

(No Model.)

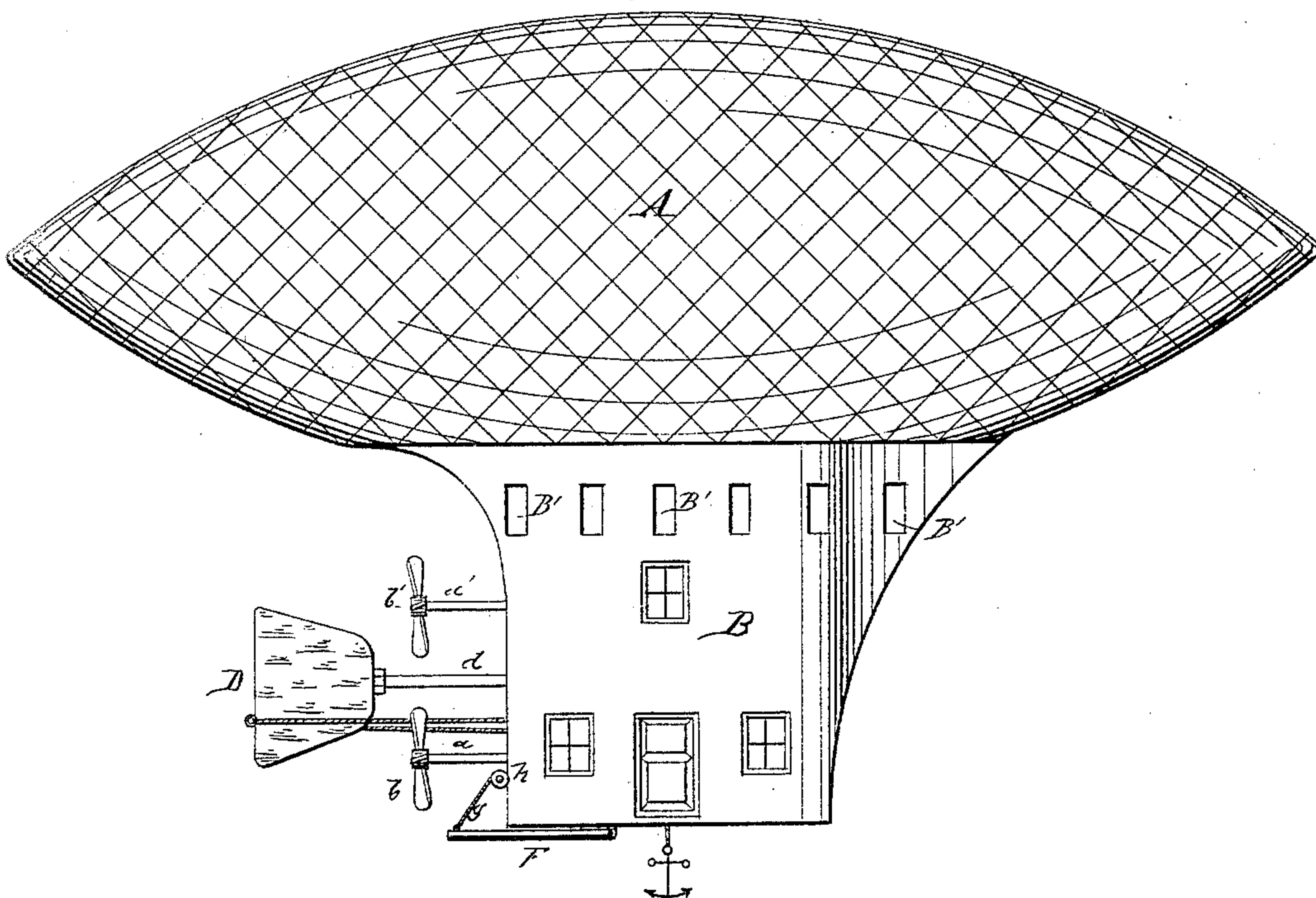
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J. J. POKORNY.  
AIR SHIP.

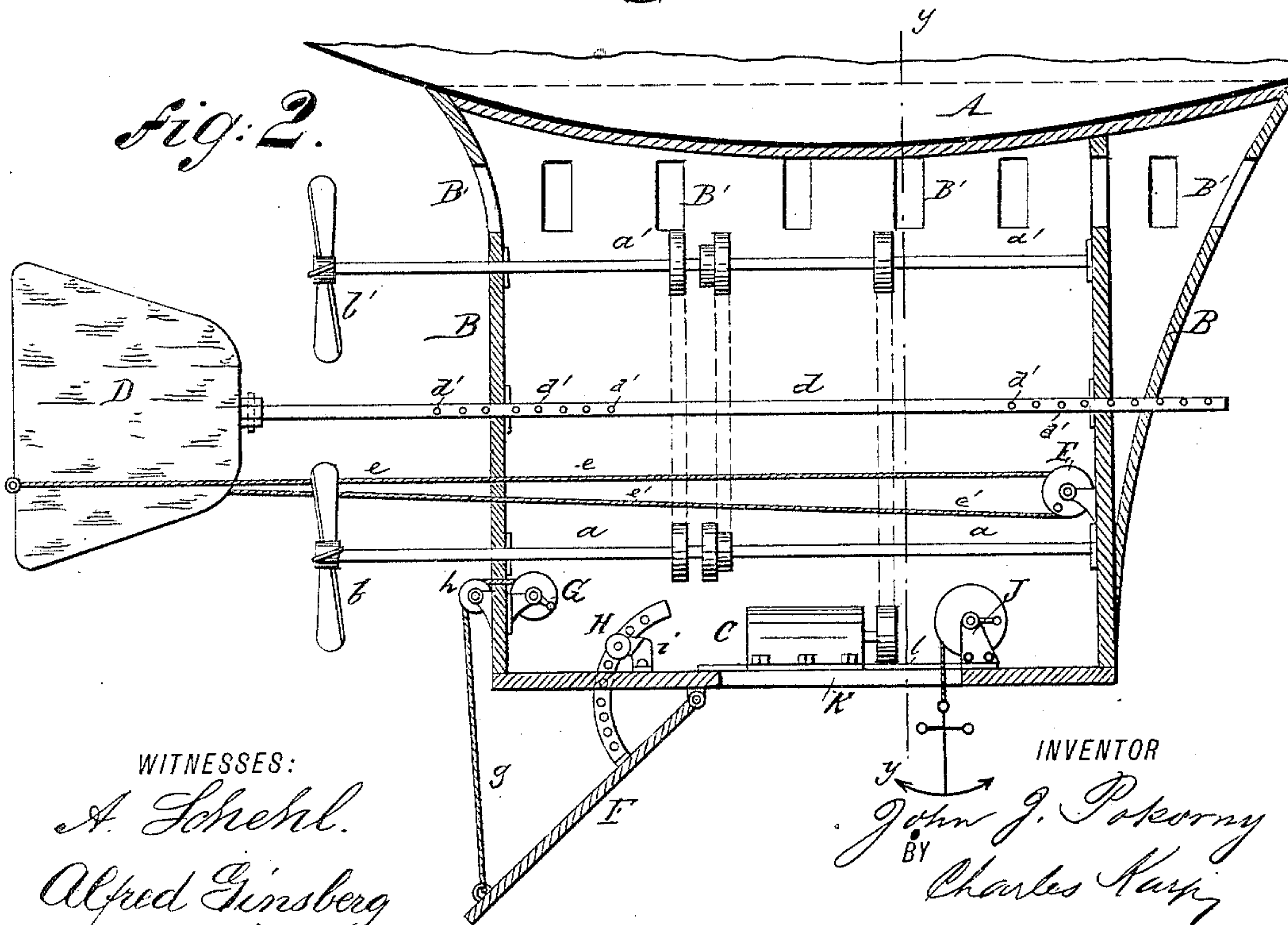
No. 424,822.

Patented Apr. 1, 1890.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

*A. Schehl.*  
*Alfred Ginsberg*

INVENTOR

*John J. Pokorny*  
BY *Charles Karp*

ATTORNEY.



(No Model.)

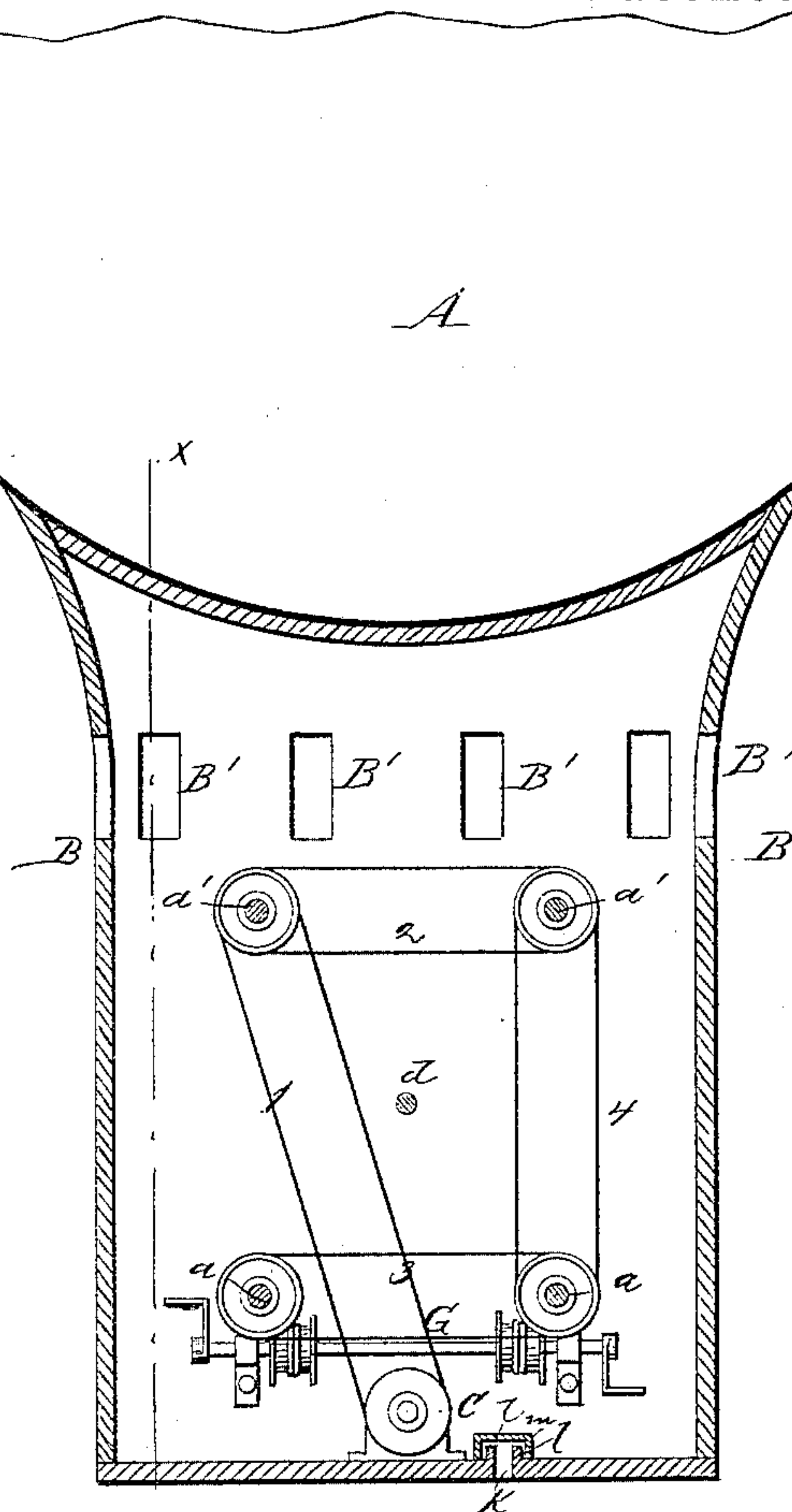
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J. J. POKORNY.  
AIR SHIP.

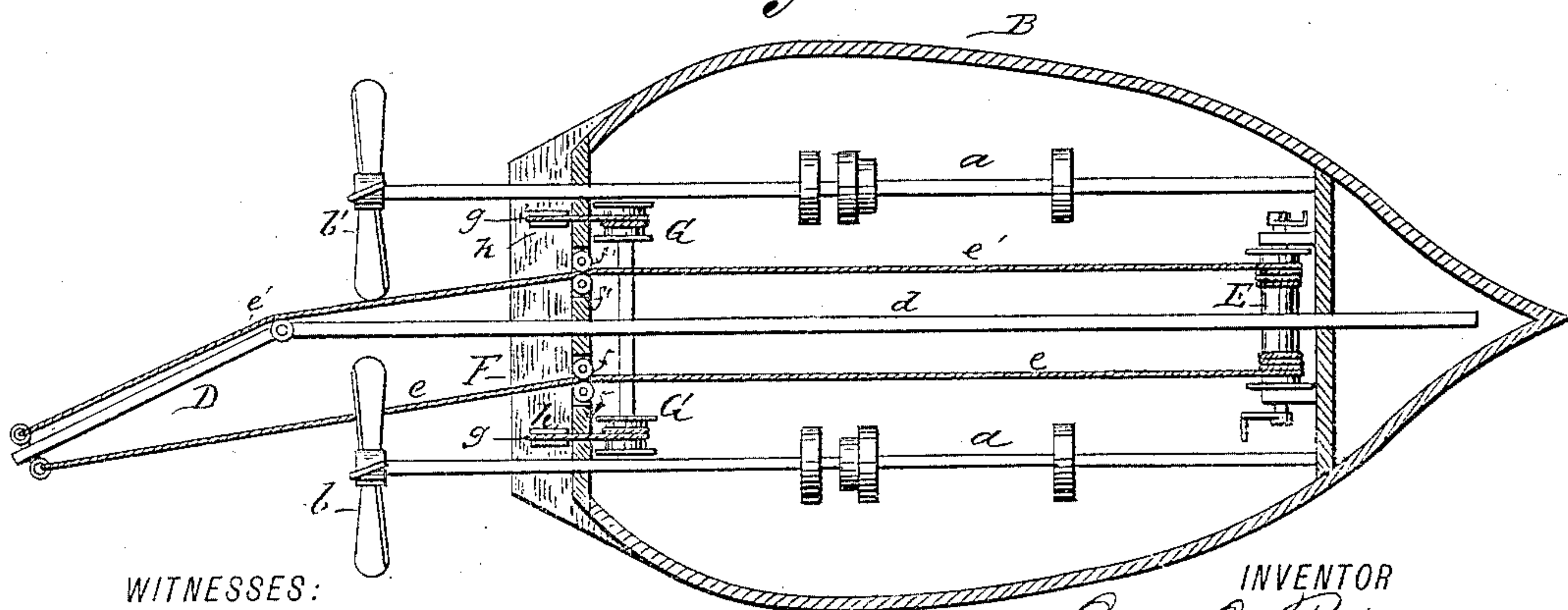
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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

JOHN J. POKORNY, OF NEW YORK, N. Y.

## AIR-SHIP.

SPECIFICATION forming part of Letters Patent No. 424,822, dated April 1, 1890.

Application filed October 19, 1889. Serial No. 327,537. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. POKORNY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Air-Ships; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in air-ships, by which the liability of steering is facilitated.

The following description fully explains the nature of my invention, and the mechanism by which I attain the object of the invention is illustrated in the accompanying drawings.

Figure 1 represents a plan of my improved air-ship. Fig. 2 is a vertical section of the car in line *x x*, Fig. 3. Fig. 3 is a vertical section of the same on line *y y*, Fig. 2; and Fig. 4 is a longitudinal section of the car.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the balloon, and B the car, of my improved air-ship. The car is attached direct to the balloon to prevent the dangling of the same when the air-ship is floating in the air. A gas, electric, or any other motor C is placed on the bottom of the car, by which motion is imparted to the shafts *a a* and *a' a'* of the propelling-screws by means of belting. The shafts have pulleys of different diameter, so that the turning motion of the shafts by placing the belts on the different pulleys can be increased or decreased, as desired. Two sets of propelling-screws *b b* and *b' b'*, driven by the shafts *a a* and *a' a'*, are employed in the car. The transmission of motion from the motor to the shafts is so arranged that one set of screws can have a motion independent from the speed of the other set, and that the motion of the shafts *a a* and screws *b b* can be entirely stopped while the shafts *a' a'* and screws *b' b'* are continually running. The plan of the transmission of motion is clearly shown in Fig. 3. The motor C imparts its turning motion by means of the belt 1 to the shafts *a' a'*, which are connected with each other by the belt 2. The shafts *a a*, which are connected

with each other by the belt 3, receive their motion from the shafts *a' a'* by means of the belt 4. When it is desired to stop the motion of the shaft *a a*, the belt 4 is placed on a loose pulley on a corresponding shaft *a*. By this arrangement and by means of the pulleys of different diameters on the shafts, the motion of the propelling-screws *b b* can be decreased or stopped while the propelling-screws *b' b'* keep their regular speed.

The rudder D, outside of the stern of the car, is connected by a hinge to the rudder-pole *d*, which passes through the whole length of the car. The pole *d* is provided with holes *d'*, by means of which and bolts passing through the same the pole can be so set that the rudder may be placed at any required distance from the stern of the car. The steering motion of the rudder is produced by means of two ropes *e* and *e'*, fastened to the outer edge of the rudder and passing between two sets of pulleys *f f'*, through the back wall of the car to a windlass E, to which the ropes are so fastened that by the turning of the windlass one rope is wound up while the other rope is unwound. The simultaneous but reversed motion of the ropes causes the steering action of the rudder.

A wind-board F is attached by means of hinges to the outside of the bottom of the car. Two or more ropes *g*, which are fastened to the wind-board near its outer edge, pass over pulleys *h* on the outside of the back wall of the car and through the same to the windlass G, attached to the inside of the said back wall. A quadrant H, of iron or other suitable material, passing through the bottom of the car, is fastened to the wind-board. When it is desired to lower the wind-board, the ropes *g* are unwound from the windlass G. As soon as the wind-board has reached the required position the quadrant H, by means of a bolt passing through guide-holes in the quadrant, or by any other suitable locking device, is fastened to a standard *i*.

The bottom of the car is provided with a longitudinal opening *k*, alongside of which rails *l* are fastened, on which moves a carriage J, holding the anchor-windlass. This arrangement has for its purpose to contribute, if necessary, by the location of the anchor to the



proper balance of the air-ship. If desired, the longitudinal opening *k* may be closed by a cover *m*.

5 The car has in the upper part of the walls openings *B'* to allow the wind pressing side-long against the air-ship a passage and to decrease the resistance of the air-current.

10 I do not attach the car to the balloon by means of ropes, as usually done, but give the upper part of the car such a shape that the balloon fits exactly into the upper part of the car, as shown in Figs. 2 and 3. The car is attached direct to the balloon, and may be fastened to the same by means of bolts, rivets, or  
15 otherwise.

The car may be provided with doors and windows, as desired.

20 When the air-ship is floating in the air by means of the gas contained in the balloon, it can be steered in any direction and moved forward by means of the rudder and the action of the propelling-screws.

25 When it is desired to lower the air-ship, the balloon is slowly discharged of the gas, as usual.

To impart to the air-ship an inclined descent the motion of the lower set of screws is decreased or entirely stopped, as above described, the uninterrupted working of the up-

per set of screws keeping the air-ship in its 30 proper direction while descending. It is evident that the action of the upper set of screws will bring the air-ship into a tilting position. To prevent this the wind-board is lowered, whereby a resistance against the current of 35 air at the hind part of the car is produced, which in a certain degree neutralizes the effect of the upper set of screws, and enables the air-ship to go down in a horizontal position. Should this position not be reached by the 40 lowering of the wind-board, it will be aided by moving the anchor to the back part of the car, as above mentioned.

Having thus described my invention, I claim as new and desire to secure by Letters Pat- 45 ent—

In an air-ship, a rudder hinged to a pole passing alongside through the car, and being provided with holes by means of which and bolts passing through said holes the rudder 50 can be set close to or a distance from the stern of the car, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN J. POKORNY.

Witnesses:

DANL. GERBER,  
ALFRED GUISEBERG.