

**IMPROVED RUNNING GEAR FOR WAGONS.**

The improved running gear illustrated herewith is so constructed that either of the wheels may rise above or sink below a level in passing over obstructions or depressions without straining the gearing or body.

The rear end of the reach is secured to the rear axle. The forward portion is rounded off, passes through the head block, A, and has a nut, B, screwed upon its forward end. Said portion of the reach also passes through an eye formed upon the upper circle, C, of the fifth wheel, the forward or straight part of which is bolted to the head block, A. The lower circle is bolted, as shown, to the forward axle. The head of the king bolt is imbedded in the lower side of the head block. The brace, D, is curved upward and rearward so as to pass beneath and serve as a guide and seat for the lower circle of the fifth wheel. Its upper end is bent upward and has an eye to receive the reach. A collar, E, on the reach rests against the forward side of the eye of the upper fifth wheel circle, to relieve the nut, B, from having to sustain all the draught. The springs of the body are attached to the saddle, F, and through lugs on the latter passes the end of the reach. The rear lug has a square hole formed through it to receive a square portion of the reach, so that the saddle is thus held parallel with the rear axle. The wagon body and gearing is thus kept from being strained or twisted by the upward or downward movement of the wheels.

Patented through the Scientific American Patent Agency May 22, 1877. For further information address the inventor, Mr. Moses Atwood, New Sharon, Mahaska county, Iowa.

**A Tin-Clad Catfish.**

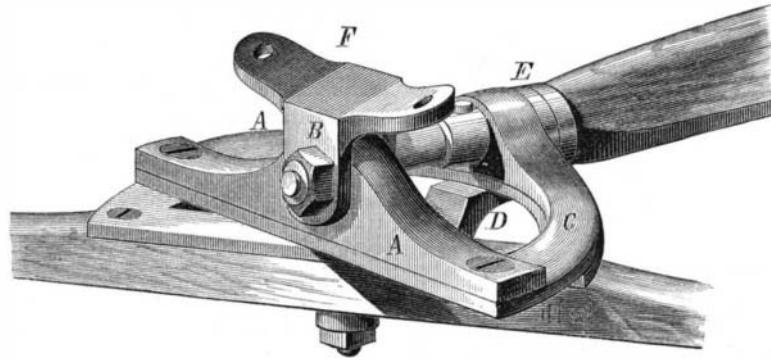
A boy, while fishing in Lake Butts des Morte the other day, felt a nibble, and, drawing his hook toward the shore, observed a half-gallon fruit can trailing on the bottom. Having secured the vessel, he was greatly surprised to find that a large catfish had taken up his abode therein and remained until his increased dimensions did not admit of egress. He had evidently flopped around in his tin parlor until a hole was made in the rust-eaten bottom, through which his tail protruded. In this condition the catfish had power to navigate from one place to another, and must have been regarded by his aquatic neighbors as a kind of iron-clad monitor.—*Menasha (Wis.) Press.*

**ANGLE IRON BENDING MACHINE.**

We illustrate one of several machines recently constructed by Messrs. Fielding and Platt, of Gloucester, England, for the Stephenson Boiler and Forge Company, Failsworth, Manchester. It is, says *Engineering*, adapted especially for bending angle irons for the rings of boilers 8 feet diameter, and consists of a large circular cast iron table, to one side of which the bending mechanism is attached. As will be seen from the engraving, there are one large and three small vertical rolls. The larger one revolves upon a fixed spindle, while the spindle of the others can be traversed by means of screws. The angle iron to be bent is gripped between the fixed and the middle traversing roll, and the two outer ones are then moved forward simultaneously to bend the bar to the curves required. One of the large handwheels is used for moving the gripping roller, and the other for traversing the bending rolls, the screws employed for this being geared together. The two gripping rolls are driven by the gearing shown in the drawing, the moving roll being connected to the gearing by universal clutches, which allow a free motion to be given to the sliding bearings. The two bending rolls are of course free on the spindles, and are not driven. For carrying the angle irons upon the table, rollers may be recessed into its face.

**Disinfecting the Air in Hot Weather.**

M. Boschauhas devised a method of disinfection based on the continuous and economical production of ozone by means of manganese dioxide, which in view of the present warm season, is of timely interest. Ordinary light brown wrapping paper is thinly covered with size, and on the latter the pulverized dioxide is sifted, so that it forms an adherent layer. It is merely necessary to hang the sheets thus prepared in the apartment to be disinfected or aerated. M. Boschau states that he lined a trunk with paper thus pre-



**ATWOOD'S RUNNING GEAR FOR WAGONS.**

pared, and placed therein some old cheese and strong radishes, which he left in the receptacle for a fortnight. At the end of that period the materials were removed and the lid of the trunk quickly shut. Fifteen minutes afterwards, on opening the trunk, not the slightest odor was perceptible. The ozone given off by the dioxide having completely disinfected the carbonic and butyric acids produced. The inventor proposes to manufacture wall paper, prepared in an analogous manner for use in schools, hospitals, etc.

**Strange Accident.**

An extraordinary accident occurred recently at a small shop in Fleet street, where American "crullers" and iced drinks are sold. Some person recommended to one of the young ladies employed in this shop the use of nitric acid and quicksilver for cleaning silver. The person thus advised purchased the prescription, telling the chemist, it is alleged, for what purpose she intended it. Whether this was so or not, negligence would seem to have been shown in giving to an inexperienced person two such dangerous agents without due warning of the consequences of their admixture. The poor girl proceeded to mix what she had obtained directly she returned to her place of occupation, with the result of a violent explosion, which, it is feared, has destroyed her sight.—*London Echo.*

**Fusing Nickel and Cobalt.**

M. C. Winckler announces in *Dingler's Journal* that he has succeeded in fusing nickel and cobalt in ingots of from two to five kilos, by using refractory crucibles, maintaining a very high temperature, keeping carbon and silica from contact with the melted metal, and by carefully excluding the oxygen of the atmosphere during the progress of the casting.

**Oil in California.**

The *Alta* says that, in Southern California, one well is already yielding 25 barrels per day, and only 180 feet depth has been bored. Pipe lines are already projected and California anticipates a repetition of the Pennsylvania oil fever.

**Competitive Trials of Steam Fire Engines in Sweden.**

These trials commenced near the Southwater Tower of the Government Railway Station. Shand, Mason & Co.'s engine, No. 4, which was first tested, obtained steam in 4 minutes and 30 seconds; produced 100 lbs. pressure in 7:50, and filled a tank holding 6,500 tons in the short space of 4 minutes. Merryweather's double cylinder engine produced steam in 4:30 and obtained 100 lbs. pressure in 12:10. The test of this engine in filling the tank was now interrupted, as were all other operations of the respective engines exhibited, by order of the Chief of the Fire Brigade, because of the danger apprehended of some adjacent wooden houses and sheds being ignited by the sparks ejected from the engine funnels, it blowing very hard just at that time. All the engines, eight in number, were then removed to the south side of the castle, and set to work again, in order to compete for rapidity in producing steam, equality and constancy of pressure, as well as for vertical height. The top of the staff on the roof of the castle being the highest adjacent point, and is 150 feet above the level of the water. Bedmoe's engine (Liege), which took the lead in the trial, produced steam in 8 minutes, and attained 105 lbs. pressure in 13:5. Next came an American engine (Messrs. Nichols & Co., Vermont), producing steam in 4:30 and 100 lbs. pressure in 10:30. Merryweather's single horizontal obtained steam in 7 minutes and reached 100 lbs. pressure in 10:50. Shand & Mason's large engine then produced 100 lbs. steam pressure in the shortest space of time, being 7:30 against 7:50 in the morning. Merryweather's large engine obtained this time 100 lbs. pressure in 11:40 against 12:10 in the morning. A very interesting competition now took place between Shand & Mason's and Merryweather's two largest engines. Shand & Mason used in this trial a 1 1/8" nozzle, and Merryweather one of 1 1/4" inch. The former, however, threw a higher jet, with, of course, a greater volume of water.—*Nerikes Allehanda Orebro District Journal.*

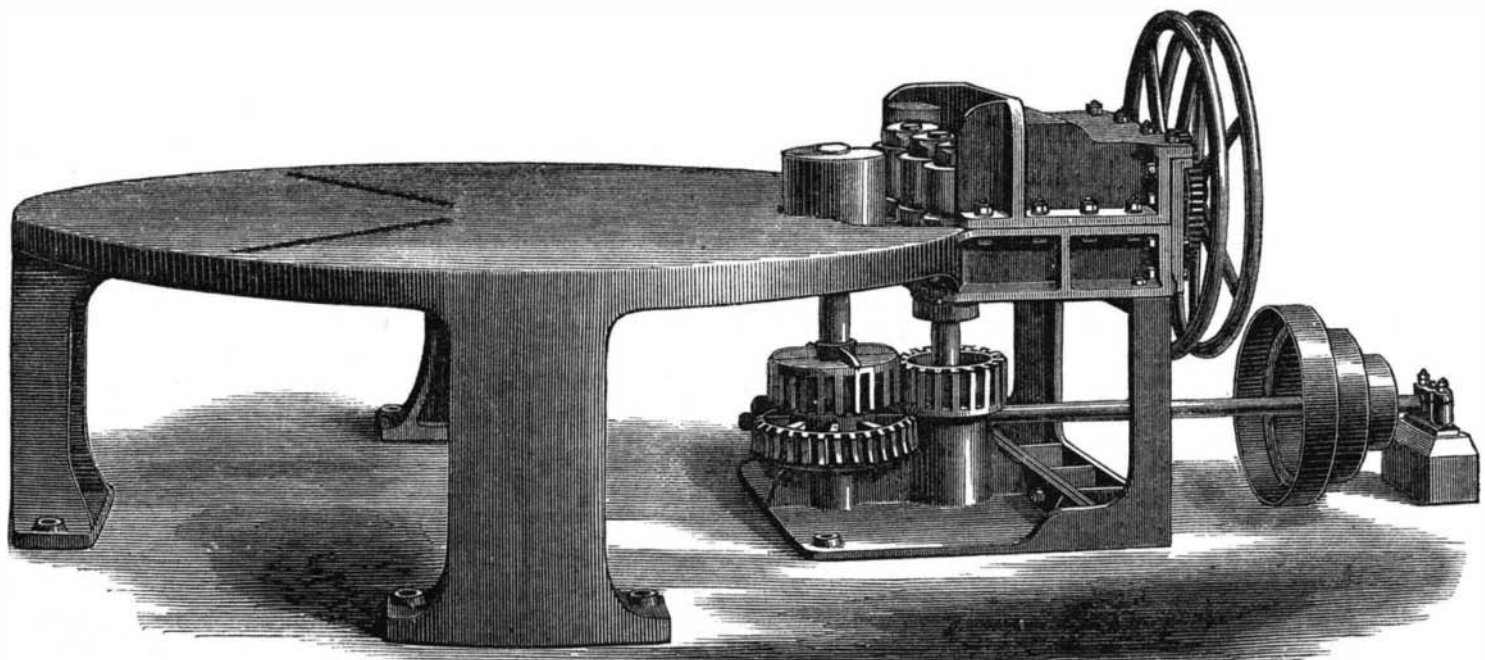
**Rain Power.**

A writer in *Cornhill Magazine* says that the amount of heat required to vaporize a quantity of water which would cover an area of 100 square miles to a depth of 1 inch, would be equal to the heat which would be produced by the combustion of half a million tons of coal, and that the amount of energy of which this consumption of heat would be the equivalent corresponds to that which would be required to raise a weight of upwards of 1,000 millions tons 1 mile high. To evaporate the annual rainfall on New York State alone in a year would require about five times the annual coal output of the United States.

**Large Telescopes.**

Clark & Son, of Cambridge, Mass., are making a telescope fifteen feet long with an object glass of eleven inches in diameter, for the Government Observatory at Lisbon, to cost \$6,000, and be used for photographing the sun. Princeton College is having a \$4,000 one made with a nine inch glass for astronomical excursions, and talks of getting a much larger one. The Clarks are also to make a gigantic one for Yale College, but it will take several years' work and cost some \$50,000; the flint for the object glass, which has already been bought in France, cost \$6,000.

It is stated that a meteoric stone fell, on the 19th of June, at Bowling Green, Ky., within ten or fifteen feet of a little boy at work on a farm, striking a tree with a report like that of a small cannon. The report states that it weighs about a pound and a half, and resembles a fragment of grindstone, but is much harder and heavier.



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