

New Inventions.

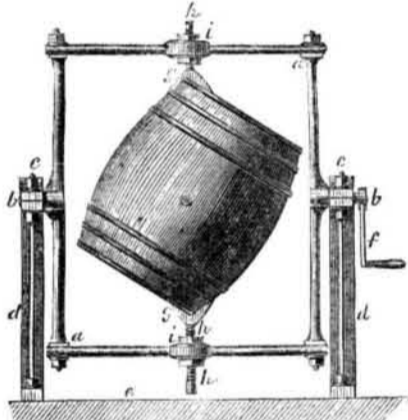
Improved Diving Bell.

Mr. Maillefert, of this city, has invented an improved diving bell which he calls an ærotatic tubular one; it is composed of an ordinary bell having in addition an outer case which can be filled with air to raise it, and a long tube from the bell, having ladders inside and shutters so arranged that the workmen can ascend and descend without the necessity of bringing up the bell each time, as the tube projects above the surface of the water. An experiment was tried with it at Hunter's Point, L. I., in eighteen feet depth. As soon as the bell had been lowered, the men descended by the tube and remained in it five hours; they then ascended for dinner, and afterwards went down again and remained another five hours, working all the time on the submarine railroad track. They could hear distinctly all that was said on shore 150 feet distant, and were much satisfied with the experiment. Sufficient light passes down the tube to enable them to see how to work.

Machine for Cleaning Casks.

We copy this engraving from the *London Engineer*, as it appears to us to be an ingenious and useful little device. It consists in an arrangement for holding casks while being caused to rotate for rinsing and scouring the interior of the cask.

The illustration represents a front view of a cask-cleaning machine with a cask mounted in it. *a, a*, is a strong rectangular frame of iron, furnished with journals, *b, b*, one on each



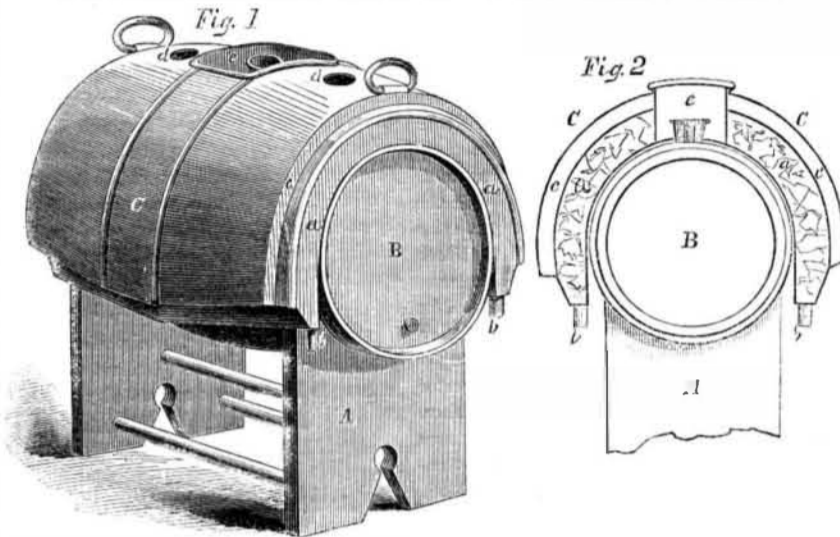
side, which are fitted in suitable bearings, *c, c*, carried by A-shaped standards, *d, d*, which are erected and rigidly fixed on the base or floor, *e*. The axis of the frame is represented as furnished with a winch handle, *f*, for the purpose of rotating the frame *a* by hand, but it may be driven by a strap and rigger or other suitable contrivance for communicating steam or other motive power. *g, g* are the fangs or parts for fixing the cask in the frame. The V-holding prongs or fangs, *g, g*, are formed to suit the chime or angle of the cask to be held; the stem, *h*, of each of these fangs, *g, g*, is furnished with a screw thread fitted with nuts, *i, i*. The stems, *h, h*, are passed through plain holes in the frame, and are fixed in position by the set nuts, *i, i*. The nuts, *i, i*, afford the necessary facilities for forcing up and fixing the cask by the fangs, *g, g*; and also permit of the fangs being adjusted to suit different sizes of casks. The position of the cask may also be varied at will by turning the cask round on the stems, *h, h*, as on an axis; this may be done from time to time as the work progresses, if necessary, the machine being stopped for the purpose. In order to effect this, the nuts, *i, i*, are slacked on the stems, *h, h*, which being furnished with squares for applying suitable keys or wrenches, the stems and the cask with them are partially turned round.

The mode of operation is as follows:—The cask having been mounted and fixed in the frame by the fangs, *g, g*, the bung is turned uppermost, and water or other fluid, with or without solid materials, introduced into the

cask; the bunghole is then closed, and the frame, *a, a*, with the cask, put in motion by the winch handle, *f*; the frame, *a*, being turned end over end, gives the necessary motion to the cask, and thereby agitates the contents in such a manner as to effectually scour and cleanse the interior of the cask so submitted to its action. The contents of the cask are then run out at the bunghole, and

fresh water put in if necessary and the motion repeated, in order to rinse the cask, which is then removed from the frame. A modification of the above apparatus is described in the patentee's specification. It consists of an arrangement for holding the cask in a position in line with the axis of rotation of the frame. The apparatus is worked in the same manner as that above described.

MESSENGER AND REHAHN'S BARREL COOLER.



All those light kinds of beer, and other liquids, which cannot be drawn through an engine, while the barrel remains in the coolness of the cellar, but must be at hand that the fresh glasses may be drawn from the wood itself, are certain to get very warm in summer, and there is nothing so thoroughly nasty as warm "lager." By the use of this cooler it is always kept sparkling, fresh and clear.

This invention is intended to be a portable refrigerator for barrels, and it can be easily lifted from one to the other. In our engravings, Fig. 1 is a perspective view of one fitted on a barrel, and Fig. 2, a section.

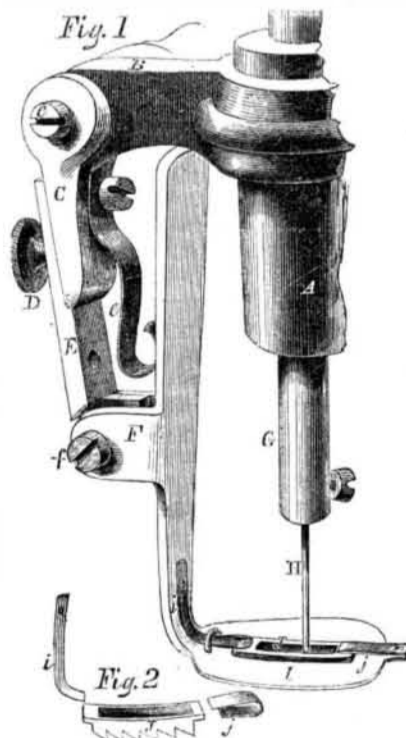
A is the stand, and B the barrel, C be-

ing the refrigerator made of zinc or similar metal. It is divided into two compartments, in the one, *a*, is placed the ice, at the end of which are two channels, *b*, through which the water can run off; *c* is the other compartment, in which is placed plaster of Paris or some non-conducting substance, and has two holes, *d*, through which it can be filled. There is also a cut-off arrangement seen at *e*, keeping the space over the bung free, so that the bung can be easily pulled out to allow the liquor to run. It was patented Sept. 15th, 1857, and further particulars may be obtained by addressing the agent, A. Lippman, 96 Eldridge street, New York.

Andrus' Feed for Sewing Machines.

All those kinds of feed motion (applied to sewing machines) which consist in the motion of an independent foot or feed pad, are apt to be irregular in their action. The inventor of the arrangement illustrated by the accompanying engraving has devised a plan to obviate this difficulty.

A is the end through which the needle shaft moves up and down, having projecting from



it a piece, B, to which is hinged the piece, C, by the screw, *c*. The screw, *D*, fastens E, and to it is hinged by the screw, *f*; the foot, *F*; this is kept on the cloth by the pressure of the spring, *e*. This foot has an independent mo-

tion communicated to it from the driving wheel through the parts we have described; it is serrated on its lower side to grip the cloth. I is the portion that lays on the cloth, and through it is inserted the supplementary foot, J, (seen separate in Fig. 2), which is kept in place by the springs, *j* and *i*, and by their means it is always able to maintain a hold on the cloth, and ensure the regularity of the feed motion. The needle, H, attached to the piece, G, passes through this supplementary foot, which has in it a slot, to allow the same. It is especially applicable to the cheap machines, and was patented November 3, 1857.

Further information may be obtained from C. H. Andrus, Collins' Hotel, New York.

Improved Method of Treating Iron Ores.

An improved method of freeing iron stone and other metallic ores from shale has recently been invented by John Harding, of Leeds, England. In preparing some iron ores for the furnace, it has to be separated from the shale, in which it is found imbedded. This has hitherto been performed by spreading the ore upon the surface of the ground, and subjecting it to the action of the weather until the shale is sufficiently loosened to allow of its being chipped off the ore by manual labor. This is a work of months and years, and is a costly process, in consequence of the number of men necessarily employed in spreading, chipping, &c. The improvement consists in subjecting the ore shales to the action of steam, and accomplishes in a few hours results which require months of exposure to the weather to otherwise obtain, and are then very often imperfectly accomplished.

DRYING WOOD.—One of the cheapest and most effectual methods of drying wood is to expose it in a closed chamber to steam heated to about 400° or 500° Fah., which will extract all the moisture.

Getting Better.

After seeing all around us hungry human beings asking for work, and feeling that the difficulties in money matters had caused a temporary stagnation of manufacturing industry, it is with pleasure that we learn from various quarters that water wheels and steam engines are again working, and the noise of mill gearing again animates the lately silent centers of productive wealth. In our own city, many workshops are daily taking on the hands which they were compelled to discharge during their temporary suspension. In Lowell, Mass., two large mills, that have been working only half time, are about to resume their usual amount of labor; at Woonsocket, R. I., a large rolling and nail mill has set to work; at Norwalk, Conn., mills on whose working or stoppage depends the daily bread of thousands, are now in motion; and at Manayunk, Pa., and its neighborhood, many factories have opened their doors, and the pleasant click of the shuttle and rattle of the spinning bobbin is once more heard in the picturesque valley of the Schuylkill. Four mills and two calico printworks at Fall River, Mass., the Chicopee (Mass.) mills, and the Troy and Albany Iron works, N. Y., have also resumed operations.

It would seem that we were not crushed by the past panic, but only knocked back a bit; and if it did burn us a little, we shall rise, Phoenix-like, more glorious, from the ashes, and be more strong and energetic for the temporary disaster.

Arrival of the Frigate Niagara.

This noble war steamer arrived at this port on the 20th, having sailed from Plymouth, Eng., on the 5th inst., making the voyage in a little over fourteen days—a very good passage for a propeller across the Atlantic at this season of the year. There are some recollections of a regretful character connected with the arrival of this vessel. She left our shores last spring to assist in laying the ocean telegraph cable; and great expectations were entertained, from the extensive preparations made, that this would be successfully accomplished; but these hopes all proved delusive. On the 10th of August, the cable was broken by mismanagement, and the expedition defeated in its objects. The vast expenses incurred by our own and the British governments have all been thrown away, and the *Niagara* has returned home, having failed to accomplish the objects for which she was sent to Europe. It is now reported that even if the cable had been laid, it would not have operated, as its coating had heated and become defective in the holds of the vessels in which it was coiled.

The officers of the *Niagara* met with much attention, and received tokens of great kindness from the people while in England. A splendid farewell banquet was given to them on the British flag-ship *Impregnable*, at Plymouth, a few days before the *Niagara* sailed for home.

The Commissioner's Decision on the Policeman's Club.

An application was recently made for a patent on an improvement to render policemen's batons or clubs more efficient, and prevent those using them from being disarmed by rioters. This application has been rejected by the Commissioner, and a partial report of his decision was telegraphed to and published in our city papers of Friday, last week. The decision came too late for us to present our views on the subject in this number, but we will do so in our next. We will only state at present that the report has been the means of propagating through the daily press the most ridiculous and erroneous notions respecting this invention.

Steamship Vanderbilt.

This well-tried and famous vessel came near meeting with a serious misfortune on her late voyage to Europe. She grounded on a shoal off Southampton; but, fortunately, a tug steamer was alongside, and pulled her off, with only the loss of an anchor, she having sustained no damage to her hull.