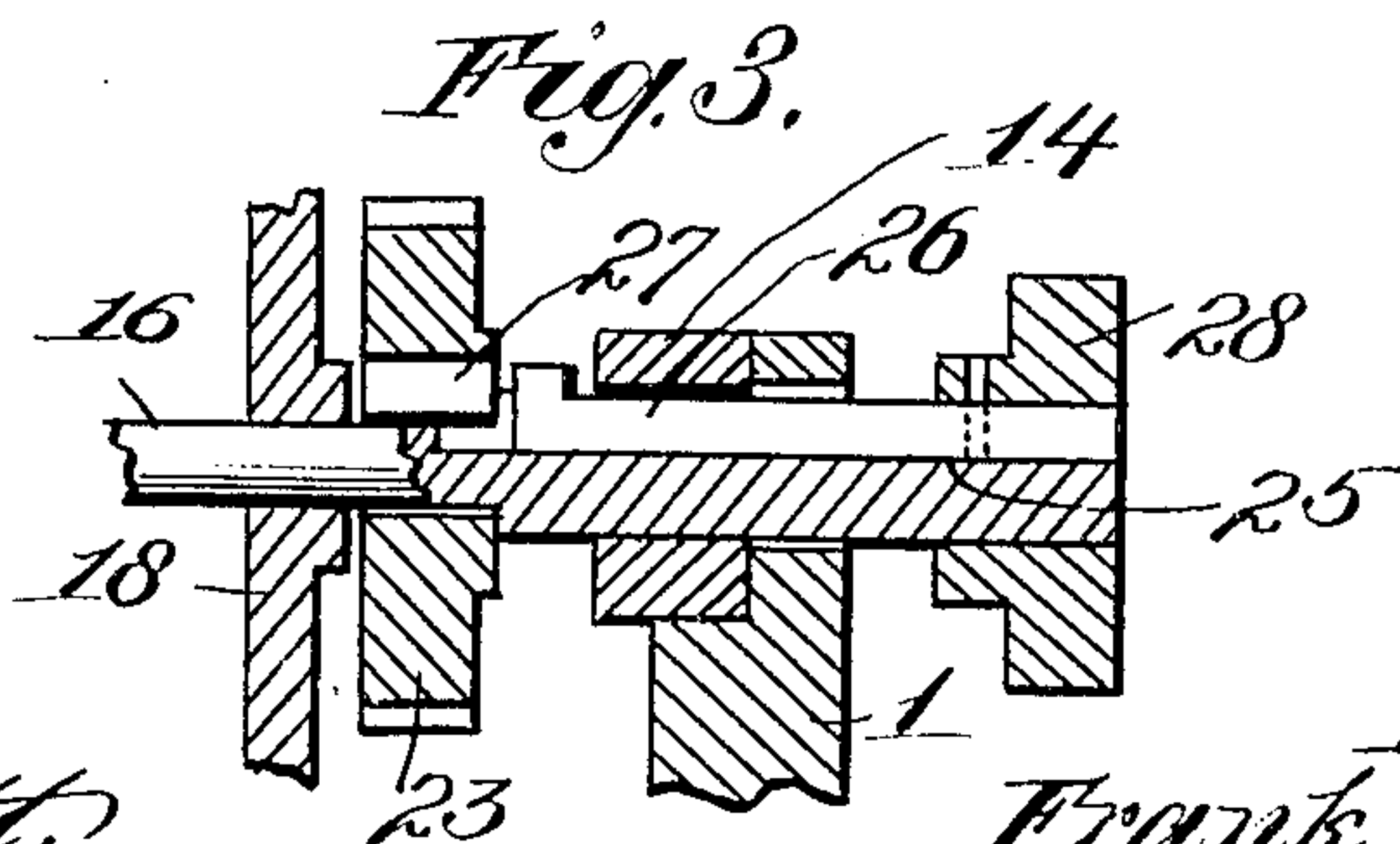
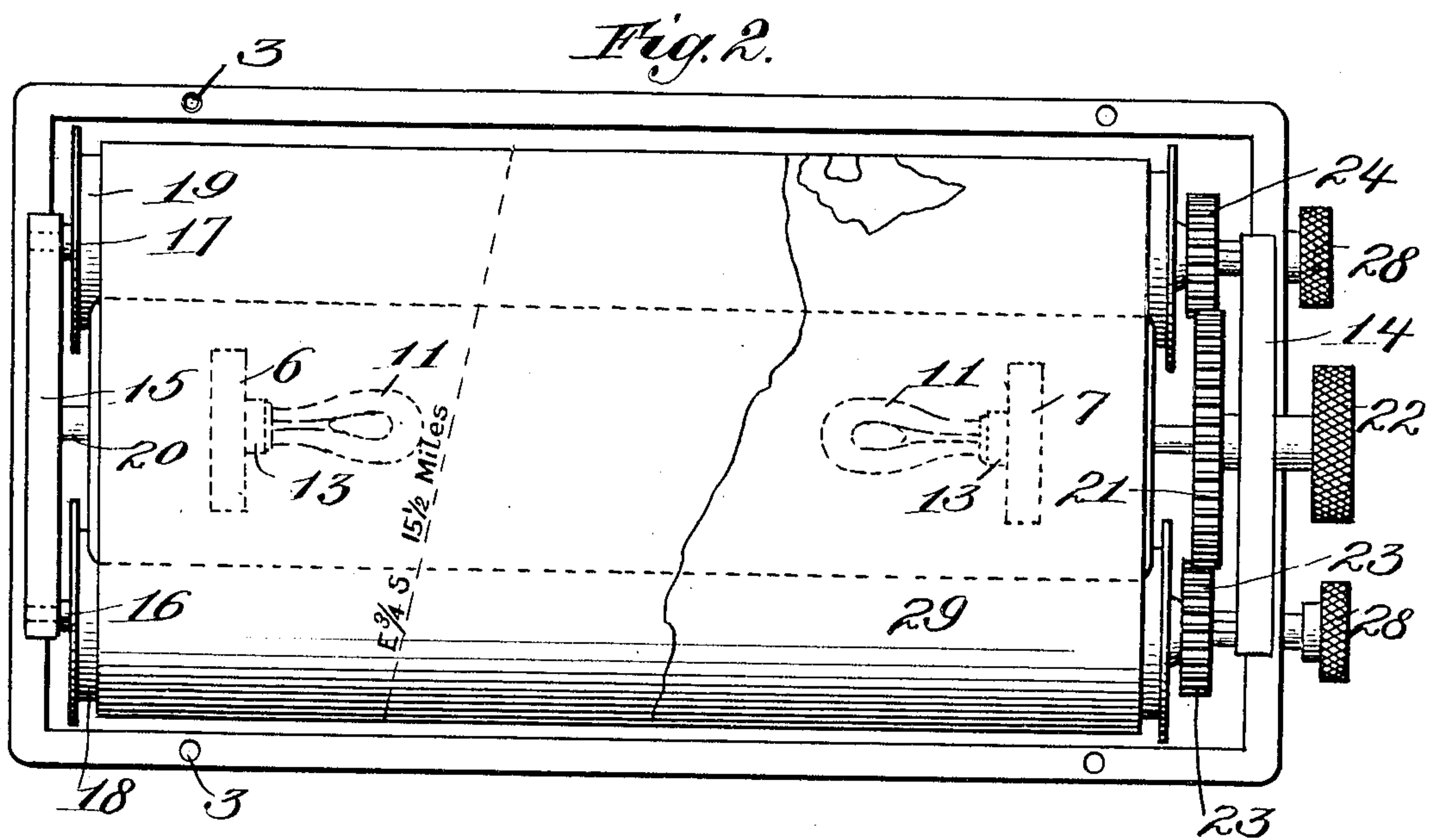
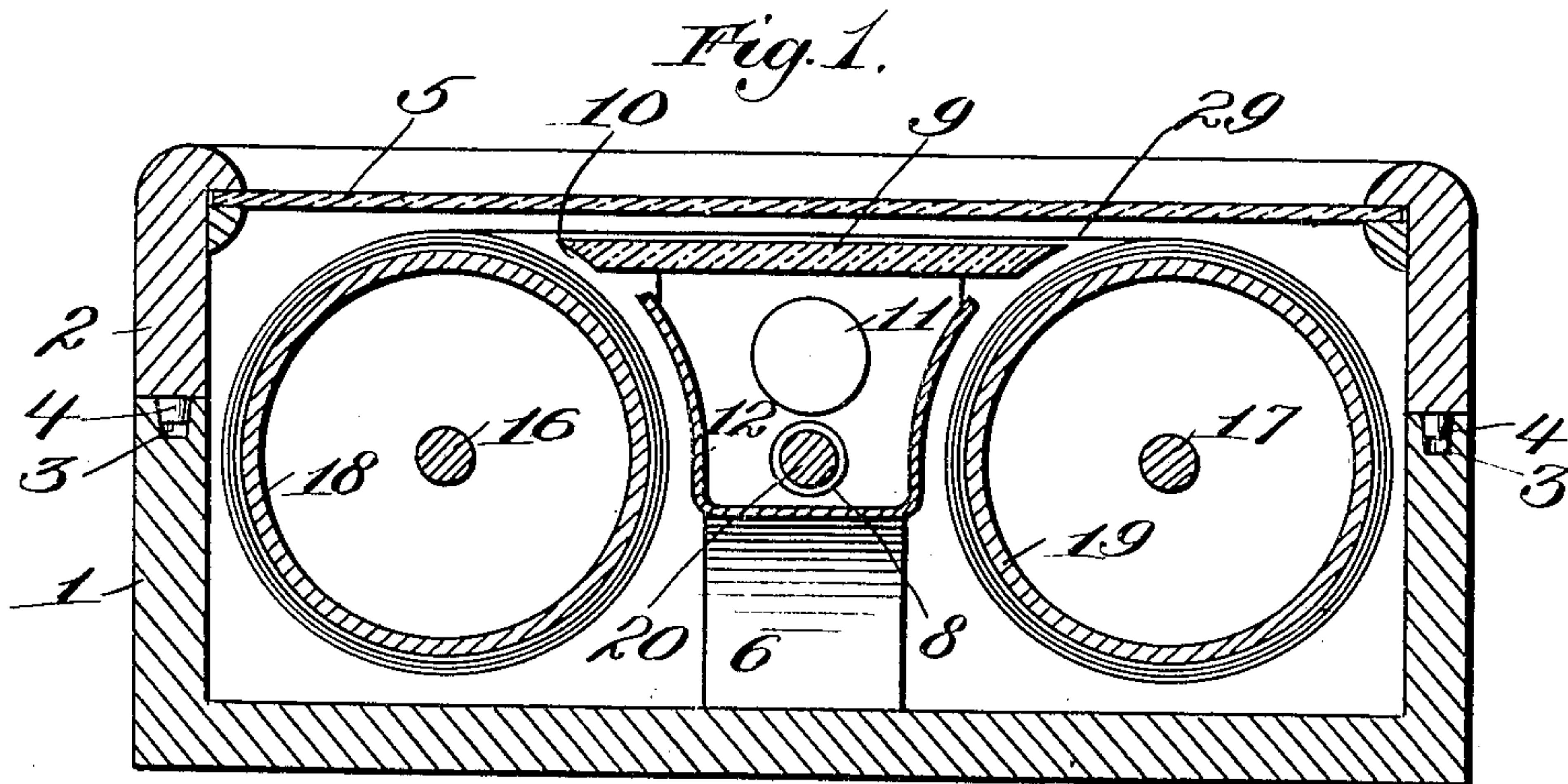


No. 876,141.

PATENTED JAN. 7, 1908.

F. W. BOYER.
CHART HOLDER.
APPLICATION FILED JUNE 1, 1907.



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UNITED STATES PATENT OFFICE.

FRANK WOODRUFF BOYER, OF NEW YORK, N. Y.

CHART-HOLDER.

No. 876,141.

Specification of Letters Patent.

Patented Jan. 7, 1908.

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To all whom it may concern:

Be it known that I, FRANK WOODRUFF BOYER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Chart-Holders, of which the following is a specification.

This invention relates to certain new and useful improvements in chart holders, and is particularly adapted for use by navigators.

The object of the invention is to provide navigators with an apparatus for the ready and convenient display of their charts, and further in providing a chart-holder whereby a chart while being held may be readily shifted so as to display any desired portion of it.

The invention further aims to provide a chart holder with means whereby when the chart is displayed, it can be illuminated and protected from the elements, so that the chart may be used if desired on an open deck of a vessel in the night and in stormy weather.

The invention further aims to provide a chart-holder with a single rotatable shifting means which when operated in either direction, will cause the shifting of the chart.

The invention further aims to construct a chart-holder which shall be simple in its construction, strong, durable, efficient in its use and comparatively inexpensive to set up.

With the foregoing and other objects in view, the invention consists of the novel combination and arrangement of parts herein- after more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings forming a part of this specification, wherein like reference characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a transverse section of the chart holder; Fig. 2 is a plan, and Fig. 3 is a sectional detail.

Referring to the drawings by reference characters, the chart-holder consists of a casing formed in two sections the lower of which is designated by the reference character 1 and the upper of which by the reference character 2. The lower section is of considerable more depth than the upper section, and may

be termed a receptacle, and the upper section may be termed the lid or cover therefor. The upper edges of the front and rear walls of the lower section are provided with a plurality of recesses 3, which are adapted to receive a plurality of pins 4 depending from the lower edges of the front and rear walls of the upper section 2.

The pins 4 are adapted to connect the sections 1 and 2 together. The top of the upper section 2 is formed of transparent material, as indicated by the reference character 5, and in this connection, a sheet of glass is preferably employed. This will permit of the navigator inspecting the chart, which will be hereinafter referred to. Arranged within and secured to the bottom of the lower section 1 is a pair of upwardly-extending supports 6, 7, which are arranged a suitable distance apart, and each provided with an opening 8, the function of which will be hereinafter referred to. Mounted upon and secured to the top of the supports is a rectangular plate 9 of transparent material over which passes the chart to be hereinafter referred to. The plate 9 is adapted to prevent the sagging of the chart, and has its lower face beveled as at 10.

Arranged within the lower section 1 and between the supports, 6, 7 is an illuminating device 11 preferably a pair of electric blow lamps suitably surrounded by a shield 12 to prevent the heat from the lamps injuring the chart when wound upon the rollers, to be hereinafter referred to. The supports 6 and 7 are each provided with a suitable socket 13 for the lamp which is adapted to be connected to a source of electrical supply.

Secured to the inner face of one side wall of the lower section 1 is a bearing plate 14 and attached to the inner face of the other side wall of the lower section 1 is a bearing plate 15. The latter is adapted to support one end of the axes 16, 17 of the rollers 18, 19, respectively, and is also adapted to support one end of the operating shaft 20. The other end of the axes 16, 17 and shaft 20 extends through the plate 14 and the side wall to which said plate 14 is connected. The shaft 20 extends through the openings 8 in the supports 6, 7, and carries an enlarged gear-wheel 21, the latter being fixed on the shaft and on the outer end of the shaft 20 is a milled head 22 to permit of readily operat-

ing the shaft 20. Loosely mounted upon the axes 16, 17 are the pinions 23, 24, respectively, and that end of each of the axes 16, 17 upon which the pinions 23, 24 are mounted, is provided with a groove 25 in which operates a feather or spline 26. The inner end of the spline 26 is adapted to engage in a groove 27 formed in the pinion 23 or 24 as the case may be. The outer end of the feather 26 is connected to a milled button 28 mounted upon the outer end of the axes. By such an arrangement, the axis 16 or 17 can be operated independently of the operating shaft 20 and its gear-wheel 21, so that any slack in the chart can be taken up and when it is desired to shift the chart through the medium of the shaft 20 and gear 21 all that is necessary is to move the button 28 inwardly, which imparts a like movement to the spline or feather 26 and causes the same to engage in the groove 27 and lock the pinion to its respective axis, so that when the shaft 20 is operated, motion will then be imparted through the medium of the gear 21 to the pinion and its respective roller.

The reference character 29 denotes the chart which is secured at one end to the roller 18 and at its opposite end to the roller 19. The chart is adapted to show the various courses, the various soundings, the various lighthouses and other matters which a navigator's chart should be provided with.

By the arrangement of the pinions and gear as set forth, it will be evident that by turning the milled head 22 when the pinions are locked to their respective axes, motion will be imparted to both of the rollers, causing the chart to unwind from one roller and wind up upon the other roller, and when the milled head 22 is turned in the opposite direction, a contra-movement will be imparted to the chart. By this arrangement a separate operating means for each roller is dispensed with.

The chart-holder is such that it can be mounted upon a support in close proximity to the navigator, preferably on a support directly in front of the wheel, so that when the navigator steers, all that is necessary for him to do to find out his course, or other information from the chart is to look over the wheel and down, thus overcoming the objection of scanning the entire chart, the chart generally being suspended from a suitable support in front and above the navigator. As the vessel continues on its course, the chart can be shifted slightly so that all the navigator has to do is to scan a small portion of the chart to obtain the information desired.

In the embodiment of the invention as shown by the drawings, the illuminating device illustrated is an electrical one, but the application is not limited to the employment of such an arrangement as any form of illuminating device can be employed, and the pro-

viding of the chart-holder with an illuminating device of any character, permits of the chart being used at night and on the open deck if desired, and by inclosing the chart in the manner as set forth, the chart-holder may be used on the open deck in stormy weather.

It is thought the many advantages of my improved chart-holder for a convenient display of charts for navigators can be readily understood from the foregoing description, taken in connection with the accompanying drawings, and it will furthermore be evident that changes, variations and modifications can be resorted to without departing from the spirit of the invention, or sacrificing any of its advantages, and I, therefore, do not wish to restrict myself to the details of construction hereinbefore described and illustrated in the accompanying drawings, but reserve the right to make such changes, variations and modifications as come properly within the scope of the appended claims.

What I claim is—

1. A chart-holder comprising a casing formed of an upper and a lower section, said upper section provided with a transparent top, a transparent plate supported by said lower section, a pair of rollers supported in said lower section, a chart suitably connected to said rollers, means carried by said rollers whereby each of them can be operated independently, causing thereby the operation in opposite directions of the rollers, an operating means simultaneously engaging with both rollers for operating them, and means for connecting and disconnecting the rollers to and from said operating means to permit of the operation in opposite directions of the rollers independently of each other.

2. A chart-holder comprising a casing provided with a transparent top, a pair of rollers rotatably mounted in said casing and having their axes at one end projecting through one wall of the casing, a chart connected to the rollers and adapted to be wound thereon and unwound therefrom, a pinion loosely mounted on the axis of each of said rollers, adjustable means mounted on the projecting ends of the said axes for connecting the pinions thereto, and means engaging with the pinions and adapted when operated to impart movement to said rollers when said pinions are connected to the axes, said adjustable means adapted to operate said rollers independently of each other when the pinions are disconnected from the axes.

3. In combination, a pair of rotatable rollers, means for supporting the axes of said rollers, means carried by said rollers whereby each of them can be operated independently, causing thereby the operation in opposite directions of the rollers, an operating means simultaneously engaging with both rollers for operating them, a chart connected to the

said rollers and adapted to be wound thereon
and unwound therefrom when the said means
is operated, and means for disconnecting the
rollers from said operating means to permit
5 of the operation in opposite directions of the
rollers independently of each other.
In testimony whereof I have hereunto set

my hand in presence of two subscribing wit-
nesses.

FRANK WOODRUFF BOYER.

Witnesses:

FREDERICK BARRIE,
EDSON M. ZABRISKIE.