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The Effects of Moonlight.

Professor Piazza Smyth, the Astronomer Royal for Scotland, in his interesting account of a recent scientific expedition made by him to the Peak of Teneriffe, has set at rest the vexed question of the heat of the moonlight. He says that his thermometrical instruments were sensibly affected by the moon's rays, even at the lowest of two stations occupied by him at different elevations. In tropical climates meat which is exposed to the moonlight rapidly becomes putrid; and in the Indies, the negroes who will lie sweltering and uncovered beneath the full glare of a tropical sun, carefully muffle their heads and faces when exposed to the moonbeams, which they believe will cause swelling and distortion of the features, and sometimes even blindness.

Improved Dumping Wagon.

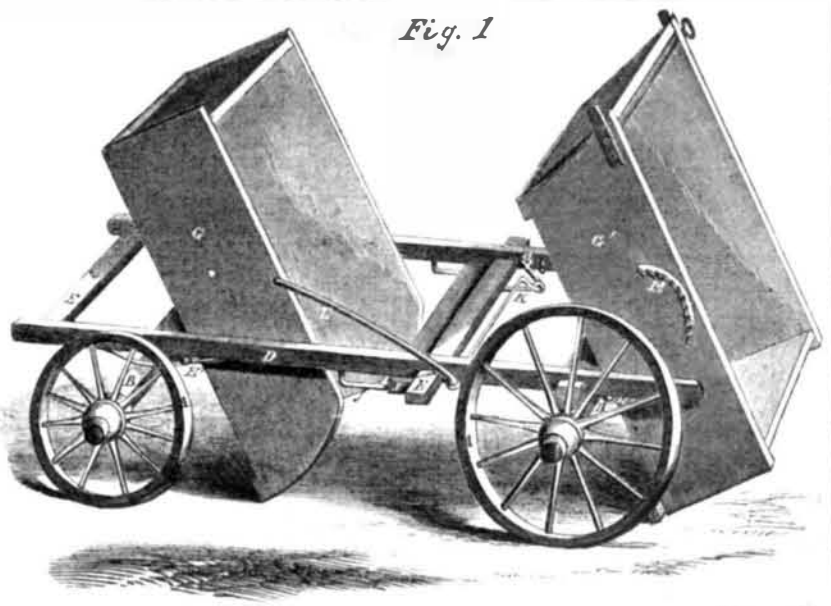
The advantages that are gained by constructing common road wagons, so that they will "dump" are so well known that it is unnecessary to recapitulate them. The wagon which is the subject of our illustration dumps in two parts, the body being divided transversely at or near the center of its length, and the sections are hinged so that they can be tilted independently of each other. This arrangement avoids the necessity of shifting or sliding the body, even if made long, independently of the frame, when it is desired to dump the load, as the front section can be dumped, and the truck then moved forward far enough to bring the rear section in proper position for dumping like the first, so that its load may be dumped on that deposited by the first section. Two different materials can be carried in this wagon and dumped separately, in different places, or in the same as desired.

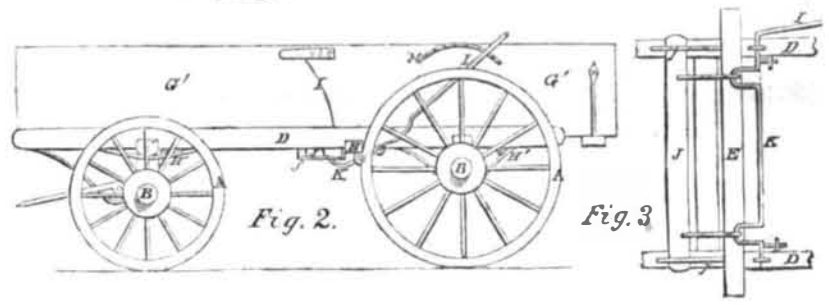
In our engravings, Fig. 1 is a perspective view of the wagon, dumped. Fig. 2 is a side elevation of the wagon as ready for carrying a load, and Fig. 3 is a view of the mechanism by which the parts are dumped. A A are the wheels, and B B the axles of a common road wagon. D D are two side bars resting on the bolster of the front axle, and fastened permanently to the axle of the rear wheels. These bars are also connected together by stay-bars, E E. On the frame formed by the bars the body of the wagon is mounted; the section, G, being hinged at H, and the section, G′, being hinged at H′. The line, I, of division between the sections, is cut obliquely down through the body, so that the front section may descend without touching the rear one, and still a tight joint be maintained when the sections are locked together. The two sections are held up at the point, I, by the sliding bar, J, and by hinged catches, *a*. The bar comes underneath the division line, being arranged to slide back and forward in brackets, *j j*, and when under the line stops the front section from falling or tilting. The catches are hinged to the top of the side bars, D, and enter holes in the side-board of the rear section, and prevent it from tilting. K represents a crank bar operated by the lever, L, that moves J in its brackets. The lever, L, is held by a notched segment, M, in proper position to prevent the sections from dumping.

From the foregoing description and reference to the drawings, it is evident that if the wagon is loaded while in the position in Fig. 2, neither part will tilt, and the load may consequently be carried to the desired place. It is also evident that after the load is transported to the place of destination, and the sliding locking bar, J, moved to the position shown in Fig. 1, the front section may be as easily dumped as a short cart, and the other section can be dumped by withdrawing the catches, *a*. It was patented Oct. 20, 1857, by the inventors, M. Y. and T. J. Cope, of Centerbridge, Pa., who will be happy to furnish any further particulars.

COPE'S DOUBLE DUMPING WAGON.

Fig. 1





WOOD'S IMPROVED BREWER'S COOLER.

Fig. 1

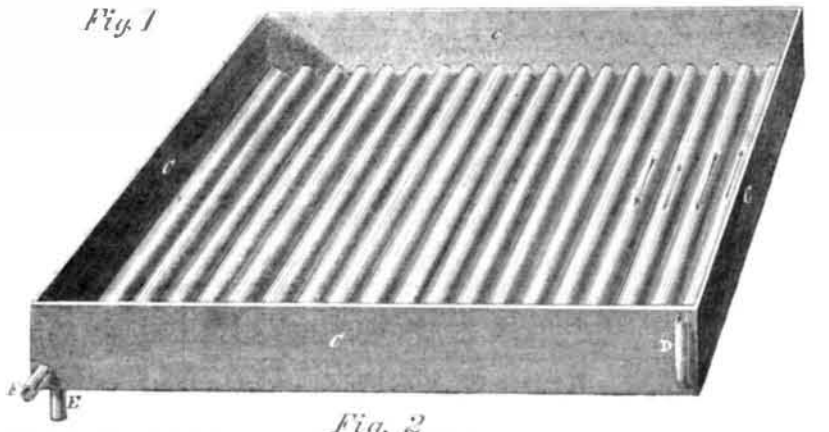
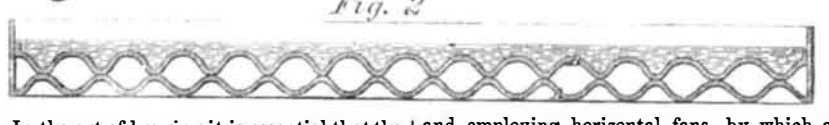


Fig. 2



In the art of brewing it is essential that the wort, after being boiled with the necessary quantity of hops, and properly concentrated and rendered clear, should be cooled as rapidly as possible, to prevent acetification, or "fixing," as it is technically termed. The means employed at present to effect this object consists in having large shallow vessels constructed of wood, into which the liquor is poured, and employing horizontal fans, by which a powerful draft of air is created over the surface of the liquor. Success by this means is not always certain, and the liquor is often acetified before it is cooled.

This invention renders the speedy cooling of the liquor a matter of certainty, and the construction of this improved cooler is extremely simple.

In our engravings, Fig. 1 is a perspective view of the cooler, and Fig. 2 a section.

Two plates of corrugated metal are laid on each other in the manner seen, B A, so that the corrugations form tubes, and they are closed slightly at the ends, and the depressions raised alternately, so as to open communication throughout the whole series. To this bottom are then placed sides, C, and a cooler is formed; the wort is poured in, and cold water passing through the tube, D, into the tubes formed by the corrugations, passes through them in the direction of the arrows, and out at E. A continuously flowing stream of cold water is thus kept up, and the liquor is rapidly and surely cooled, when it can be removed by the pipe, F.

The inventor is Adam Wood, of Pittsburg, Pa., and he will be happy to furnish any further information concerning it. It was patented September 15, 1857.

Air and Moisture.

Dr. Stark, Secretary to the Meteorological Art Society of Scotland, states that in Great Britain a certain amount of moisture in the air relative to its temperature is essential to health, and a deficiency in this amount is followed by an increasing mortality. By this is not meant the absolute amount of aqueous vapor in a cubic foot of air, but its relative amount. Thus, at a temperature of 30° Fah. a cubic foot of air requires about two grains in weight of watery vapor to saturate it completely. But if the heat of that air be raised to 60°, it requires rather more than 6½ grains in weight of aqueous vapor to produce the same amount of saturation. Yet both these airs are in the same relative state as to saturation with moisture, both have just that amount which they can easily carry. Meteorologists have agreed to reckon full saturation of the air with moisture, whatever be the temperature, as 100; and in Scotland the degree of humidity which appears to be most conducive to health ranges from 80° to 85° Thus, air at the temperature of 30°, with one grain and six-tenths of aqueous vapor, would be in the same state, as to moisture, as air at 60° with 4½ grains in weight of watery vapor—both would indicate 50° of humidity, and be in the best condition, in so far as amount of moisture is concerned, for the support of health.

Cisterns that will keep out Surface Water.

A correspondent—C. A. White, of Burlington, Iowa,—informs us that the following method of building cisterns in moist ground will effectually prevent water soaking through them from the outside and inside also:—

"The bottom of the cistern is spread with hydraulic cement in the usual manner, then laid over with brick, upon which the wall is commenced about an inch, or an inch and a half from the earth all around. When the wall is about four courses high, the interstices between the wall and the earth are filled with grout, or the ordinary cement, made very thin, and poured in; then build up the wall, and fill in with grout as before. When the cistern is plastered inside, the wall is completely encased with a coat of cement, that prevents the passage of water both ways."

Two schooners have already cleared from Detroit, Mich., this season, direct for Liverpool, and seven more are to sail on like voyages during the present month. Their cargoes are principally staves and other small hardwood timber.