

Scientific American.

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

VOLUME IX.]

NEW-YORK OCTOBER 1, 1853.

[NUMBER 3.

THE SCIENTIFIC AMERICAN,
PUBLISHED WEEKLY.

At 128 Fulton street, N. Y. (Sun Buildings.)

BY MUNN & CO.

Agents.
Hotchkiss & Co., Boston. Dexter & Bro. New York.
Stokes & Bro., Philadelphia. B. Dawson, Montreal, C.E.
Cook, Kinney & Co., San Francisco. M. Boullémet, Mobile, Ala.
E. W. Wiley, New Orleans.
Le Count & Strong, San Fran. E. G. Fuller, Halifax, N. S.
Avery Belford & Co., London M. M. Gardissal & Co. Paris.
Responsible Agents may also be found in all the principal cities and towns in the United States.
TERMS—\$2 a-year:—\$1 in advance and the remainder in six months.

Oil of Hops.

Dr. Wagner, of Germany, has been examining this oil, and has furnished some very interesting information respecting it. It does not contain any sulphur, and belongs to the group represented by the general formula, C₁₀ (carbon) H₈ (hydrogen). It is a mixture of camphene and a bihydrate of it, C₂₀H₁₈O₂ (oxygen). This oil is but slightly soluble in water. It has no narcotic action. When pure it is of a light brown color, has a powerful but not intoxicating odor, a warm and bitter taste resembling thyme. It scarcely reddens litmus paper. On testing it chemically to prove that there was no sulphur in it, an alcoholic solution was digested with fresh precipitated oxide of lead, and no sulphuret was formed. An aqueous solution of the oil was digested with a bright silver coin, and no change was produced on the surface.

The oil C₂₀H₁₈O₂ is isomeric with Borneo cajeput and bergamot oils, and the aldehyde of campholic acid, C₂₀H₁₈O₄. By treating the oxygenated part of hop-oil with nitric acid, the author was unable to obtain anything more than a brittle yellow resin.

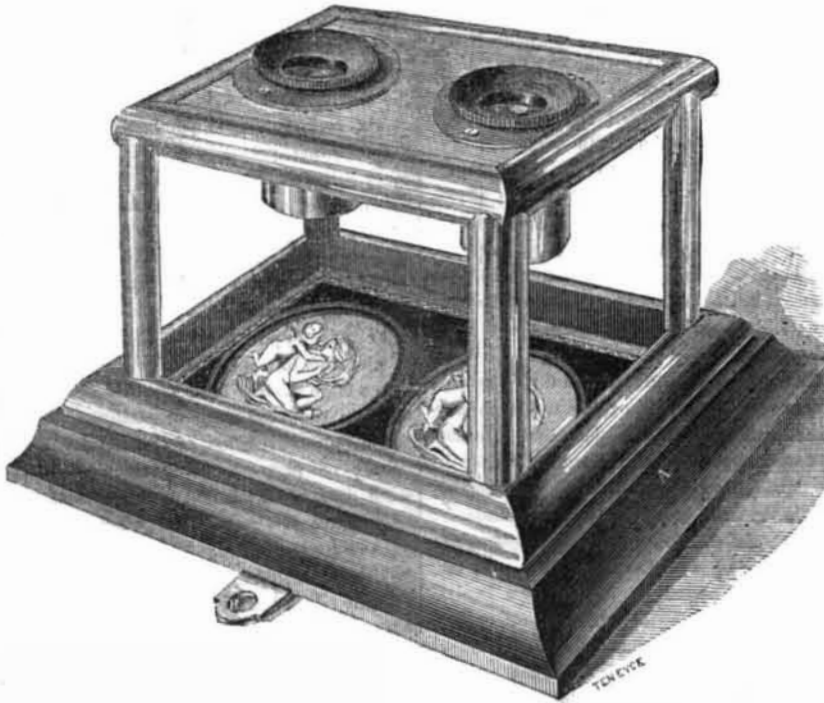
The author, has, together with V. Bibra, instituted a series of experiments on the physiological action of the oil; and they have ascertained that it has no narcotic effect, and corresponds with other volatile oils. A rabbit bore a dose of 20 drops without loss of appetite or any other sign of discomfort.

Rochleder's investigations have shown that the so-called active principles are common to all the members of a natural family. Both hops and hemp belong to the Urticacæ; both plants have a great analogy in a physiological point of view. Now since the narcotic effect of beer results from a yet unknown constituent of the hop, probably an organic base, and as hemp, according to the above principle, would contain the same constituent, it would perhaps be theoretically correct to grow hemp instead of hops for the purpose of communicating to beer its bitter taste and narcotic properties. The bitter of hemp closely resembles that of the hop. In an agricultural point of view this would be very advantageous, for besides the fact that the growth of hemp is less dependent than the hop upon meteorological conditions, the former can, after the extraction of the soluble constituents, be employed in making yarn. The oriental nations have, since the most remote period, been acquainted with the narcotic properties of the "Cannabis indica;" the famous napenthe of ancients is said to have been prepared by decocting the hemp leaves. At the present day the Arab employs his Haschisch for the same purpose. In the Persian taverns in the country, an infusion of the larger leaves and capsules of hemp is used, under the name of "Subjee" or "Sidhee," to relieve the fatigue of travellers.—In Egypt, hemp extract is frequently taken with strong coffee after dinner.

Large Locomotive Shop.

By the "Philadelphia Ledger" we learn that two establishments for building locomotives in that city, Norris' and Baldwin's, turned out 134 last year. Norris' & Son's locomotive factory is the largest in this country.

MASCHER'S STEREOSCOPE.



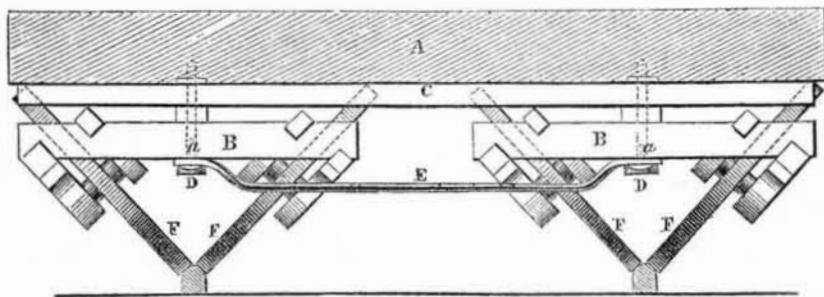
The accompanying engraving is a view of Mascher's new Stereoscope, designed for Daguerrean artists. It is constructed of plate glass mounted with German silver. Two tubes are seen, which contain the lenses, and may be screwed in or out to accommodate the vision of different persons.

A is a drawer containing the picture, which may be changed at pleasure. B B are plates by which the stereoscope is fastened in any desired position. This instrument completely protects the pictures, and saves the artist much time, which would otherwise be consumed in explaining to the uninitiated the mysteries of binocular vision. It is at the Crystal Palace.

This implement is intended to illustrate Mascher's Stereoscopic Daguerreotype Case, patented March 8th, 1853, and illustrated in No. 37 of our last Volume. These cases, we understand, are being rapidly introduced, and we certainly think that no one, having seen them, will have his picture set in any other. We spoke favorably of the invention in our former notice, and we again recommend it to the consideration of the public.

Circulars containing all necessary instructions for taking and putting up pictures, list of prices, &c., can be obtained by addressing the inventor, John F. Mascher, 408 North Second st., Philadelphia.

IMPROVEMENT IN CAR TRUCKS.



The annexed engraving represents a railway Truck, patented July 1st, 1851, by Daniel W. Eames, of West Turin, N. Y.

The claim is for the manner of arranging the wheels, F F F F, in pairs, with their axles at an inclination with each other and with the horizon: A represents the platform of the vehicle; B B are trucks secured to the cross-piece, C, by means of bolts, D D, on which they swivel, they are connected together by the tie rod, E. The wheels have their bearings in boxes secured to the truck, and, as will be perceived, converge toward each other in approaching the rails on the inclined sides of which they travel. a a are bolts confining to its place the cross-tie.

The sides of the wheels may be with or without the ordinary vertical flange—none is represented in the engraving. The upper surfaces of the rails may be bevelled, curved, or made in any other shape which shall be found best adapted to their successful working. The peripheries of the wheels must be adapted to the shape of the rail.

There is certainly some novelty about this invention, and the inventor claims for it several decided advantages. Among these he claims that it may safely be run at a much higher rate of speed than any other, not being so liable to run off the track; that it will turn short curves without straining the axles, or causing a slip of the wheels, and that consequently the running gear is subject to less wear, and is rendered more durable; that it prevents the swinging of the cars, so unpleasant when they are running at a great speed, and that the rail is rendered more durable, as the wear is distributed over a greater extent of surface.

Any further information which may be desired can be obtained by letter addressed to Daniel W. Eames, Constableville, Lewis Co., N. Y., the patentee and sole proprietor of the invention.

Tunneling the Falls of the Ohio.

The Falls of the Ohio are attracting much attention at present from various quarters, as to the best plan for making them passable for the

immense trade and travel of the Great West.—The directors of various railroads, building and in contemplation, are making their calculations, estimates, and plans, for connecting their roads with Louisville and continuing them to both sides of the river. The idea of the "iron horse" and its train crossing the falls with the speed of light, and making the waters of the Ohio as easy of passage as the plains of Indiana, is a grand one, which could not be too quickly consummated.

A tunnel made of strong cast-iron cylinders, 15 feet in diameter, is proposed—a good plan.

The Hot Air Engine in France.

"The hot air engine, one of Mr. Ericsson's has been sent over here to prevent the expiry of his French patent. It has been set to work at the establishment of Messrs. Mazeline, and a pamphlet on the subject has been issued by Mons. Emanuel Lissignol, the manager of the establishment. The cylinder is about 4 feet 6 inches diameter, and the feeding cylinder inverted over it, 4 feet diameter. Both cylinders are connected together and have the same stroke viz., 8 inches. At 36 revolutions per minute, the indicated power by the friction brake is only 3 horse, instead of 10 horse, its nominal power. This great loss of power Mr. Lissignol attributes to the numerous leakages and mal-arrangement generally of the machine. He proposes, as the first step towards improvement, to make the cylinder double-acting, and to avoid heating the bottom of the cylinder, by the use of a boiler or generator, based on the same principle as the regenerator, and composed of wire gauze."

[The above is from the correspondence of the "London Artisan." The hot air engine alluded to was the one which was constructed originally to drive the printing presses of the "New York Evening Post." It certainly was lucky for the "Post" that its engine was sent to France.—The hot air engine for the "Post," to replace it, was to be in by this time. We would respectfully ask the "Post" how it operates; does it give out more than three horse of its nominal ten? the thought of a hot air engine, with a cylinder, 4½ feet diameter, working at 3 horse power only, is something really laughable to a steam engineer. A steam engine with a cylinder only 6 inches in diameter, and 8 inches stroke could do as much work. We have to inform our readers, for a positive fact, that the Ericsson is getting in new cylinders, and her engines (still hot air) are to be operated on a totally different principle from the kind patented by Ericsson, as illustrated by us; they are to operate on the principle of Stirling's entirely.

Crossing the Atlantic in a Week.

Since we noticed the statement made by Mr. Norris, of the building of a steamship—himself the engineer, and J. W. Griffiths the nautical architect—which was to cross the Atlantic in six days, a number of inquiries have been made of us respecting it: answers to them cannot be given: it is best to wait the development of events. From Major Norris and Mr. Griffiths we expect nothing ordinary, and if their vessel makes the voyage in eight and a half days, instead of six, they must get the broom. This would be most extraordinary sailing, as it would be an average of 360 miles every day. We shall be more than satisfied if the new steamship does this. Anything new that may come before us respecting it we shall report to our readers.

The Grand Trunk Railroad of the British North American Provinces was commenced last week at St. Johns, N. B. This railroad is intended to unite America with Europe at the nearest connecting points, to shorten ocean navigation.