No. 646,868. Patented Apr. 3, 1900.

J. B. PASTOR.

SLED PROPELLER.

(Application filed Dec. 8, 1899.)

(No Model.)

FIG. 1.

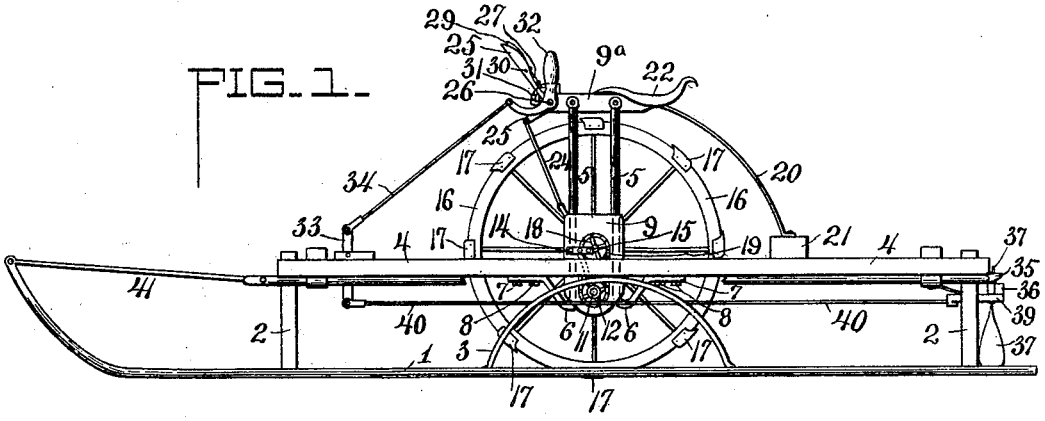


FIG. 2.

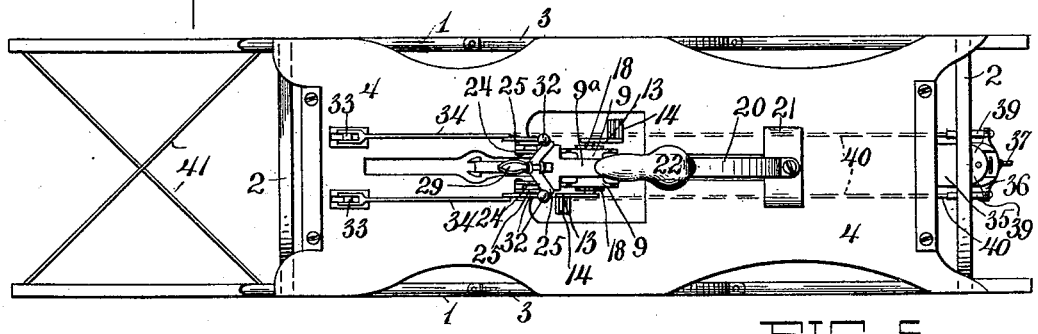


FIG. 3.

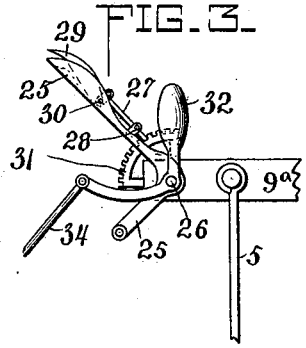


FIG. 4.

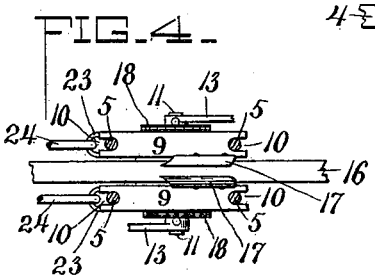
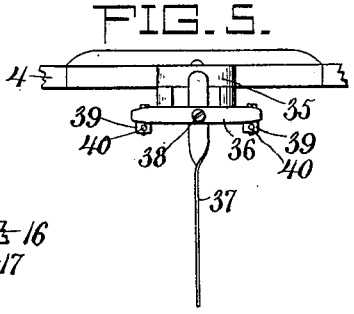


FIG. 5.



WITNESSES

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JACOB B. PASTOR, OF SAND BEACH, MICHIGAN.

SLED-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 646,868, dated April 3, 1900.

Application filed December 8, 1899. Serial No. 739,696. (No model.)

To all whom it may concern:

Be it known that I, JACOB B. PASTOR, a citizen of the United States, and a resident of Sand Beach, county of Huron, State of Michigan, have invented certain new and useful Improvements in Sled-Propellers, of which the following is a specification.

My invention relates to sled-propellers; and it consists of the parts and combination of parts, as will be hereinafter more fully set out.

The object of the invention is to produce a propelling mechanism that is light, yet effective, with means whereby the propelling mechanism may be adjusted to and from the ice.

In the drawings, Figure 1 is a side elevation of my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a detail view of the operating-levers. Fig. 4 is a detail view of the sliding gear-box; and Fig. 5 is a rear elevation of the rudder attached to the sled, the sled being broken away.

1 represents the runners, connected by means of the bow-shaped standards 2 at each end.

3 is a spring the ends of which are secured to the runner, while the body of the same extends upward from said runner.

4 is the platform, secured upon the standards 2 at each end and upon the springs 3 in the center, said springs having a tendency to relieve the standards and platform from jars incident to a machine of this character.

5 are guides the lower ends of which are bent upward at 6, thence at right angles to the main body, as at 7. These guides are secured to the under side of the platform by means of bolts 8, passing through the platform and the portion 7.

9^a is a reach-bar connecting the guides 5 at the top and extending some distance beyond these guides.

9 are sliding blocks, provided with the grooves 10 in each edge thereof, in which the rods 5 are adapted to fit, as clearly shown in Fig. 4.

11 is a crank-axle journaled in both of the slide-boxes 9.

12 is a sprocket-wheel keyed fast to the shaft 11 on the outside of one of said boxes.

13 is a crank-arm provided with a suitable pedal.

15 is an axle journaled in the boxes 9, on which is keyed the propelling-wheel 16, provided with suitable teeth or bights 17, secured to the periphery of the same. This propelling-wheel is keyed to the shaft 15 between the sliding blocks 9, as more clearly shown in Fig. 4.

18 is a sprocket-wheel secured upon the shaft 15 outside of the sliding block 9 and immediately above the sprocket-wheel 12 on the shaft 11, said sprocket-wheel being suitably connected or geared together by means of a sprocket-chain 19.

20 is a flat spring one end of which is secured to the block 21, secured upon the platform 4, while the other end is secured to the reach-bar 9^a. 22 is a suitable saddle mounted upon said spring 20.

23 is a loop secured to the upper forward corner of the respective slide-blocks 9, and 24 is a link one end of which is loosely secured in said loop, while the other end is pivoted to a bell-crank lever 25, pivoted at 26 to the forward end of the reach-bar 9^a.

27 is a dog or pawl working in a bearing 28, integral with the bell-crank lever 25, and 29 is a bell-crank lever pivoted at 30 in the handle of the bell-crank lever 25, to which the dog 27 is suitably secured.

31 is a segmental rack secured upon the forward end of the reach-bar 9^a, with which the dog 27 is adapted to engage.

32 are bell-crank steering-levers pivoted to the forward end of the reach-bar 9^a.

33 are levers pivoted in the forward end of the platform 4, which are connected to the steering-levers 32 by means of links 34.

35 is a rearward extension from the platform 4 to which is pivoted a rocking lever 36.

37 is a rudder adjustably secured in a slot in the rocking lever 36 by means of a set-screw 38.

39 are arms pivoted to the respective ends of the rocking lever, which are connected to the lever 33 by means of the rods 40, which extend underneath the platform 4.

This machine is operated by revolving the pedals 14, which through the chain and sprocket gearing revolves the driving-wheel 16, the teeth 17 digging into the ice and snow, thus affording traction. In order to steer the machine, one or the other of the handles 32 is operated, which springs the rocking arm

36, thus setting the rudder 37 for the direction desired. When the machine has gained headway and it is desired to coast, the driving-wheel 16 is elevated by means of the lever 25, which when pulled backward elevates the sliding blocks 9 and the driving-wheel 16 by means of the loop 23 and the links 24 and is locked in this position by means of the dog 27, which may be released when it is desired to drop the wheel.

41 are braces extending from the forward ends of the runner to the platform 4.

I claim—

1. In combination with the sled; guides extending upwardly therefrom, bearing-blocks sliding between said guides, a driving-wheel journaled in said blocks, a bell-crank lever, having vertically-acting connection with said blocks, and a segmental rack holding said bell-crank lever to any adjustment.

2. In combination with a sled, having uprights and a seat-supporting reach-bar surmounting the same; a steering mechanism comprising the rudder having a cross-arm 36, rods 40 leading forward from said rudder, levers 33 with which said rods are connected, and bell-crank levers 32 fulcrumed on the reach-bar and having controlling connection with said levers 33, substantially as and for the purpose set forth.

3. The combination of a sled, upright guides, the reach-bar surmounting said guides, sliding blocks mounted between said guides, a chain and sprocket gearing journaled in said blocks, a driving-wheel connected with said gearing and means for holding said blocks adjustably in a predetermined position, consisting of bell-crank levers mounted on the reach-bar and having vertically-acting connection with the blocks and a dog and segmental rack holding said lever to its adjustment.

4. In a machine of the character described, the combination with the upright guides, and sliding blocks secured between said guides, of loops secured upon said blocks, links connected to said loops and a bell-crank lever suitably mounted and connected to said loops.

5. In a machine of the character described, the combination with the upright guides, parallel to each other, of sliding blocks having grooves in each side in which said guides are adapted to fit, a chain and sprocket gearing journaled in said blocks and a driving-wheel journaled between said blocks and connected with said gearing, loops secured upon said sliding blocks, links secured to said loops and a bell-crank lever suitably mounted and connected with said links.

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