

# Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME 5.]

NEW YORK NOVEMBER 3, 1849.

[NUMBER 7.]

THE  
Scientific American,  
THE  
BEST MECHANICAL PAPER IN THE WORLD.  
CIRCULATION 14,000.  
PUBLISHED WEEKLY.  
At 128 Fulton Street, New York, (Sun Building,) and  
13 Court Street, Boston, Mass.  
BY MUNN & COMPANY.  
The Principal Office being at New York.  
Barlow & Payne, Agents, 59 Chancery Lane, London  
TERMS—\$3 a year—\$1 in advance, and  
the remainder in 6 months.

## Rail Road News.

### Important Railroad Law Decision.

At the recent term of the United States Circuit Court, held at Rutland, Vermont, Justice Nelson presiding, the Troy and Rutland Railway Company, or the Rutland and Washington, as it is designated in Vermont, applied for an injunction against the Whitehall and Rutland Company. A bill has been filed by the Rutland and Washington Company, for a perpetual injunction to restrain the building of the Rutland and Whitehall Railroad, on the ground mainly, that the charter of the latter company was the grant of the same or a similar franchise with the former, and therefore, under the constitution of the United States, invalid as impairing the obligation of a contract. It appears, however, from the argument, that the routes of the two roads were not in fact parallel throughout, and that \$100,000 had been already expended on the Rutland and Whitehall Railroad, which under the contract, was to be completed within a year. In the defence it was contended in the first place that there was a fatal defect of parties, in omitting to make the principle (the Rutland and Whitehall Company) a party to the suit; and in the next, that, if made a party, the Court had no jurisdiction, both parties being corporations created by and doing business in the same State; and lastly, it was insisted upon the merits that the constitutional provision did not apply.

### English Railways.

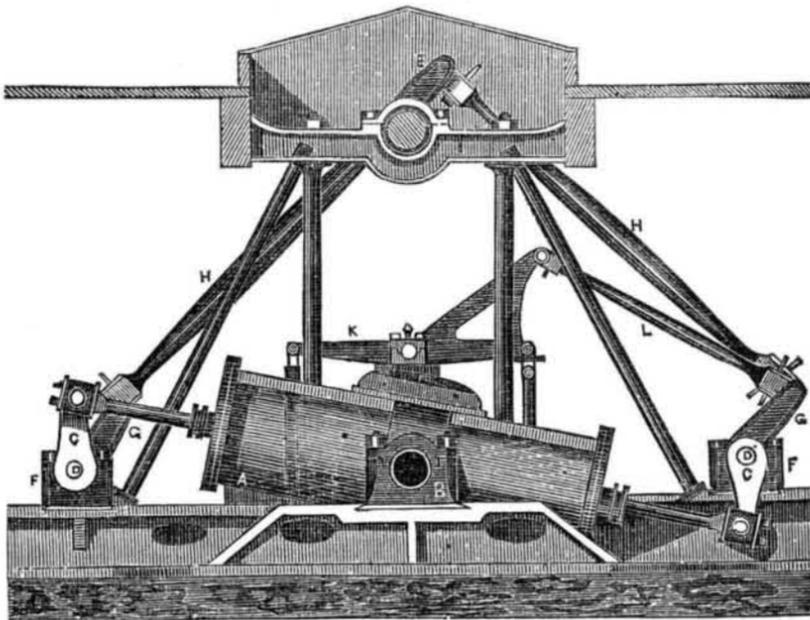
From an analysis of railroads in Great Britain and Ireland, it appears that the number of miles of railroad open for use, on the 30th of June last, was 5,447. The number of passengers conveyed during the preceding half year was 28,761,895. The number of persons killed on the railroads during that period was 86, and of persons injured 75. Of the persons killed, 12 were passengers, five of whom were killed from causes beyond their own control, and seven in consequence of their own misconduct or want of caution. Of the other persons killed, 51 were persons in the employ of the railway companies or of contractors, and 21 were trespassers or persons in no way connected with the railroads, who lost their lives in consequence of improperly crossing or standing on the tracks.

Queen Victoria and the royal family, on her return from her late visit in the highlands of Scotland, for the first time made her return journey the whole way by railroad, it was proposed to make the journey from the seat of Earl Gray, in Northumberland, near the Scottish border, in the Isle of Wight, a distance of 450 miles, in two days.

### Railroads in Pennsylvania.

There is a movement in Pennsylvania for a new Line West which is looked upon with great interest by those who have a mercantile eye to the benefit of linking Philadelphia with Pittsburg, the great line through Ohio and with St. Louis, in hopes of the future Pacific Railroad running from there to San Francisco.

## IMPROVEMENTS IN MARINE STEAM ENGINES.



This is a side elevation of improvements in Marine Steam Engines, invented and patented in England, by Messrs. John Hick & Wm. Hodges, of Lancaster Co., England, and a description of which first appeared in the London Patent Journal. As this is a subject to which a great deal of attention is directed at present, we believe it will be of no little interest to many of our readers.

This machinery is principally adapted for war vessels, where the main shaft is desired to be low in the hold, and the machinery placed below the water line; but regarding it as a whole we consider it as more novel than beneficial.

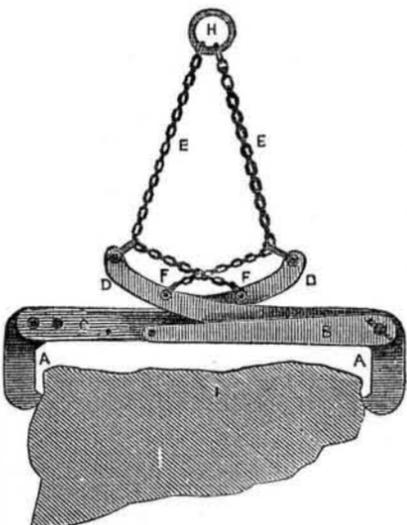
It will be seen that the cylinder A, is placed horizontally, and oscillates on bearings, B. It is furnished with two pistons, with a separate piston-rod passing from each end of the cylinder, and connected with cranks C, C, on the crank-shafts, D, D, to which they impart simultaneous motion. One cylinder only is shown in this view, there being another similarly situated on the other side of the main-crank, E, and connected to cranks, C, C, placed at right angles on the shafts, D, D, to those before mentioned. Between the bearings, F, are double arm cranks, G, to which the connecting-rods, H, H, are attached; and these being placed at right angles to each other, are both connected

to the same pin of the main-crank, E, on the paddle shaft; the one having a double or forked end, embracing the single end of the other. A frame, I, is placed on either side of the main-crank, which constitutes the whole support of the shaft, with the exception of the paddle-box bearings.

The air-pumps are worked from each end of the oscillating lever, K, which is connected with one of the cranks, G, by means of the rod L. The valves and other gearing may be worked by any of the arrangements usually resorted to in oscillating engines.

When these engines are intended for working a propeller-shaft, the connecting-rods, H, H, are dispensed with, and the piston-rods of one cylinder are placed in connection with double arm cranks, G, G;—the framing, of course, being suitably constructed for such arrangement; the two overhung cranks G, G, are connected by means of a straight bar placed transversely across the vessel, the engines being in a position suitable for such purpose. A single crank is placed on the end of the propeller-shaft, the crank-pin of which is of a like radius with the cranks, G, G, and is connected with the connecting-bar at the centre, and receives a corresponding motion, thereby communicating it direct to the propeller shaft.

### The Webber.



This is an apparatus which derives its name from the inventor, Mr. E. Webber, of Gardner, Maine. It has been patented, and is now the property of the Assignee, Mr. Daniel Winslow, of Portland, Me., a gentleman who will pay prompt attention to any letters (p. p.)

that may be addressed to him on the subject. Its object is to grasp and retain masses of ice, or blocks of stone of various sizes. A A are the jaws which are moveable, and can be increased or diminished in distance to grasp and retain large or small blocks, I. D D are the levers of the jaws, to which are attached the chains, E E, at two places by rings, F F, and to a central ring, H, above; B C are shifting braces, for the purpose of changing the fulcrum of the levers at pleasure. The object of this apparatus, and the difference between it and those in common use, will be apparent to all. For the purpose of elevating masses of ice and blocks of stone, boxes, bales, &c., of various sizes, its utility and advantages are apparent, and must be set down among those improvements that are new and useful.

### West India Coffee.

All the coffee grown in the West Indies has sprung from two plants taken thither in 1726, by a French botanist from the botanic garden at Paris. On the voyage, the supply of fresh water became nearly exhausted, but so anxious was the Frenchman to preserve the plant, that he deprived himself of his allowance in order to water them.

## Useful Receipts.

### To make Aromatic Rhubarb Syrup.

Take of rhubarb, bruised, 2½ oz.; cloves, bruised, cinnamon, bruised, each ½ oz.; nutmeg, bruised, 2 drachms; diluted alcohol, 2 pints; syrup 6 pints. Macerate the rhubarb and aromatics in the diluted alcohol for fourteen days, and strain; then, by means of a water-bath evaporate the liquor to a pint, and, while it is still hot, mix it with white sugar to a proper taste. Aromatic syrup of rhubarb may also be prepared by putting the rhubarb and aromatics, previously reduced to coarse powder, and moistened with diluted alcohol, into an apparatus for displacement, pouring upon them gradually diluted alcohol until two pints of filtered liquor are obtained, then evaporating to a pint, and completing the process as above directed.

### Common Rhubarb Syrup.

Take of rhubarb, bruised, 2 oz.; boiling water a pint; sugar 2 lbs. Macerate the rhubarb in the water for 24 hours, and strain; then add the sugar.

### To make Smelling Salts.

Take a small piece of burnt unslaked lime, say 1½ oz., and add to it in a mortar, 1 oz. of muriate of ammonia, rub them well together, and you will perceive the pungent smell of ammoniacal gas. Observation—The muriatic acid—spirit of salt—of the sal-ammoniac has a greater affinity for lime than ammonia, it therefore leaves the ammonia and combines with the lime, forming the muriate of lime, whilst the ammoniacal gas is set at liberty.

### Volatile Salt Scent Bottles.

Fill small wide mouthed phials with the smelling salts, and add a drop or two of essence of lemon to each, thus superior scent bottles will be formed; the ingredients of a hundred of them would not cost two shillings, and at the same superior to the most that are made.

### To make Water of Ammonia, Hartshorn.

Into a retort put some quicklime, broken small, along with muriate of ammonia, let the beak of the retort be immersed in water, and apply a lamp below the retort; the ammonia-gas will be given out, and passing into the receiver nearly full of water, it will be absorbed by the water, forming water of ammonia.

### To Make Solder for Steel-joints.

Silver 19 pennyweights, copper 1 pwt. and brass 2 pwt. Melt under a coat of charcoal-dust.

### Kustitien's Metal for Tinning.

Malleable Iron, 1 lb., heat to whiteness; add regulus of antimony, 5 oz., and Molucca tin 24 lbs.

### Blanched Copper.

Fuse 8 oz. of copper and ½ oz. of neutral arsenical salt, with a flux made of calcined borax, charcoal-dust and powdered glass.

### Warts.

Irritating substances should never be applied to warts. I have found them effectually removed by a strong decoction of galls, which hardens their surface, and constricts the lax skin round the bottom of the warts, and a few days, or perhaps a week will show the result. On this principle school boys apply ink.—[Ex.]

[We have removed many warts by a very simple and easy process, viz., to wash them with a strong solution of pearlsh, and let it dry on the warts. If this is done two or three times, the warts will disappear.