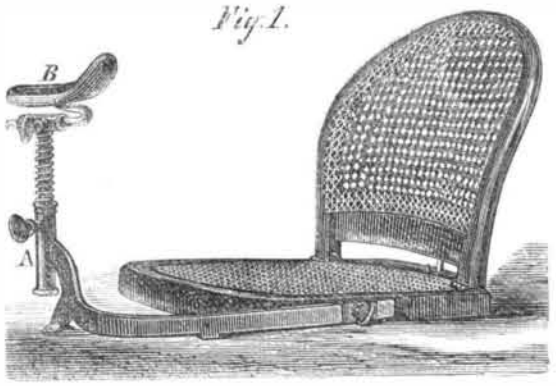
NEUHAUS' TAILOR'S REST AND SEAT.

The cramped position of the legs seen in tailor's at their work and in the posture assumed by Orientals, is so far unnatural that it requires constant practice to make it tolerable; yet it is considered to be the most convenient for the work of the tailor. To relieve the constraint upon the lower limbs and afford a support for the spine in the case of tailors, the device shown in the accompanying engravings is contrived.

Fig. 1.



It is a legless chair, with seat and back, to be placed upon a bench or table; the back being hinged to the seat and made adjustable by means of a screw in the rear, so that the angle of inclination of the back may be suited to the conformation of the workman and the work to be done. In addition, there is attached to the side of the seat a bar, having at the other end a standard and socket, A, for the reception of a leg rest, or saddle, B, with its shank, which may be raised or lowered, and secured in position by means of a thumb screw. This upright shank has a horizontal socket on its upper end, in

Fig. 2.

which the leg rest is adjusted. The weight of the leg is sustained by a spiral spring encircling the upright of the leg rest. The bar to which the supporting device is attached may be contracted or extended by means of a slot in the bar and a screw attached to the chair seat.

With this device there can be no cramping, and the position of the workman may be made perfectly easy and comfortable, and be changed at will. Patented through the Scientific American Patent Agency, June 2d and August 11th, 1868, by Frederic Neuhaus, who may be addressed, Box 148 Belleville, Ill.

Oriental Newspapers.

There are now lying before us two papers such as have rarely or never before lain on any other editorial table in this country, if in the world. One of them is the venerable official *Pekin Gazette*, that has been published for a thousand years, the first number of which was probably an exact counterpart of all its successors. The other is a number of a Japanese fortnightly issued on the arrival of each American steamship at Rokohama. It has been published about eighteen months, and is sold for ten cents a copy.

The Chinese paper covers ten pages, each four inches wide by ten long, and has yellow paper covers, on which are printed its name and date in black and crimson inks. It is the only native paper for a population of 414,000,000 souls, who have for centuries been in some degree of contact with European influences, and who have a literature that is vaster in its dimensions than that of any other people. It is exclusively confined to official notices. The other is one of two papers started in Japan since that empire was opened by Commodore Perry's expedition. It covers 34 pages octavo, and is illustrated. Like the Chinese the leaves are uncut, and are printed on but one side. It is called the *Newspaper of the World*. Instead of being confined to a barren record of official proceedings, it treats of agriculture, horticulture, navigation, and the building of ships; the politics and condition of other countries, literature and general news for about 40,000,000 people. It contains a cut of the European horse and dog, a small picture of a British steam gunboat, another of a somewhat similar craft, and a remarkably well executed representation covering a whole half page, of the American Pacific mail steamship Great Republic. There is also a diagram that may be geographical, or satirical, or may describe the method of cutting a carcass of mutton. The pages are not numbered. Some are covered with undivided prints. Some are divided into unequal columns by lines. Some have great blacks of matter injected into the heart of the page.

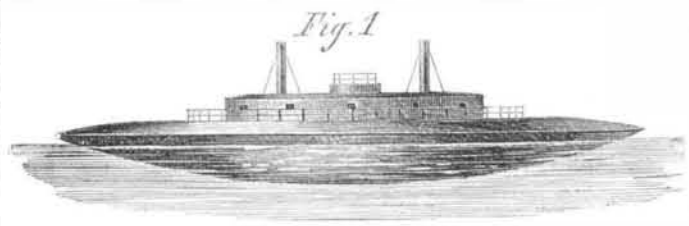
The first impression obtained from these two papers is naturally one of gratified curiosity. But there is really more meat to them. They are representatives of the condition and prospects of two empires with which we have recently come contact. The Chinese, slow and proud and conservative, have made no progress in a thousand years. The Japanese, prompt, enterprising, and anxious for improvement, begin with movable type that they have themselves cast, and employ twenty times the amount of matter used by the Chinese. —*Philadelphia North American.*

CIRCULAR FLOATING BATTERIES AND ARMORED WAR VESSELS.

The idea of constructing floating batteries of a circular form is not new, but the plan of making them offensive engines as well as defensive is quite modern. Among the plans of Napoleon the Great, for invading England, were circular floating forts propelled by sails and windmills, capable of conveying an army, respectable in numbers, with all its necessary provisions, etc. But the idea has never been tested in practical use.

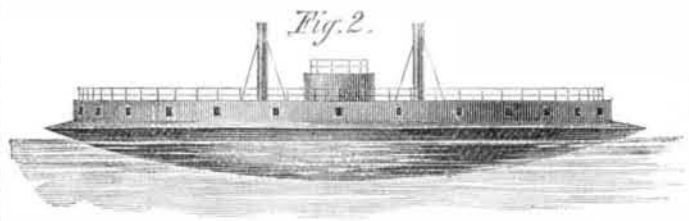
We copy from the *London Artizan*, three of a series of engravings, intended to show several adaptations of the idea of circular armored vessels, proposed by Mr. John Elder, of the firm of Elder & Co., Glasgow, Scotland. One of our San Francisco, Cal., exchanges, however, copies a letter from a Mr. Rutter, who shows that some years ago he proposed a simi-

Fig. 1



lar plan and tested it by models, copies of which, with descriptions, etc., were sent to the British Minister of Foreign Affairs at Valparaiso, to President Johnson, at Washington, and the Emperor, Napoleon III., at Paris. But whoever may be entitled to the credit of the original proposition, the plan seems to be capable of being made useful under certain circumstances. The hull of a ship built on Mr. Elder's plan, as illustrated by his models, would be somewhat similar in shape to a saucer with a flat covering, or to a small section of an orange, the rind of which would represent the skin of the vessel. Mr. Elder stated that a ship of this shape would draw only about half the water which would constitute the draft of an ordinary shaped vessel of equal displacement, though the midship section would of course be much greater. At first sight it might appear impracticable to drive a vessel so constructed through the water at any considerable speed, but

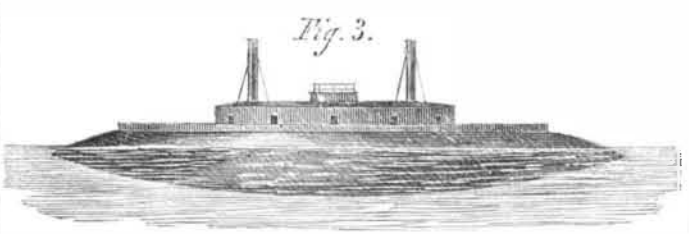
Fig. 2.



his own experience, he said, had afforded ample evidence that such a belief was erroneous. He had made two models—one of an ironclad of the most modern design, and another of a vessel built according to the plan he was advocating—and he had found, after repeated experiments in smooth and rough water, that the circular model required no more power to propel it than the other.

It was proposed for the purpose of propulsion to employ hydraulic machinery in vessels built on the circular system, similar to that used in Her Majesty's ship, *Waterwitch*—the suction pipe and water jet being in a line with each other, and it was estimated that there would be no difficulty in obtaining a speed of twelve knots an hour, if, indeed, the circular vessels would not attain to a speed commensurate with that of our fastest ironclads. The machinery for maneuvering the vessel was also very ingenious. On each side of the suc-

Fig. 3.



tion pipe and of the delivery pipe or water jet two other pipes were placed, curved at their outer ends in opposite directions, and through these the water might be taken in and given out instead of being received and delivered through the straight pipes referred to. By this means the vessel might be made to revolve in any direction, and the several guns, which were placed at frequent intervals round the vessel, could each in its turn be brought to bear on the same spot.

His method of steering is by means of a centrifugal pump, or, rather, turbine, revolving by means of a shaft, carrying at one end a pinion driving the wheel and at the other end a pinion revolving the pilot house. When the turbine revolves the pilot house is turned. By having a "look out," on line of sight, in the pilot house, corresponding with the suction pipe of the turbine, the person in the pilot house, while steering the ship, would have his back to the water jet, and would "look out" in a line with the suction. The ship would thus be caused always to travel in the corresponding direction, or, in other words, the steersman would only have to continue looking at any particular place in order to direct his vessel toward it as a destination. Double screws would seem to be applicable to the propulsion and steering of these vessels as well as the hydraulic plan of the *Waterwitch*.

From the peculiar shape of the hull, the sides forming a very acute angle with the horizon, the plating required would not be heavy. The lightness of draft is a great recommendation for its use as a movable harbor defense. The facility with which it may be turned is obvious; in fact, when required, it may be made to act as a floating revolving turret, being caused to rotate as fast as the guns can be fired. This power of rotation might also be employed when the vessel is required to act as a ram, somewhat in the fashion of a gigantic circular saw.

In the engravings, Fig. 1 represents the immersed portion, strengthened by a convex deck, the edge being above the surface, the vessel being intended for ramming as well as a powerful floating battery, the turret being pierced for a number of guns. Fig. 2 shows the battery extended nearly to the outside of the vessel with a raised pilot house in the center. Fig. 3 has the cutting edge of the vessel below the surface, but still carrying an offensive battery. Evidently this is intended mainly as a battery; for if driven through the water with sufficient speed to act as a ram its submergence, with its peculiar form, would tend to load the deck with water and diminish its buoyancy and speed. These are but a few of the modifications of form proposed by Mr. Elder; one is to have a vessel carrying a high tower in which, near the top, are mounted guns for firing over parapets, a marine adaptation of the land engines used in sieges centuries ago and employed by Titus in the reduction of Jerusalem. Mr. Rutter claims for his plan—in no essential different from Mr. Elder's—

1st. A perfect defense and protection, both of guns and men.

2d. Economy in the number of men required to work the vessel.

3d. Diminished weight of iron armor, and consequently of of relative cost to other vessels.

4th. A steady platform for the fire of guns, even in a sea way, combined with light draft of water.

5th. Impossibility of capture by boarding.

6th. Resistance offered to any attempt at destruction by rams or by running down.

7th. The small surface exposed to an enemy's fire as compared with the extent of an ordinary ship's broadside.

8th. The extraordinary capability of delivering her fire at all points of the compass at once, or of delivering a rapid and continuous succession of discharges on one point.

Petroleum Oil Test.

The general and prevailing opinion in regard to kerosene or refined petroleum oil is, that it must be of a high fire test to be safe, and to burn well; this is based on the fact that so many accidents have occurred by the use of kerosene or petroleum which have proved to be of a low fire test, and below the Government test which is considered safe.

We find by experiment that there is a certain point above which an increase of the fire test is detrimental to the burning qualities of this class of oil. All of these oils contain more or less of the paraffine or heavy oil which is not a burning oil, and the higher the test the less readily it will volatilize or feed through any of the ordinary kerosene wicks, and the more it contains of the heavy oil. This fact follows with all classes of distilled oils, from the heavy Canned and Albertine coal oil through Pennsylvania, and oil distilled from the heavy Western Virginia oil, no matter how highly purified, or at what point in distillation they are cut off, or what the color may be, there is a point below which it is not perfectly safe with the ordinary merchantable lamp, and a point above which its burning qualities are seriously injured. The point to arrive at is that which contains the least amount of paraffine that will consume with the other oil, and not wax, rosin, or burn on the wick or tube.

The color of the flame is also a guide and test; lower the fire test, white will be the light, and the light commences to shade to a yellow red till it reaches a point where the oil is so heavy with paraffine, or heavy oil, that the light or flame is dark, poor, and inferior. This important point, after careful tests and observations, we have established at 14° above the Government test, and 24° above what is considered safe merchantable oil, and between 110° Government test and 134° to 140° and to be 122° to 124° Fah. standard oil. For all ordinary uses a lower test is considered perfectly safe and in general use.

We copy the above useful information from F. S. Pease's Oil Circular, which can be obtained by addressing him at Buffalo, N. Y.

Heavy Locomotives.

Engineering says: There are good reasons for believing that as soon as steel rails shall have been generally substituted for iron, thereby permitting of weights of from seven to nine tuns per engine wheel, a much more powerful class of locomotives will be in request. The economy of working the heaviest goods trains is now well understood, and it is only the want of strength in the permanent way that limits the weight and power of six coupled engines to the existing standard. It would afford a good exercise to many young engineers to set about designing six-coupled engines of a weight of 50 tuns or thereabouts and having this weight equally distributed. The cylinders would require to be from 20 to 21 inches in diameter, for 2 feet stroke and 5 feet wheels and the boiler should not have less than 1800 square feet of surface, and 30 square feet of fire grate.