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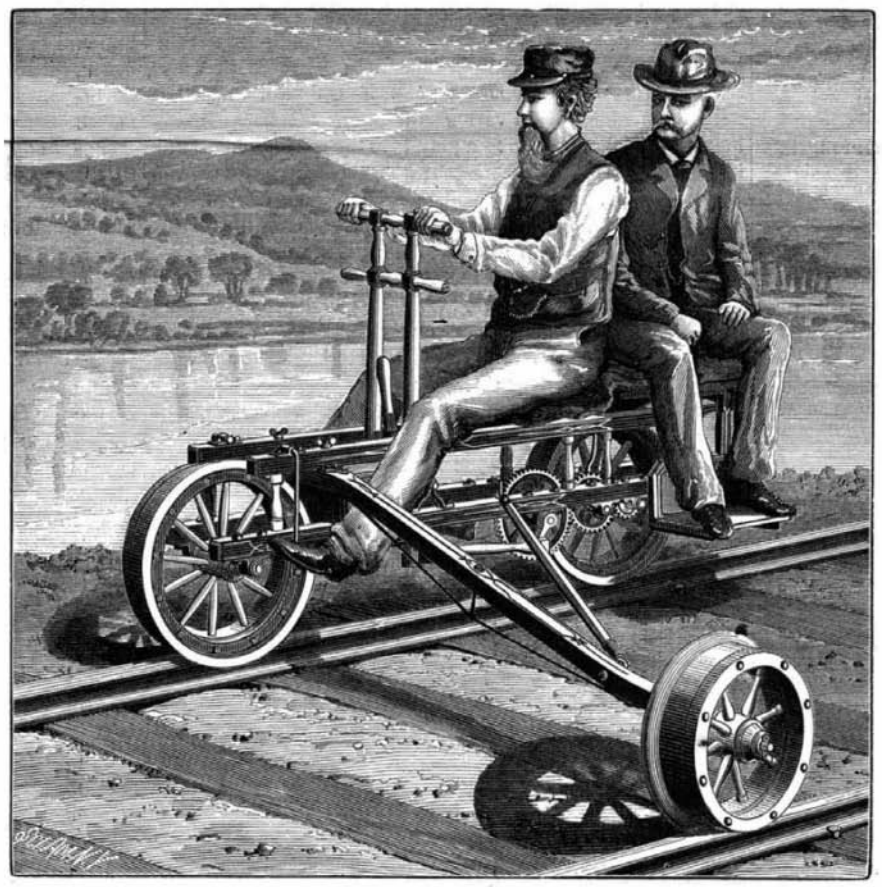
THREE WHEELED INSPECTION CAR.

The car herewith illustrated facilitates a close inspection of a railroad, and it is claimed that by no other device can this be done so effectually. It is propelled by one person and has a device for carrying a second, thereby enabling a road master or inspector, when convenient, to avail himself of the services of a spare section hand or other man for the purpose of propelling him over the line, he being free to note all defects in alignment or surfacing.

In this way he can visit personally a large portion of the sections under his charge in a single day, stopping wherever the men are at work, giving his directions and calling attention to defects while they are fresh in his mind, and in this way keeping his track at all times in the best possible condition, as it is well known that in this department it is only a close attention to the details of the work that is rewarded with success. The car is propelled by a rowing motion and auxiliary foot power. The frame, wheels, and arm are made of white ash, the frame being firmly held together by bolts. The arm is stiffened by an iron brace. The tires are cast iron, the axles and crank shaft are iron, the crank and stirrups of malleable iron. The arm is adjustable and can be removed at will, thus securing economy of space in transportation. The car weighs about 140 pounds, and is made with either a 17 or 20 inch driver, geared 3 or 4⅓ times, as may be most expedient. There are some 4,000 of these cars now in use both in this country and Europe.

The manufacturers, the Sheffield Velocipede Car Company, of Three Rivers, Mich., should be addressed for further information.



THREE WHEELED INSPECTION CAR.

THE BARNEY AUTOMATIC DUMPING BOAT.

What to do with city refuse has been a question to the health departments of our large cities for years. If it is deposited in the harbor it tends to create bars obstructive to navigation, and if thrown into the sea light and dry from the decks of scows just outside the harbor, much of it drifts to the adjacent shores, making a nuisance if not breeding disease. The only effectual manner and place for its disposal appear to be by sinking it far enough out at sea to prevent it from choking navigable channels or contaminating adjacent shores. This is done by the system illustrated in the accompanying engravings, known as "The Barney Automatic Dumping Boat" plan.

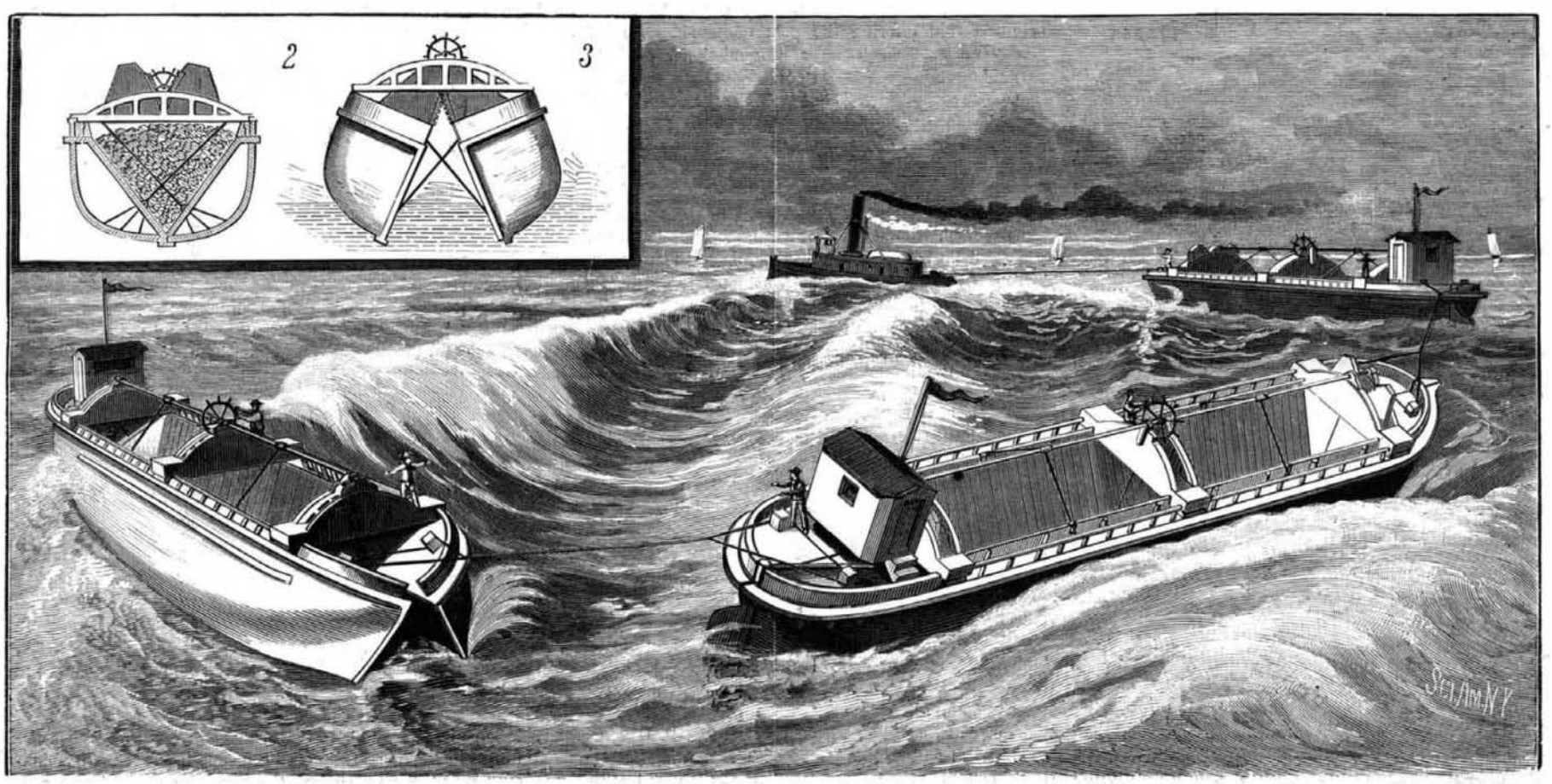
The boats built on this system are not flat scows carrying all their load on deck and far above the water line, but are serviceable sea boats, capable of riding the waves without danger, and cannot sink unless wholly destroyed. The load is the ballast of the boat, and insures steadiness until the cargo is emptied, when the natural buoyancy of the boat is its assurance of safety. Each boat is in two longitudinal sections, or consists of two pontoons hinged to bridges above the deck and presenting the appearance of an entire boat. as seen in cross section in Fig. 2. Each pontoon, or half, is air tight, and the load is carried between the two, occupying a V-shaped space shown in the same figure, extending from the outer edge or gunwale to the keel. The bridges connecting the two pontoons are hinged to their outer edges, and are connected by a shaft running the entire distance, by turning which three segments of gears controlling the position of the pontoons are opened, the whole operated simultaneously by one man at the center bridge. This work is simply that of releasing the load, and of securing the two pontoons together after the releasing, as the pontoons work automatically. opening by the gravity of the load, and closing by the displacement, or the force of the water on their outsides. So the mechanism is very simple: the two longitudinal halves of the boat are hinged to three rigid connecting bridges at their upper edges and connected by geared segments of one-eighth of a circle, or 45 degrees. The two halves or sections are held together by connecting rods, or tension rods, as seen in Figs. 2 and 3.

It is not intended that the boat, as a whole, shall be water tight. In fact, the meeting of the two air tight pontoons at the common keel is far enough from being hermetical, that it is intended the sea water shall come up by absorption and capillary attraction and saturate the entire load of refuse. This increases its density and its facility to sink quickly to the bottom. So, after the cargo is dumped into the sea, the pontoons may be held apart by means of friction beams, as in Fig. 3, while the sea washes the load space between them, cleansing the walls with the sea brine. This is seen, also, in the last boat in tow in the principal engraving.

This method of dumping and cleaning has manifest advantages: The load can be instantly emptied and the boat can be cleaned in a few minutes. The load is discharged into the water six feet below the sea level instead of being scattered on the surface of the waves, and being thoroughly saturated is prepared to sink, instead of being light and ready to drift. Two men, instead of twenty, is the complement of these boats A trip with a tow of these boats from New York city will not occupy half the time required by the old fashioned scow system.

They have been tested by this city for fifteen months, and have proved a great saving of time and expense over the old method. With these boats the danger to the harbor from dumping the city refuse may be placed out of the question.

(*Continued on page* 276.)



DUMPING CITY REFUSE AT SEA.