

No. 659,583.

Patented Oct. 9, 1900.

D. CORCORAN.
WORM AND CHAIN DRIVING GEAR.

(Application filed Feb. 26, 1900.)

(No Model.)

Fig. 1.

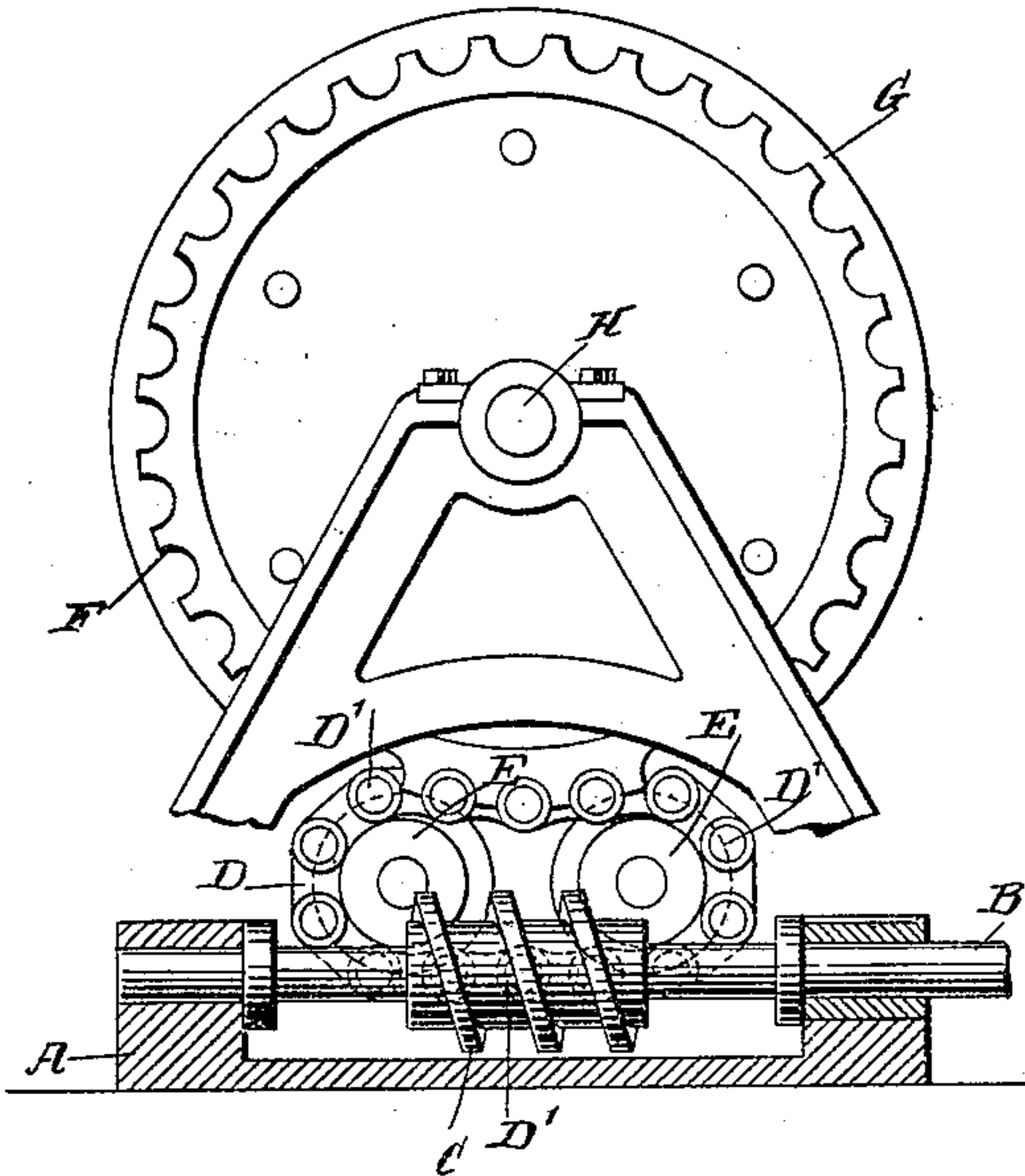


Fig. 2.

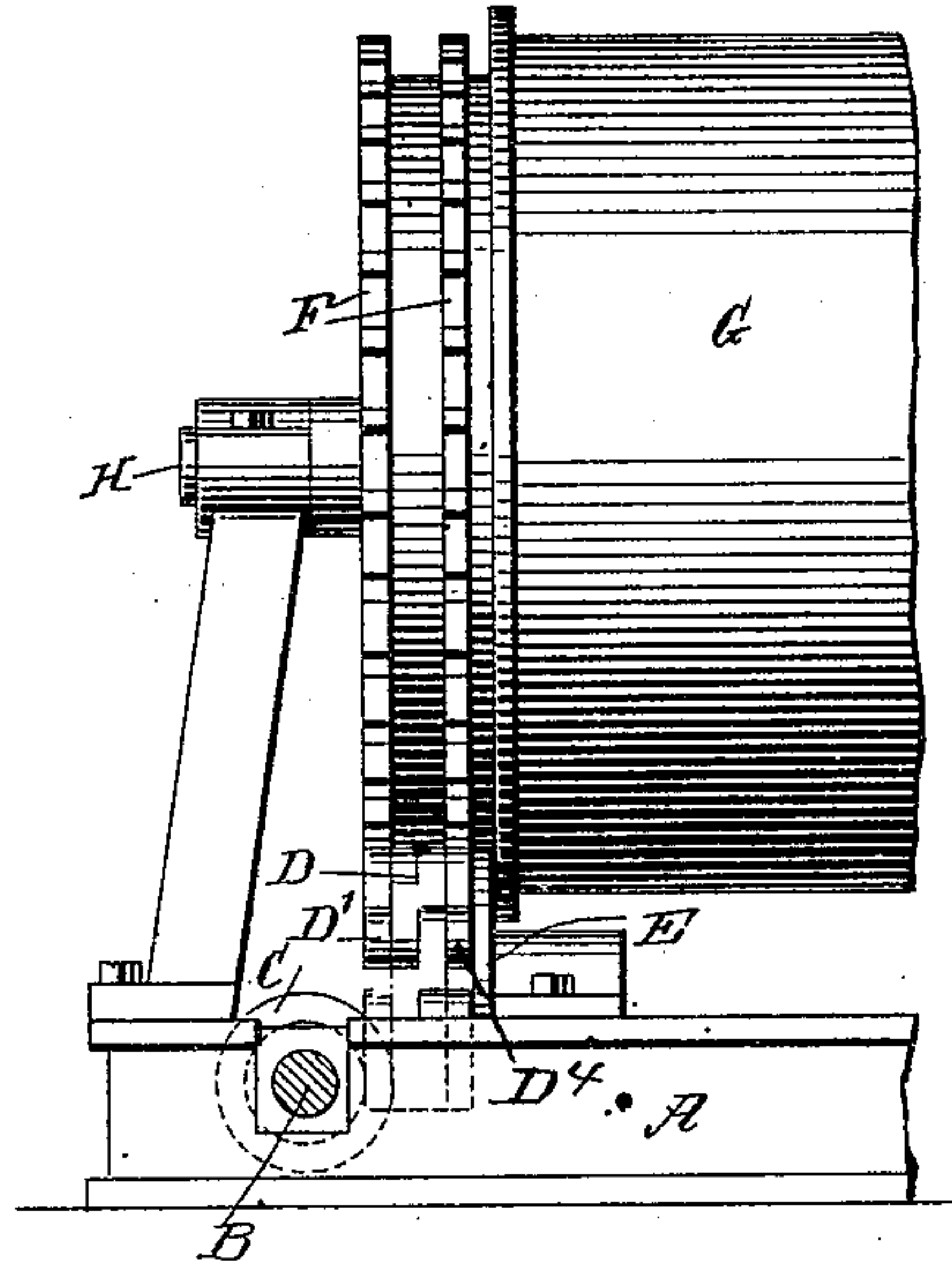


Fig. 3.

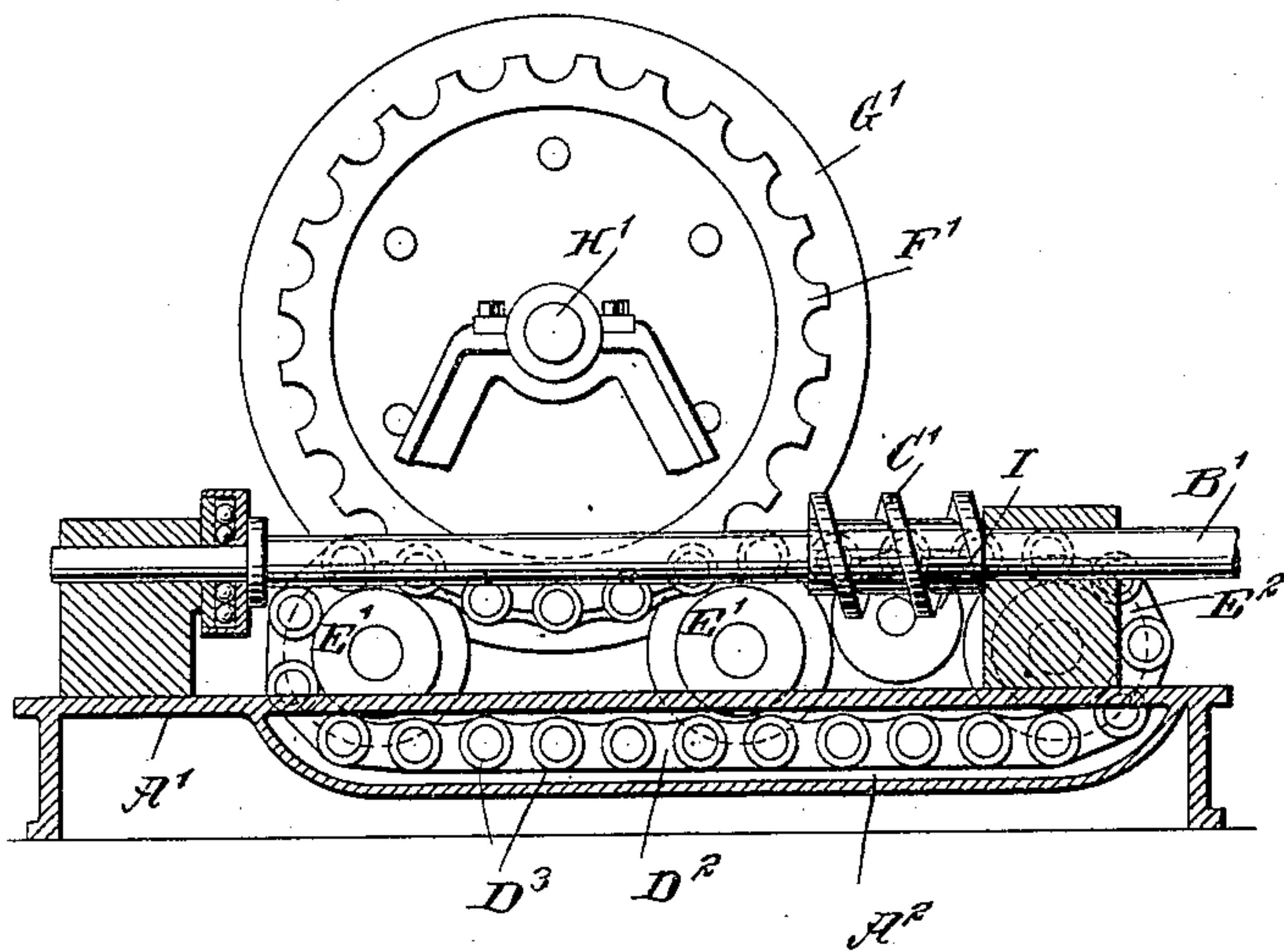
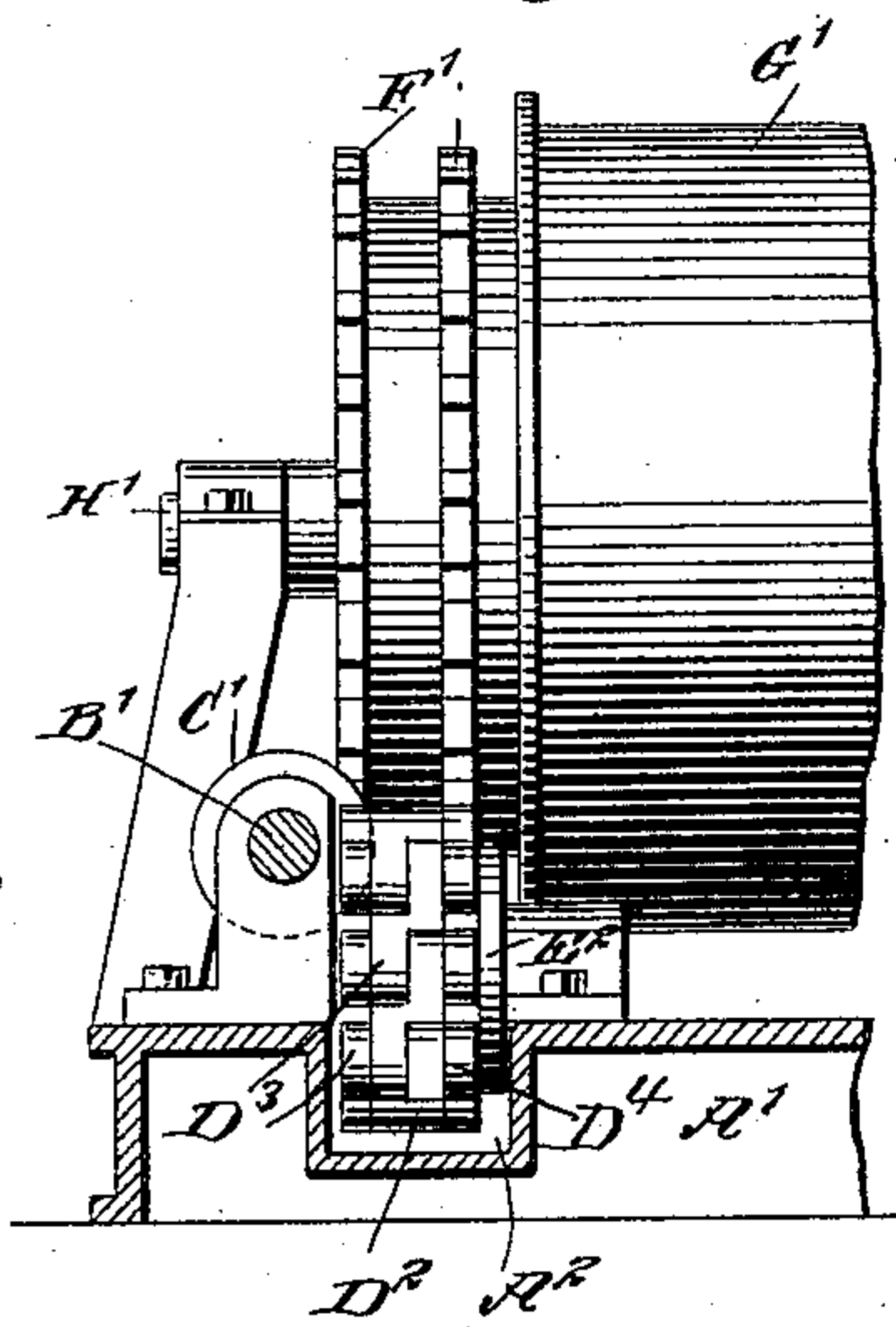


Fig. 4.



WITNESSES:

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WORM-AND-CHAIN DRIVING-GEAR.

SPECIFICATION forming part of Letters Patent No. 659,583, dated October 9, 1900.

Application filed February 26, 1900. Serial No. 6,519. (No model.)

To all whom it may concern:

Be it known that I, DANIEL CORCORAN, a citizen of the United States, and a resident of Yonkers, in the county of Westchester and State of New York, have invented a new and Improved Worm-and-Chain Driving-Gear, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved worm-and-chain driving-gear which is simple and durable in construction, very effective and positive in operation, and more especially designed for use in elevators, hoisting-machines, and other machines and devices used for the transmission of power.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement with parts in section and as applied to a hoisting-drum. Fig. 2 is an end elevation of the same with the driving-shaft in section. Fig. 3 is a side elevation of a modified form of the improvement with parts in section and as applied to a hoisting-drum, and Fig. 4 is a sectional end elevation of the same.

The improved driving-gear illustrated in Figs. 1 and 2 is mounted on a frame A, in which is journaled a driving-shaft B, connected with suitable machinery for imparting a rotary motion to said shaft in either a forward or backward direction. On the shaft B is secured a worm C in mesh with friction-rollers D', held on pivot-pins for the links of a link-chain D, passing over a pair of idlers E, journaled in suitable bearings on the main frame A, the shafts of the idlers standing at a right angle to the shaft B, as will be readily understood by reference to the said Figs. 1 and 2.

As illustrated in Fig. 1, the worm C engages the lower run of the chain D between the idlers E, and the friction-rollers D' of the upper run of said chain are held by the idlers E in engagement with the front member of a double sprocket-wheel F, secured to a hoist-

ing-drum G, attached to a hoisting-drum shaft H, journaled in suitable bearings carried by the frame A. The rear member of said sprocket-wheel is engaged by rollers D⁴ on the rear face of the chain D, or the parts D⁴ may be simple pins. When the shaft B is rotated, then the worm C imparts a traveling motion to the chain D in a forward or backward direction, according to the direction in which the shaft B is rotated, and the traveling motion of the chain causes rotation of the sprocket-wheel F and the hoisting-drum G in either a forward or backward direction to wind up or unwind the cable for the hoisting-drum.

From the foregoing it is evident that the driving-gear is very compact in construction and composed of but a very few parts not liable to get out of order, and when the shaft B is rotated a positive rotary motion will be transmitted to the hoisting-drum in either a forward or a backward direction, according to that in which the shaft B is turned.

As illustrated in Figs. 3 and 4, the frame A' is provided with an oil-well A², through which the lower run of the chain D² passes, so as to keep the links and friction-rollers D³ lubricated, said chain passing over a pair of idlers E', which serve to hold a portion of the chain in engagement with the sprocket-wheel F' on the drum G', secured to the drum-shaft H'. A third idler E² is also journaled on the frame A', and the worm C' on the driving-shaft B' engages that portion of the upper run of the chain extending between the idler E² and the next adjacent idler E'. In this case I prefer to employ a thrust-disk I, journaled on the frame and engaging the chain D² on the side opposite to the one in mesh with the worm C'. The operation is the same as described in reference to Figs. 1 and 2—that is, the rotary motion of the shaft B' causes the worm C' to impart a traveling motion to the chain D², which latter imparts a rotary motion to the worm-wheel F' and the drum G' in either a forward or backward direction, according to the direction in which the shaft B' is turned.

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

1. The combination of the rotatable worm,

the chain having on one side projections engaged by said worm, a driven wheel engaging the projections of the chain on the same side as the worm, and idlers for holding a portion
5 of the chain adjacent to the driven wheel.

2. The combination of the chain having projections on both sides, a double driven wheel straddling the chain and engaging the projections on both sides thereof, the rotatable
10 worm in driving engagement with the projections on one side of the chain, and idlers for holding a portion of the chain adjacent to the driven wheel.

3. The combination of the chain having projections, idlers over which passes said
15 chain, a driven wheel engaging one run of the chain centrally between the idlers, and a driving-worm engaging the other run of the chain centrally between the idlers.

In testimony whereof I have signed my
20 name to this specification in the presence of two subscribing witnesses.

DANIEL CORCORAN.

Witnesses:

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