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Steamship-Building.

In England the steamship-building trade appears to be very active, while with us it is, and has been for a long period of time, very dull. One company at Newcastle-on-Tyne is building four iron steamboats for the navigation of the river Volga, in Russia, and an equal number for the East India Railroad Company. The latter boats are of 7 feet draft, 30 feet beam, and 225 in length. The plating of the hull is three-eighths of an inch thick of puddled steel, which is double the strength of iron plate of the same thickness; and a web girder, ten feet deep, extends the whole length of each vessel, forming its backbone and giving it great stiffness. There is one peculiar feature in which British steamers of the present day differ from those of our country, namely, the materials of which they are constructed. A timber ship is the exception in England and iron ones are the rule; with us the reverse is the case.

New Distilling Apparatus.

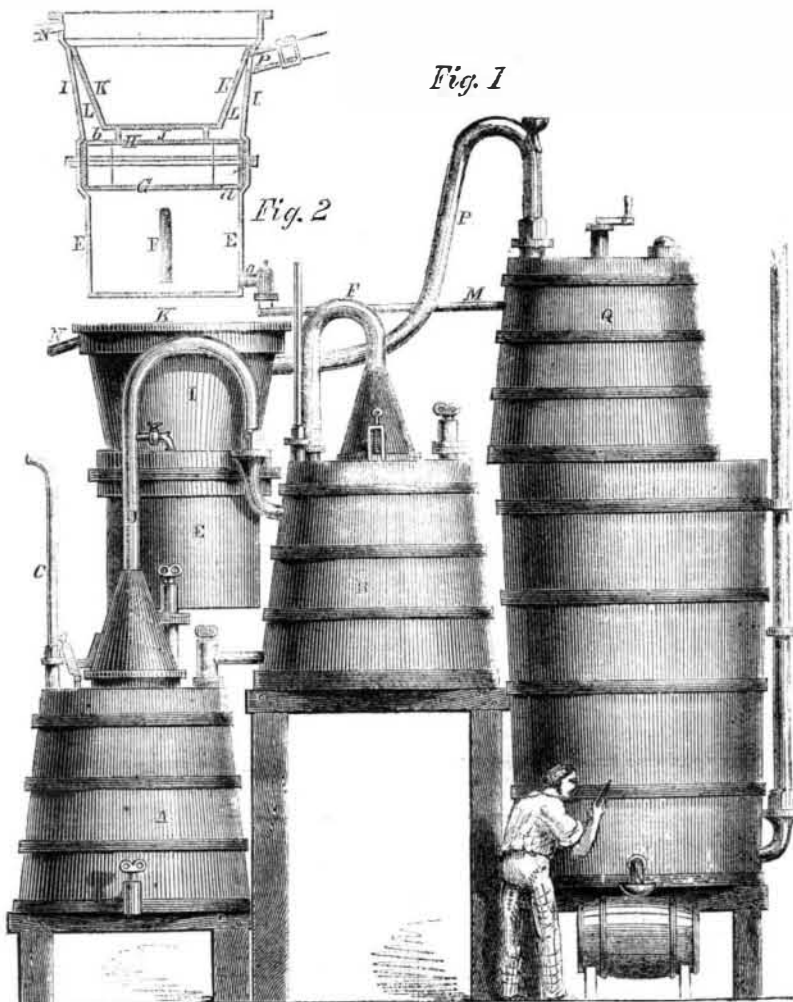
The subject of distillation is always an interesting one to study, so beautiful and regular are the changes which take place in the substance which is being distilled. Alcohol, for example, is always formed from sugar, which, in fermentation, splits up into that spirit, water, and carbonic acid gas. Sometimes the sugar is used as such, and sometimes the starch contained in vegetable substance is first converted into sugar, and then fermented. The alcohol is contained in a watery solution, and from this it has to be separated by distillation, which is easily done, as alcohol evaporates at a much lower temperature than water. The apparatus in which this is done is called a still, and the vapor is again liquified in a condenser or worm tub.

The subject of our engraving is an improved apparatus for this purpose—invented by Peter Kessler, of Belleville, Ill., and patented March 1, 1859—which we will now proceed to describe.

Two stills, A and B, are placed as usual, the wort or beer in the still, A, being heated by steam conducted to it by a pipe, C. The vapors thus arising from the beer ascend through a pipe, D, to the still, B, from which they enter a vessel, E, by means of a pipe, F. This vessel is closed at the top by a cup, G, the bottom of which has an opening, a, and a plate, H, placed on the top of the cup. G has another opening, b, opposite a.

Another cylindrical vessel, I, is placed on the top of E, communicating with it by means of the openings, a and b, and the circulation is further increased by a hollow cylinder, J, of such height as to reach the bottom of a conical vessel, K. The space left between the outside of the vessel, K, and the inside of the vessel, I, decreasing towards the top, where it

KESSLER'S DISTILLING APPARATUS.



runs into a sharp point. The gaseous liquor contained in the vessel, E, ascends through the openings, a and b, and fills the space, L, and if cold water is poured into the vessel, C, the impurities contained in the liquor are condensed. Water is admitted to the vessel, K, by means of a pipe, M, and a pipe, N, serves to carry off surplus water to prevent overflowing. It is obvious that the condensation takes place more rapidly towards the top of the space, L, if the vessel K, be filled with water up to the top, as the cold surface of the outside of the vessel, K, increases, while the contents of the space, L, decrease, so that by putting more or less cold water into the vessel, K, the strength of the liquor may be regulated. The condensed impurities, i. e., the low wine, flow back to the vessel, E, through the openings, a and b, and they are carried back to the still, A, by means of a faucet, O, which is attached to the vessel, E, close to its bottom.

By this arrangement the pumping out of the low wine is avoided, and a great deal of trouble and labor saved thereby; and as a certain quantity of good spirit would always be contained in the low wine, the flowing back into the still by this arrangement causes a great saving, as much of the liquor contained in the low wine as treated in the usual way is lost, the low wine being always pumped out at a high temperature, so that the liquor which escapes therefrom, when coming in contact with the cold atmosphere, is lost.

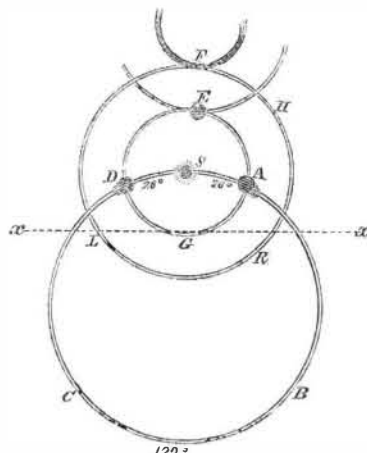
The gaseous liquor thus freed from its impurities to a degree which depends upon and may be regulated by the quantity and the temperature of the water contained in the

vessel, K, which escapes through a pipe, P, that leads into a suitable cooler, Q, from which it is drawn off into casks.

Any further information or particulars may be obtained from the inventor by addressing him as above.

Halos and Mock Suns.

The accompanying figure illustrates some interesting natural phenomena witnessed at New Ipswich, N. H., on the 2d instant. The sketch and description have been communicated to us by E. T. Quimby, M. A., principal of Appleton Academy, who took the measurement of the angles by the theodolite to ensure correctness.



The observations from which this sketch was made were taken at about 4 P. M., the sky at the time being quite hazy. The large circle, A B C D, extended horizontally around the heavens, and was about the same

altitude on either side. It was of white light, and had the real sun, S, and the two mock suns, B and C, in it, at equal distances (120°) apart. The smaller circles were vertical, and it will be observed that they cannot have their true relative position on the sketch, as the large one is parallel to the horizon, while the others are perpendicular to it, hence if they could be put in proper position, the mock suns, A and D, would be in a line with the real sun, S. These two mock suns were in the large horizontal halo, and also in the vertical one, A G D E, and were distant from the sun about 26°. There was another mock sun for a part of the time at E, and there was a partial halo, as represented, turned in the opposite direction. Outside of this, at a distance of 45° from the sun, appeared another halo, which was quite dim, though somewhat brighter in its upper part; and tangent to it was the partial halo, F, evidently concentric with the partial halo, E. The spot, F, was the brightest of all the halos, and exhibited the prismatic colors very plainly. The mock suns showed the colors also, especially A and D. The halo themselves were all white, except the arcs, F and E, the last showing the colors but faintly. X X is the line of the horizon.

Similar phenomena were witnessed at Boston and other places as well as New Ipswich, on the same day. The Boston *Traveler* says of the parhelia:—

“While the sun was shining rather faintly through cirrus clouds, a luminous circle was suddenly formed at the distance from it of about fifteen degrees, and quite complete around it, although the prismatic colors were brighter in some parts of the luminous circle than they were in others, but where they were brightest they appear as brilliant as in the finest rainbow. Moreover, on the north and on the south sides of the circle at the altitude of the sun, a well defined mock sun was seen, and on the upper part of the arch a third, less perfect, but all strongly tinged with the colors of the spectrum. This phenomenon, (which continued visible about fifteen minutes, until the sun became wholly overcast) is not very uncommon in some parts of the earth, but is seldom seen here.”

We have seen several halos and mock suns, but none exactly like those represented by the sketch of our correspondent.

Self-Ruling Envelopes.

Mr. G. F. Nesbitt, of this city, the Government contractor for the supply of stamped envelopes, has introduced a new envelope into the market, which is at once convenient and simple. The novelty consists in the combination of black lines with the under wing of the envelope in such a way as to be concealed from the observation by the side wings, except when the face and back are pressed together to receive the superscription. The millions of people who are accustomed to write on ruled paper will find it an inestimable gain in the appearance of their addresses on envelopes.

Woolen Factory in Oregon.

The pioneer woolen factory on the Pacific coast has lately been established at Salem, Oregon. It is furnished with the latest and most improved machinery from the eastern States, and has turned out some cassimeres which are equal in every respect to any manufactured in New England. As Oregon wool has a high reputation, we have no doubt but good broadcloth, and all other sorts of woolen articles, will be made of it at no distant day.