

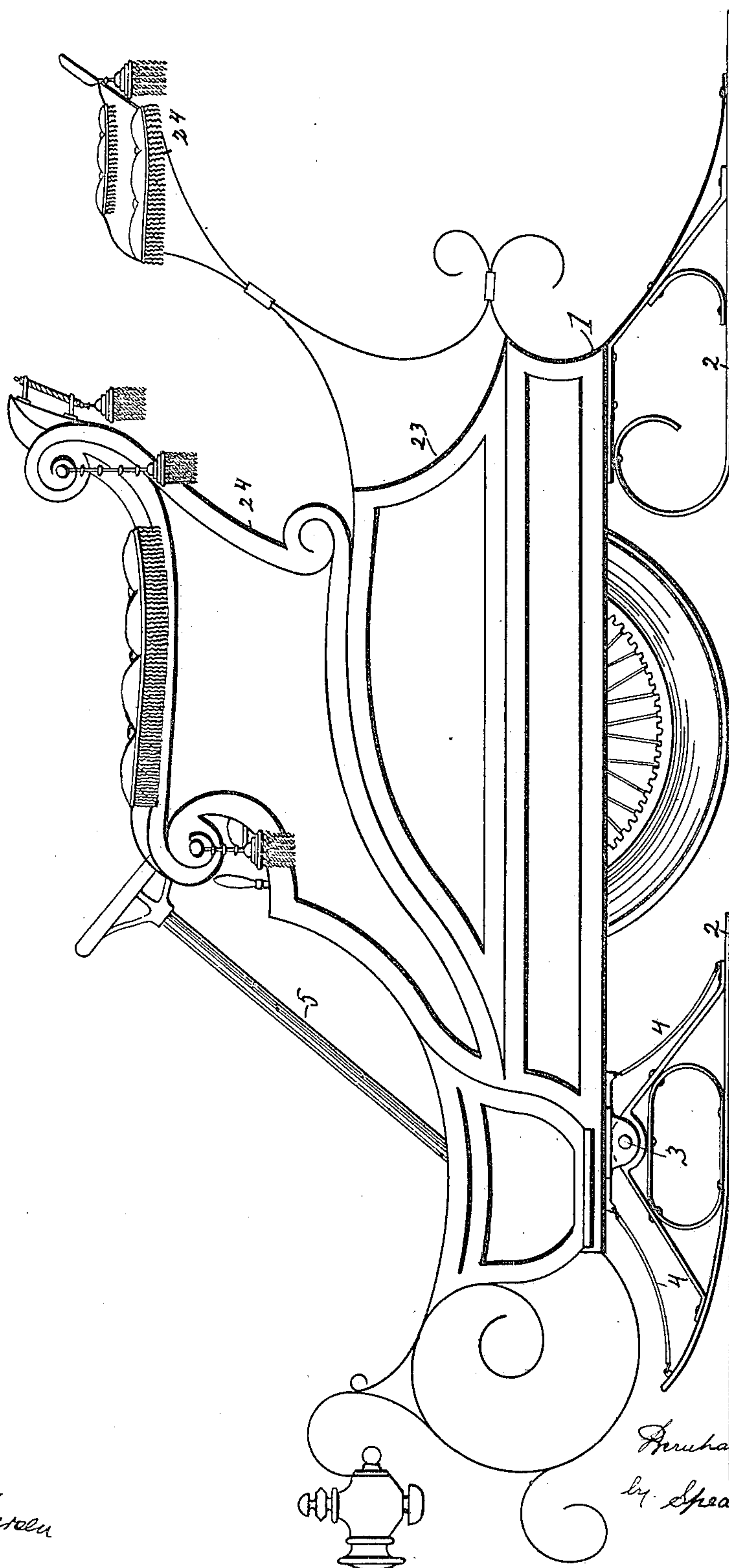
No. 831,820.

PATENTED SEPT. 25, 1906.

B. BESKOW.
AUTOMOBILE SLEIGH.
APPLICATION FILED OCT. 3, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



Witness
John F. Green
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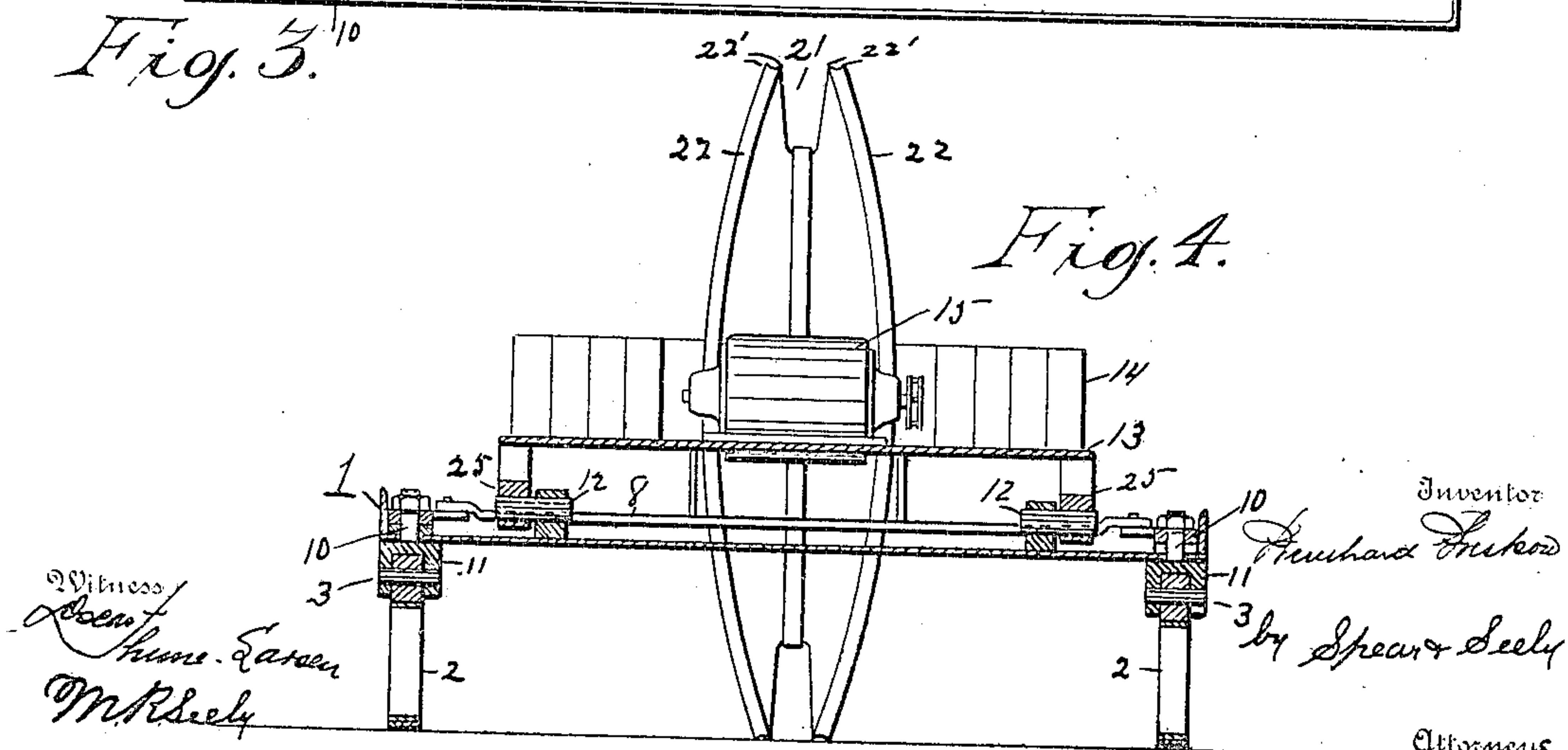
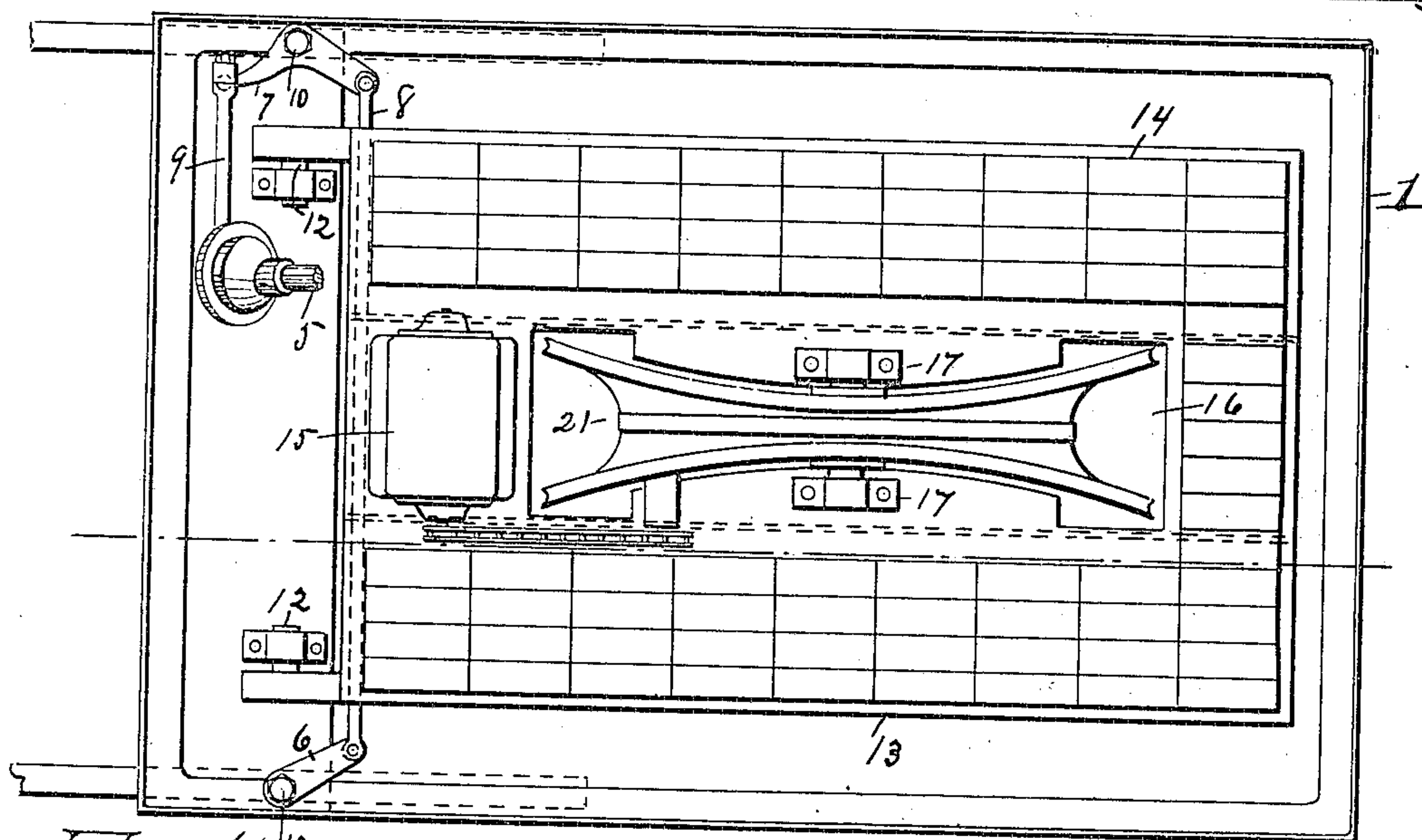
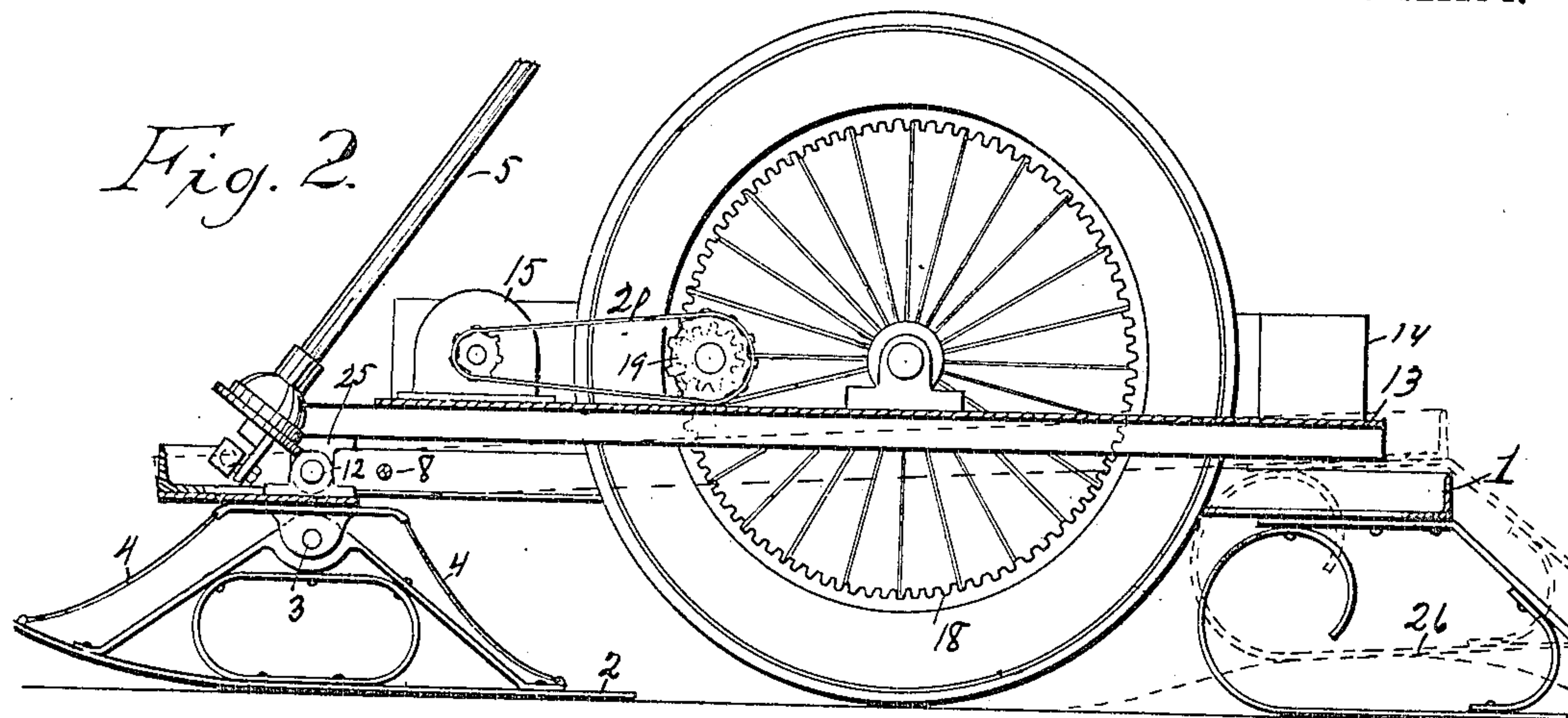
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

BERNHARD BESKOW, OF SAN FRANCISCO, CALIFORNIA.

AUTOMOBILE SLEIGH.

No. 831,820.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed October 3, 1905. Serial No. 281,170.

To all whom it may concern.

Be it known that I, BERNHARD BESKOW, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Automobile Sleighs, of which the following is a specification.

My invention relates to automechanically-propelled vehicles, and more particularly to sleighs.

In certain sections of the country it is very desirable that sleighs be provided with means for propelling them automatically or by self-contained power, whereby they may be used commercially upon the streets or roads or for pleasure, the latter purpose including their use more particularly upon the ice of rivers or other large bodies of water. I accomplish these objects by taking advantage of the resistance to movement in a straight line that is offered by an object set obliquely or at an angle to that line and where there is normally but little friction, as upon snow or ice, by causing the resisting object to enter the surface over which propulsion is to be made. It is a well-known fact that in skating a person of light weight can pull a comparatively heavy load by placing the edges of the skates at an angle to the direction in which the load is to be drawn.

In my Patent No. 694,303, February 25, 1902, I show and describe a wheel provided with a plurality of sinuous or serpentine projections, as by providing them with tires or rims or by making the tread concave in cross-section, which projections are adapted to enter the surface over which the vehicle is passing and, owing to their inclination to the line of travel, to offer sufficient resistance to prevent slippage, even when passing over snow or ice. The tendency for such inclined resisting-propeller to move laterally is counteracted in said wheel by locating the corresponding curves of the sinuosities opposite each other.

In the accompanying drawings I have shown an embodiment of my invention, in which a sleigh or sled is provided with one of my wheels and with means for operating the same.

Figure 1 is a side elevation. Fig. 2 is a longitudinal sectional view with the bed or body portion omitted. Fig. 3 is a top plan view of the same. Fig. 4 is a transverse sec-

tional view through the front runners looking toward the rear.

In constructing a sleigh in accordance with my invention the frame 1 of the top or body portion is mounted upon runners 2 in any ordinary manner, two sets of runners at each end being shown in the drawings and the front ones pivoted, as at 3. Where the runners are pivoted, check-straps 4 are provided to prevent the ends from tipping too far in either direction. The sleigh is preferably steered by changing the course or direction of one of the sets of runners relatively to the frame 1, preferably the front set, which is done by means of the ordinary steering-rod 5; which actuates the arms 6 and 7 through the rods 8 and 9. The arms are rigidly connected with pivots or trunnions 10, that project up through suitable perforations in the frame 1 from the bolsters 11, to which the runners are flexibly connected by the pivot 3.

Pivotally connected at its front end to the front bar of the frame, as by a pivot 12, is a motor-support, preferably consisting of a floor or platform 13, on which is placed the source of power, as storage batteries 14 and a motor 15, when the sleigh is to be driven by electricity. The central portion of the platform is cut away or provided with an opening, as shown at 16, within which is mounted the propeller or motive element—preferably one or more of my patented wheels, as hereinbefore specified. The axle of the wheel is journaled in bearings 17 upon opposite sides of the openings, so as to hold the wheel vertical, and it is provided with means for connecting it with the motor 15, preferably by means of an internal gear 18 on its rim, the sprocket 19, and chain 20. The periphery of the wheel is preferably centrally recessed or concaved circumferentially, as shown at 21, which forms walls or projections 22. These walls are bent or curved transversely, so as to form a duplex laterally-sinuous bearing-surface in which the lateral sinuosities of the respective parts coincide reversely. The periphery of each of these treads or bearing-surfaces is made sharp enough to cut into the snow or ice, and thereby propel the sleigh forward when the wheel is rotated. The face of each of these treads is preferably recessed or concaved circumferentially, which will form two parallel sharp cutting edges 22' or four edges for each wheel. In running the sleigh over comparatively soft snow the large or

central depression 21 will pack it down hard enough to afford sufficient resistance to propel the sleigh forward and when running upon ice or smooth packed snow the engagement therewith of the sharp edges will propel the sleigh.

Mounted upon the outer frame 1 is a box or bed 23 of the sleigh, which may be made as ornamental as desired and provided with one or more seats 24. The platform 13 is inclosed within the box and is preferably higher than the frame 1, which causes it to be completely hidden and also permits of the use of a large wheel with a low outside frame. This is accomplished by providing the forward end of the platform with depending perforated ears 25, through which is passed the pivot-bolt 12.

By constructing a sleigh in this manner it will present a very neat appearance and can be driven at a very rapid speed over snow or ice, and if the road should be rough or uneven the wheel and runners by means of the pivotal connection will accommodate themselves to the inequalities of the road, as shown in dotted lines at 26 in Fig. 2. By placing the motor and storage batteries or other source of power on the platform their weight is added to the weight of the wheel and its supporting-frame, and thereby the tractive power and efficiency of the wheel is correspondingly increased. In the drawings the connection of the motor with the wheel is shown as being in front of the axle, but of course it can be made at any point to suit conditions or circumstances.

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

1. In a sleigh, a runner-supported frame, a rotary propeller pivotally mounted thereon, the periphery of which is centrally recessed circumferentially, forming oppositely-curved,

sinuous walls, the tread of each wall being concaved circumferentially.

2. In a sleigh, a runner-supported frame, a platform pivotally secured thereto, a wheel journaled in the platform and having a plurality of endless, sharp, oppositely-located, curved surfaces, and means for applying power to said wheel downward in front of its axle, and adjacent to the periphery.

3. In a sleigh, a frame, a plurality of runners therefor, a platform pivotally secured at its forward end to the frame and provided with an opening, a wheel mounted in said opening and having a plurality of oppositely-located, reversely-curved, sharp, engaging surfaces, and a motor on the platform for actuating said wheel.

4. In a sleigh, a frame, the forward end of which is provided with bolsters, runners for the bolsters and for the rear end of the frame, means for swinging the bolsters in unison to guide the sleigh, a platform pivotally secured at its forward end to the frame and provided with an opening, a driving-wheel mounted vertically in said opening, and a motor on the platform for actuating said wheel.

5. In a sleigh, a frame, two bolsters at the forward end, each provided with a pivot projecting through the frame, an arm secured to the upper end of each pivot, a rod for connecting said arms, means for actuating said arms, a pair of runners at each end of the frame, the ones in front being pivotally secured to the bolsters, and driving mechanism pivotally mounted in the frame.

In testimony whereof I affixed my signature, in presence of two witnesses, this 14th day of September, 1905.

BERNHARD BESKOW.

Witnesses:

M. R. SEELY,
F. M. BARTEL.