(No Model.) 2 Sheets—Sheet 1.

# J. LOOSE.

## SLED PROPELLER.

No. 328,415. Patented Oct. 13, 1885.

*Fig. 1.*

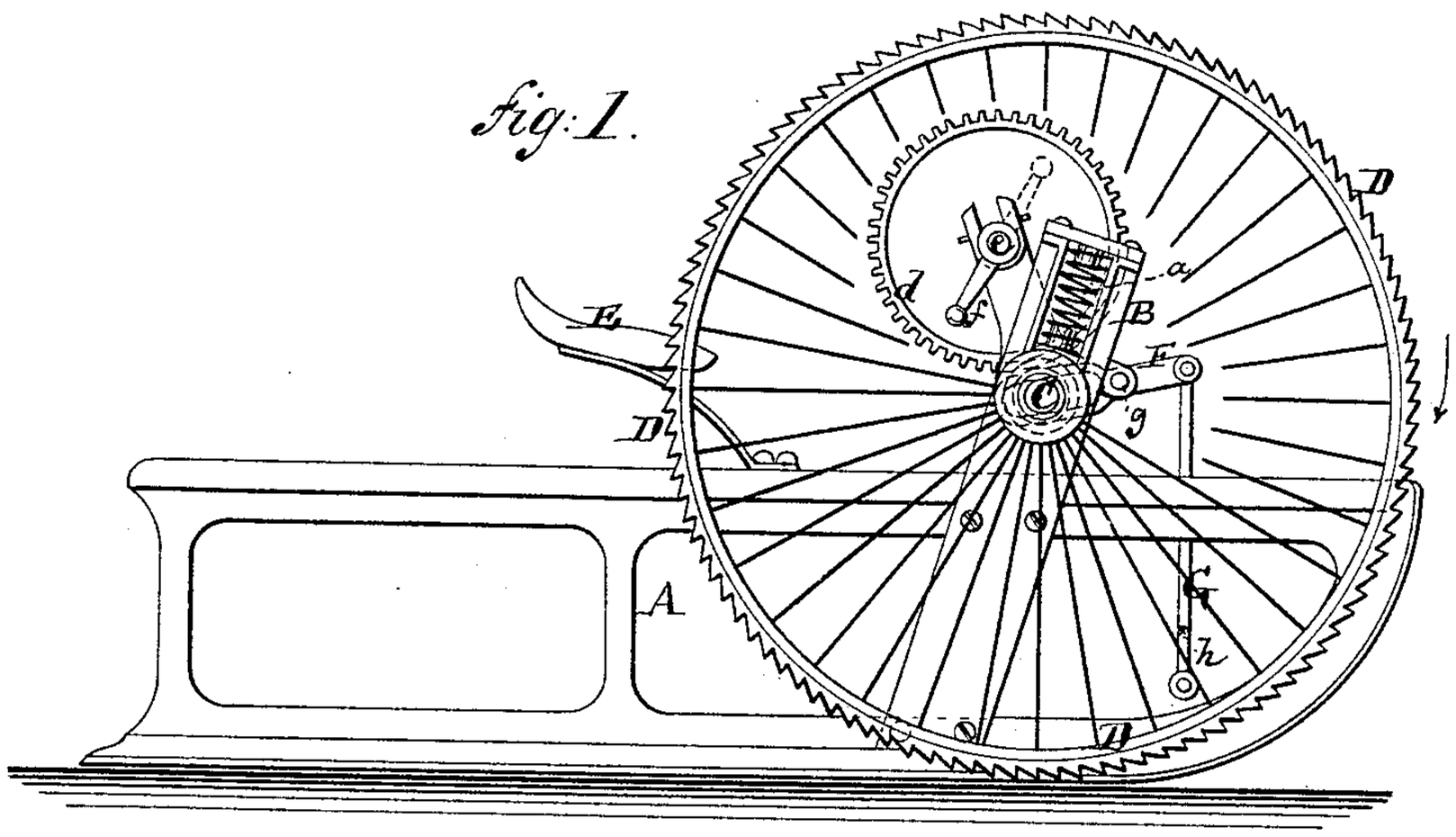
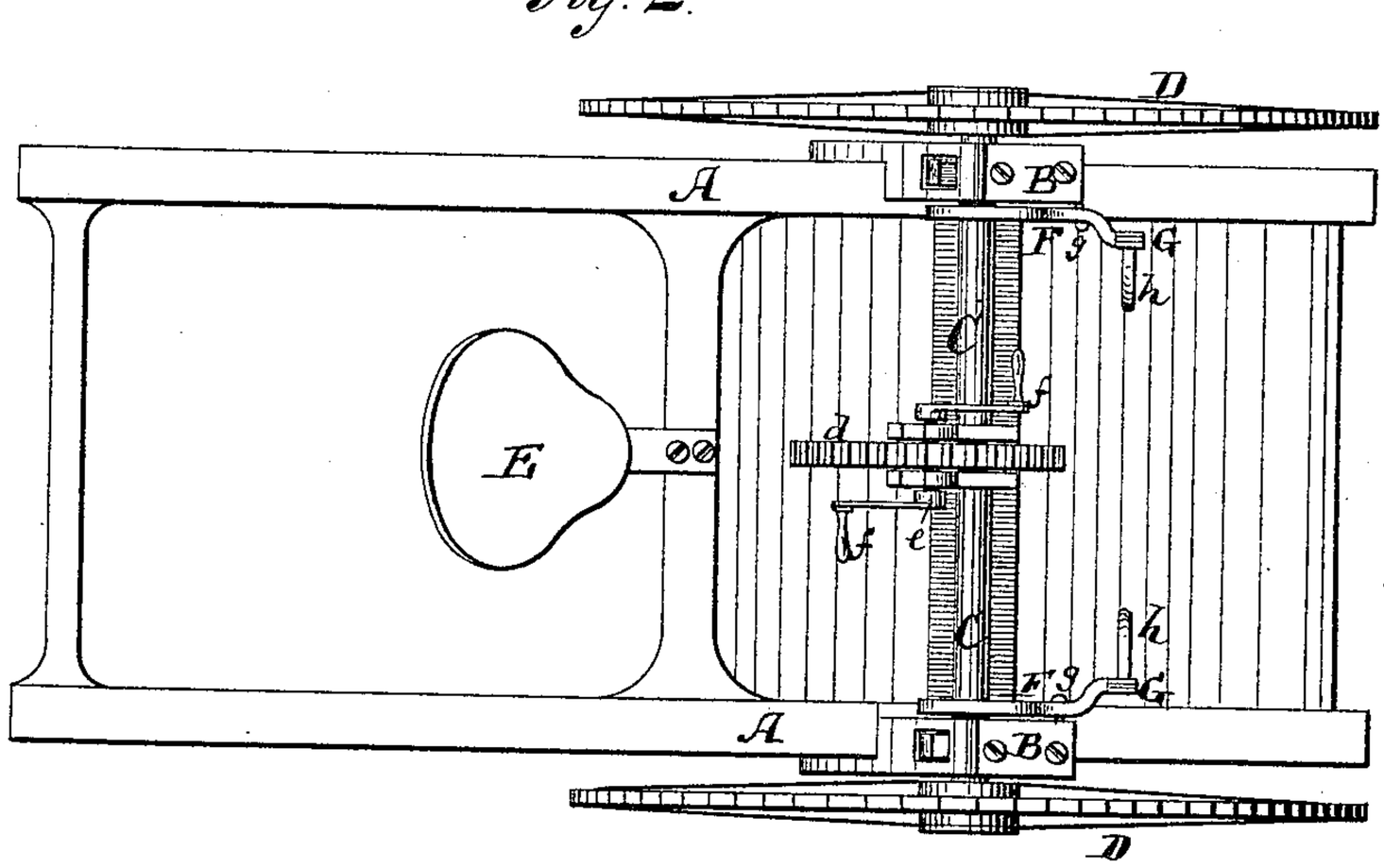



*Fig. 2.*




WITNESSES:
A. Schehl.
Gustav Schmeeré.

INVENTOR
John Loose.
BY Briesen & Steele
ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

# J. LOOSE.

## SLED PROPELLER.

No. 328,415. Patented Oct. 13, 1885.

*Fig. 3.*

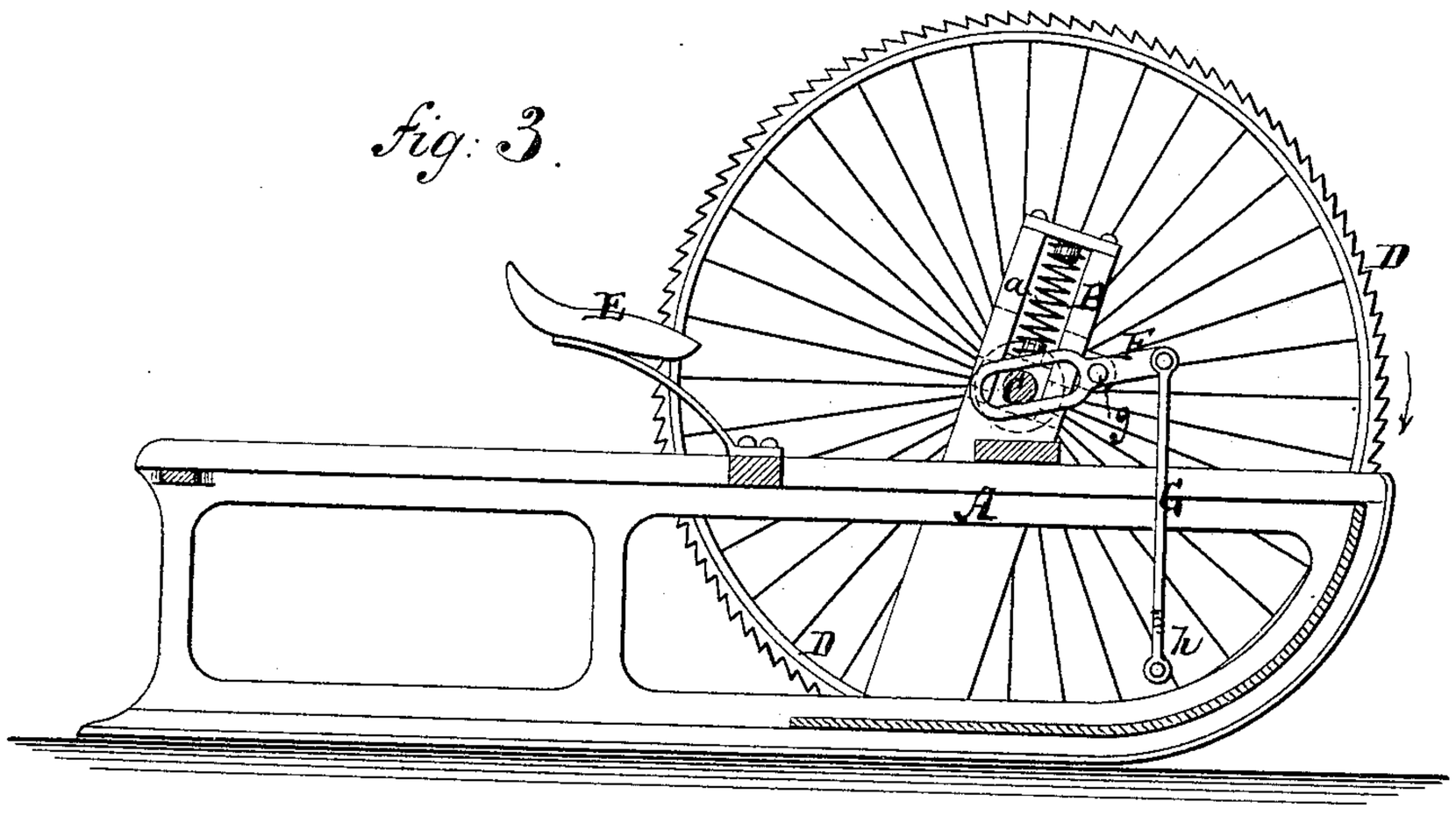
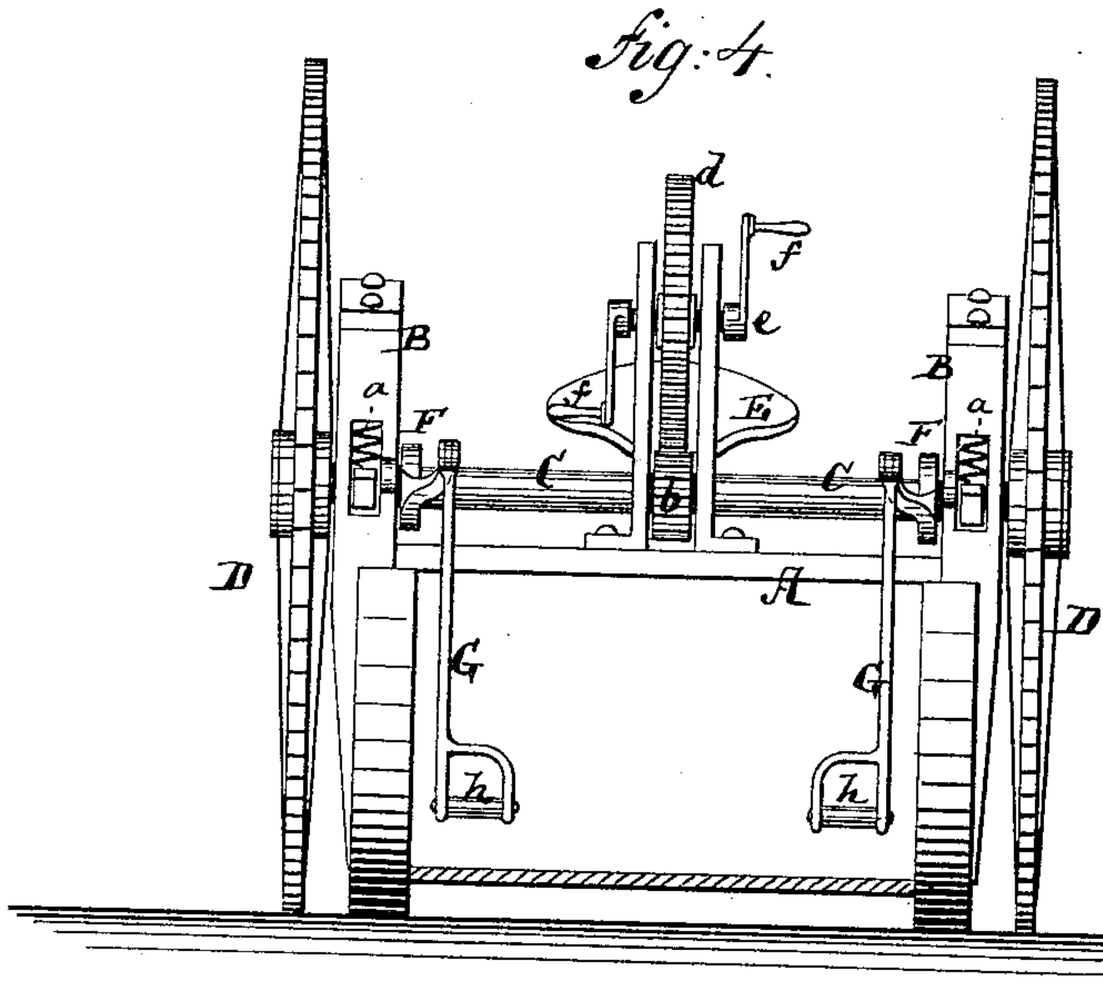



*Fig. 4.*

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INVENTOR

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# UNITED STATES PATENT OFFICE.

JOHN LOOSE, OF BROOKLYN, NEW YORK.

## SLED-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 328,415, dated October 13, 1885.

Application filed September 9, 1885. Serial No. 176,558. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN LOOSE, a citizen of Germany, and a resident of Brooklyn, in the county of Kings and State of New York, have invented an Improved Sleigh-Propeller, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved sleigh-propeller. Fig. 2 is a top view of the same. Fig. 3 is a vertical longitudinal central section of the same; and Fig. 4 is a front view, partly in section, of the same.

This invention relates to a new sleigh, which is provided with mechanism by which its occupant will be enabled to rapidly propel and steer the same.

The invention consists in a new combination of parts, whereby the propulsion of said sleigh is rendered convenient, and whereby it can be properly steered, and also of a new arrangement of propelling-wheels, all as hereinafter more fully described.

In the drawings, the letter A represents a sleigh of suitable construction. In the front part of this sleigh are upwardly-extending posts or blocks B, in which a transverse shaft, C, has its bearings. Each of these posts has a spring, *a*, above that portion of the shaft that lies in the post. The said springs serve to hold the shaft C in a substantially-horizontal position.

Upon the ends of the shaft C are mounted the propelling-wheels D D, which reach down to at least the level of the sleigh-runners.

The shaft C, at or near its middle, carries a pinion, *b*, which gears into a toothed wheel, *d*, which is hung upon a crank-arbor, *e*. This arbor has crank-handles *f*, which, when grasped by the occupant of the sleigh, who sits on a suitable seat, E, enable him to revolve the arbor *e*, and thereby also the shaft C and the wheels D.

While propelling the sleigh forward, the wheels D revolve in the direction of the arrow which is represented in Fig. 1. It will be seen from the same figure that the periphery of the wheel D is toothed substantially like a ratchet-wheel; but that the wheel is mounted upon the shaft C in such manner that its teeth will face forward where they bear on the snow. This at first sight would appear anomalous, because in all propellers that have heretofore been devised in which toothed wheels were employed—such as ice-propellers, for example—the teeth of such propellers would face rearward where they bear on the ice or ground, to enable them to bite into the ice or soil; but I find that in propelling a sleigh over the snow it is not practicable to use propelling-wheels which, by throwing their teeth into the snow, would have a tendency to push the snow backward, because in that case they will simply move the snow and not the sleigh. By mounting the wheels, however, in the manner shown in Fig. 1 I cause them to compress the snow gradually beneath their toothed peripheries, and thus to construct for themselves a surface on which the propellers will take a firm enough hold to enable them to move the vehicle forward.

For steering the sleigh, I have placed beneath the shaft C, near each end thereof, levers F, which are pivoted at *g* to the posts B, and from which depend rods G, that terminate at their lower ends in stirrups *h*. The occupant of the sleigh puts his feet through the stirrups *h* and grasps the handles *f f*. When he turns the handles, the shaft C is revolved and the vehicle caused to proceed. To direct the sleigh, he depresses the stirrup *h* on that side of the sleigh to which he wants to turn, thereby raising the shaft C, and with it the propelling-wheel D at that end of the shaft. The springs *a* above the shaft permit this tilting thereof. This action leaves only one of the propelling-wheels in the snow, and causes it to turn the sleigh toward the side on which the other wheel is elevated. A sleigh thus arranged can be rapidly propelled over the snow even if the latter is not firmly compacted, and it can be conveniently steered. In fact, it is under perfect control at all times.

What I claim is—

1. A sleigh-propeller provided with toothed propelling-wheels D D, the teeth of which face forward where they bear on the snow, as specified.

2. The combination of the sleigh A with the shaft C, wheels D, springs *a a*, toothed wheels *b d*, crank-arbor *e*, levers F F, rods G G, and stirrups *h*, substantially as described.

JOHN LOOSE.

Witnesses:
CHARLES G. M. THOMAS,
GUSTAV SCHNEPPÉ.