

E. M. WHEELLOCK.
INCASED GEARING.
APPLICATION FILED JUNE 20, 1910.

986,614.

Patented Mar. 14, 1911.

2 SHEETS-SHEET 1.

Fig 2

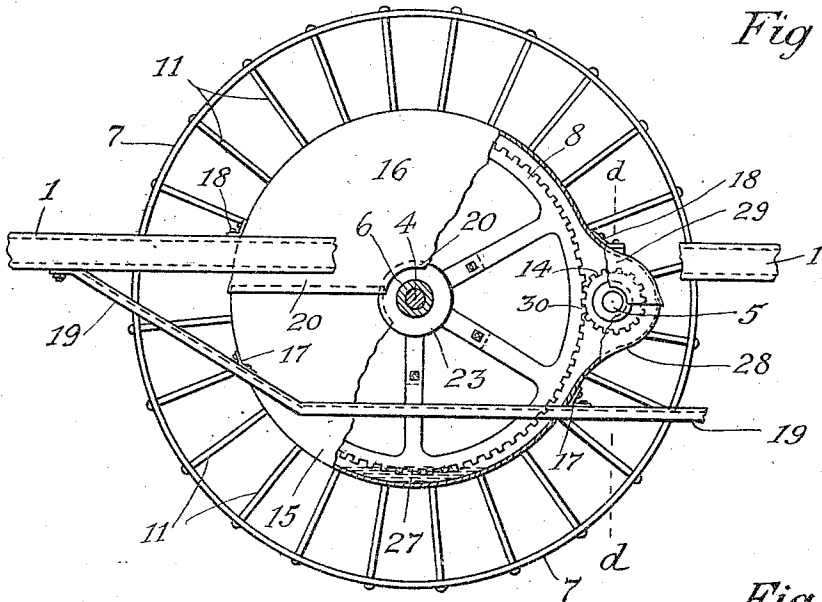


Fig. 3

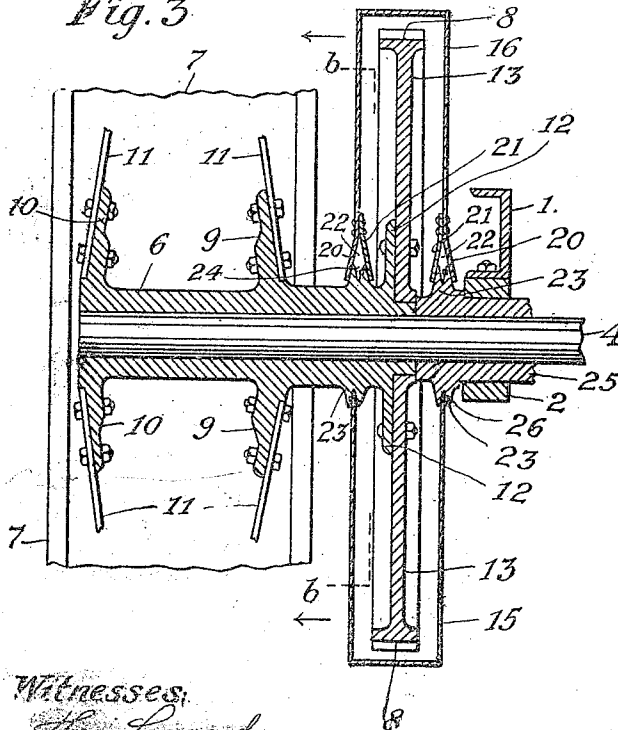
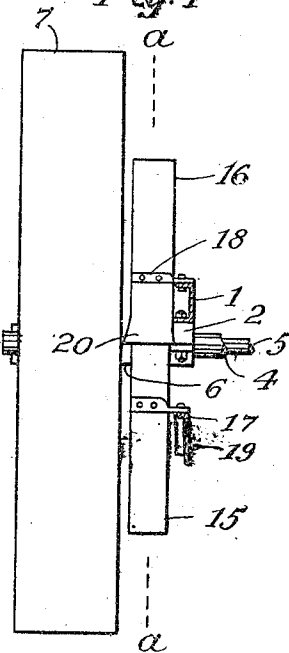


Fig. 1



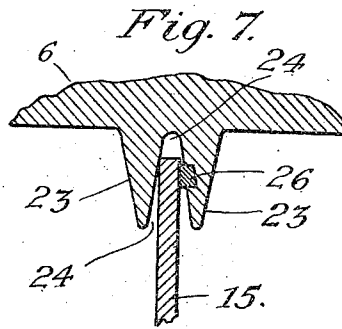
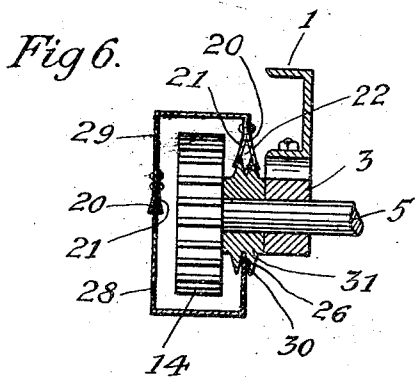
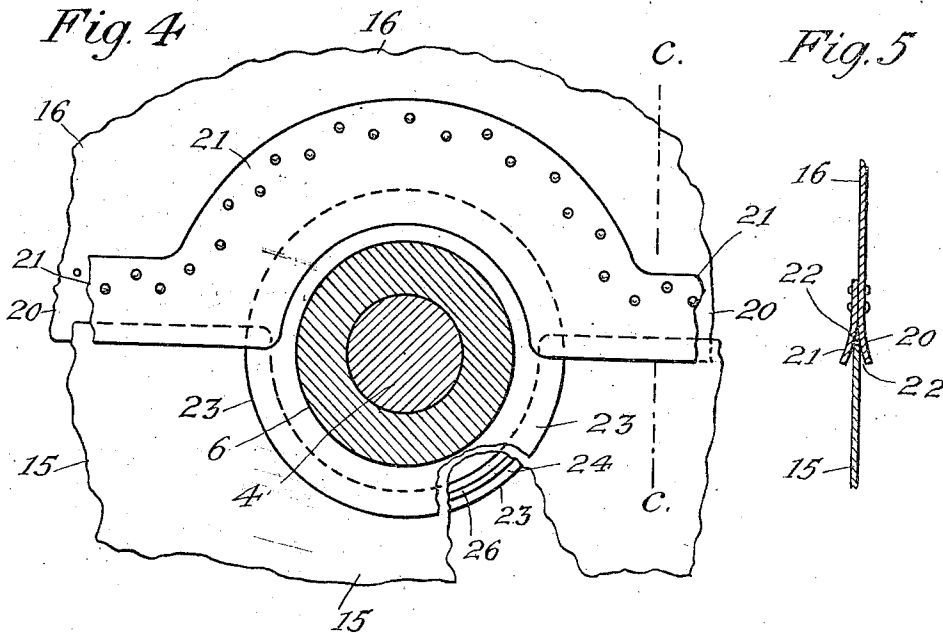
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EDWIN M. WHEELOCK, OF WINONA, MINNESOTA.

INCASED GEARING.

986,614.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed June 20, 1910. Serial No. 567,803.

To all whom it may concern:

Be it known that I, EDWIN M. WHEELOCK, a citizen of the United States, residing at Winona, in the State of Minnesota, have invented certain new and useful Improvements in Incased Gearing, of which the following is a specification.

My invention relates to incased gearing, and its object is to provide improved devices for housing gearing, particularly the driving gearing of traction engines, adapted to exclude dirt and dust therefrom and provide a suitable chamber for containing a lubricant for the gearing.

My improvements are illustrated in the accompanying drawings, in which—

Figure 1 is an elevation from the rear of the left driving traction-wheel and its incased gearing of a traction engine embodying my improvements. Fig 2 is an elevation, partly in section, viewed from the right of Fig. 1. Fig. 3 is a sectional view, enlarged, on the line *a-a* of Fig. 1. Fig. 4 is a similar view on the line *b-b* of Fig. 3. Fig. 5 is a vertical section of the gear casing joint on the line *c-c* of Fig. 4. Fig. 6 is a vertical section of the pinion casing on the line *d-d* of Fig. 2. And Fig. 7 is an enlarged detail of portions of the lower casing member and hub flange.

In the drawings 1 designates a portion of the metal framework of a traction engine, from which are suspended the journal-boxes 2 and 3 for the axle 4 of the traction-wheels and the driving pinion shaft 5. The hub 6 of the traction-wheel 7 and its driving gear-wheel 8, as shown in Fig. 3, consists of an integral body that carries both wheels. The portion of the hub that supports the traction-wheel is provided with two circular flanges 9 and 10 which incline on converging lines, and to these the inner ends of the spokes 11 are secured by bolts.

The driving-gear wheel 8 is supported on the hub 6 by means of radial arms 12 extending from the hub and attached by bolts to the spokes 13 of the gear-wheel. In this way the traction-wheel and the gear-wheel are rigidly and firmly joined, so that the rotation of the latter is communicated directly and positively to the former. The gear-wheel 8 is driven, as usual, by a pinion 14 on the counter-shaft 5 which is journaled in the boxes 3 suspended from the frame,

and the shaft is rotated in the usual way by suitable connections with the engine (not shown).

The gear-wheel and the pinion are housed by a tight sheet-metal casing composed of a lower section 15 and an upper section 16. The casing members are secured by angle-plates 17 and 18 to portions of the framework, the upper section being attached to the main frame members 1 and the lower section to a supporting bar 19 provided for the purpose. The two casing members 15 and 16 are substantially semicircular and are joined at or about the horizontal plane of the axle 4 and counter-shaft 5.

The lower margins 20 of the upper casing member 16 are bent or flanged in outward direction and have corresponding inwardly inclined lap-strips 21 riveted or otherwise secured to them, whereby the parts 20 and 21 provide tapering recesses 22 extending the length of the lower edge of that member. Both casing members are cut away in semicircular form around the hubs on the axle 4 and counter-shaft 5; but throughout their straight horizontal portions the upper edge of the lower section 15 extends into and against the walls of the recesses 22 in the lower margin of the upper section 16.

The portion of the hub 6 between the gear and traction wheels is provided with a circular flange or ring 23 which has a circumferential groove 24; and the collar 25 on the axle 4 at the inner side of the gear-wheel is provided with a like flange or ring 23. When the hub and collar are rotated the upper halves of the rings 23 turn in the casing recesses 22 close to the walls of the parts 20 and 21. The upper edges of the cut-away portion of the lower casing member 15 are arranged well within the grooves 24 of the rings 25, so that the groove walls extend a suitable distance below the edge of the lower casing section.

To insure a dust-tight joint between the lower casing top and the rings 23 felt packing-rings 26 may be provided in the walls of the ring grooves 24. The casing thus constructed serves efficiently to exclude dirt, dust, and water.

A suitable lubricant 27 is contained in the lower casing section through which the cogs of the gear-wheel pass. The lap-strips 21 and the rings 23 prevent the escape of any

of the lubricant that may descend from the upper casing member and direct it into the lower member.

The casing extensions 28 and 29 which house the pinion 14 may be of construction similar to the casing members 15 and 16; and the counter-shaft 5 may be provided at the outer side of the pinion with a ring 30, like the rings 23, on a hub or collar 31, the parts coöperating in the manner described in connection with the gear-wheel casing.

The rings or flanges 23 and 30 have been referred to as rotating with the hubs or collars by which they are supported, but their rotation is not essential and, without changing their function, they may be loosely supported so as not to rotate.

Either casing member can be readily removed by unscrewing the bolts by which the angle-plates 17 or 18 which support them are secured to the frame.

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

- 25 1. In an incased gearing, a sectional casing, a gear-wheel, and a hub therefor having a circumferentially grooved ring for receiving a corresponding portion of the lower casing section, substantially as set forth.
- 30 2. The combination with a casing comprising upper and lower sections having central arc-shaped openings, the upper section having its lower margin bifurcated to receive the horizontal upper edge of the lower section, of a gear-wheel, and a hub therefor
- 35 having a circumferentially grooved ring for receiving the upper arc-shaped edge of the lower casing section, substantially as set forth.
- 40 3. The combination with a casing comprising upper and lower sections having central arc-shaped openings, the upper section having its lower margin bifurcated to receive the horizontal upper edge of the lower sec-

tion, of a gear-wheel, and a hub therefor 45 having a circumferentially grooved ring the upper portion of which is straddled by said curved bifurcations and the lower portion of which receives in its groove the upper curved edge of the lower casing section, substantially as set forth. 50

4. The combination with a gear-wheel, and a circumferentially grooved ring rotating therewith, of a sectional casing the lower section of which has a portion of its upper 55 edge curved and located within said ring groove, substantially as set forth.

5. The combination with a gear-wheel, and a circumferentially grooved ring rotating therewith, of a sectional casing the lower 60 section of which has a portion of its upper edge curved and located within said ring groove, and the upper section of which has its lower edge bifurcated and its central portion arc-shaped and straddling the corre- 65 sponding portion of said ring, substantially as set forth.

6. The combination with a gear-wheel, and a pinion, and circumferentially grooved rings rotating therewith, of a sectional cas- 70 ing the lower section of which has portions of its upper edge curved and located within said ring grooves, substantially as set forth.

7. The combination with a traction-wheel, a gear-wheel, and a hub common to both and 75 having a circumferentially grooved ring, and a sectional casing for the gear-wheel the lower casing section having a portion of its upper edge curved and located within said ring groove, substantially as set forth. 80

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses this 3d day of June, 1910.

EDWIN M. WHEELOCK.

Witnesses:

E. T. WHEELOCK,
B. O. MAN.