Aug. 27, 1957 R. W. JONES 2,803,900

READING APPARATUS

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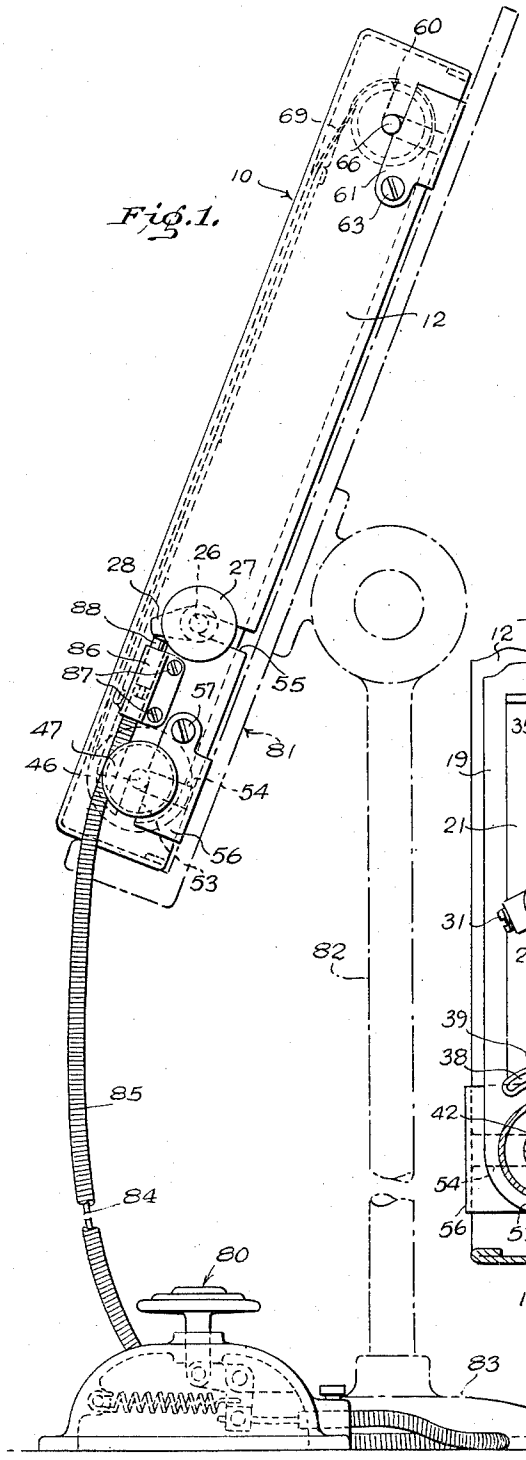


Fig. 1.

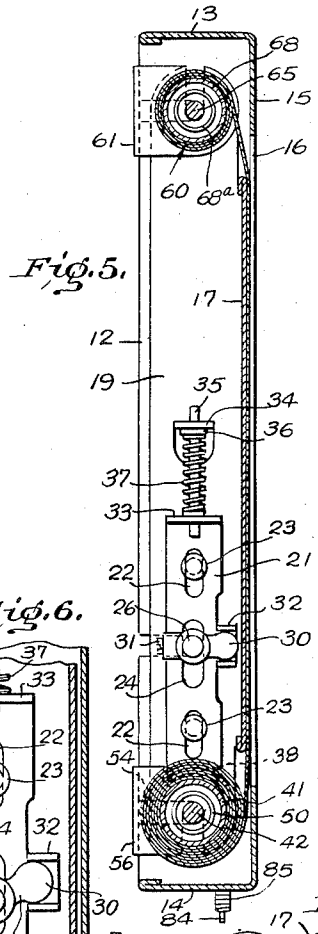


Fig. 5.

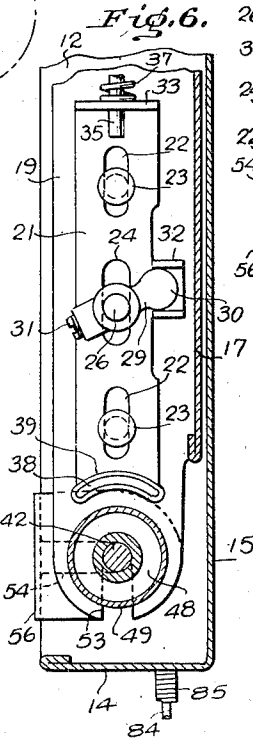


Fig. 6.

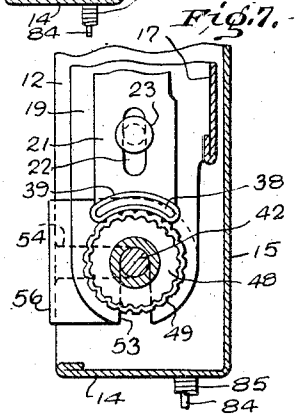


Fig. 7.

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Fig. 2.

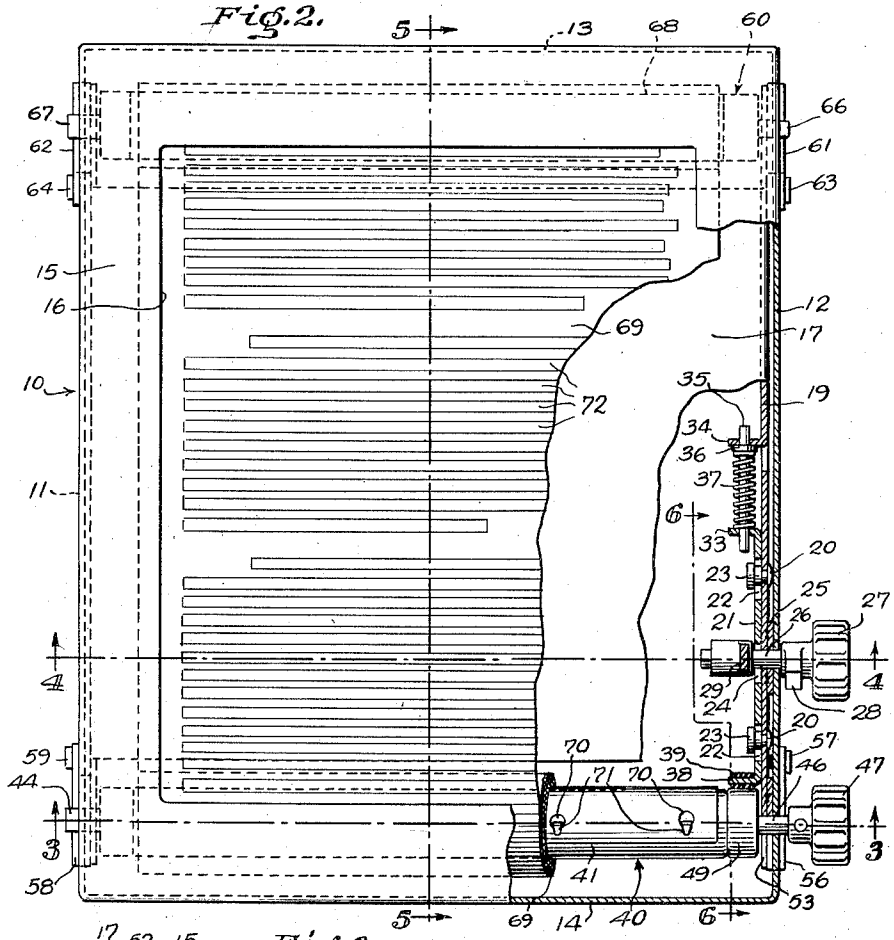
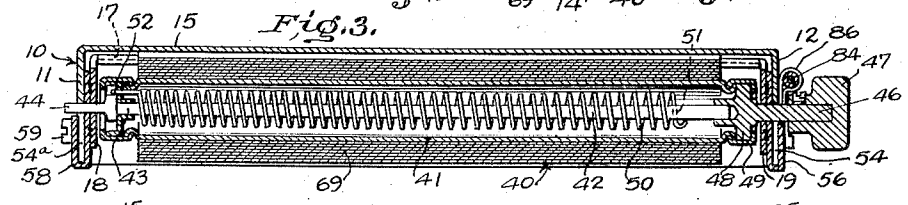


Fig. 3.



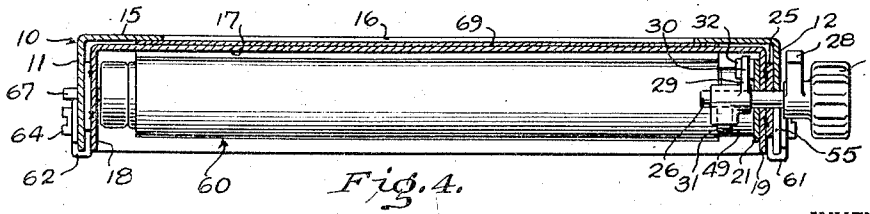


Fig. 4.

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READING APPARATUS

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Application March 15, 1954, Serial No. 416,113
4 Claims. (Cl. 40—31)

The present invention relates to a reading apparatus and it consists in the combinations, constructions and arrangements of parts herein described and claimed.

Generally there is provided a compact device which may be placed upon a table or the like or which may, if desired, be mounted upon a separate stand. The device includes a novel framework having a window through which is exposed a web which is adapted to travel from one reel to another. A novel control means is provided for the movement of the web from one reel to the other and the device is such that it is particularly useful for the reading of speeches and the like either directly to an audience or through other media such as television. It is also useful for the reading of music, it being apparent that there is no necessity for the turning of pages and, in one form of the invention, the use of the reader's hands is entirely unnecessary in controlling the continuous web.

It is accordingly an object of the invention to provide a device of the character described which is simple in construction, inexpensive to manufacture and yet effective and efficient in use.

Another object of the invention is to provide a novel reading apparatus including a pair of reels and a web adapted to pass from one reel to the other, a framework having a window for exposing the reel as it so travels and novel means for regulating the movement of the web from one reel to the other.

A further object of the invention is the provision of a novel frame forming a part of the invention.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawings, in which:

Figure 1 is a side elevational view, partly broken away, and partly dotted, of an embodiment of the invention,

Figure 2 is a plan view, partly broken away, of the device illustrated in Figure 1,

Figure 3 is a sectional view taken along line 3—3 of Figure 2,

Figure 4 is a sectional view taken along line 4—4 of Figure 2,

Figure 5 is a sectional view taken along line 5—5 of Figure 2,

Figure 6 is an enlarged fragmentary sectional view taken along line 6—6 of Figure 2, and

Figure 7 is a view similar to Figure 6 but showing certain elements therein advanced from their position in Figure 6.

Referring more particularly to the drawings, there is shown therein a device of the character set forth comprising an outer casing generally designated at **10** having side walls **11** and **12**, end walls **13** and **14** and a top **15** provided with a window **16**.

An inner frame is provided with a top plate or platen **17** and a pair of dependent side walls **18** and **19**.

Slidably mounted upon the inner face of the side wall **19** by means of a pair of rivets **20** affixed to the side wall **19** is a plate **21** having a pair of longitudinal slots **22** formed therein to encompass the shanks of the rivets **20**, the latter being provided with heads **23** at their inner ends to maintain the plate **21** upon the side wall **19**.

A longitudinal slot **24** is provided in the plate **21** between the slots **22** and a reinforcing plate **25** is affixed to the outer side of the side wall **19** adjacent the slot **24**. A stub shaft **26** is journaled in the side wall **19** and reinforcing plate **25** and is provided with a knob **27** at its outer end and, between the outer face of the wall **12** and

the knob **27**, with an integrally formed radially extending lever **28**. A radially extending finger **29** is provided at its outer end with a rounded head **30** and is affixed to the shaft **25** adjacent the inner end thereof by means of a set screw **31** or the like. Integrally formed with the plate **21** and extending upwardly therefrom is a U-shaped abutment **32** which encompasses the rounded head **30**.

That end of the plate **21** presented toward the end wall **13** is provided with an integrally formed inwardly extending ear **33** and a like ear **34** is struck from and extends inwardly from the side wall **19**. A rod **35** freely extends through the ears **33** and **34** and is provided with a collar **36** which is affixed thereto and is adapted to bear against that face of the ear **34** presented toward the ear **33**. A compression spring **37** surrounds the rod **35** and bears against the collar **36** and the ear **33**.

An arcuate brake member **38** is formed integrally with that end of the plate **21** presented toward the end wall **14** and is covered with a coating of rubber or the like, as indicated at **39**.

A reel is generally indicated at **40** and comprises a hollow cylinder **41** in which is centrally and longitudinally mounted a rod **42** one end of which is journaled, as indicated at **43**, in that end of the cylinder **41** adjacent the side wall **11** and which is provided with a flattened portion **44** which is extended through the side walls **11** and **18** and is held thereby against rotary movement. A stub shaft **46** extends revolubly through the side walls **12** and **19** and is provided with a knob **47** at the outer end thereof and with a hub **48** at the inner end thereof. A band **49** fixedly interconnects the hub **48** and that end of the cylinder **41** adjacent thereto. A helical spring **50** surrounds the rod **42** and is affixed at one of its ends, as indicated at **51**, to the rod **42** and at its other end, as indicated at **52**, to the cylinder **41**. The band **49** may be crimped in corrugated fashion as shown in Figure 7 for providing a roughened surface to be engaged by the brake **38** and for affixing the hub **48** thereto.

In the ends of the side walls **18** and **19** are provided longitudinal slots **53** into which the flattened end **44** of the rod **42** and the stub shaft **46** are assembled. The side wall **12** is provided with a pair of vertically extending transverse slots **54** and **55** to receive respectively therein the stub shafts **46** and **26** when the frame is assembled into the casing **10**. The side wall **11** is likewise provided with a similar slot **54ª** for the reception therein of the flattened end **44** of the rod **42**. A U-shaped lock plate **56** with its inner leg fixed to the side plate **19** and encompassing the lower edge portion of the side wall **12** adjacent the slot **54** has its outer leg detachably affixed to the side wall **12** by means of a screw **57** or the like. The outer leg of the lock plate **56** bears against the underside of the stub shaft **46**. A U-shaped lock plate **58** fixed to the side **18** encompasses the lower edge portion of the side wall **11** and is detachably affixed thereto by means of a screw **59**, and its outer leg bears against the flattened portion **44** of the rod **42**.

A second reel is generally indicated at **60** and is transversely mounted between the walls **18** and **19** and the walls **11** and **12** adjacent the end wall **13**. The reel **60** is substantially identical in construction with the reel **40**, but the spring contained therein is of lesser strength than the spring **50** in the reel **40**. Lock plates **61** and **62**, identical in construction with the lock plates **56** and **58** are respectively affixed to the walls **12** and **11** by means of screws **63** and **64**. The reel **60** has its rod **65** and its stub shaft **66** extending through opposite sides of the device in the same manner as that of the reel **40**, with said rod **65** held against rotation by its flattened end **67**, it being understood that the cylinder **68** of said reel is free to rotate with respect to the rod **65** against the action of the spring **68ª** contained therein.

A web 69 of flexible material such as paper or the like is adapted to have its ends wound upon the reels 40 and 60 and with an intermediate portion thereof extended over the top plate or platen 17 of the frame. The ends of the web 69 are provided with pluralities of transversely spaced openings 70 which are adapted to engage over hooks 71 struck from the cylinders 41 and 68 in transversely spaced relationship.

In operation, it will be apparent that when the frame with the reels 40 and 60 and web 69 therein has been assembled in the casing 10 by moving the same upwardly, it being understood that the various vertical slots allow for such upward movement of the stub shafts and the like, that thereafter the lock plates 56, et cetera, may be positioned upon the side walls 11 and 12 and affixed thereto by their respective screws thus keeping the device in a single unit. The web 69 will bear upon its upper side reading material, musical scores, or the like, as indicated at 72, and will be connected at its free ends by means of the hooks 71 to the reels 40 and 60 whereupon the web may be wound as far as possible upon the reel 40 by turning the handle 47 in a counterclockwise direction as viewed, for example, in Figure 1. This manual counterclockwise turning of the reel 40 tensions the spring 50 therein and causes counterclockwise turning of the reel 60 by the pulling of wound web 69 therefrom to tension its spring 68a. The device is now in condition for operation, and it will be apparent that the material displayed upon the web 69 may be viewed through the window 16. As the reader completes reading that portion of the material displayed through the window 16, he may then allow the web 69 to move in an upward direction as viewed, for example, in Figure 2, that is to say, from the reel 40 to the reel 60, this being accomplished by turning the knob or handle 27 in a clockwise direction as viewed, for example, in Figure 1. Whereupon, the finger 29 will act to move the plate 21 and consequently the brake member 38 out of braking contact with the band 49, thus permitting the reel 40 to unwind in a clockwise direction due to the action of a spring 50, again as viewed in Figure 1, whereupon the spring 68a of the reel assembly 60 will act to cause the reel 60 to move in a clockwise direction again as viewed in Figure 1. The spring 68a in the reel 60, which is of less strength than the spring 50 in the reel 40, is for the purpose of winding on the reel 60 any portion of the web 69 unwound from the reel 40, and it is not intended that the spring 68a exert sufficient pull on the web 69 to aid in the unwinding of said web from the reel 40. As soon as a sufficient amount of web 69 has thus moved from the reel 40 to the reel 60 to thus display new matter in the window 16, the reader will release his grip upon the knob 27, thus allowing the plate 21 to move downwardly as viewed in Figure 5, for example, due to the action of the compression spring 37 acting thereon and thus forcing the brake member 38 again into contact with the band 49 to thus lock the web in the newly selected position. In case a small amount of movement of the web 69 in either direction is desired, the knob 47 may be turned against frictional engagement of the brake member with the band.

Should it be desired to remotely control the present device as by means of a foot pedal, generally indicated at 80, the device may be mounted upon, for example, an easel shown in dotted lines in Figure 1 and generally designated at 81, the easel being supported in customary manner by a standard 82 mounted upon a base 83. In this case, a reciprocable cable 84 extends from the foot pedal 80 through a flexible housing 85 which terminates in a bracket 86 affixed to the side wall 12 by means of screws 87, it being understood that the free end of the cable 84 has a head 88 thereon adapted to move the lever 28 in a clockwise direction as viewed in Figure 1 when the foot pedal 80 is pressed downwardly by the foot of the operator.

While I have herein described a specific form which the invention may take, it will be understood that changes and modifications may be made by those skilled in the art which still fall within the spirit and scope of the appended claims.

What is claimed is:

1. A device of the character described comprising a casing having a window therein, a frame, means for affixing said frame in said casing, a reel transversely mounted in each end of said frame, a web of flexible material wound upon and interconnecting said reels, means for moving said web from one reel to the other beneath said window, said means including a spring in each of said reels, and manually operable means for controlling said movement, said last-mentioned means comprising a band carried by said one reel, a plate slidably mounted on said frame, a brake member formed at one end of said plate, a U-shaped abutment formed integrally with said plate, a rotatable stub shaft extending through said frame and said casing, a finger radially affixed to said shaft and having its free end positioned between the legs of said abutment, a lever radially affixed to said shaft externally of said casing, a knob at the outer end of said shaft, and spring means carried by said frame for normally urging said brake member against said band.

2. A device as defined in claim 1 wherein said spring means comprises an apertured ear formed at the other end of said plate, an apertured ear formed integrally with said frame, a rod extending through said ears, a collar affixed to said rod and bearing against that face of the ear carried by the frame which is presented toward the ear carried by the plate, and a compression spring surrounding said rod and bearing against said collar and against said ear carried by said plate.

3. A device of the character described comprising a substantially rectangular casing having a window therein, a pair of elongated reels rotatably mounted within said casing and at opposite ends of said window, a web of flexible material extending beneath said window and having its opposite ends wound upon said reels, separate spring power means operatively connected to each of said reels so as to impart rotation to their respective reels independent of one another and in directions whereby one of said reels constitutes a web delivery reel and the other a web take-up reel, and a manually operable brake member engageable with said web delivery reel so as to frictionally hold said reel against rotation by its spring power means and the delivery of said web to the web take-up reel.

4. A device of the character described comprising a substantially rectangular casing having a window therein, a pair of elongated reels rotatably mounted within said casing and at opposite ends of said window, a web of flexible material extending beneath said window and having its opposite ends wound upon said reels, separate spring power means operatively connected to each of said reels so as to impart rotation to their respective reels independent of one another and in directions whereby one of said reels constitutes a web delivery reel and the other a web take-up reel, said spring power means for imparting rotation to said web delivery reel being of appreciably greater power than the spring power means for imparting rotation to said web take-up reel, and a manually operable brake member engageable with said web delivery reel so as to frictionally hold said reel against rotation by its spring power means and the delivery of said web to the web take-up reel.

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