

ROWLAND'S IMPROVED LIFTING JACK.

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We illustrate here a new and simple lifting jack, applicable to all kinds of vehicles. The base, A, supports an inclined bar, B, and standard, D. The lever, F, has its fulcrum at G, in bar B, and extending forward is pivoted to the notched bar, I, which is connected by the bar B, by the short bars J. It will be evident that when the lever, F, is operated the notched bar will be raised or lowered. The axle of the vehicle rests upon one of these notches according to the height of the sxle. K is a bar which is pivoted to the base, and which extends upward above the lever, F. It carries a pin, I, which, when the jack is loaded, falls into one or the other of the recesses, M, in the top side of the lever, and thereby holds the load. When the load is to be lowered the rear end of the lever, F, is depressed to release the pin, when the bar, K, is thrown forward with the foot. The tweer is then allowed to rise and release the jack. The device is strongly and inexpensively constructed.—*Scientific American*.

To Render Corks Air and Water Tight. - The Obmiker Zeitung suggests the use of parafin as the best method of making porous corks gas and water tight. The method of impregnation suggested is simply to allow the corks to remain for about five minutes beneath the surface of melted parafin in a suitable vessel, the corks being held down either by a perforated lid, wire screen or similar device. Corks thus exterior, may be introduced and removed from the neck of a method gate ease, and make a joint with the flask that is a perfect seal.

IRON is a dangerous ingredient in fire brick. When a brick containing iron is exposed, even at a low temperature, to gases containing carbon, part of the carbon is deposited acar the iron. This has often not only caused the brick to lose its cohesion, but may even burst it so as to throw down the iron walls of furnaces and the linings of flues.

The relations between M. Pasteur's discoveries concerning the development of germs, and the progress of modern surgery were discussed by the Paris Academy of Sciences a few weeks ago. In the course of the discussion, M. d'Abbadie, the explorer of Abysthia, remarked that there was a saying among the natives along the ahore of the Red Sea that a wound to be healed should remain in contact with the air; and in that region he found

THE late experiment in the introduction of Salmon into Australia, made by Sir Samuel Wilson, has so far proved successful. Fully one-half of the ova which were received from California hatched successfully.

CAST iron pipes fifteen inches in diameter and three-quarters of an inch thick will sustain a head of water of 600 feet. One of oak two inches thick and of the same diameter will sustain a head of 180 feet.

TO DETECT fraudulent balances, after an equilibrium has been established between the weight and the articles weighed, transpose them, and the weight will preponderate if the article is lighter than the weight, and contrawise.

WITHIN the last few months the French physicite have succeeded in liquefying acetylene, ethyl, hydride, marsh gas, nitrogen dioxide, oxygen, nitrogen, hydrogen and atmospheric air. These were the last of the miscalled "permanent gases."

WE might save at least one-fifth of our bread and one-third of our meat. So long as we insist on our bakers supplying our table with snow-white bread, so long must the miller eliminate from the flour its most nourishing part. This part approaches, in chemical constitution, that of flesh.

FORMS of living matter are numerous beyond all computation, the diameter of which is not more than 1-40,000 of an inch ! Allow some dry hay to remain two days in water, then filter and leave it two more days, and it will swarm with living creatures, each one having a separate organization.

WHEN wood is employed as a fuel it ought to be as dry as possible. To produce the greatest quantity of heat it should be dried by the direct application of heat. As usually employed it has about twenty-five per cent. of water mechanically combined, the heat necessary for evaporating which is lost.

MR. John Watson, F.R.A.S., read a paper at the meeting of the Newcastle Chemical Society, on the utilisation of sewage and the purification of rivers, in which he stated that a small quantity of dilute hydrochloric acid was sufficient to precipitate the most noxious sewage, and leave the supernatant water pure.

A GOOD cement is formed when shellac is dissolved in a concentrated solution of borax. Albumen of egg mixed with quicklime makes a very strong cement, but does not resist water effectually; it is employed to unite pieces of spar and marble ornaments to which moisture has little access. Coppersmiths use a similar compound for securing the edges and rivets of beilers, but in this case blood is substituted for the white of an egg.