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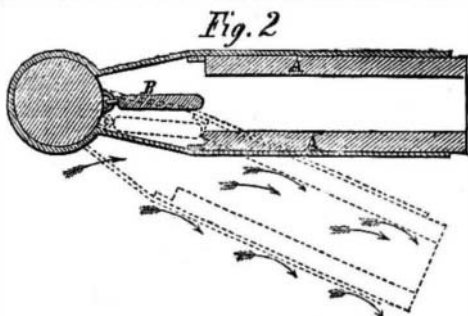
NEW YORK, NOVEMBER 10, 1866.

(\$3 per Annum,
[IN ADVANCE.]

Improved Rudder.

Sometimes, owing to causes difficult to comprehend, a vessel every other way satisfactory, is not readily obedient to her rudder. She moves from the course of her run sluggishly, although ample ordinary steering way is obtained. Such a quality in a ship or steamer endangers life and property, and to obviate these effects, which, in many cases, are fatal, is the object of this improvement. It is, in fact, a double rudder, having four instead of two resisting surfaces, and is claimed to give greatly increased power over the movements of a vessel. On the lakes, the navigation of which is attended with greater peril, at times, than on our rivers or the sea, it is said this rudder has proved very effective.

As may be seen by the engravings, the rudder is hollow. From the rudder post two pieces of timber, one at the top and the other at the bottom of the rudder, are fixed, and secured to them are leaves, A, which form the sides of the rudder. These do not extend to the rudder post, but leave a space in which are hung two supplementary rudders, B, pivoted to the post and capable of swinging sufficiently to close the aperture. It will be seen by the arrows, Fig. 2, that if the rudder is turned "a-port" or "starboard," the water rushes against the other side of the rudder, closing the leaves, B, and directing the force of the water against the opposite inside of the main rudder, while it operates against the outside in the ordinary manner; this, it is claimed, gives double the resistance offered by the solid rudder. The upper portion of the space is protected from floating weeds, wood, etc., by bars, so that the free action of the automatic leaves may not be hampered. Nautical men will at once understand the merits of this invention.

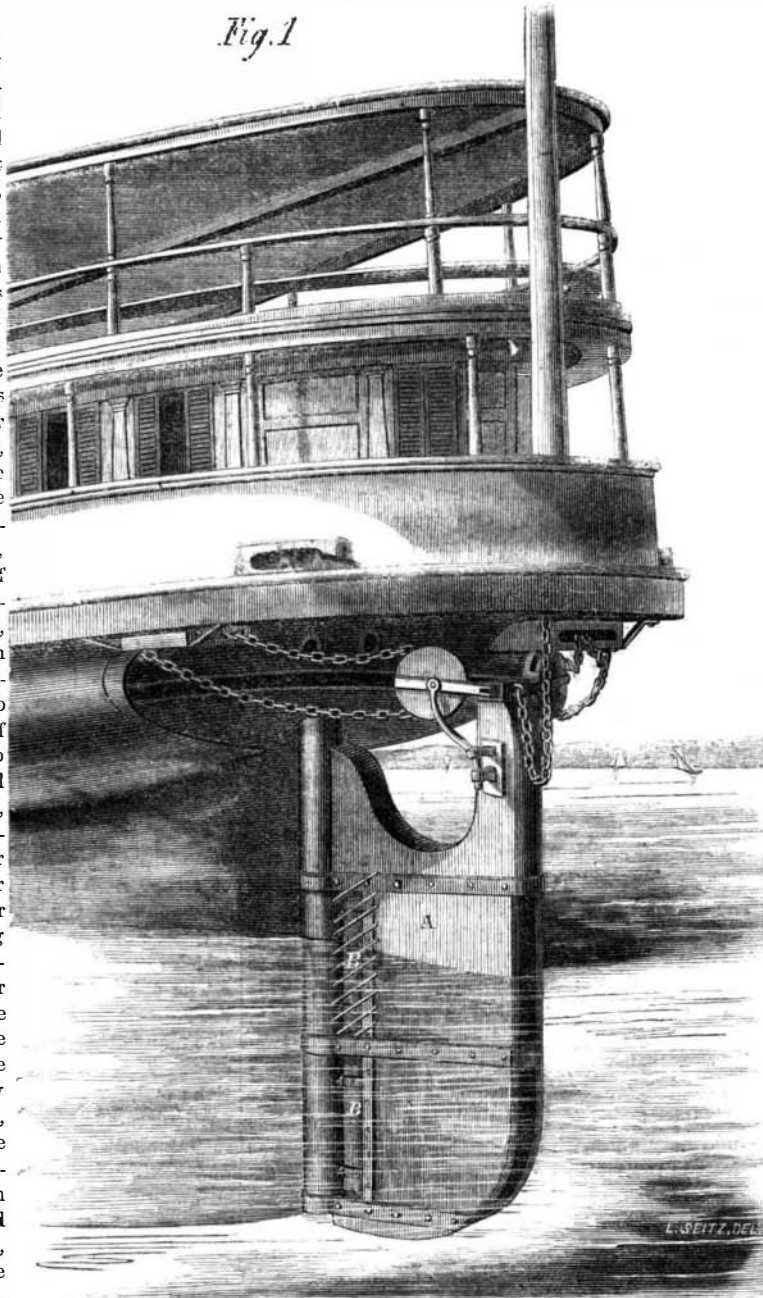


It was patented through the Scientific American

Patent Agency by N. D. Le Pelley, Cleveland, Ohio, March 14, 1865. Patents have also been secured in foreign countries through this office. For further information, rights to build, etc., address W. L. Wetmore, Marquette, Mich.

THE *American Journal of Mining* states that seven more deep-sea telegraph projects are now on foot, three

Fig. 1



LE PELLEY'S SHIP'S RUDDER.

of which are to be constructed by Americans, three by English capitalists, and one to be a French line. The first is to extend from Cape Charles (opposite Fortress Monroe), to Lisbon, in Portugal, via the Bermudas and Azore islands. The second line, already contracted for, is to connect Falmouth, England, with Halifax, touching also at the Azores. Third, the North American Telegraph Company, proposes to join Scotland, the Faroe Islands, Iceland, Greenland, Labrador and Canada, by a double line of cable. Fourth, the Russo-American line. Fifth, the French company's route is via Lisbon, the Canary and Cape Verde Islands to Cape San Roque in Brazil, thence to Cayenne in French Guiana,

The sixth is designed by an American company, to pass from Florida to Cuba, thence to St. Domingo, thence to Porto Rico; also from Cuba to Jamaica, and thence to the Isthmus of Panama. The last line is from New Zealand and Australia, to connect with the Anglo-Indian line, and also a land branch through China to meet the Russo-American line.

MISCELLANEOUS SUMMARY.

JAMES H. PEASE, of Reading, Pa., a driver on the Reading railroad, has invented an improvement for feeding locomotive boilers, which has been tested practically on a number of locomotives, and is said to work admirably. It is simply the connecting of the injector and feed pump with the same pipe, thereby dispensing with one suction and feed pipe, with the necessary connections. Only one check valve is required, and no frost pipe is necessary. A stop cock is placed in the overflow of the injector, and by means of a three-way cock, steam can be blown through the connection into the pump to prevent its freezing.

In the six months ending June 30th, the British rainfall amounted to 17 inches, more than in the whole of the year 1865, and yet we look back on those six months as a period of fine weather. Since June there has been a rapid increase in the quantity. In Gloucestershire, 10 inches fell in eight weeks; and in Dorsetshire, more than 7 inches in twenty-five days. The total fall, from January to September inclusive, was more than 30 inches. Excessive as this quantity may appear, it will not do more than restore the balance which had been disturbed by the unusual dryness of the three former years.

TAKING into consideration the very destructive results of modern artillery when applied against granite fortifications faced with iron, or having embrasures of that metal, as developed by our own experiments at Shoeburyness and those at Fortress Monroe by the American Government, it has been decided by the engineers of the War Department to alter the construction of the Spithead forts from a combination of granite and iron to one entirely of iron of the most massive character.—*Engineer.*

In preparing pure caustic alkalis, M. Graeger, having brought the alkaline carbonates to such a state of purity that they only contain traces of chlorides, first treats them with carbonate of silver, and then boils them with lime from calcined marble. The lye is then filtered through a funnel, in the bottom of which are placed fragments of marble and powdered marble, first pouring distilled water through till it passes perfectly limpid.

PERSONAL.—Joseph Barron, of Mobile Ala., writes to us complaining that he does not receive replies to his letters, and wants to know why we do not pay some attention to his business. The answer is plain. We have now before us one of our letters addressed to Mr. Barron, returned "unclaimed" through the dead-letter office. This is the third letter to him which has been returned to us. There must be something wrong at the Mobile office.

WE call attention to the advertisement of Jenkins's patent globe valve, which seems to possess real merit. The bottom of the valve is provided with a slightly elastic rubber disk, which makes it perfectly tight, and prevents leakage even if particles of sand or other impurity should sometimes be present. Wear of the valve seat is also prevented. Engineers speak well of this improvement.

Work with an abundance of vitality is a pleasure; with exhaustion, a labor.