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Rail Road News.

Alabama and Tennessee Railroad.

The chief engineer, Lewis Troost, Esq., of this road has presented an able report on the subject to J. W. Lapsly, Esq., the President. The Report is principally taken up with the resources of the country through which this railroad will run, and the amount of transit and freight likely to pass over it, so as to make it pay. This should always be the first consideration taking into account the probable future increase of business, as the necessary result of new and economical means of communication. This Mr. Troost has done; the productive capacities of our Southern States, are incalculable. Railroads and plank roads will develop a vast amount of wealth by infusing new life and vigor into the inhabitants of those regions through which they pass. This has universally been the result of good roads in every country. The capacities of the Southern States are altogether superior to the North, because of a more advantageous climate, but without good roads, climate and soil may all be of no avail to make a country prosperous as a surplus producing country. It has been acknowledged that if there were good rail roads in the East Indies, the raising of cotton to compete with America would now be farther advanced than it is; for want of good roads the price of transit, places India cotton far in the wake of a payable competition. We therefore say to our Southern friends, look well to good railroads, plank, and other roads. The right spirit is awakened, we know, but do not have too extravagant ideas of a great and sudden revolution of accruing benefits. Let there be a steady but determined and cautious perseverance, and in a few years your ledger leaf of profits will exhibit a well ink-marked balance sheet.

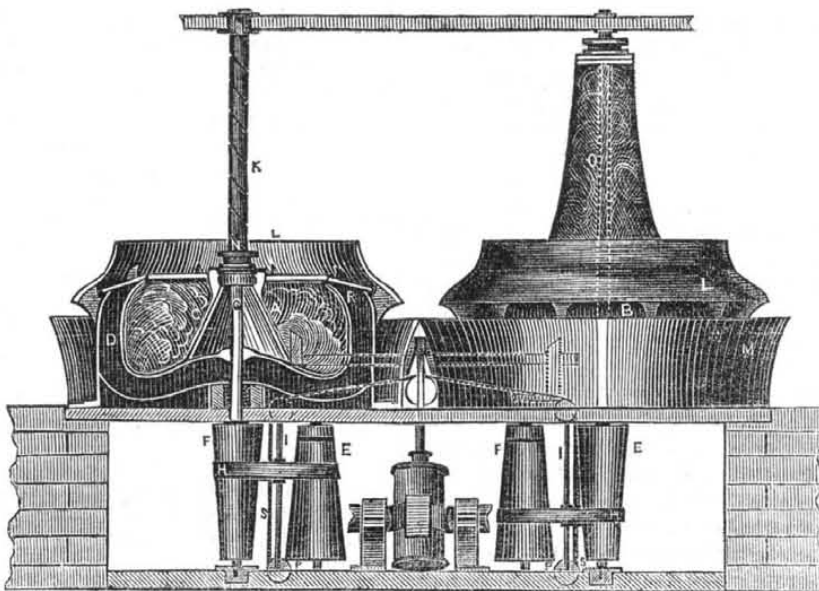
Tunnel on the Baltimore and Ohio Railroad.

The Great Tunnel, of the Baltimore and Ohio Railroad, is one of the greatest works of civil engineering now going on in the world.—It is a few miles from Morgantown, West Virginia, and is through a mountain (for a rail track) a mile and a quarter wide. There are already sunk three shafts, some 20 by 19 feet, and from 175 to 185 deep. Hundreds of shanties are now reminding one of a new town in California.

The shafts being now completed to the perfect level of the road, a large number of hands are enabled to go to work, tunneling through the rock—all of which has to be brought up through the shafts, except at the two extremes or sides of the mountain. They work day and night—one set during the night, and the other by day. The works of the Baltimore and Ohio Railroad, in passing through Western Virginia and the Ohio Valley, will be among the proudest works of the age.

The English railways are said to "have ruined the sailing coasters, cashiered steamboats, superseded canals, and used up navigable rivers."

NEW MACHINERY FOR DEPURATING SUGAR AND OTHER SUBSTANCES.—Figure 1.



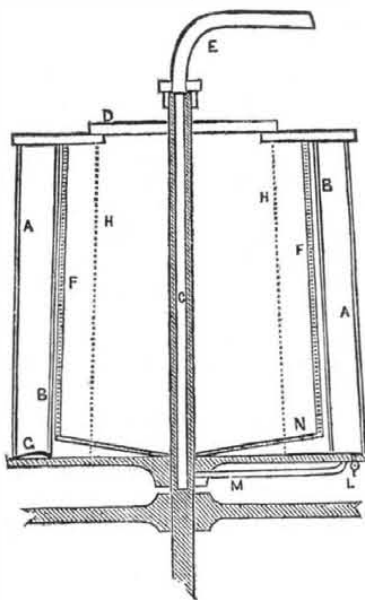
This improvement is the invention of Mr. R. A. Brooman, the great gutta percha inventor, of London. It is patented there, and measures have been taken to secure a patent in America. The real principle of the invention is the employment of a centrifugal force, which throws the moisture out and suffers it to escape, while the substance from which the moisture is to be extracted is prevented flying from the centre. Figure 1 represents two machines constructed upon this principle; A and B, are two pans, containing the substances to be purified. They are mounted on two shafts, O and G, and placed within receptacle, D—for the extracted matters. E and F are cone pulleys, on the lower ends of the shafts, connected by a driving band between each pair to give motion to the pans, gradually accelerating the same. Loose pulleys are placed on the top of the upper cones, to stop the motion when required. The driving cones, may be connected to the engine shaft by spur gearing to give them a steady motion. The driving bands, H H, pass through guide forks which are moved up and down on the rods, I I, by means of an endless cord, S S, passing over the pulleys, P P, and the cord is represented by the dotted lines as passing over pulleys,—the spindle of one being operated by a wrench, to actuate the cord and operate the forks so as to raise and lower the bands, H H, as required. The pan, when first loaded, has a slow motion. C, in the inside, is a loose bag of a peculiar form for unloading. The outer edge is secured to the flange, R, and the inner edge to the ring nut, N, which fits the screwed spindle, K, which is secured on the pan shaft. To unload the contents, the nut, N, is held while the spindle turns with the pan, carrying the nut and bag upwards, the centrifugal force of the pan filling the bag. The guard, L, guides the extracted matters into the bag, as the centrifugal force, makes the said matters, impinge on the guard. They are then deposited in the receptacle, M. On releasing the nut, N, the bag is run down to load again.

Figure 2 represents a vertical section of the rotating drum. It is double: A the outside, and B the inside one. The upper part of the drum has a central opening closed by a cover, D, through which the substances to be purified and dried are introduced, to rest on the false bottom, N. F is a wire cloth fitted in the interior of the drum, to permit the free escape of the moisture. The drum rotates on a spindle; C is a hollow shaft attached to a joint at the top, for the admission of steam by

the pipe, E. The channel in the hollow shaft is connected with the space between the drums, A B, by the pipe, M.

The substances to be depurated are placed in by the opening at the top, and the steam turned on, while at the same time slow rotary motion is imparted to the cylinder, until all is heated, when the motion is increased, and then the moisture is thrown out through the wire-cloth screen, F, by the centrifugal force. The moisture is received in the space below the false bottom, E, and is then drawn off by the pipe and tap at G. Water may then be introduced for farther purification, and the same process, as described, continued until perfect purification is effected. In some cases it may be advantageous to admit steam to the

FIG. 2.



substance. The screen, F, is then made smaller, as denoted by the dotted lines, H H, and the steam pipe may be so arranged as to admit steam on the exterior. The steam enters the substances to be operated on, and is at first condensed, then the water is driven off by the centrifugal force, until the whole becomes heated and the steam has penetrated into the interior, when it may be shut off, and the operation is soon completed. L is a cock to let off the water of condensation from between the drums, A B.

In figure 1 the manner of imparting mechanical motion is principally shown, but there may be various ways to do this as good as that represented, only the motion at first, un-

til all is heated, must be slow. For sugar, but little water should be used at once.

The principle of this invention is the feature we design to set forth, so as to bring it into notice, as we deem it an important one, in the sugar refining business, especially. This improvement can easily be tested on a small scale. The principle of it, viz., throwing off the moisture by centrifugal force, we know, is philosophical and correct, and in our opinion worthy of much attention.

Useful Receipts.

Coffee for Weak Stomachs.

Place a quarter of a pound of ground coffee in a jug, pour a pint of cold spring water thereon, and let it stand twenty-four hours; then strain off the clear extract, which preserve in a well corked bottle. When you wish for a cup of coffee, boil half-a-pint of milk, to which add a table-spoonfull of the cold extract.

[The above is from an exchange. The coffee thus made, although not very cheap, is very delicious.

To Destroy Insects on Vines.

Sprinkle the vines with boiling hot soap suds.—[Ex.

[This is not our view nor would we like to put it forth as it is. It is correct, however, according to its title, but it should have told the whole truth and added, "this will kill the vines likewise."

A Successful Factory.

The Elkton (Md.) Democrat describes Lord's cotton factory, situated upon the Great Elk, four miles north of Elkton, and says:

The most gratifying evidences of the success with which Mr. L. is conducting his operations, met us at every step of our progress through the establishments. He is enlarging his operations, extending his buildings, adding a new water wheel, introducing new and highly improved machinery, at immense cost, but which will amply remunerate him in the saving of time, material and labor. About one hundred persons are employed in the establishment, who work twelve hours per day. This factory manufactures table diaper only, and turns out fifty pieces per day, of rich and beautiful figure, which finds a ready sale in all our cities, and would do so, even if the quantity were greatly increased.

The Iron Business of New York.

On the Saranac river there are forty-one forge fires. Of these, twenty were in operation on the first of January last, and of these twenty, fourteen have since suspended work. These twenty fires employed 255 hands, and made 3,000 tons of bloom, and 550 tons of bar iron annually. They required over \$100,000 worth of agricultural products every year, and the capital they employed was \$225,000. Out of eighteen tuyeres on the Salmon river, ten are now in use. Of the fifty-four on the Ausable, a small number are in operation.

Whale Shooting.

The ship North Star, of New London, Ct., is about to sail on a whaling voyage, and is provided with patent guns of Capt. Brown, for shooting right whales. They are said to be very efficient, and to throw harpoons and lances with unerring aim.

Late arrivals from Newfoundland report that a large plain of unbroken ice, nearly two hundred miles in length, has been seen and circumnavigated in latitude 46. This is directly on the great highway between Europe and the United States, and it is feared the obstruction may prove disastrous to shipping.