cross-section rather than circular cross-section. The short shaft 33 is removably supported for rotation with a shaft extension member 34 which is rotatably mounted for rotational movement in frame member 29.

The shaft extension is formed with a head portion 35 which is cut out to form a socket 36 which is opened on one side and the top so as to permit the passage of the short shaft 33 therein, when the roller is moved with a swinging movement about short shaft 31 as a pivot from a tilted position. This socket is provided with straight side portions so that when the shaft is supported therein, the short shaft 33 and shaft extension 34 may be rotated as a unit. In order to retain the short shaft 33 within the socket, one side of the socket is provided with a slot 37 within which the free end of a spring detent 38 is disposed, the other end of this spring being anchored as shown at 37^a to the head portion of the shaft extension. It will be observed that the free end of the spring detent is V-shaped and projects into the socket, thereby enabling the seating and unseating of the short shaft 33 in the socket by the exertion of slight force, but preventing movement of the short shaft out of the socket during the operation of the roller.

Surrounding the shaft extension and disposed on the portion of the extension outside of the frame member 29, a circular collar 39 is secured to the shaft extension by a key 39^a. This collar at its inner end is in abutting engagement with the frame member 29 and has its outermost end formed to define a disk surface. Integrally formed as a part of the shaft extension is a contracted portion 40 upon which there is slidably mounted a pulley 41. Disposed between the pulley and the disk surface of the collar 39 is a spring washer 42 having a plurality of angularly spaced arms which engage at their outer ends the disk surface of collar 39 and at their junctures unite to engage the pulley 41. The pulley 41 is actuated against the spring washer by means of an expansion coil spring 43 having one end bearing against the pulley and its other end against an abutment washer 44 which is secured to the portion 40 of the shaft extension in any appropriate manner. The outermost end of the shaft extension extends beyond the washer 44 and is of substantially square cross-section. This end is clearly shown at 45.

The feed roller 25 is similarly mounted, except that in this case there is no pulley or spring on the shaft extension. Since movement of the strip of indicia bearing material is accomplished through means shortly to be described, a slight drag should be provided in the case of the feed roller so that it will not overrun. For this pur-

pose, a leaf spring 46 is supported on the bottom of the housing with its free end in friction driving engagement with the contracted portion 40 of the shaft extension 34 associated with the feed roller.

The strip of indicia bearing material is longitudinally moved past the window by means of a driving roller 47. This roller is disposed on the opposite side of the platform 21 from the feed roller 25 and is rotatably supported at its ends in the spaced frame members 28 and 29. The roller is preferably covered with a layer of rubber or other suitable material for assuring a good gripping engagement of the roller with the strip of indicia bearing material. It will be noted that the plane of the strip as it passes from the platform 21 is the same as that of the platform and engages the driving roller tangentially.

During the driving of the strip, the strip is pressed into engagement with the driving roller by means of a pressing roller 49 which is likewise provided with an outer covering of rubber or other suitable material.

The pressing roller is rotatably supported at its ends in a pair of pivoted arms 50 and 51, these arms having their corresponding ends rotatably supported on the bearings 32 and collar 39 associated with the take-up roller.

The arms 50 and 51 are normally impelled by tension springs 52 and 53 in such a direction as to move the pressing rollers toward the driving roller. Since the strip of indicia bearing material is disposed between these two rollers, it will be evident that the strip will be normally disposed in engagement with the driving roller. Moreover, the plane of movement of the strip as it is wound on the take-up roller is upwardly inclined so that if the pressing roller is moved away from the driving roller, the strip will move out of engagement with the driving roller and consequently its movement will stop.

Control of the movement of the strip is accomplished by moving the pressing roller towards or away from the driving roller. For this purpose, there is provided a transverse rod or shaft 53^a which is rotatably mounted in the frame members 28 and 29, and has one end extended to the exterior of the housing, where it is provided with a thumb lever 54 by means of which the shaft may selectively be rotated in opposite directions. Associated with each of the arms 50 and 51 is a cam 55 which bears against the lower edge of its associated arm. The face of this cam is so arranged that when the thumb lever 54 is pressed downwardly, the arms 50 and 51 will be moved in a direction to carry the pressing roller away from the drive roller so as to interrupt movement of the strip of indicia bearing material. To release the roller so that it may be moved under the action of springs 52 and 53 into engagement with the upper surface of the strip and press the strip against the driving roller, it is only necessary to move the thumb lever in an upward direction.

The shaft at one end of the pressing roller is provided with a pulley 56. This pulley is connected to a belt 57 which is trained over the pulley 41 associated with the take-up roller. With this arrangement, the take-up roller will be rotated only when the pressing roller is being moved or when the strip is being driven.

The driving roller 47 is supported in the frame members 28 and 29 and at one end carries a worm wheel 58 which is driven by a worm 59 on shaft 60, this shaft being supported in a suitable bear-

ing 61 secured to frame member 28. The other end of shaft 60 has a worm wheel 62 which is driven by a worm 63 secured to the end of shaft 64, this shaft extending transversely of the power compartment 11 and being rotatably supported in suitable bearings 65 and 66 secured to the partition 13.

The other end of the shaft 64 has a disk 67 mounted thereon for sliding movement longitudinally on the shaft but restrained against relative rotational movement on the shaft. This disk has its surface engaging a right angularly disposed larger disk 68 on the driving shaft 69 of an electric motor 70. The disk 68 is longitudinally slidable on the shaft 69 and is resiliently impelled by a spring 71 against the disk 67. By sliding the disk 67 along the shaft 64, the point of engagement between the disks is moved closer or farther away from the center of disk 68, whereby the speed at which the driving roller is rotated may be decreased or increased as desired.

For actuating the disk 67 along the shaft 64, manually operable means of adjustment are provided. A shifting fork 72 has one end associated with the disk 67 and is supported at its other end on an internally threaded nut 73 which is in threaded engagement with a screw 74, this screw being supported at its end portions by suitable bearings 75 and 76 on the partition 13. One end of this screw is extended through the wall of the casing and is provided with a digitally operable dial member 77.

The dial member 77 carries a plurality of spaced graduations as shown at 78 which cooperate with an index pointer 79 to indicate different positions of the dial member as the screw is actuated to move the disk 67 relative to disk 68, whereby the speed of the driving roller is varied.

It will therefore be apparent that by using a constant speed power means such as a synchronous motor, the speed of movement of the strip will always be the same for a given setting of the dial.

Referring to Figure 4, there is pivotally mounted on the frame member 29 an arm 80, this arm being pivoted intermediate its ends as at 81 for swinging movement. One end of this arm carries an idler pulley 82 which is normally held in engagement with the belt 57 for driving the take-up roller by means of a tension spring 83 having one end connected to the other end of the arm 80 and its other end anchored as at 84 to the connecting flange at the bottom of frame member 29. The belt member just described will operate to maintain the belt 57 suitably tight during swinging movement of the pressing roller.

Should the power means for driving the driving roller, for some reason, become damaged or inoperative, emergency operation of the device is accomplished through manually operable driving means. In alignment with the square ends 45 of the shaft extensions of the feed roller and take-up roller, there is provided in each case an auxiliary driving shaft 85 which is rotatably mounted in a bearing support 86 on the associated side wall on the casing. One end of the auxiliary driving shaft 85 is provided with a socketed head 87 which is arranged to fit over the square end 45 of the associated shaft extension. The other end of the auxiliary shaft 85 is provided with an operating crank 88. The auxiliary driving shaft is normally disengaged relative to the shaft extension by means of an expansion spring 89 surrounding the bearing 86 and shaft 85 with one end bearing against the wall of the cas-

ing and its other end bearing against the crank where it is connected to the shaft. By pressing the crank towards the casing, the auxiliary driving shaft may be connected to the associated roller and this roller may be turned to cause forward movement of the strip when the take-up roller is actuated, or in the case of the crank associated with the feed roller, by turning the roller in reverse direction, the strip may be wound on the feed roller.

From the foregoing description, it will be apparent that the herein described invention provides an improved script timing device wherein the script or indicia bearing strip is moved at a predetermined speed; which embodies novel means for controlling the speed of the strip bearing indicia; which assures the speaker or other operator completing his speech or the like within the time allotted; which is provided with auxiliary manually operable means for moving the script during emergency conditions such as failure of the main driving mechanism; which obviates the inconvenience of having manually to turn a plurality of sheets during the deliverance of an address or the like; and a device which is simple of construction, simple to operate, and efficient in operation.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted hereon otherwise than necessitated by the scope and spirit of the appended claims.

I claim as my invention:

1. In a device of the character described, a casing having a window therein, a strip of indicia bearing material movable longitudinally past said window, a drive roller on one side of the strip, a spring pressed roller on the opposite side of the strip for pressing the strip against the drive roller to cause movement of the strip, and manually actuated means for moving the spring pressed roller away from the drive roller for stopping the movement of the strip.

2. In a device of the character described, a casing having a window therein, a pair of rollers within said casing having relative movement into

and out of engagement, a strip of indicia bearing material disposed for longitudinal movement between said rollers, whereby the indicia thereon may be brought into view through said window, means for driving one of said rollers, and means for selectively moving the other of said rollers towards and away from the driven roller for causing movement and non-movement of the strip by the driven roller.

3. In a device of the character described, a casing having a window therein, a pair of rollers within said casing having relative movement into and out of engagement, a strip of indicia bearing material disposed for longitudinal movement between said rollers, whereby the indicia thereon may be brought into view through said window, means for driving one of said rollers, means for selectively moving the other of said rollers towards and away from the driven roller for causing movement and non-movement of the strip by the driven roller, and means operable from the exterior of the casing for controlling the speed of movement of the strip.

4. A script timing device comprising a casing having a window therein, a strip of indicia bearing material movable longitudinally past said window, a drive roller, a second removably mounted roller operable to press the strip into engagement with the drive roller, a take-up roller for receiving the strip that has been moved past the window, positive driving means for the driving roller, a friction drive connection between the second roller and the take-up roller, and means for moving the second roller into strip pressing and strip non-pressing positions to cause simultaneous movement and non-movement of the strip and take-up roller.

5. In a device of the character described, a longitudinally movable strip of indicia bearing material, a take-up roller onto which said strip is wound, a driving roller, a presser roller, said strip being trained between the driving and presser rollers, connection means for driving said take-up roller from the presser roller, and means for shifting the presser roller to control the movement of the strip by the driving roller.

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