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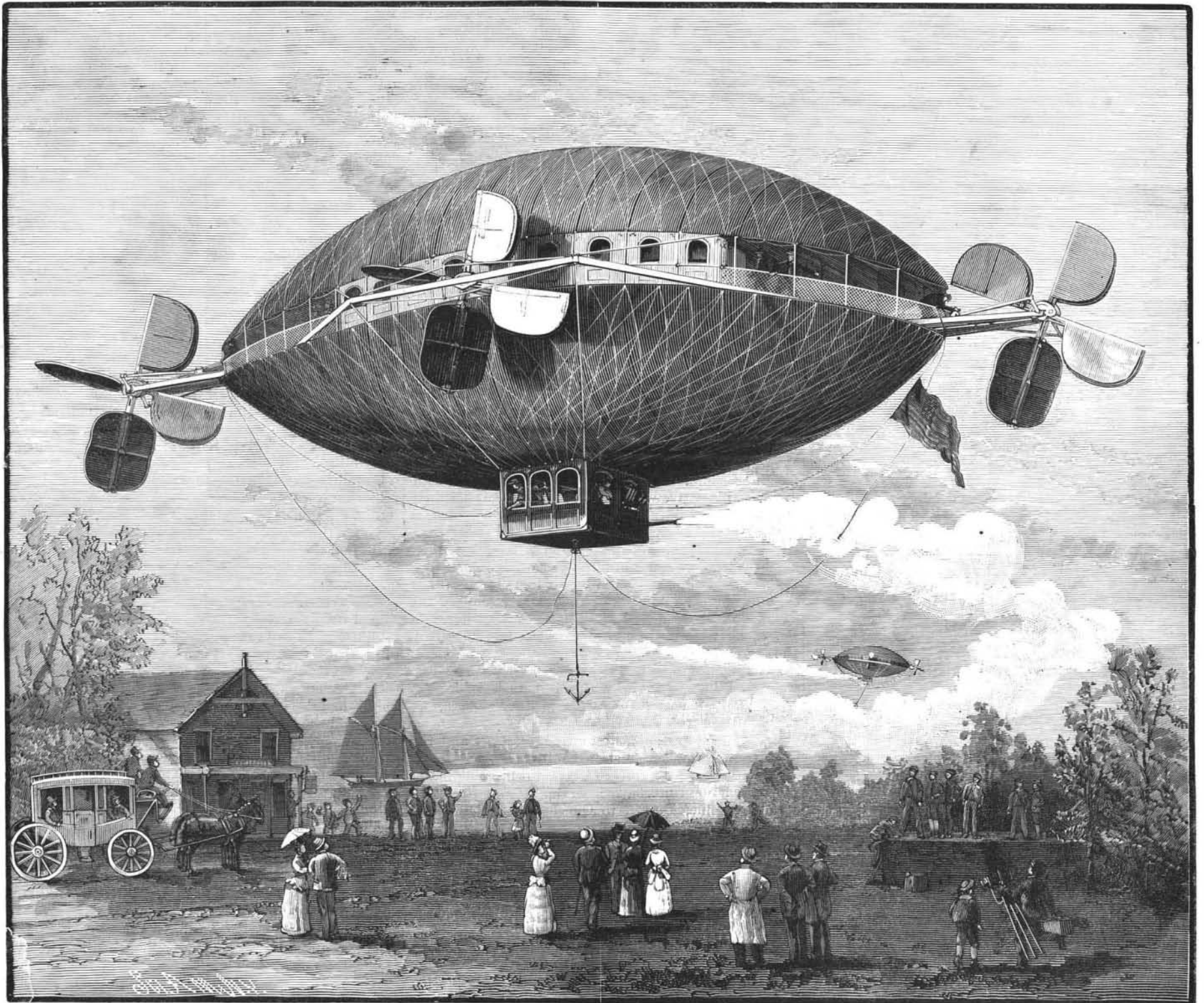
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A NOVEL FORM OF AERIAL VESSEL.

The accompanying engraving illustrates an aerial vessel and propelling wheel, the invention of Mr. Moses S. Cole, of Greytown, Nicaragua, Central America, containing many novel features in the form, construction, and general arrangement of the parts. It is claimed that this vessel can be raised, lowered, steered, and propelled in any direction at the will of the pilot. The vessel is provided with a central compartment having suitable rooms for the accommodation of pas-

sengers in line with the axis of the vessel to one side. The wheels are each mounted on a shaft having crank arms, which receive a rotary motion from the main shaft by suitable connections. The end wheels steer the vessel in any direction, and propel it in a horizontal plane. The ends of the vessel are provided with valves, which permit of ventilating the compartment when the vessel is in motion and all the doors and windows in the wall are closed. The wings of the propelling wheels are so construct-

ward motion is obtained by the rotation of the end wheels when placed in an axial position, but the vessel can be forced to execute any evolution desired by swinging one or both of these wheels sidewise. To cause the vessel to descend, the motion of the side wheels is reversed. The connections, through the medium of which motion is communicated from the motor in the shaft to the four sets of wheels, are well designed so as to insure the necessary strength combined with little weight.



COLE'S NOVEL FORM OF AERIAL VESSEL.

sengers and crew. On the top of the ceiling is secured an inflated balloon of semi-spheroidal form, while to the floor is attached a similar balloon. Downwardly through the floor extends a hollow shaft in which is placed the motive power for operating the driving wheels, and which forms at its lower end the pilot house. The main driving shaft is placed transversely across the floor, and is formed with a crank at its center, to which the motor is coupled. On each end of the shaft, and outside the inclosing wall of the compartment, is secured a wheel having several wings, which open and close automatically, according to circumstances; these wheels serve to raise or lower the vessel. Wheels similar in construction are placed at the ends of the vessel, each being mounted on a frame pivoted to the floor, and provided on its inner end with a device for swinging it from its central po-

sition as to open through a certain part of the revolution and close through the remainder. This important feature is accomplished through the medium of cams, which, in connection with the rotating spokes or arms, operate sliding bars which open the wings and lock them in that position during a certain part of a revolution. The wings are open only through one-quarter of the entire revolution, and are completely closed through one-half, the remaining quarter being necessary for the opening of the wings and the closing, which latter is due to the resistance of the air. The wings consist of frames covered with canvas or other suitable material, and hinged to the arms; the two parts of each wing can thus be opened so as to lie in the same plane, or closed so as to rest parallel with each other. The rotation of the side wheels causes the vessel to ascend, aided by the balloons. A forward or back-

The arrangement of the parts for opening the wings is simple, effective, and not liable to get out of order. The machinery, taken as a whole, may be made strong and effective without undue weight.

Petroleum in Amsterdam.

A huge iron reservoir is being built at a remote spot in the outer harbor of Amsterdam, for the storage of petroleum. It will be nearly 33 feet in diameter and of the same depth, and is calculated to hold 7,900,000 liters of oil, or nearly 1,740,000 gallons. The petroleum will be brought direct from Russia in vessels specially constructed, and it will be pumped out at Amsterdam into the tank, thus saving the expense of filling and emptying casks and diminishing the risk of accidents.

UNTIL 1776, cotton spinning was performed by the hand-spinning wheel.