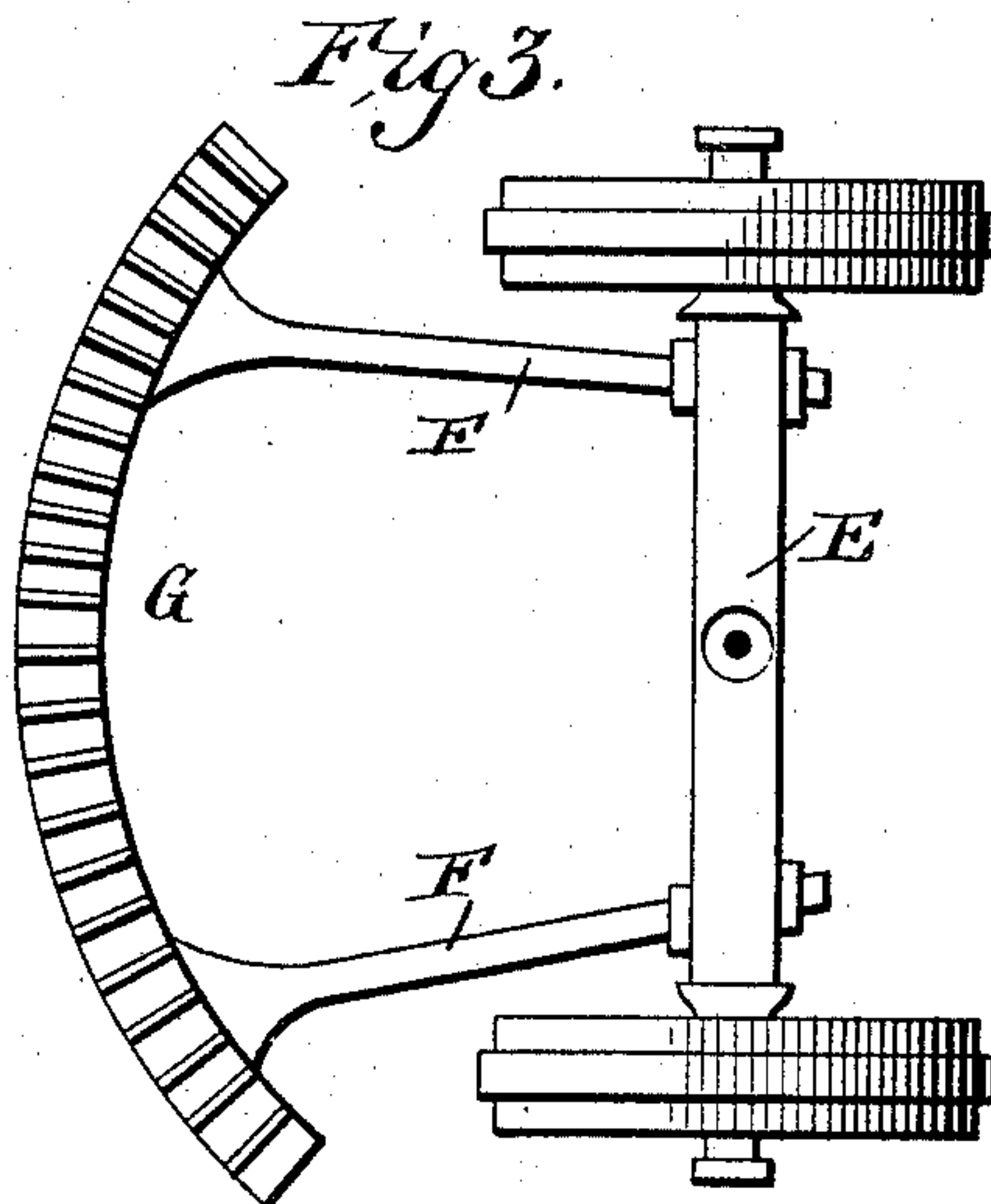
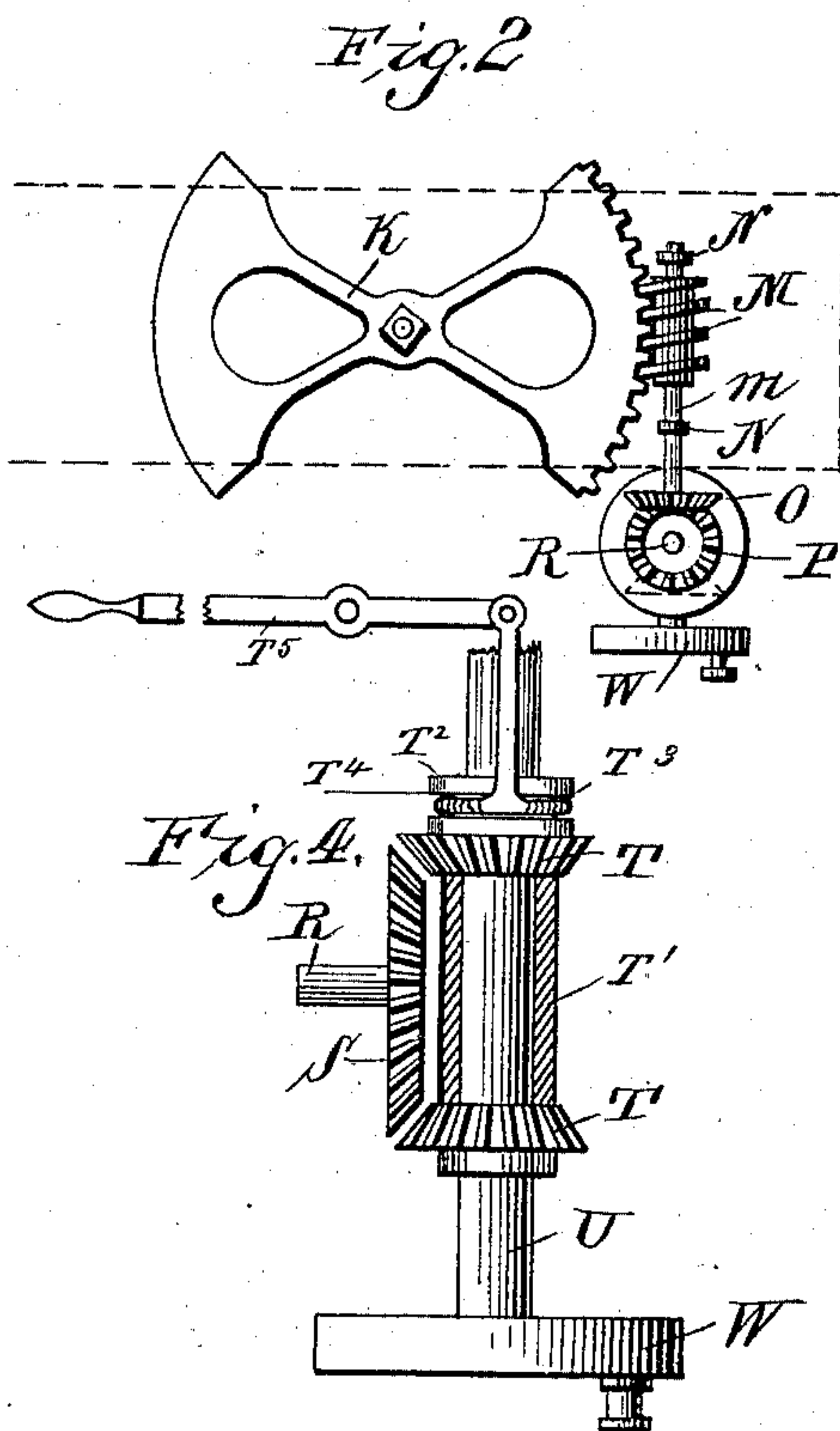
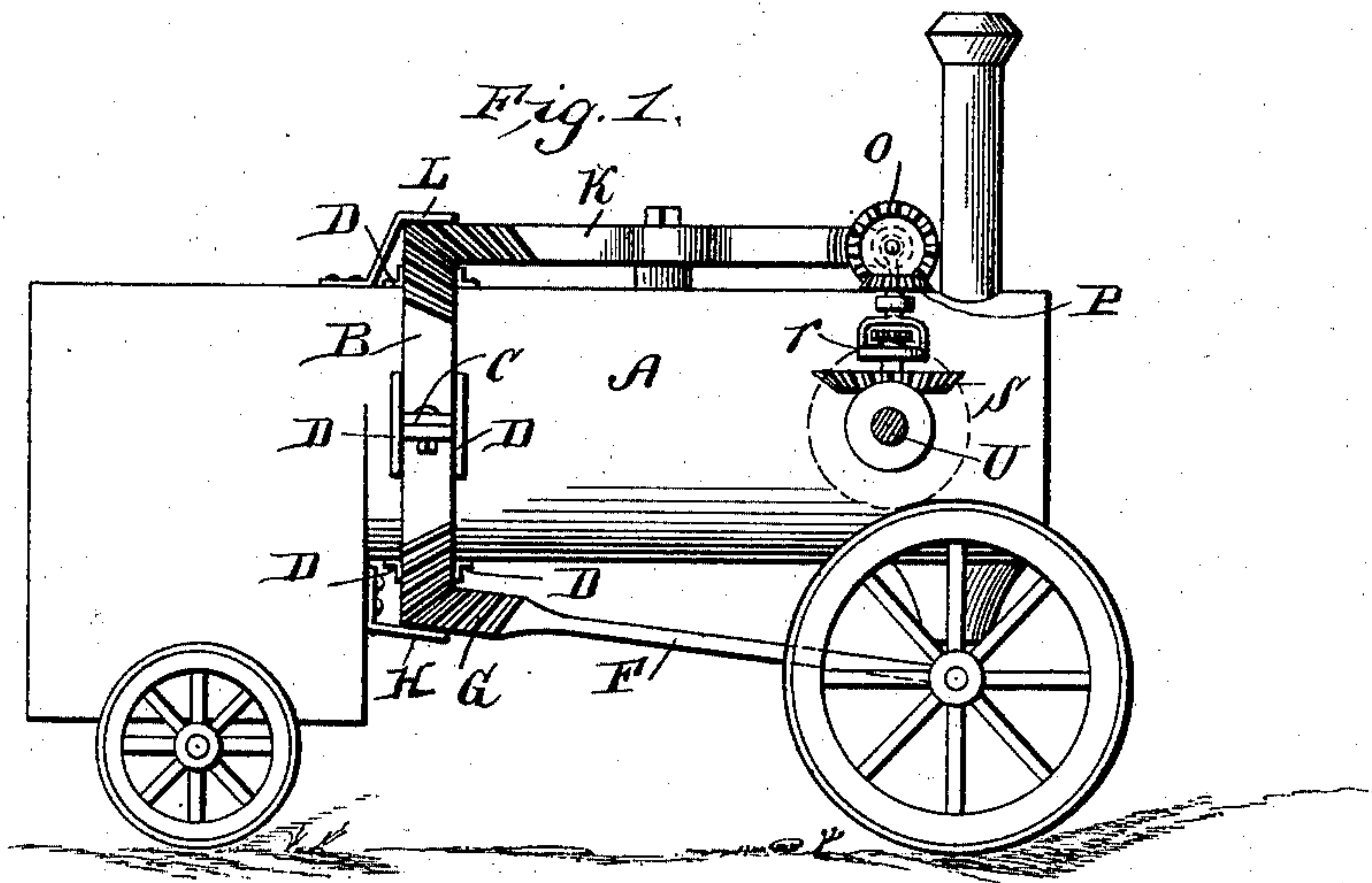


(No Model.)

G. C. STEVENSON.  
STEERING DEVICE FOR TRACTION ENGINES.

No. 567,696.

Patented Sept. 15, 1896.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

GEORGE CLAYTON STEVENSON, OF CARLOS CITY, INDIANA.

## STEERING DEVICE FOR TRACTION-ENGINES.

SPECIFICATION forming part of Letters Patent No. 567,696, dated September 15, 1896.

Application filed August 29, 1895. Serial No. 560,901. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE CLAYTON STEVENSON, a citizen of the United States, and a resident of Carlos City, in the county of Randolph and State of Indiana, have invented certain new and useful Improvements in Steam-Guides for Traction-Engines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to steam-guides for traction-engines, and the object thereof is to provide an improved gear mechanism connected with the forward truck or axle of a traction-engine, by means of which the engine may be guided; and with this and other objects in view the invention consists of the construction, combination, and arrangement of parts hereinafter described and claimed.

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

Figure 1 is a side elevation of a traction-engine provided with my improvement, and Figs. 2, 3, and 4 represent details of the construction.

In the practice of my invention I mount upon the boiler A of a traction-engine a gear-ring B, which is composed of two semicircular sections united on the opposite sides, as shown at C, and also mounted in bearings D, of any preferred form and construction, and secured to the boiler in any desired manner. The ring B is free to revolve on the boiler A, and is angular in cross-section, and the forward upper portion thereof is beveled and provided with gear-teeth on its upper and lower sides, as clearly shown in Fig. 1.

Connected with the forward axle E, by means of arms F, is a segmental gear G, also beveled and adapted to engage with the under side of the gear-wheel B, as clearly shown in Fig. 1, and said segmental gear is held in connection with the gear-wheel B by means of a bearing or support H.

Pivotally connected with the upper side of the boiler is a double segmental gear K, the rear end of which is beveled and provided with gear-teeth adapted to mesh with the upper teeth of the ring B, as clearly shown in Fig. 1, and said segmental gear and the ring

B are held in connection by means of a bearing L, secured to the boiler in any desired manner, and the forward end of the double segmental gear K is adapted to engage and operate a worm-gear M on a shaft *m*, which is secured transversely of the boiler by means of bearings N, said bearings and said shaft being located near the forward end of the boiler. The outer end of said shaft is provided with a beveled gear-wheel O, adapted to engage with a corresponding beveled gear-wheel P, mounted on a vertical shaft R, which is mounted in bearings *r*, and the lower end of said shaft R is provided with a beveled gear-wheel S, adapted to engage with and operate corresponding beveled gear-wheels T, mounted on the shaft U, to the outer end of which is secured a crank-wheel W, all of which is clearly shown in Figs. 1, 2, and 4.

The gear-wheels T are mounted on or secured to a sleeve T', which is adapted to slide back and forth on the shaft U, and said sleeve is provided with a collar T<sup>2</sup>, by means of which is formed an annular groove T<sup>3</sup>, which is adapted to receive a yoke T<sup>4</sup>, provided with an arm which is pivotally connected with a lever T<sup>5</sup>, in and by means of which said sleeve may be moved back and forth, as will be readily understood. In the normal position of the parts, the gear-wheel S is not engaged with either of the gear-wheels T, but said gear-wheel S may be thrown into connection with the wheels T by means of the lever T<sup>5</sup>, pivoted to the lug upon a boiler, and the direction of the machine will depend upon the gear-wheels T, with which the gear-wheel S is placed in connection, one of said wheels T being designed to turn the forward axle in one direction and the other to turn it in the other direction, as will be readily understood.

The operation will be apparent from the foregoing description, when taken in connection with the accompanying drawings. The shaft U is revolved by means of a belt or other device connected with the propelling mechanism, (not shown,) and the gear-wheel S is thrown into connection with one or the other of the wheels T, as hereinbefore described, the wheel T with which the connection is made depending upon the course which it is desired that the engine shall take, the double



segmental gear K, the ring B, and the segmental gear G, connected with the forward axle, being operated by the shaft *m* and its connected gears when the gear-wheel S is connected with one of the gear-wheels T, as will also be readily understood.

It is evident that changes in the form, construction, and combination of the various parts of my improved steam-guide for traction-engines may be made without departing from the spirit of my invention or sacrificing its advantages; and I therefore reserve the right to make such alterations therein as fairly come within the scope of the invention.

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

The combination with a traction-engine provided with a revoluble beveled gear-ring encircling the boiler's front end, of a segmental beveled gear arranged to mesh with the said gearing below the boiler; a double segmental gear arranged to mesh one segment with the gearing above the boiler, and to mesh the other segment with a worm-gear that is fixed

transversely on the boiler near the front thereof; a beveled gear-wheel fixed on the outer end of said worm-shaft and engaging with a corresponding gear mounted on a vertical shaft at the side of the boiler on whose lower end is still another gear-wheel engaging with a corresponding train-wheel mounted on a sliding sleeve provided with a collar having an annular groove, on a transverse shaft to whose outer end is secured a belt-pulley; a yoke engaging in the groove of the said collar and having its arm pivotally connected with a lever by means of which the sleeve may be moved back and forth for directing through its connections, the course of the engine, all constructed and arranged substantially as herein shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 19th day of August, 1895.

GEORGE CLAYTON STEVENSON.

Witnesses:

MARTIN HOOVER,  
J. N. SHERRY.