

THE RIDER HOT AIR ENGINE COMPANY EXHIBIT.

The largest and the oldest builders in the world of hot air engines, the Rider Engine Company, of New York, have a fine exhibit in Machinery Hall, as shown in our illustration. The company make both the Rider and the Ericsson hot air engines, and they turn out such large numbers of both kinds that their machines are superior in all respects, both as to ability for

trolley wheels, insulated wire, electrical brushes, etc., and the largest assortment of commutator bars to be found in the exhibits. The fact that their product is used exclusively by the Westinghouse people, who furnish power and lighting for the World's Fair, speaks volumes for this metal for electrical work.

This company claim that theirs is the only pure copper cast solid without alloys and without blow-

holes, and that it has the greatest conductivity of any cast goods, that the original fiber of the copper is not destroyed, and that their castings have a tensile strength of 36,000 pounds to the square inch, and their wire over 80,000 pounds, or nearly double that of any copper offered in the market; that its anti-friction qualities are unequaled, giving it when used in bearings twice the life of any other metal used for the purpose. The company furnishes any goods required for standard dynamos, motors or street car lines, and the goods are warranted to have three times the

wear of any other metal for commutator segments, electric brushes, gear pinions, armature bearings, street car bearings or trolleys.

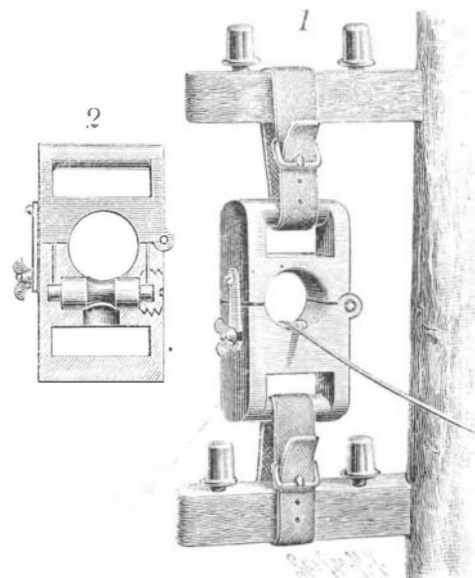
The Decomposition of Steam.

Herr Rosenfeld has devised a very pretty means of illustrating the decomposition of steam by a heated metal, which may make a really pleasing addition to the platform resources of a lecturer on water gas. For the purpose of the experiment, Herr Rosenfeld employs a small quantity of powdered magnesium, introduced into a short length of combustion tube fitted at one end with a stopper and tube for the escape of gas, and connected at the other end with a vessel containing water.

If this vessel is gently heated, while heat is also cautiously applied to the tube containing the magnesium, steam passes over and the metal merely glows—absorbing the oxygen and delivering a steady stream of hydrogen, which can be collected over water. If the evolution of steam is increased, so as to send a rapid current through the tube and over the heated metal, the latter burns with a dazzling light, and the heat soon breaks the tube. Before this can possibly happen, however, and necessarily end the experiment, a good deal of hydrogen will have passed over and been collected in the bell jar. The sequence of operations makes a highly effective lecture experiment.

A GUIDE BLOCK FOR TELEGRAPH WIRES, ETC.

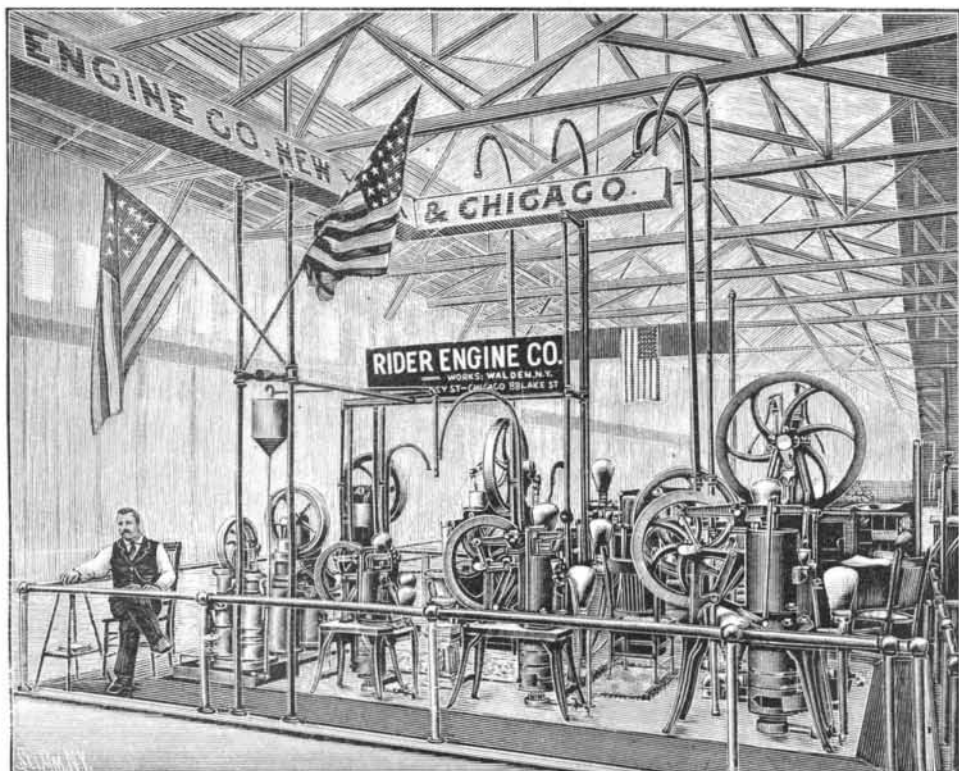
Where wires are to be run or stretched from pole to pole, as in putting up telegraph, electric light, and other wires, the device shown in the illustration is designed to greatly facilitate the work. The improvement has been patented by Mr. Ulysses H. Alexander, of No. 1008 Delaware Avenue, Wilmington, Del. It consists of a block adapted to be conveniently connected with the cross arms of a pole, as shown in Fig. 1, the block consisting of two hinged sections, each having on its inner face recesses which constitute a circular opening when the sections are closed. In the lower wall of the central opening, as shown in the sectional view, Fig. 2, is a cut-away portion adapted to receive a roller, and side recesses, one of which receives one of the trunnions of the roller, while in the other is fitted a screw plug affording a bearing for the other trunnion. The central portion of the roller is concave, to better guide the wire passed over it, and the roller may be readily changed by removing the plug. For lubricating purposes, oil ducts lead from the upper surface of the lower block section to each of the trunnions. The two sections of the block are preferably locked in closed position by means of a hook and wing nut screwing on a threaded stud, the sec-

**ALEXANDER'S GUIDE BLOCK FOR RUNNING WIRE.**

tions being thus readily opened out for the introduction of the wire or its removal from the central opening.

How to Test a Watermelon.

I draw my thumb nail over the melon, scraping off the thin green skin. If the edges of the skin on each side of the scar are left ragged or granulated, and the rind under the scar is smooth, firm, and white, and has something of a glassy appearance, the melon is ripe. But if the edges of the scar are smooth and even, and the thumb nail has dug into the rind in places, and the skin does not come off clean, then the melon is green. You can easily learn on two melons, one ripe, the other green, noting the difference after they have been cut open.—*Southern Farmer.*

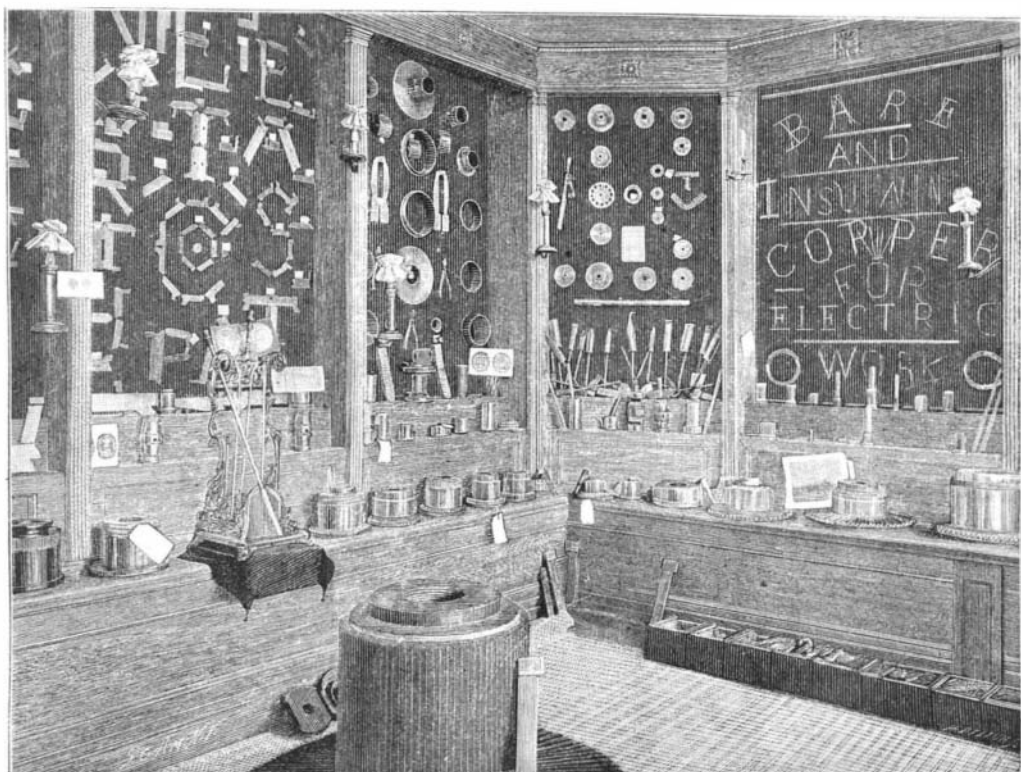
**THE WORLD'S COLUMBIAN EXPOSITION—THE RIDER ENGINE CO. EXHIBIT.**

work and workmanship. During the past five years many improvements have been introduced and the price has been lowered, the manufacturers claiming that this is now the cheapest pumping apparatus in the world which is both serviceable and reliable, its only competitor in the field of domestic pumping being the cumbrous and uncertain windmill. It is supplied with a kerosene-burning attachment if desired, which renders the engine practically automatic.

THE EUREKA TEMPERED COPPER CO.'S EXHIBIT.

The exhibit at the World's Columbian Exposition of the Eureka Tempered Copper Co., of North East, Pa., is located in the southwest gallery of the Electrical building. The display is a wonderfully complete one, and seems to embrace nearly everything that it would be thought possible to make of copper or brass. It is shown in an attractive Moorish mosque, of which our illustration represents an exterior and interior view.

This company enjoys a wide reputation for its casting of copper without blowholes and without alloys, and its process of hardening copper, for which it was awarded the John Scott medal by the city of Philadelphia, at the suggestion of the Franklin Institute, in 1891. The company exhibit all sizes and types of commutators for street car and electric lighting. Their exhibit also includes bearings, gears, pinions,

**THE WORLD'S COLUMBIAN EXPOSITION—THE EUREKA TEMPERED COPPER CO.'S EXHIBIT.**