

No. 620,166.

Patented Feb. 28, 1899.

M. F. McANELLY & E. F. WILLIAMS.  
AUTOMOBILE VEHICLE.

(Application filed May 21, 1898.)

(No Model.)

2 Sheets—Sheet 1.

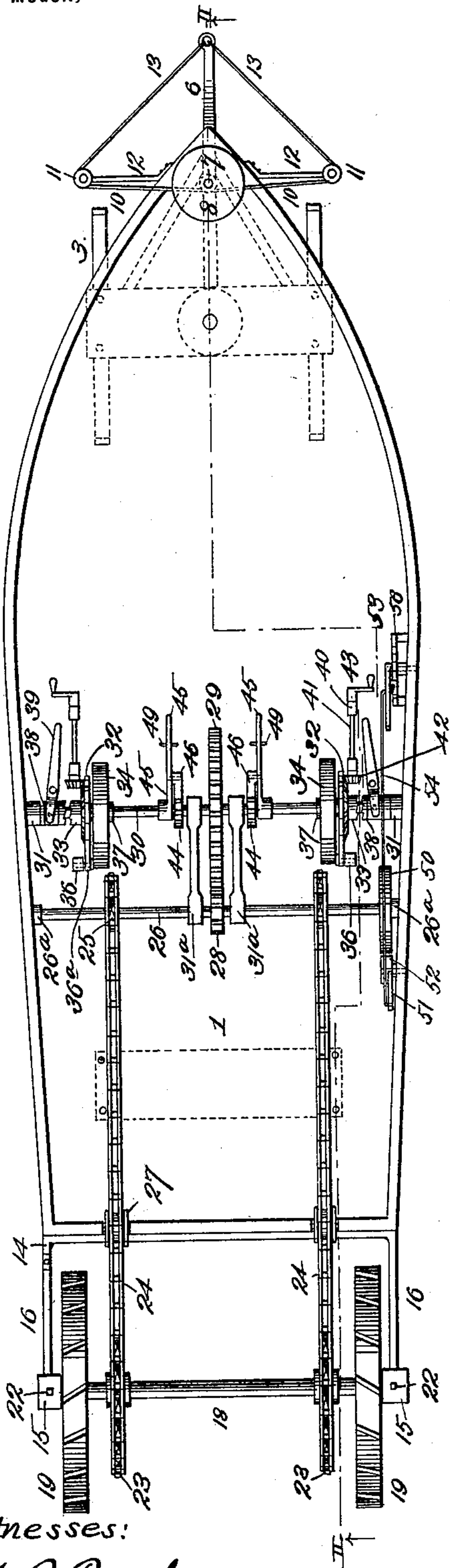


Fig. 1.

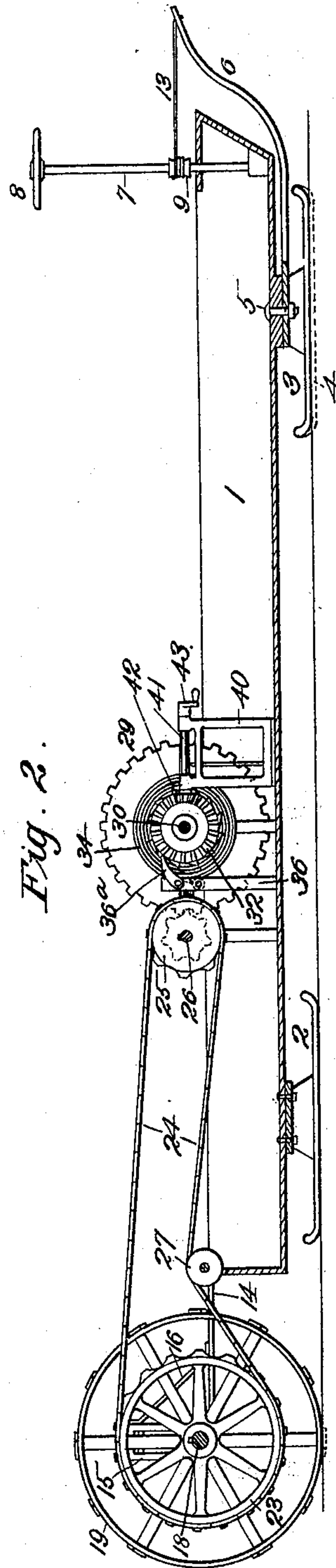


Fig. 2.

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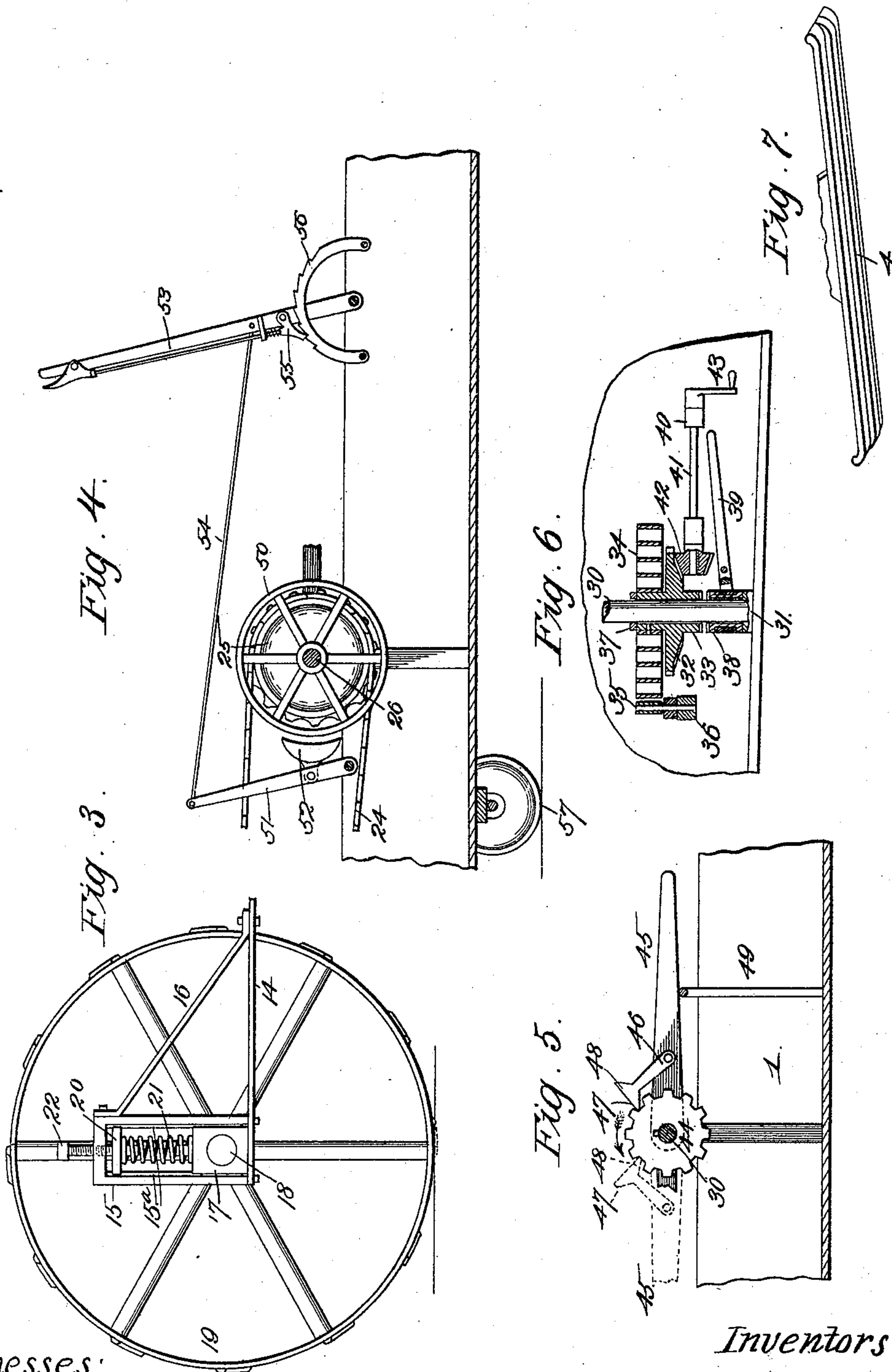
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# UNITED STATES PATENT OFFICE.

MOSES F. MCANELLY AND EDWARD F. WILLIAMS, OF GRAIN VALLEY,  
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## AUTOMOBILE VEHICLE.

SPECIFICATION forming part of Letters Patent No. 620,166, dated February 28, 1899.

Application filed May 21, 1898. Serial No. 681,298. (No model.)

*To all whom it may concern:*

Be it known that we, MOSES F. MCANELLY and EDWARD F. WILLIAMS, of Grain Valley, Jackson county, Missouri, have invented certain new and useful Improvements in Automobile Vehicles, of which the following is a specification.

Our invention relates to automobile vehicles for traversing land, water, snow, or ice; and it consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed.

The object of the invention is to produce a vehicle of the character described in which the actuating power is a spring or springs and which is of simple, strong, durable, and comparatively inexpensive construction.

In order that the invention may be fully understood, we will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents a top plan view of a vehicle embodying our invention. Fig. 2 is a vertical longitudinal section of the same, taken on the line II II of Fig. 1. Fig. 3 is a side view of the traction-wheel end of the vehicle. Fig. 4 is a sectional view of the boat to illustrate clearly the brake mechanism. Fig. 5 is a sectional view to illustrate the means for assisting the springs to propel the vehicle or for backing the same against the resistance of the springs. Fig. 6 is a horizontal section of certain parts, and Fig. 7 is a perspective view of one of the runners of the front sled.

In the said drawings, 1 designates a shallow flat-bottomed boat or skiff, 2 a toboggan sled secured to and arranged under the rear end of the same, and 3 the front sled, the same being provided with longitudinal ribs 4, depending from the runners of the sled and adapted by grooving the snow or ice over which the vehicle is traveling to prevent it slipping laterally to the left or right and making it possible to turn to the left or right without difficulty or danger. Said sled is connected centrally to the skiff by means of the king-bolt 5. A forwardly-projecting arm or tongue 6 is secured to the sled and pivoted upon said king-bolt.

7 designates a vertical shaft journaled in the front end of the boat or skiff and provided at its upper end with a hand-wheel 8, by which it is operated, and just above the bolt with a drum 9. A cable is wound around said drum and extends thence outwardly, as shown at 10, and forwardly around the guide-pulleys 11, mounted rotatably upon the laterally-projecting arms 12 of the boat, and said cable extends convergingly forward from said pulleys, as at 13, and is attached to the front end of the tongue or arm 6. By this arrangement it is obvious that the vehicle may be steered to the right or to the left, accordingly as the steering-wheel 8 is turned in one direction or the other.

14 designates a U-shaped frame which projects rearwardly from the boat or skiff, and 15 a pair of inverted-U-shaped brackets mounted upon the rear ends of said frame and braced in their vertical positions by means of the oblique bars 16. 17 designates bearing-boxes which are mounted to slide vertically in said brackets 15 and upon the longitudinally-extending ribs 15<sup>a</sup> of the same in order to prevent any possibility of dislocation. 18 designates a shaft journaled in said boxes, and 19 traction-wheels secured thereon.

20 designates grooved sliding plates which are fitted upon the ribs 15<sup>a</sup> of the brackets, and 21 spiral expansion-springs interposed between said plates and the bearing-boxes in order to hold the latter downward with a yielding pressure, said springs being held reliably in position by means of pins projecting from the plates 20 and the boxes 17. (See Fig. 3.) The tension of said springs upon said boxes may be increased or diminished by proper manipulation of the set-screws 22, mounted in the upper ends of said brackets and bearing against the upper side of the sliding plates 20. By screwing down upon said set-screws the weight of the traction-wheels can be increased, so that there will be no possibility of their slipping inoperatively upon the ground or upon ice or snow, as will be readily understood.

23 designates a pair of large sprocket-wheels mounted upon shaft 18, and 24 a pair of chains which extend forwardly over the rear end of and into the boat and engage the smaller



sprocket-wheels 25 of the transverse shaft 26, journaled in bearings 26<sup>a</sup> of the boat. In order that the lower strand of said chains may enter the boat without passing through its rear end, guide-pulleys 27 are secured to such end and said lower strands deflected by engagement with said pulleys, as shown clearly in Fig. 2.

28 designates a small cog-wheel mounted in shaft 26, and 29 a large cog-wheel mounted upon a parallel shaft 30, journaled in bearings 31 of the boat, and said shafts at their middle are connected by the tie-bars 31<sup>a</sup> to prevent said shafts from bending under the strain imposed by the gear-wheels, and consequently to prevent the disengagement of the latter.

At a suitable distance apart wheels 32, which are provided peripherally with ratchet-teeth and facially with beveled cog-teeth, are loosely mounted upon shaft 30, and said wheels are also provided with clutch members 33.

Powerful coiled springs 34 are secured at their inner ends to the hub portions of said wheels 32 and at their outer ends to pins 35 of vertical standards 36 of the boat, and pivotally mounted on said standards are dogs 36<sup>a</sup>, which engage the peripheral ratchet-teeth and prevent the springs from unwinding accidentally.

The wheels 32 are prevented from moving inwardly upon shaft 30 by means of the collars 37, and their clutch members 33 are adapted to be engaged by the companion clutch members 38, which rotate with the shaft 30, but also have sliding movement thereon. They are engaged by the customary forked levers 39, by which they may be thrown into or out of gear with the clutch members 33. When said clutches are in engagement and the dogs 36<sup>a</sup> out of engagement with wheels 32, said springs unwind and by such action through the medium of the gearing described rotate the traction-wheels and propel the vehicle, whether upon land, ice, or snow. To arrest the vehicle, it is only necessary to throw said clutches out of engagement.

The springs may be rewound when necessary or desirable by the following mechanism: 40 designates frames secured to the boat, and 41 shafts journaled therein and provided at their rear ends with beveled pinions 42, engaging the beveled teeth of wheels 32, and at their opposite ends with crank-handles 43, the turning of which in the proper direction will obviously restore the power of the springs 34.

In case it is necessary or desirable to assist the springs in propelling the vehicle or to back the vehicle we employ one or more small cog-wheels 44, mounted rigidly upon shaft 30, and a corresponding number of levers 45, provided with dogs 46, pivoted thereto and having oppositely-projecting teeth 47 and 48 for engagement with said wheels, accordingly as the vehicle is to be moved in one direction or

the other, and said shafts when inoperative are supported in a convenient position by means of the standards 49 of the boat. To turn the wheels 44 in the direction indicated by the arrow, Fig. 5, the dog-tooth 47 engages wheel 44, and the lever is swung back and forth, the beveled surface of said tooth permitting it to slip over the cog-wheel during the inoperative stroke of said lever. To turn said wheel in the opposite direction, the dog is first disengaged from the wheel and then thrown to the position shown in Fig. 5. The dog is then moved to the position shown in dotted lines, with its tooth 48 engaging the cog-wheel.

In order to retard the progress of the vehicle in descending grades or to check it quickly at any time desired, we mount upon the shaft 26 the brake-wheel 50 and pivot to the boat in any suitable manner the lever 51, provided with a pivoted brake-shoe 52 for engagement with said wheel. We also pivotally mount upon the boat at a suitable point the lever 53, connected by link 54 to lever 51 and provided with the usual spring-actuated dog 55 for engagement with the toothed segment 56 in order to secure the brake in the position desired.

As the function of the various parts has been explained a recapitulation of the operation is deemed unnecessary. It is necessary, however, to state that when used as a land vehicle the boat or skiff is preferably mounted upon wheels or rollers 57 at its front and rear ends instead of upon the sleds 2 and 3, which, however, may be easily and quickly removed. In crossing streams the wheels or sleds and the traction-wheels may be removed, especially if the stream happens to be a shallow one, (otherwise it would be unnecessary,) and it may be well to further state that the passage of the vehicle over rough or uneven ground will not be fatiguing, because the springs 21 act as cushions to the upward movement of the bearing-boxes or the downward movement of the plates 20, and thus relieve the occupants of the boat of the incidental jar or jolt, as will be readily understood.

From the above description it will be apparent that we have produced an automobile vehicle which embodies the features of advantage enumerated in the statement of invention, and it is to be understood, of course, that we reserve the right to make such changes in the form, proportion, detail construction, or arrangement of parts as do not involve a departure from the spirit and scope of the invention, and we do not confine ourselves to the use of any particular number of power-springs and parts working in conjunction therewith.

Having thus described the invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An automobile vehicle, comprising a skiff or boat, a frame projecting rearwardly therefrom, brackets mounted upon said frame,



spring-depressed bearing-boxes in said brackets, a shaft journaled in said bearing-boxes and provided with traction-wheels, and means to rotate said shaft to propel the vehicle, substantially as described.

2. An automobile vehicle, comprising a skiff or boat, a frame projecting rearwardly therefrom, brackets mounted upon said frame, spring-depressed bearing-boxes in said brackets, a shaft journaled in said bearing-boxes and provided with traction-wheels, and coiled power-springs geared to said shaft to propel the vehicle, substantially as described.

3. An automobile vehicle, comprising a skiff or boat, a frame projecting rearwardly therefrom, brackets mounted upon said frame, spring-depressed bearing-boxes in said brackets, a shaft journaled in said bearing-boxes and provided with traction-wheels, coiled power-springs geared to said shaft to propel the vehicle, means to prevent the accidental unwinding of said springs, and means to rewind the latter when desirable or necessary, substantially as described.

4. An automobile vehicle, comprising a skiff or boat, a frame projecting rearwardly therefrom, brackets mounted upon said frame, spring-depressed bearing-boxes in said brackets, a shaft journaled in said bearing-boxes and provided with traction-wheels, a shaft suitably journaled in the boat, clutches mounted and adapted to rotate with and slide upon the same, wheels journaled upon said shaft provided with companion clutches, coiled springs secured at their inner ends to said wheels and at their outer ends to a fixed point, a train of gearing between said shaft and the shaft of the traction-wheels, and levers to throw the first-named clutches in or out of engagement with the clutches of said wheels, substantially as described.

5. An automobile vehicle, comprising a skiff or boat, a frame projecting rearwardly therefrom, brackets mounted upon said frame, spring-depressed bearing-boxes in said brackets, a shaft journaled in said bearing-boxes and provided with traction-wheels, a shaft suitably journaled in the boat, clutches mounted and adapted to rotate with and slide upon the same, wheels journaled upon said shaft and provided with ratchet and cog teeth and with companion clutches, gravity-dogs engaging the ratchet-teeth, gear-pinions engaging the cog-teeth, coiled springs secured at their opposite ends to the hubs of said wheels and to fixed points in the boat, gearing connecting said shaft with the traction-wheel shaft, and a lever for throwing the first-named clutches in or out of engagement with the clutches of said wheels, substantially as described.

6. An automobile vehicle, comprising a

boat or skiff, a frame projecting rearwardly therefrom and carrying brackets, bearing-boxes mounted in said brackets, a shaft journaled therein and provided with traction-wheels, a spring-actuated shaft geared to the traction-wheel shaft, and means to assist said springs in the propulsion of the vehicle, or to back the same, comprising a cog-wheel upon the power-shaft, a lever pivoted upon the shaft, and a reversible double-toothed dog pivoted to said shaft and adapted to engage said cog-wheel, substantially as described.

7. An automobile vehicle, comprising a boat or skiff mounted upon sleds, the rear one rigid and the front one pivoted, and provided with depending guide-ribs, a tongue projecting forwardly from the same, laterally-projecting arms of the boat, provided with guide-rollers, a drum-shaft provided with a steering-wheel, and a cable wound around the drum-shaft extending around said pulleys and attached to the front end of the tongue, in combination with a driven shaft, and traction-wheels mounted thereon, substantially as described.

8. An automobile vehicle, comprising a boat or skiff mounted upon sleds, the rear one rigid and the front one pivoted, and provided with depending guide-ribs, a tongue projecting forwardly from the same, laterally-projecting arms of the boat, provided with guide-rollers, a drum-shaft provided with a steering-wheel, and a cable wound upon the drum-shaft, extending around said pulleys and attached to the front end of the tongue, in combination with a driven shaft, and traction-wheels mounted thereon, a brake-wheel, a brake-carrying lever, a lever connected to the brake-carrying lever, and means to secure the last-named lever at the desired point of adjustment, substantially as described.

9. In a vehicle of the character described, a boat, a frame projecting rearwardly therefrom, brackets mounted thereon and provided with ribs, sliding boxes mounted upon said ribs, a shaft journaled therein, traction-wheels mounted upon said shaft, sliding plates also mounted upon the ribs of said brackets, expansion-springs bearing at their upper and lower ends, respectively, against the sliding plates and the boxes, and set-screws carried by the brackets and bearing down upon said plates, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

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EDWARD F. WILLIAMS.

Witnesses:

M. R. REMLEY,

F. S. THRASHER.