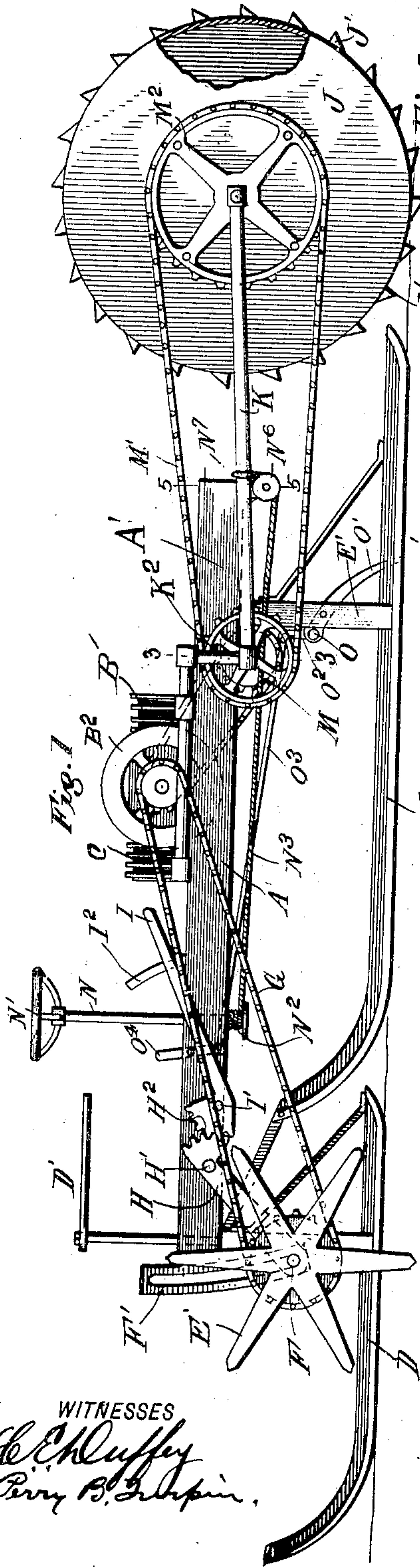


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PATENTED FEB. 19, 1907.

J. SHERWOOD.
AUTO SNOW CAR.

APPLICATION FILED JUNE 5, 1906.



WITNESSES
C. H. Ruffey
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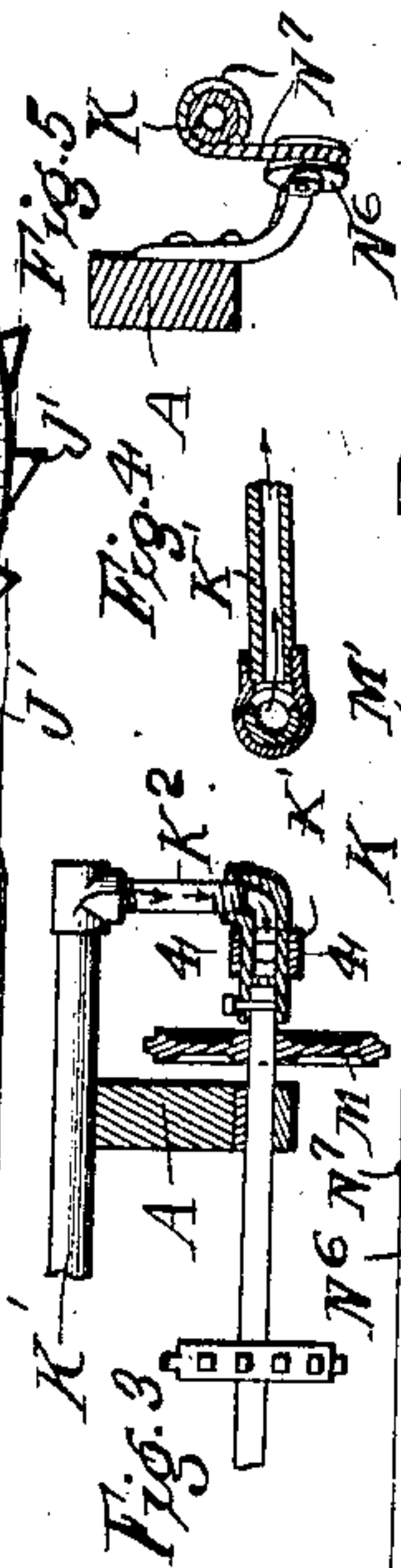
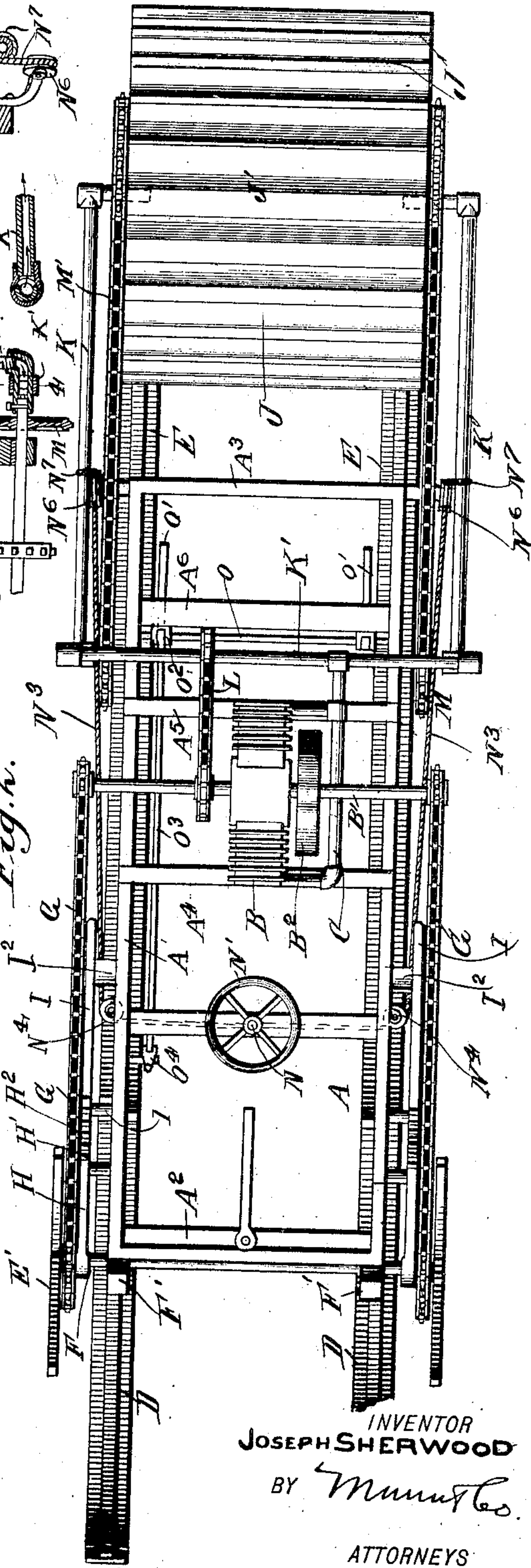


Fig. 2.



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AUTO SNOW-CAR.

No. 844,963.

Specification of Letters Patent.

Patented Feb. 19, 1907.

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To all whom it may concern:

Be it known that I, JOSEPH SHERWOOD, a citizen of the United States, and a resident of Lake, in the county of Fremont and State of Idaho, have made certain new and useful Improvements in Auto Snow-Cars, of which the following is a specification.

My invention is in the nature of a car or sled for use on snow with a propeller for moving the same; and the invention consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side view, and Fig. 2 is a top plan view, partly broken away, of an apparatus embodying my invention; and Figs. 3, 4, and 5 are detail sections on, respectively, lines 3-3, Fig. 1, 4-4 of Fig. 3, and 5-5 of Fig. 1.

In carrying out my invention, I provide a main frame mounted on runners and carrying a suitable motor, together with a propeller connected with the said main frame and arranged to be operated by the motor mechanism on the main frame to advance the car, and also to be heated from the said motor mechanism, whereby to keep the surface of the propeller clear of accumulations of snow, so it will be in operative condition at all times when desired.

In carrying out my invention, the main frame A may be formed with the side beams A', the front cross-bar A², the rear cross-bar A³, and the intermediate cross-bars A⁴, A⁵, and A⁶, the bars A⁴ and A⁵ supporting the motor B, which motor may be of any suitable type, preferably a gasoline-engine, a conventional illustration of the same being presented in Figs. 1 and 2 of the drawings. This engine has a drive-shaft B', a fly-wheel B² thereon, and has its exhaust discharging to a pipe C. As the engine may be of any suitable construction well known to those skilled in the art, a detail illustration of same does not appear to be necessary herein. The main frame A is mounted on the runners D and E, which may be arranged one in advance of the other and may be made of like material on the plan of skees, and the front runners D are supported so they may be turned by the steering-lever D' to guide the machine.

Drive-wheels E' are secured on a shaft F adjacent to the front end of the main frame A, the shaft F being driven by a sprocket-chain G from the drive-shaft B', and said shaft with the wheels at its opposite ends

may be adjusted up and down in guides F', connected with the main frame by means of the levers H and I. The lever H is pivoted at H' to the main frame, connects at its front end with the shaft F, and has its rear end geared at H² with the front end of the lever I, which lever I is pivoted at I' to the main frame and may be operated at its rear end to raise or lower the front propellers E. When in the position shown in Fig. 1, the lever I secures the front propellers in position to engage the snow or ice, these propellers being especially designed for use in case the main propeller should become ineffective, such as when crossing ice or the like. A rack I² may be provided for engagement by the lever I in order to hold the front propeller in any desired adjustment up or down. The rear propeller J is in the form of a cylindrical drum provided on its periphery with ribs or teeth J', adapted to engage snow in order to propel the machine forward when operated, as presently described, and this drum J is carried by the tubular side bars K, which are pivoted at their front ends relatively to the main frame and are connected with the exhaust discharge of the engine and deliver such discharge to the interior of the propeller J, whereby to heat the same, so the snow will not stick to it, the propeller being made in the form of a hollow drum, as before described. In the construction shown the tubular side bars K connect at their front ends with a cross-pipe K', (see Figs. 3 and 4,) which the exhaust-pipe C discharges at a point midway between the ends of the pipe K', so the exhaust may circulate through the pipes K and K' to the propeller. The cross-pipe K' is mounted on and the pipes K are connected by suitable swivel-couplings with branches K², depending from the pipe K', the pipes K² connecting with the outer ends of a counter-shaft driven by the sprocket-chain L from the engine-shaft B' and provided with the sprocket-wheels M, connected by the chains M' with the sprocket-wheels M² on the main propeller for driving the latter.

In order to put any desired pressure on the propeller J, I provide means between the same and the main frame for depressing the said propeller. As shown, the depressing means comprise a shaft N, having a hand-wheel N' and journaled to the main frame and provided with a drum N², on which cables N³ are wound, the said cables being suitably guided at N⁴ and extending back below

guide-pulleys N⁶ at the rear end of the main frame, and thence up and connected at N⁷ with the propeller-frame, so that the shaft N may be turned to depress the said propeller-frame and the propeller to any desired degree.

A brake-shaft O is journaled to the up-rights E' of the rear runners and has the downwardly-projecting shoes O' and an upwardly-projecting crank O², the latter being connected by a pitman O³ with a treadle O⁴, which may be operated to force the shoes O' down against the surface of the snow whenever it is desired to brake the machine.

The front propellers may be used as supplemental to the rear or main propeller, but they are specially designed for use in emergencies, as when the machine crosses ice or the like, when the front propellers may be utilized to move the machine until the main propeller may again operate.

It will be noticed that the weight of the main propeller is supported independently of the main frame, so it may operate to propel the machine, and the main frame being relieved of its weight may be utilized for carrying a load as may be desired.

I claim—

1. The combination substantially as herein described, of the main frame, the main propeller, the propeller-frame having tubular side bars to which the main propeller is journaled, a cross-tube connected with the front ends of said tubular side bars and communicating therewith, a cross-shaft gearing between said cross-shaft and the propeller-drum, an engine on the main frame, gearing between said engine and the said cross-shaft, whereby to drive the latter, and means for discharging the exhaust from the said engine to the cross-tube, whereby it may be delivered thence to the main propeller, substantially as set forth.

2. The combination with the main frame,

of the main propeller, a propeller-frame having tubular side bars pivoted at one end to the main frame and provided at their other ends with bearings for the propeller, an engine on the main frame for driving the propeller, and means for delivering the exhaust from the engine to the said tubular side bars, whereby it may be conducted to the propeller, substantially as set forth.

3. The combination with the main frame, an engine on the main frame, a cross-shaft geared with the engine, whereby it may be driven therefrom, tubular side bars connected with said cross-shaft, the propeller journaled to the tubular side bars, gearing between the propeller and the cross-shaft, and means for delivering the exhaust from the engine to said tubular side bars, substantially as set forth.

4. In a machine substantially as described, the combination with the main frame and the runners supporting the same, of a propeller having a cross-shaft and the wheels secured thereon, a pair of levers pivoted to the main frame and connected at their front ends with the said cross-shaft, and extended in rear of their pivots, and operating-levers geared with the rear extension of said levers, substantially as set forth.

5. The combination with the main frame, its supporting-runners, and the main propeller, of the propeller-frame pivoted to the main frame and to which the main propeller is journaled, a shaft journaled to the main frame, cables operated by said shaft, and connected with the propeller-frame, and guides for said cables below the connection of the cables with the propeller-frame whereby they may operate to depress the propeller-frame, substantially as set forth.

JOSEPH SHERWOOD.

Witnesses:

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