

No. 654,778.

Patented July 31, 1900.

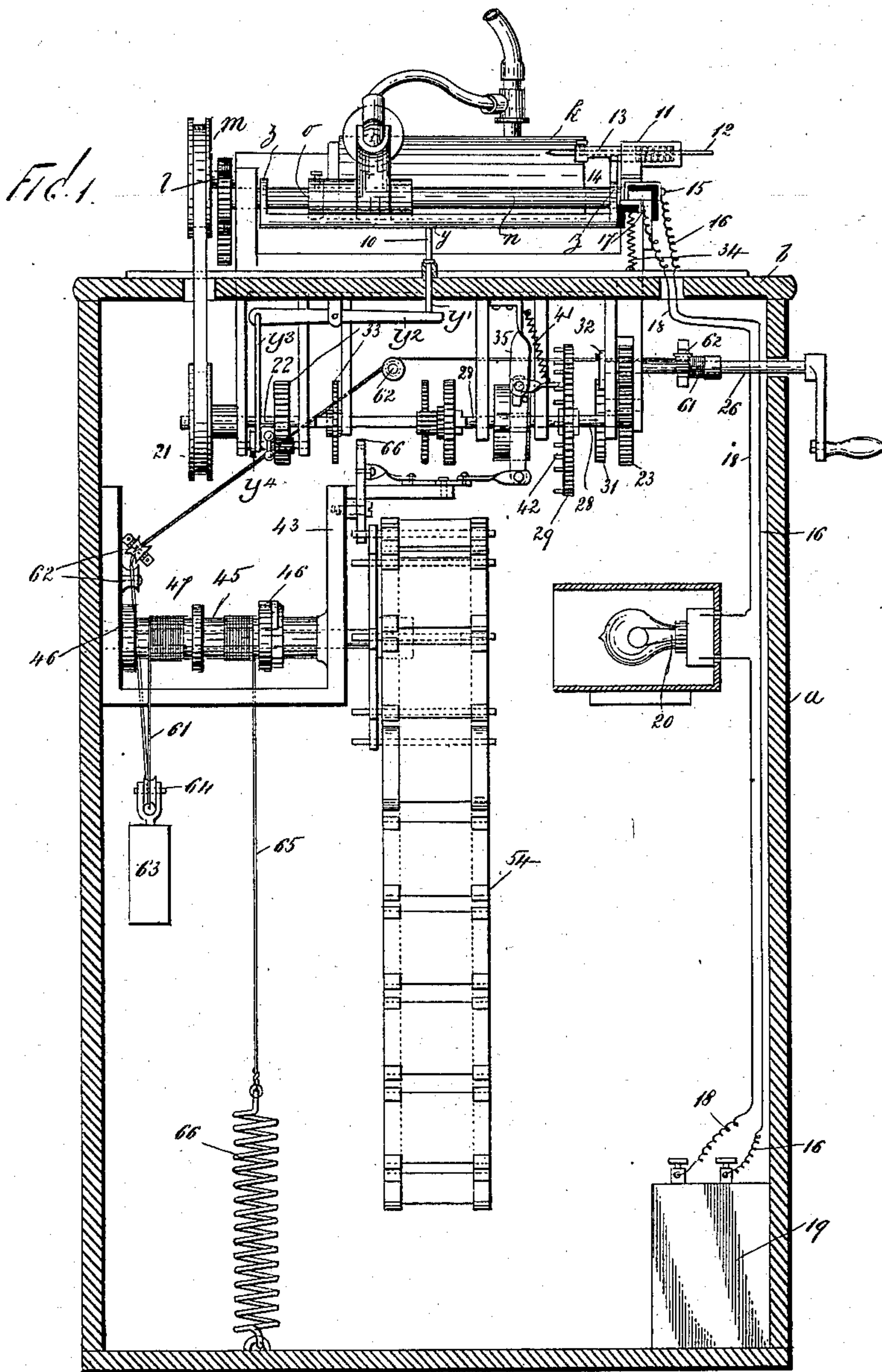
G. W. BOSCHEN.

PANORAMIC ATTACHMENT FOR PHONOGRAPHS.

(Application filed Apr. 25, 1899.)

(No Model.)

5 Sheets—Sheet 1.



WITNESSES

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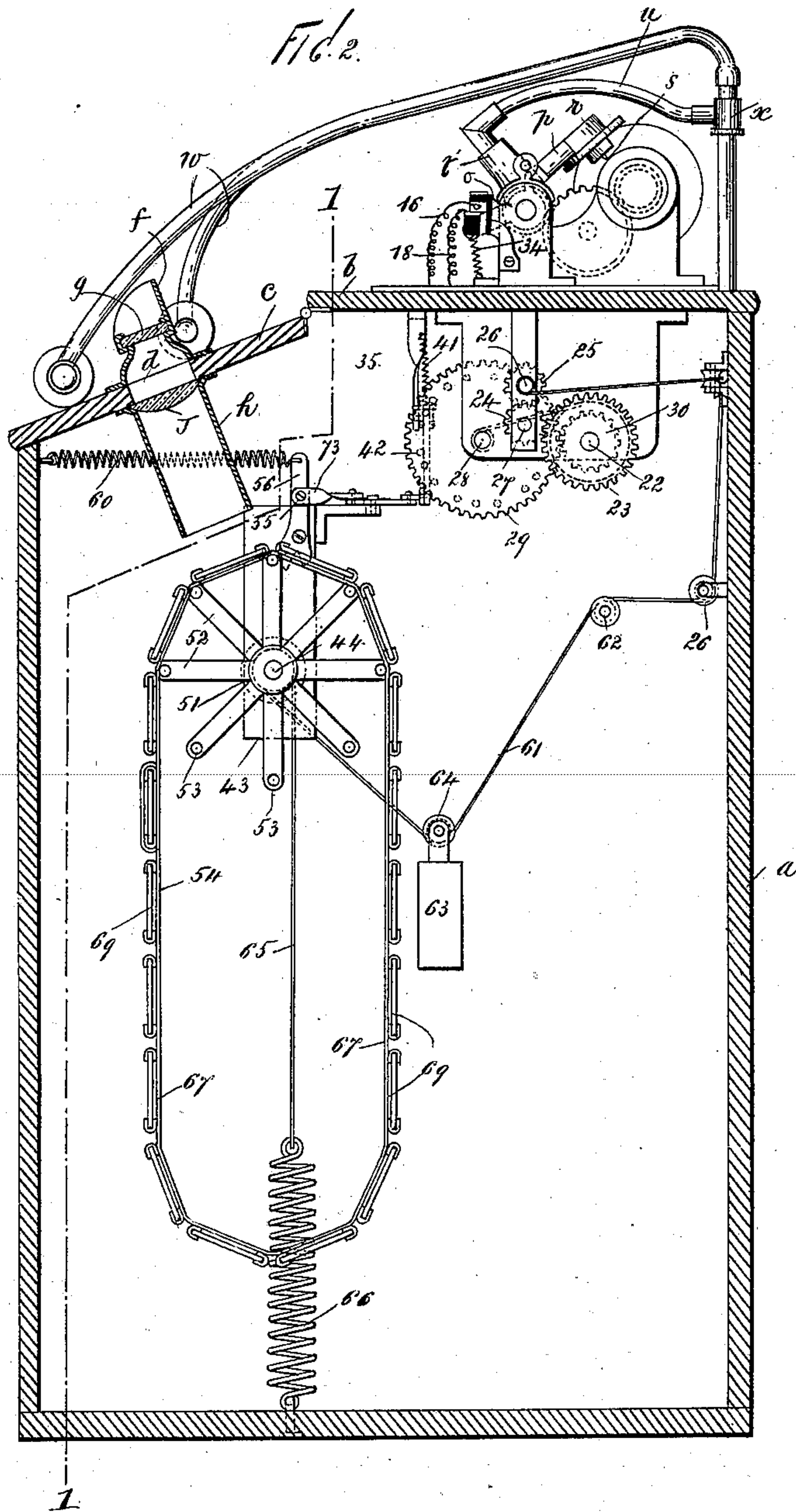
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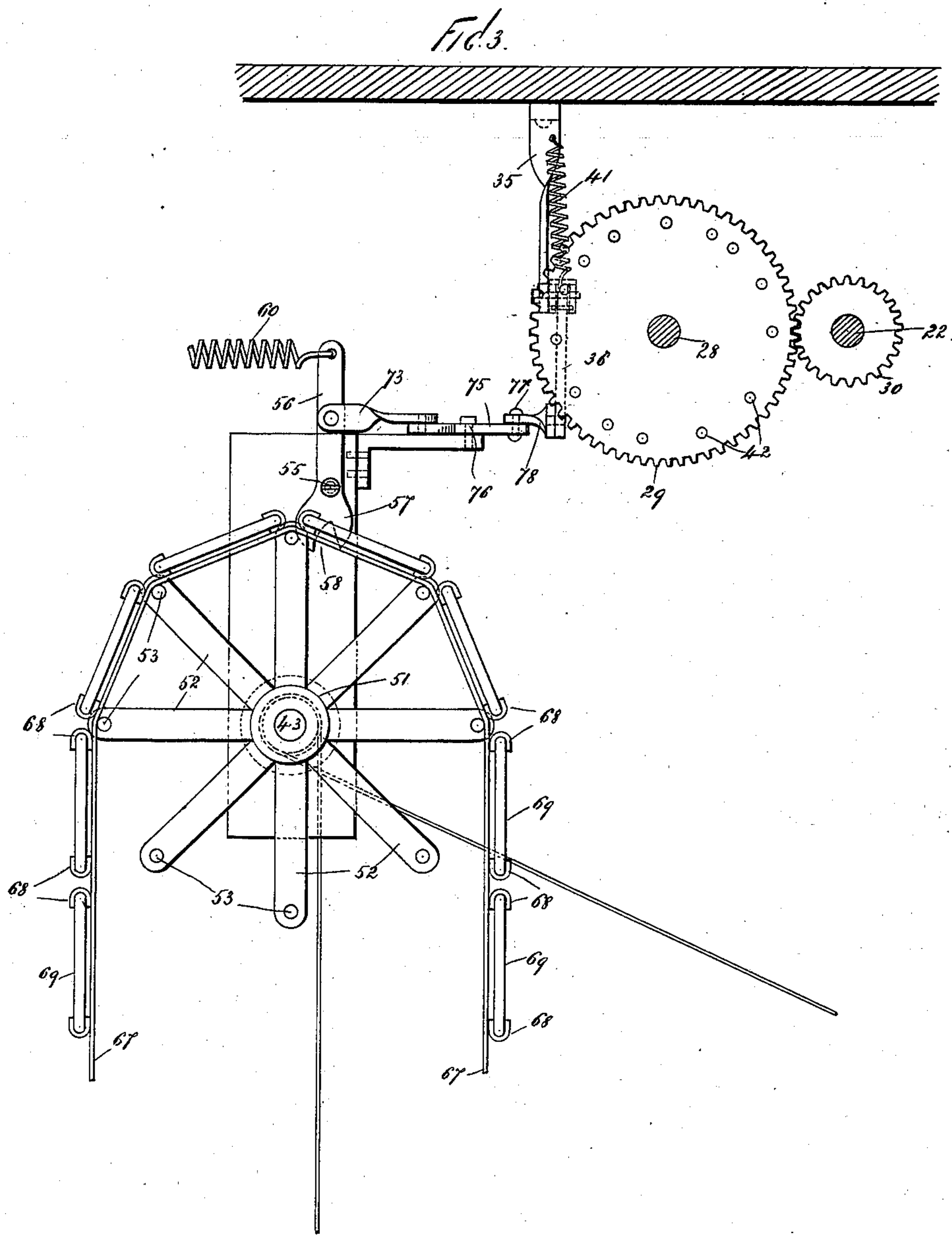
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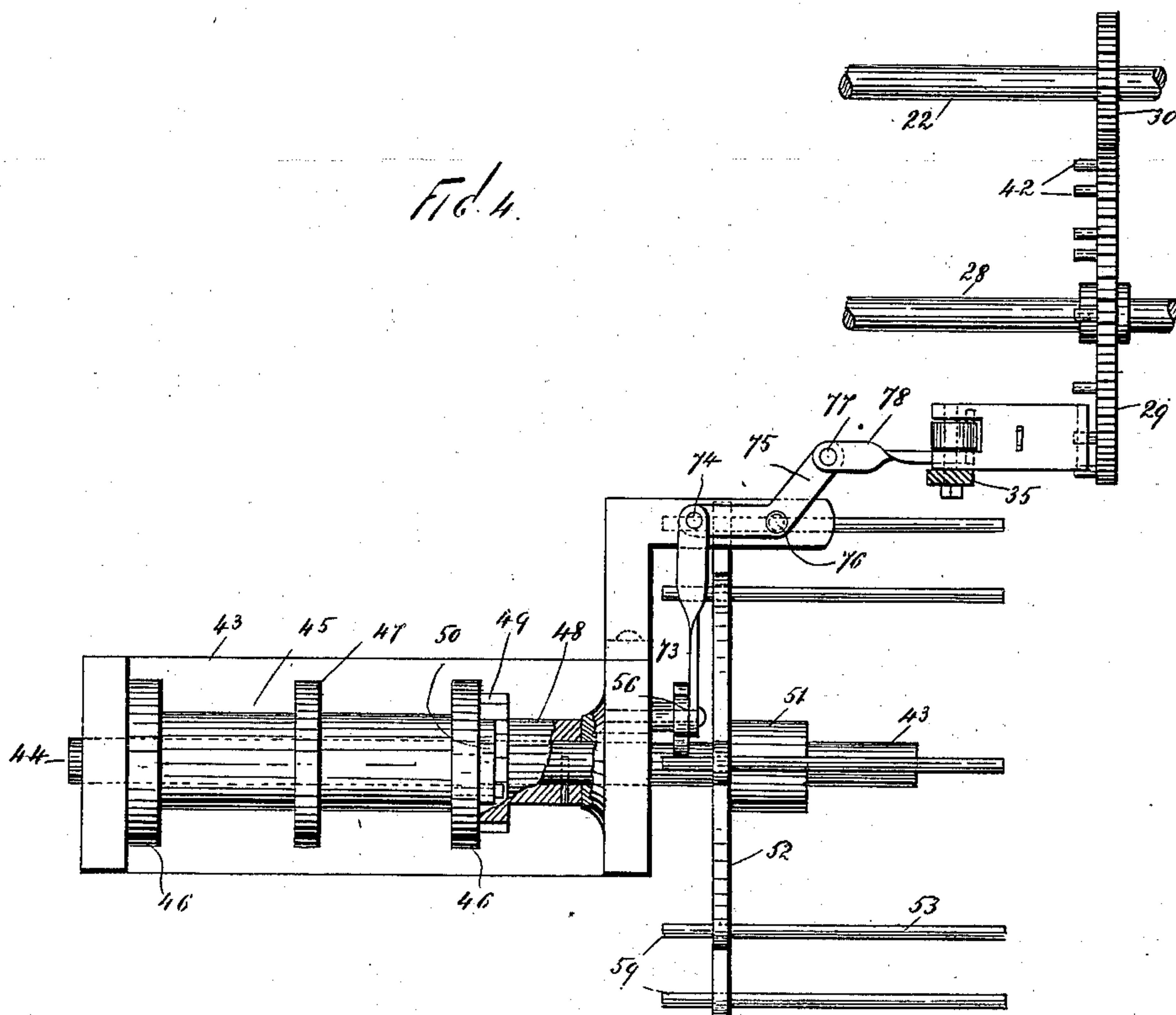


Fig. 5.

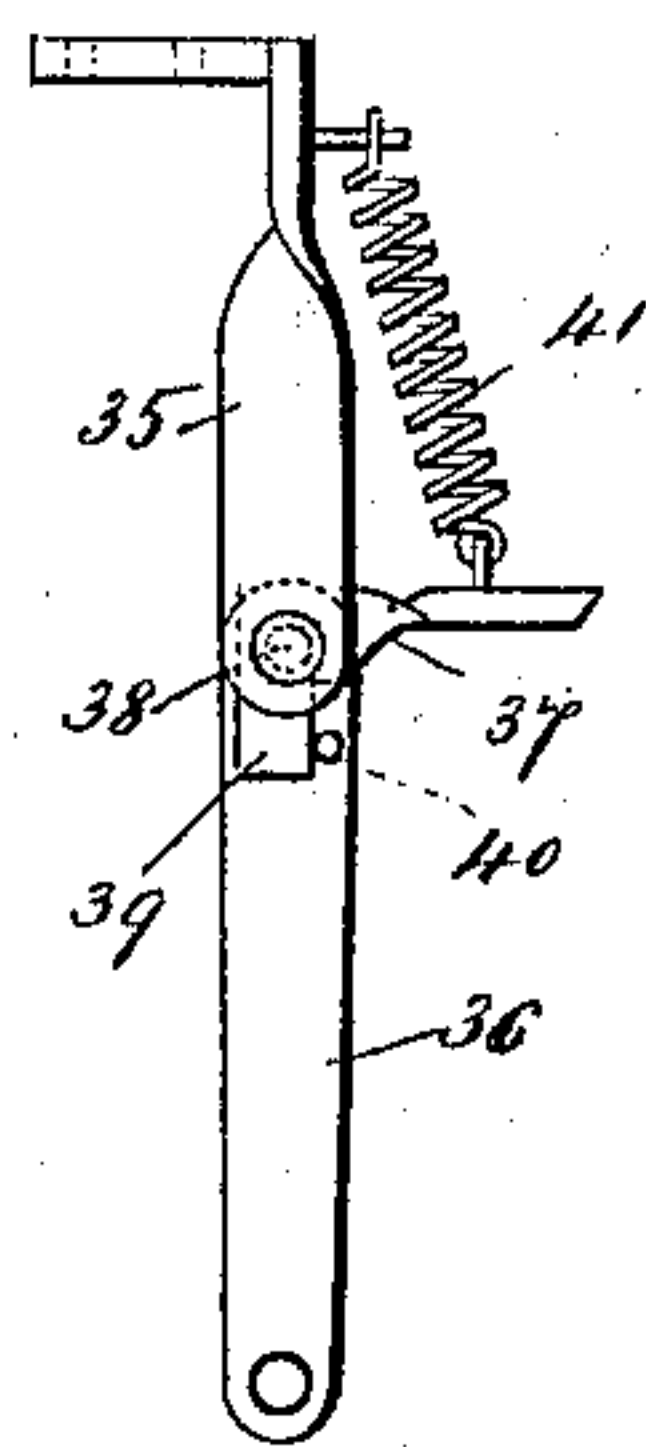
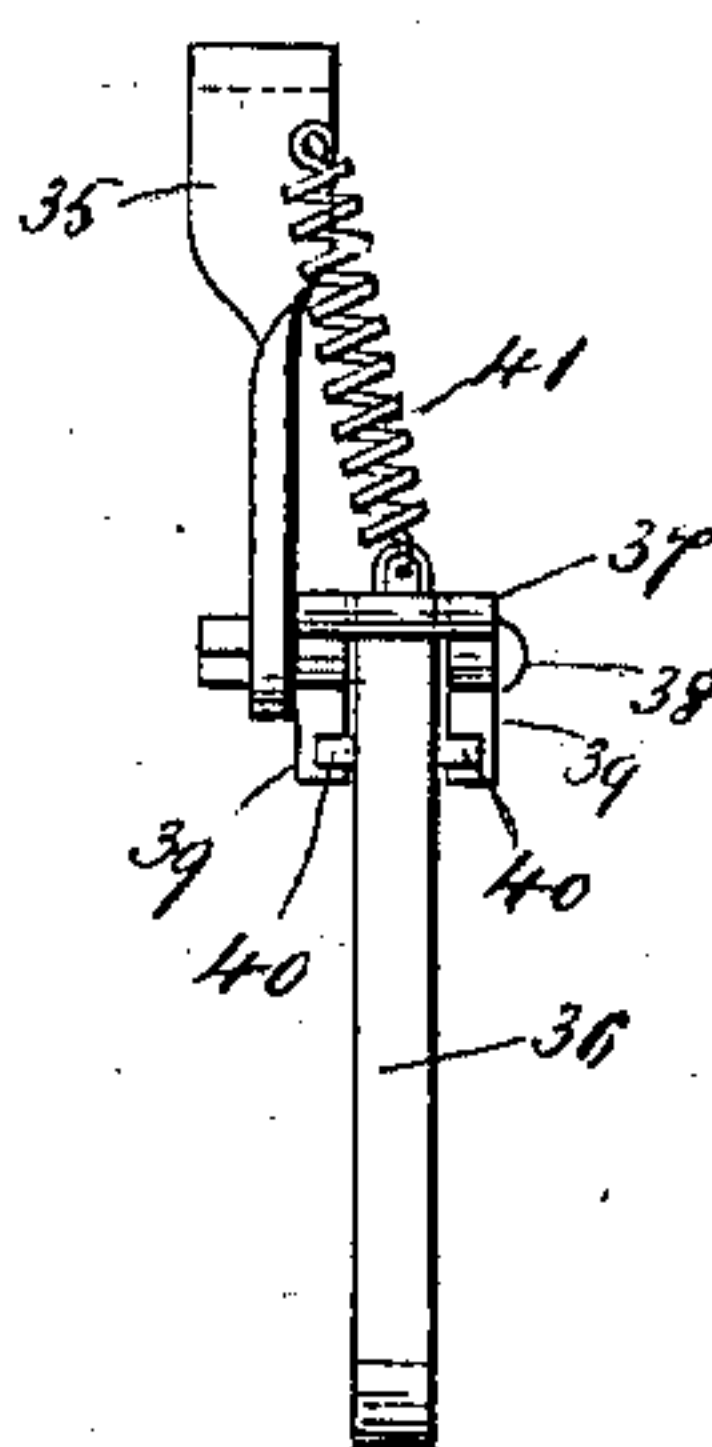


Fig. 6.



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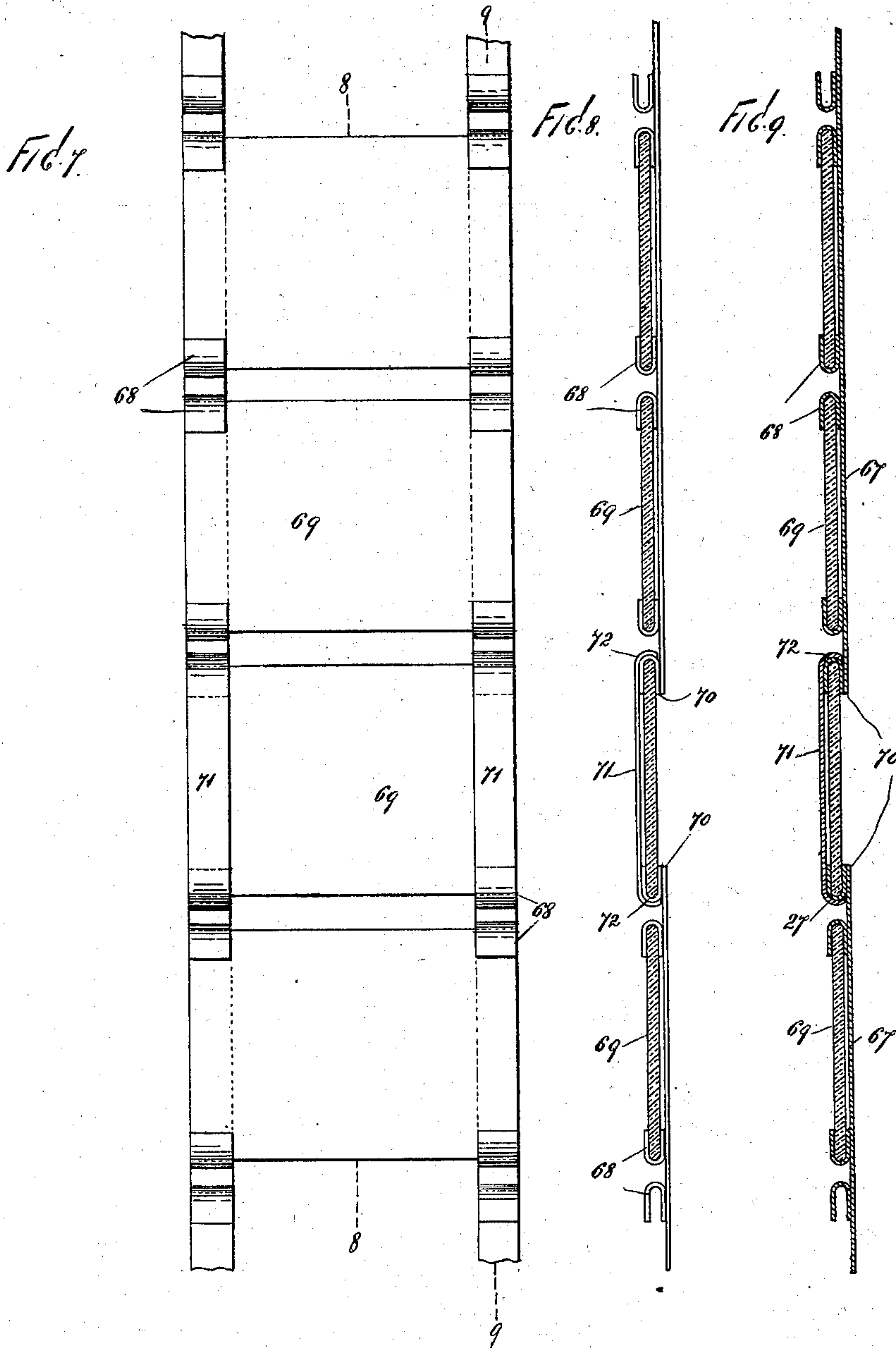
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(No Model.)

5 Sheets—Sheet 5.




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UNITED STATES PATENT OFFICE.

GUSTAVE WOLF BOSCHEN, OF RAHWAY, NEW JERSEY, ASSIGNOR OF ONE-HALF TO PHILIP HILDEBRANDT, OF HOBOKEN, NEW JERSEY.

PANORAMIC ATTACHMENT FOR PHONOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 654,778, dated July 31, 1900.

Application filed April 25, 1899. Serial No. 714,349. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE WOLF BOSCHEN, a citizen of the United States, residing at Rahway, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Panoramic Attachments for Phonographs, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to phonographs; and the object thereof is to provide an improved panoramic attachment for a phonograph by means of which a song, speech, or story may be illustrated by a series of pictures which are successively exhibited during the delivery of the song, speech, or story by the phonograph, a further object being to provide an attachment of the class described in which the arrangement of the pictures and the operative mechanism are such as to illustrate topics, parts, or subjects of the song, speech, or story at the exact moment of the reference thereto by the phonograph.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a front view of the apparatus and casing therefor which I employ, the casing being shown in section, taken on the line 1 1 of Fig. 2; Fig. 2, a side view of said apparatus, the casing being in section; Fig. 3, a view similar to Fig. 2 with the casing removed and showing parts of the apparatus on an enlarged scale; Fig. 4, a plan view of a part of the apparatus on an enlarged scale; Figs. 5 and 6, front and side views, respectively, of details of the apparatus; Fig. 7, a plan view of an endless belt which carries the picture-slides; and Figs. 8 and 9, sections on the lines 8 8 and 9 9, respectively, of Fig. 7.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same letters and numerals of reference, and in the practice of my invention I provide a casing *a*, provided with a top composed of two parts *b* and *c*. The part *b* of the top is horizontal, and the part *c* is hinged thereto and preferably downwardly inclined, as shown in Fig. 2, and the

said part *c* of the top is provided centrally with a sight-opening *d*, which is closed on the upper side of said top portion *c* by a sight-tube *f*, in which is placed a glass *g*, and the sight-opening *d* is closed on the lower side by an inwardly-directed tube *h*, in which is placed a plano-convex lens *J*.

Mounted on the horizontal portion *b* of the casing *a* is a suitable frame or support, in which is mounted the blank cylinder *k* of the phonograph. The said blank cylinder is provided with a shaft *l*, on one end of which is a pulley *m*. A longitudinal slotted tube *n* is mounted in front of the record-cylinder *k* and provided with a carriage comprising a sleeve *o*, having a backwardly-directed arm *p*, which carries the reproducer *r*, which is provided with the usual stylus *s*, which operates in connection with the record-cylinder *k* in the usual manner, and the sleeve *o* is also provided with a forwardly and upwardly directed tubular extension *t*, with which the usual delivery-tube is connected, and the flexible ear-tubes *w* are placed in connection with the tube *u* at *x*. Mounted in front of the guide-shaft *n* is a longitudinal bar *y*, provided at each end with arms *z*, through which the shaft *n* passes, and the bar *y* is free to turn on the shaft *n* and is in operative connection at 10 with the vertical lever *y'*, mounted in the top of the phonograph and connected with a horizontal lever *y''*, pivoted beneath said phonograph top, which connects by means of a pitman *y'''* with an eccentric *y''''*, mounted upon a portion of the phonograph-gearing. At the end of the blank cylinder *k*, opposite the pulley *m*, is a longitudinal tubular support 11, in which is mounted a spring-operated pin 12, which passes through a sleeve 13, which is secured to said pin, and the arm *z* of the bar *y*, at the end thereof adjacent to the tubular support 11, is provided with a projection 14, which is adapted to make contact with the sleeve 13 and to be released therefrom by the carriage on the shaft *n* in the operation of the device, as hereinafter described.

The end of the support or frame in which the blank cylinder *k* is mounted is provided adjacent to the tubular support or bearing 11 with a stationary binding-screw 15, with which

is connected a wire 16, and the corresponding end of the bar *y* is provided with a binding-screw 17, with which is connected a wire 18, and the binding-screws 15 and 17 are insulated from their supports. A battery 19 is placed in the bottom of the casing *a*, and the wires 16 and 18 are in connection therewith and with an ordinary incandescent electric light 20.

The pulley *m* on the end of the shaft *l* of the blank cylinder *k* is geared in connection with a corresponding pulley 21 on a shaft 22, supported beneath the portion *b* of the top of the casing by suitable hangers in the usual manner. The said shaft 22 is provided at the end thereof opposite the pulley 21 with a gear-wheel 23, and this gear-wheel 23 operates in connection with a pinion 24, which operates in connection with a pinion 25 on the crank-shaft 26. The pinion 24 is mounted on a short shaft 27, supported in front of the gear-wheel 23, and in front of the shaft 22 is a supplemental shaft 28, on which is mounted a large gear-wheel 29, which operates in connection with a small gear-wheel 30, mounted on the shaft 22. I have also shown a ratchet-wheel 31 mounted on the shaft 22, and a pawl 32, which operates in connection therewith, and said shaft 22 is also provided with other gears, pinions, &c., as shown at 33, which are usually employed in connection with and form part of the operative mechanism of the phonograph, but which form no part of this invention.

All the operative parts of the phonograph hereinbefore described, with the exception of the electric wires or circuits 16 and 18 and the binding-screws 15 and 17, the electric light 20, the battery 19, the supplemental shaft 28, the gear-wheel 29, and the parts by which said gear-wheel is operated, are also all of the usual construction—such, for example, as is shown in Letters Patent No. 582,754, issued May 18, 1897, to Thomas H. MacDonald—and form no part of this invention.

The bar *y* is also provided at one end with a spring 34 for holding it in its normal position. Suspended beneath the part *b* of the top of the casing *a*, in proximity to the wheel 29 and at the left thereof, as shown in Fig. 1, is a hanger 35, which is shown detached in Figs. 5 and 6 and to the lower end of which is pivoted a lever 36. A pawl 37 is also pivotally mounted on a pivot-pin 38, by which the lever 36 is connected with the hanger 35, and said pawl is provided with two downwardly-directed side lugs or projections 39, which operate in connection with pins 40, secured to or formed on the lever 36, and a spring 41 connects the pawl 37 with the upper end of the hanger 35. The gear-wheel 29 is provided on the side thereof adjacent to the hanger 35 with a plurality of pins 42, which are arranged in a circle according to a system hereinafter described, and these pins operate in connection with the pawl 37.

Arranged transversely of the casing *a*, in

front of and below the shaft 28, is a yoke-shaped frame or support 43, in which is mounted a shaft 44, and mounted loosely on said shaft, within said frame or support, is a drum 45, provided at each end with a flange 46 and at the center thereof with a corresponding annular flange 47, and keyed to said shaft, within said frame or support and adjacent to the inner end of said drum and support, is a hub 48, provided with a ratchet-wheel 49, and the drum 45 is provided adjacent to said ratchet-wheel with a pawl 50, which operates in connection with said ratchet-wheel. The shaft 44 projects inwardly through the end of the yoke-shaped frame or support 43, and mounted thereon and secured thereto is a hub 51, provided with radial arms 52, which carry pins 53, arranged in a circle and constituting a drum, on which is placed an endless belt 54. Pivotaly connected with the inner end of the yoke-shaped frame or support 43 at 55 is a tripper 56, which is provided at its lower end with an elliptical head 57, in the bottom of which is formed a triangular notch or recess 58, one of the side jaws of which is slightly longer than the other, and in the normal position of the tripper 56 the convex side of the longer jaw of the head 57 rests against the projected end of one of the pins 53, as shown in Fig. 3. The pins 53 are each projected through the radial arms 52, as shown at 59 in Fig. 4, in order that the head 57 of the tripper 56 may operate thereon, and the upper end of the tripper 56 is connected with the front of the casing *a* by a spiral spring 60. The drum 45 is free to turn in one direction on the shaft 44, but cannot turn in the opposite direction without turning said shaft and the hub 48, and the drum on which the endless belt 54 is mounted and consisting of the hub 51, the radial arms 52, and the pins 53 also turn with said shaft. A cord 61 is wound on the drum 45 between the central flange 47 and the left-hand end flange or rim 46, and said cord 61 is passed over and around suitably-supported pulley-wheels 62 and connected with the crank-shaft 26, and mounted on said cord between the drum 45 and the adjacent pulley-wheel 62 is a sliding or movable weight 63, which is provided with a pulley 64, around which said cord is passed. Another cord 65 is connected with and wound on the drum 45 between the central flange or rim 47 and the right-hand end flange or rim 46, and this cord is connected with a strong contractile spring 66, secured to the bottom of the casing *a*. The cords 61 and 65 are wound on the drum 45 in opposite directions, and when the crank-shaft 26 is turned to the right in order to wind up the phonograph the cord 61 is unwound from the drum 45 and the cord 65 is wound thereon against the operation of the spring 66, and when the device is wound up the tendency of the spring 66 is to continuously unwind the drum 45.

The endless belt 54, mounted on the pins

53, connected with the radial arms 52 of the hub 51, is composed of separate flexible strips or bands 67, with the outer sides of which are connected U-shaped holders 68, which are adapted to receive and hold transparent slides 69, on which the pictures are placed, and the strips or bands 67 are divided at 70, as shown in Figs. 8 and 9, and the ends thereof connected by short flexible metal strips 71, provided with hook-shaped portions 72 at their opposite ends, which engage with the U-shaped holders 68, as clearly shown in Figs. 8 and 9, and the object of this construction is to provide means to shorten the endless belt whenever necessary or desirable.

Connected with the tripper 56, between the upper end thereof and its pivotal support at 55, is a link 73, which is pivotally connected at 74 with a crank-lever 75, which is pivotally supported at 76 and also pivotally connected at 77 with a link 78, which is pivotally connected with the lower end of the link 36, as clearly shown in Figs. 1, 2, 3, and 4.

The pictures are placed on the slides 69 in the usual manner, and the arrangement of the pins 42 on the gear-wheel 29 will depend entirely upon the topic, part, or subject of the song, speech, or story which it is desired to illustrate as the song, speech, or story is being delivered by the phonograph.

In practice the device is wound up in the usual manner, and the endless belt 54, which carries the picture-slides 69, is placed on the pins 53 to correspond with the arrangement of the pins 42 on the wheel 29, and as the song, speech, or story is delivered by the phonograph the endless belt 54 is turned by the shaft 45 so as to present one of the pictures at the desired time. In this operation as the wheel 29 revolves one of the pins 42 strikes the end of the pawl 37 and forces it upwardly. This operation forces the lower end of the link 36 to the right and correspondingly operates the crank-lever 75, which results in pulling the upper end of the tripper 56 to the right and causes the longer jaw of the tripper-head 57 to move over the corresponding pin 53, against which it normally rests, as shown in Fig. 3. In this operation the drum on which the endless belt 54 is mounted moves slightly to the left of the position shown in Fig. 3 and then moves through one space to the right, thus bringing a picture squarely under the lens-tube *h*, and in this operation the pin 53 strikes the shorter jaw of the tripper-head 57 and slides over the same, and thus the movement of the endless belt is slightly retarded and prevented from being too quick or sudden, it being understood that the spring 66 constantly tends to turn the drum on which the endless belt is mounted to the right when viewed as in Fig. 3. It will be understood that as the delivery of the song, speech, or story by the phonograph proceeds the wheel 29 is constantly turned and at the proper time the pins 42 are brought into connection with the pawl

37 and the endless belt 54 is correspondingly turned. As the machine is wound up, as hereinbefore described, and as is customary in this class of devices, the bar *y* is correspondingly raised until the projection 14 of the arm *z* thereof comes in connection with the sleeve 13, and in this position the said bar *y* is held until the sleeve *o* or the parts connected therewith strike the inner end of the pin 12. This forces the said pin outwardly and disconnects the projection 14 from the sleeve 13, and the bar *y* drops downwardly into its normal position. All these parts are of the usual construction and operation and are not therefore more clearly shown in detail. When the bar *y* is raised and the phonograph is in operation, the supports of the wires 16 and 18 at 15 and 17 are in electrical connection, and the circuit is established through the electric light 20, and the endless belt 54 is properly illuminated; but as soon as the operation of the phonograph is completed and the bar *y* drops downwardly the electrical connection of the wires 16 and 18 at 15 and 17 is broken, as will be readily understood, and the light 20 will not be in operation.

As the result of the construction herein described it will be seen that the endless belt 54 is intermittently revolved, and the time between each movement will depend upon the arrangement of the pins 42 on the wheel 29, and this arrangement of the pins 42 depends upon the parts or topics of the song, speech, or story which it is desired to illustrate, and said arrangement is such that the observer will have time to examine the pictures through the sight-opening *d* in the hinged portion *c* of the top of the casing *a*. It will also be observed that for each song, speech, or story a new arrangement of the pins 42 must be provided, together with new pictures for the slide 69 of the endless belt.

The entire apparatus is simple in construction and operation and perfectly adapted to accomplish the result for which it is intended, and it will be apparent that changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A device of the class described, comprising the combination, with a phonograph, of a plurality or series of pictures, mechanism for displaying said pictures, and means connected with the said phonograph and with the picture-displaying mechanism whereby the operation of the phonograph actuates the displaying mechanism to display the pictures at irregular predetermined intervals, corresponding to the vocal matter of the phonograph which said pictures are to illustrate, substantially as shown and described.

2. A device of the class described, comprising a phonograph in which is embodied a gear-

wheel or part rotating in unison with the sound-producing cylinder, a plurality or series of pictures mounted relatively to said phonograph, mechanism for displaying the said pictures, and means upon the gear-wheel or moving part of the phonograph whereby the displaying mechanism may be actuated at irregular predetermined intervals, substantially as shown and described.

3. A device of the class described, comprising a phonograph in which is embodied a part rotating in unison with the sound-producing cylinder, a picture - displaying mechanism mounted relatively to said phonograph, and provided with means for causing the same to turn, means for holding said displaying mechanism in a stationary position, and means upon said gear-wheel or moving part of the phonograph for tripping or throwing off the said holding means, whereby the pictures may be displayed at predetermined intervals, substantially as shown and described.

4. In a device of the class described, a casing, a phonograph mounted thereon, a gear-wheel in operative connection with the operative parts of the phonograph and provided with a plurality of pins arranged at irregular intervals in a predetermined order on one side thereof, an endless belt revolubly mounted in said casing and provided with a plurality of picture - slides, devices exerting a constant tendency to turn said belt in one direction, and devices in operative connection with said gear-wheel for giving said belt a series of movements at irregular predetermined intervals, substantially as shown and described.

5. In a device of the class described, a casing, a phonograph mounted thereon, a shaft mounted in said casing, a drum mounted on said shaft, two cords connected with and wound on said drum in opposite directions, one of which is connected with the winding-shaft of the phonograph, a contractile spring connected with the other cord and exerting a constant tendency to revolve said shaft in one direction, an endless-belt support connected with said shaft, an endless belt mounted thereon and provided with picture-slides, a gear-wheel in connection with the operative mechanism of the phonograph, and devices in connection with said gear-wheel for permitting said endless-belt support to move intermittently, substantially as shown and described.

6. In a device of the class described, a casing, a phonograph mounted thereon, an endless belt supported within said casing and provided with picture-slides, means for turning the support of said belt constantly in one direction, a gear-wheel in connection with the operative mechanism of the phonograph, and devices in operative connection with said gear-wheel for permitting said endless belt to move intermittently, consisting of pins arranged in a circle on said gear-wheel, a pawl operated by said pins, a link operated by said pawl, a crank operated by said link, and a

tripper operated by said crank, and operating in connection with the support of said endless belt, substantially as shown and described.

7. In a device of the class described, a casing, a phonograph mounted thereon, a gear-wheel in connection with the operative mechanism of the phonograph, an endless belt mounted on a support within said casing, devices exerting a constant tendency to turn said support in one direction, other devices in connection with said gear-wheel for permitting the support of the endless belt to move intermittently, and an electric light within said casing, said light being in a circuit which is opened and closed by the operative mechanism of the phonograph, substantially as shown and described.

8. In a device of the class described, a casing, a phonograph mounted thereon, an endless belt mounted on a support within said casing and provided with picture-slides, a shaft on which the support of the endless belt is mounted, a drum mounted on said shaft and adapted to turn freely in one direction and to turn said shaft in the opposite direction, a cord wound on said drum, a spiral spring connected with said cord and operating to turn said drum in the direction to turn said shaft, another cord wound on said drum, and adapted to turn the same in the opposite direction, said last-named cord being connected with the crank-shaft of the phonograph, a gear-wheel in connection with the operative mechanism of the phonograph, and devices connected with said gear-wheel for permitting the support of the endless belt to move intermittently, substantially as shown and described.

9. In a device of the class described, a casing, a phonograph mounted thereon, the operative mechanism of which is partly within said casing, an endless-belt support mounted in said casing, an endless belt mounted thereon and provided with picture-slides, devices exerting a constant tendency to turn the support of said belt in one direction, other devices in connection with the operative mechanism of the phonograph for permitting said support to move intermittently, and an electric light mounted in said casing and in a circuit which is closed and opened by the operative mechanism of the phonograph, substantially as shown and described.

10. In a device of the class described, a casing provided with a phonograph which is mounted thereon, and the operative mechanism of which is partly within said casing, said casing being also provided with a hinged top portion having a sight-opening, tubes inclosing said opening and provided with a sight-glass and a lens, an endless-belt support mounted within said casing, an endless belt mounted thereon and provided with picture-slides, devices exerting a constant tendency to turn the support of said belt in one direc-

tion, and other devices in connection with the operative mechanism of the phonograph for permitting said support to move intermittently, said casing being also provided with
5 an electric light in a circuit which is adapted to be opened and closed by the operative mechanism of the phonograph, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 24th day of April, 1899.

GUSTAVE WOLF BOSCHEN.

Witnesses:

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F. A. STEWART.