

(No Model.)

F. F. LANDIS.
STEERING GEAR FOR TRACTION ENGINES.

No. 551,493.

Patented Dec. 17, 1895.

FIG. 1.

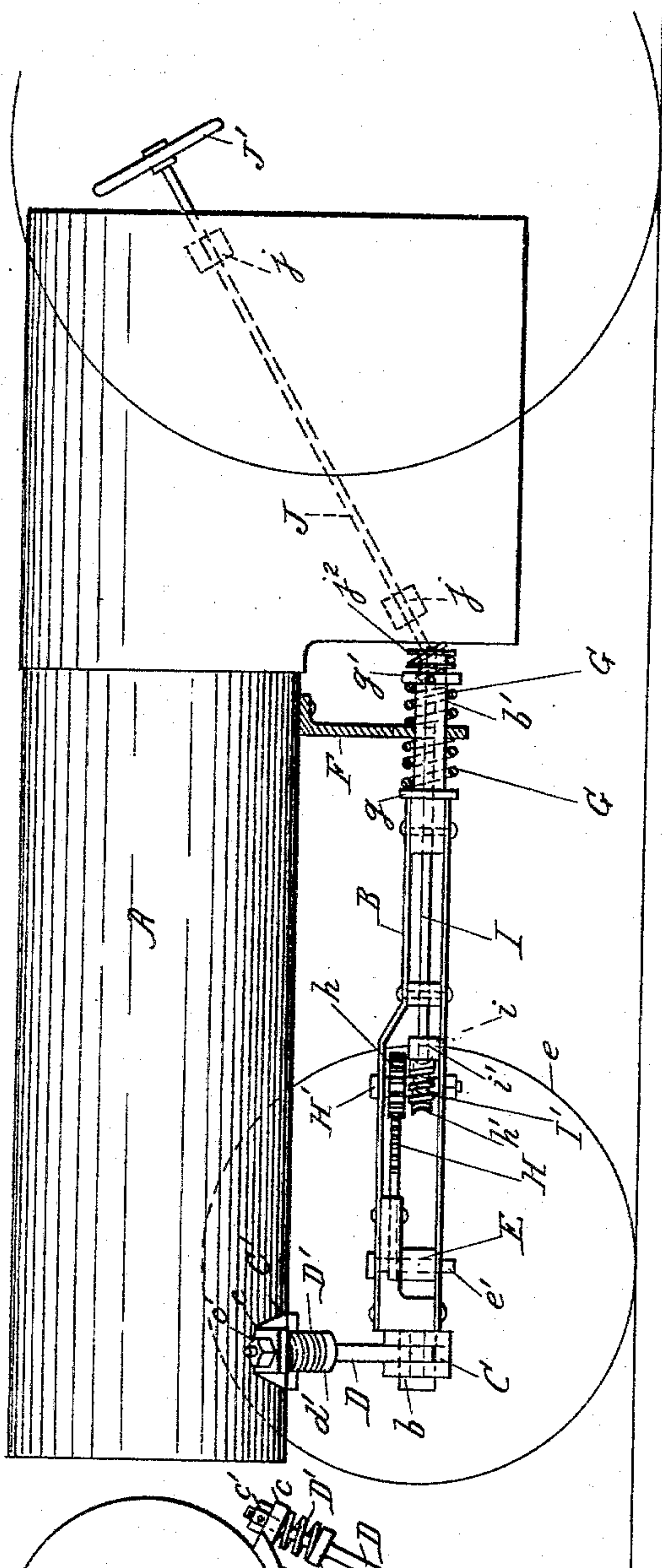
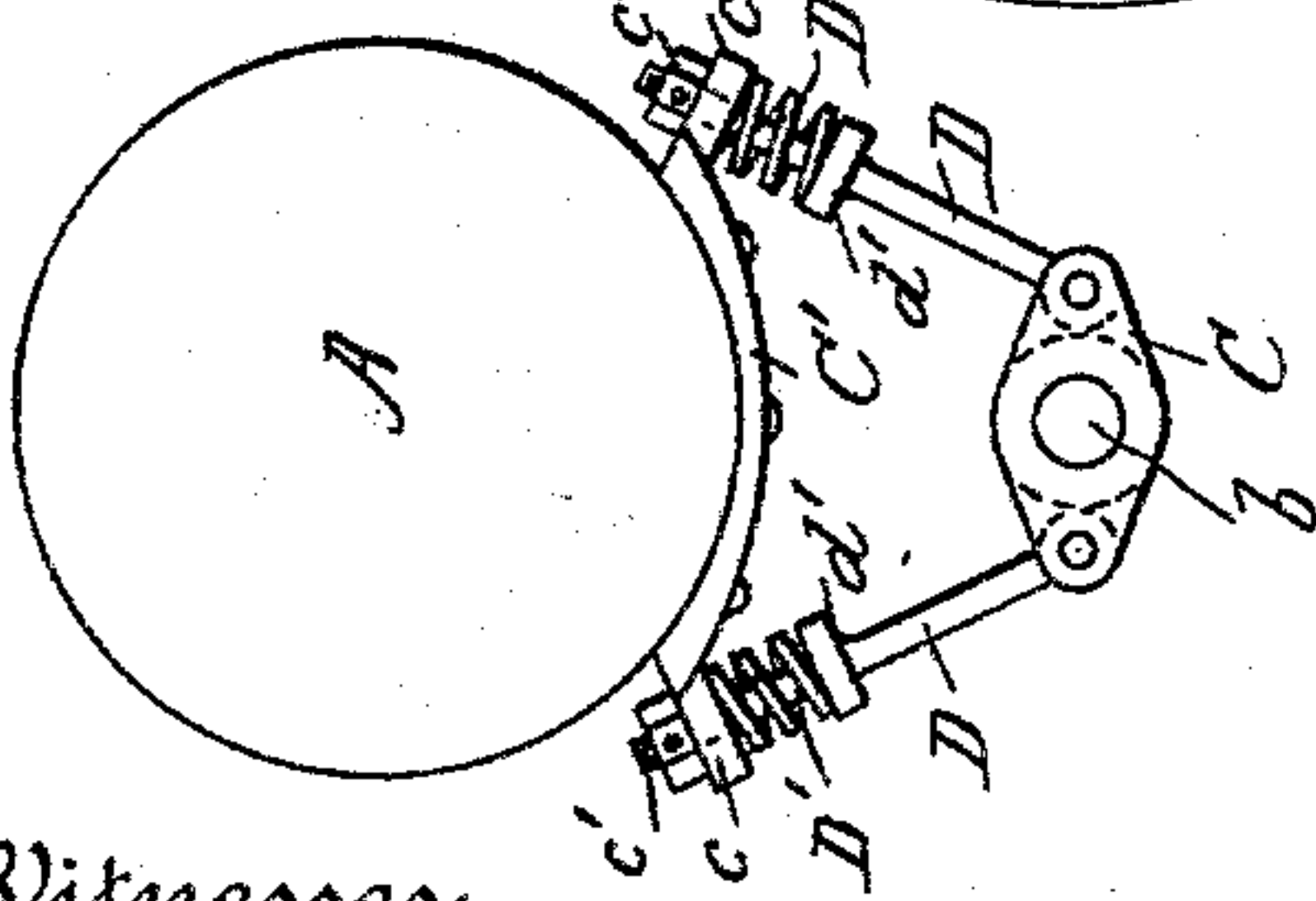
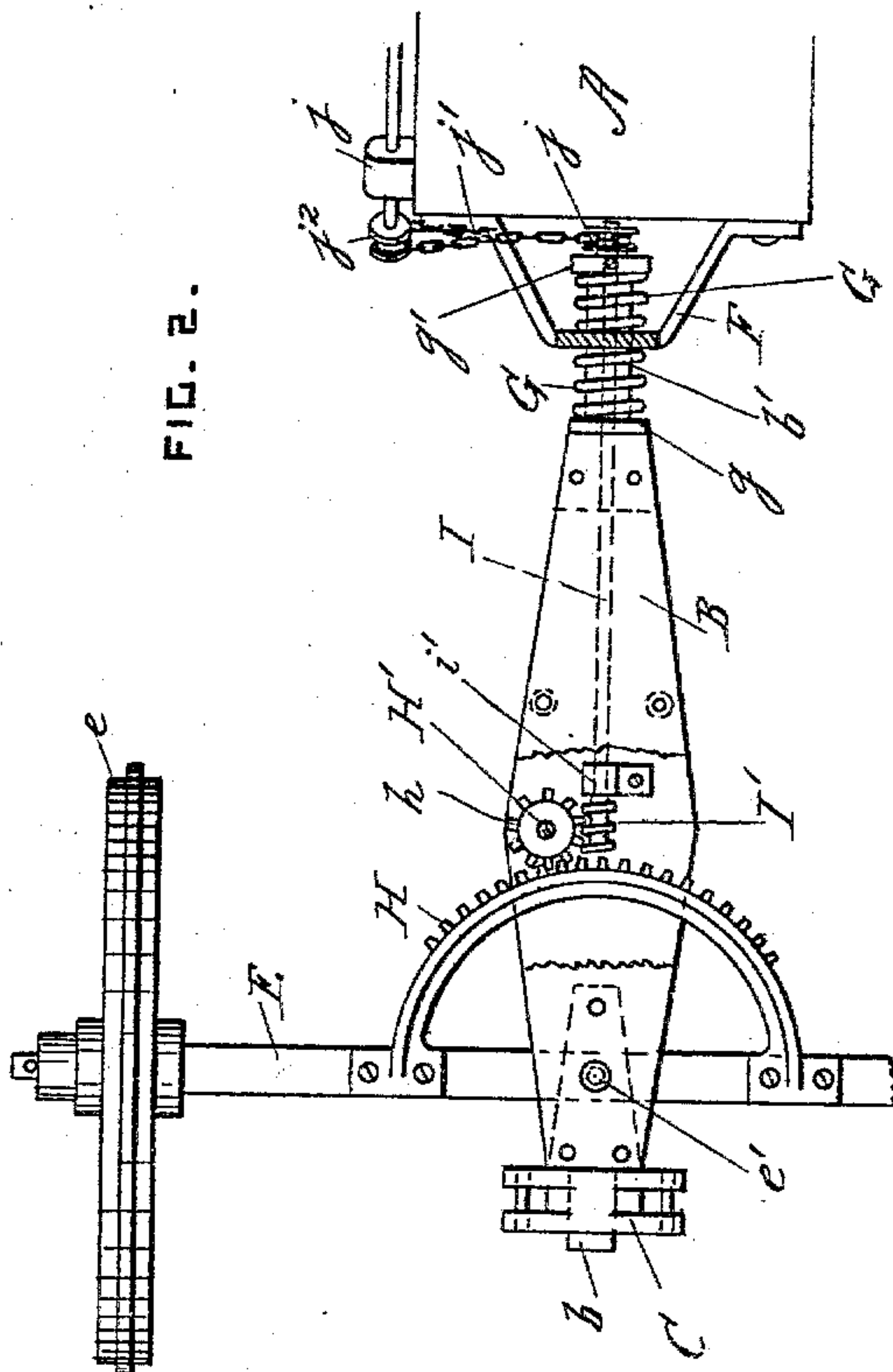


FIG. 3.



Witnesses
Wm. H. Bates
A. H. Harrison

FIG. 2.



Inventor
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UNITED STATES PATENT OFFICE.

FRANK F. LANDIS, OF WAYNESBOROUGH, PENNSYLVANIA.

STEERING-GEAR FOR TRACTION-ENGINES.

SPECIFICATION forming part of Letters Patent No. 551,493, dated December 17, 1895.

Application filed July 31, 1895. Serial No. 557,767. (No model.)

To all whom it may concern:

Be it known that I, FRANK F. LANDIS, a citizen of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, having invented certain new and useful Improvements in Steering-Gear for Traction-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to steering-gear for traction-engines; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a side view of a portion of a traction-engine, showing the steering-gear. Fig. 2 is a plan view of the steering-gear. Fig. 3 is a front end view showing how the steering-gear is connected to the boiler.

A is a portion of a traction-engine boiler of approved construction.

B is a longitudinal frame provided with a pivot *b* at its front end and a pivot *b'* at its rear end. The front end pivot *b* is journaled in a bearing C.

C' is a bracket secured to the under side of the front end portion of the boiler and provided with lugs *c*, one on each side of the boiler.

D are upwardly-diverging rods having their lower ends pivoted to the sides of the bearing C. The upper ends of the rods D slide loosely in holes in the lugs *c*, and D' are springs interposed between the said lugs and the collars *d'* on the rods D for the purpose of supporting the boiler. Nuts *c'* are secured on the outer ends of the rods D above the said lugs, to keep the rods from slipping out of the holes.

E is the front axle of the traction-engine, which is provided with wheels *e* of approved construction. The axle E is pivoted on the vertical pin *e'* secured in the front part of the frame B behind the pivot *b*.

The rear end pivot *b'* is journaled loosely in the bracket F, which is rigidly secured to the boiler in any approved manner.

G are springs surrounding the pivot *b'* and interposed between the bracket F and the collars *g* and *g'* on the said pivot. These

springs are arranged one on each side of the bracket F, and receive the end-thrusts which come on the engine in going forward or backward when passing over rough ground.

H is a toothed segment secured at the rear side of the axle E. A toothed wheel *h* and a worm-wheel *h'* are journaled on a vertical pin H' carried by the frame B, and the wheel *h* gears into the segment H.

I is a shaft journaled in the rear pivot concentric with the bearing *b'*, and having its front end *i* carried by the bracket *i'* secured to the frame B. A worm I' is secured on the front end of the shaft I and gears into the said worm-wheel.

J is an inclined shaft provided with a hand-wheel J' and journaled in bearings *j* secured to the side of the boiler in the manner ordinarily followed in making steering-gear for traction-engines.

The shafts J and I are operatively connected together by any approved form of gearing—as, for instance, the chain-wheels *j'* and the drive-chain *j'*.

What I claim is—

1. In a traction engine steering gear, the combination, with a boiler, and a longitudinal frame provided with pivots at each end and carrying the front axle; of a bracket carrying the rear pivot, a bearing for the front pivot, and diverging rods pivoted to the said bearing and connected to the front part of the boiler, substantially as set forth.

2. In a traction engine steering gear, the combination, with a boiler, and a longitudinal frame provided with pivots at each end and carrying the front axle; of a bracket carrying the rear pivot, a bearing for the front pivot, lugs secured to the sides of the boiler, rods pivoted to the said bearing, and springs interposed between the said rods and the said lugs, substantially as set forth.

3. In a traction engine steering gear, the combination, with a boiler, and a longitudinal frame provided with pivots at each end; of a bearing for the front pivot connected with the boiler, a bracket carrying the rear pivot, and springs arranged on each side of the said bracket between it and the frame, for receiving the end thrusts, substantially as set forth.

4. In a traction engine steering gear, the

combination, with a boiler, of a longitudinal
frame for carrying the front axle and its steer-
ing appliances, and springs interposed be-
tween the said frame and the boiler and per-
5 mitting the frame to have limited longitudi-
nal and vertical movements with respect to
the boiler, substantially as set forth.

In testimony whereof I affix my signature
in presence of two witnesses.

FRANK F. LANDIS.

Witnesses:

T. S. CUNNINGHAM,

HERBERT W. T. JENNER.