

SCIENTIFIC AMERICAN

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY, AND MANUFACTURES.

Vol. XXXV.—No. 25.
[NEW SERIES.]

NEW YORK, DECEMBER 16, 1876.

[\$3.20 per Annum.
[POSTAGE PREPAID.]

NEW ROTARY DIAMOND MILLSTONE DRESSER.

We illustrate in the annexed engraving a new application of the black diamond, or carbon, to the dressing of millstones. The device is the invention of M. A. Millot, of Zurich, Switzerland, and may be applied to millstones of any size and nature. The cutting is done by a rotary head to which the diamonds are attached.

The machine works entirely automatically, the mechanism being attached to a solid base, which is secured to the center of the stone. The rotating cutter moves forward and back; and when it has completed its travel in one direction, a ratchet wheel advances one tooth, and the machine operates so as to present a new surface of the stone to the action of the diamonds. The cutter head revolves at the rate of 12,000 turns per minute without the slightest vibration. The diamond points work in oil, and the adjustment is such that they always fall into the old series previously cut. But very little power is required, and a simple cord serves for its transmission. In less than an hour, it is stated, an ordinary stone is dressed with an accuracy never before attained. The edges are disposed to any desired eccentricity, in order that the increase may take place under the most favorable conditions, and so as to overcome the centrifugal force corresponding to the diameter of the stone.

M. Millot states that the automatic action of his machine is an advantage more than sufficient to compensate for its cutting only in radial direction. Waste of diamonds is prevented by completely imbedding the stones in the cutter head, so that these points never project beyond their metallic holder.

In one of the largest mills in Zurich there are eight pair of stones, four of which turn to the right and four to the left. No difference whatever is noted between the two sets in point of product obtained. In order to test the durability of stones cut by the machine with those dressed by hand, two pairs were prepared, one in each way, and worked for eight days. At the end of this time the hand-dressed millstone was considerably worn while that dressed by the machine was unaltered. It was also noted that the diamond-dressed stones remained more perfect at the circumference. One diamond cutter, it is further stated, will serve to dress several hundred stones.

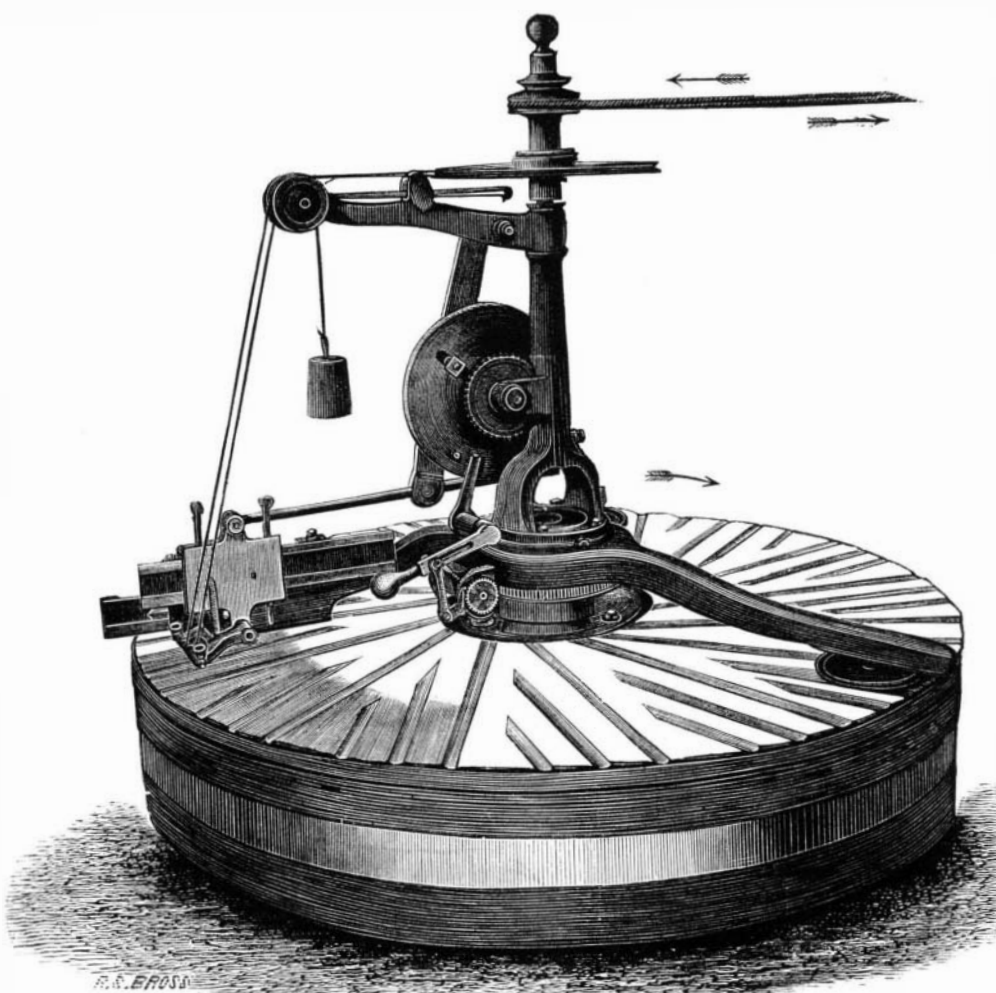
PRICE'S IMPROVED HOSE COUPLING.

The annexed illustration represents a new hose coupling which offers the advantages of easy connection by simple automatic catch mechanism, and which embodies a novel way of securing the hose, so that the latter is held with great firmness. At the same time means are provided whereby the hose can be quickly released from the coupling. Fig. 1 is a sectional view, and Fig. 2 an end view, from which it will be understood that the two parts of the coupling are precisely alike, and are interchangeable: so that, if one portion should become injured, another may be readily substituted, and thus the failure of one part does not necessitate the removal of the entire union.

A is the main ring. In a recess on its front side is secured rubber packing, B. Pivoted in its upper portion is a catch, C, which bears against a bent rubber spring as shown. Cast on the corresponding lower part of ring, A, is a projection, D. As the opposite half of the union is made in similar manner, it will readily be seen that the projection, D, on one half enters under the hook of catch, C, on the other, and is engaged thereby, and *vice versa*. Hence it is only necessary to bring the faces of the parts together, when the catches become fastened; and the packing, B, being compressed, effectually closes the joint.

The principal difficulty encountered in devices of this description is the fastening of

the hose in the rings, so that it cannot be pulled out or forced out by heavy pressure. In the present invention, a flanged double-conical ring, E, is slipped on the hose, so that the edge of the latter is lapped by the flange while the conical portion passes inside. Over ring, E, the main coupling, as already described, is placed. Then a threaded ring, F, enters the threaded rear part of ring, A, takes against the hose, and jams it firmly against the tapered ring, as represented.



MILLOT'S ROTARY MILLSTONE DRESSER.

Patented through the Scientific American Patent Agency, April 18, 1876. For further particulars, relative to sale of rights or of patent, address, before January 1 next, George W. Price, Smithtown Branch, Suffolk county, N. Y., or J. A. O'Brine, northwest corner of Front and Pine streets, Philadelphia, Pa.

The Companion of Procyon.

It now seems probably that M. Struve was mistaken in his supposed discovery, made some time ago, of a companion star to Procyon. The astronomers at the Washington Ob-

servatory have been unable to detect any such star, even with the great telescope. M. Struve is repeating his observations; but as he has since noted companion stars to Regulus and Arcturus in the shape of fine spots of light, distant about 10 seconds, where it is certain that no heavenly bodies of the kind are in existence, it appears that the optical deficiencies of the astronomer himself have led him into error.

Chinese Views on English Science.

If the election were not over, we should direct the attention of our political contemporaries, whose ingenuity is so fertile in devising campaign anecdotes not wholly complimentary to their opponents, to the author of a book called "Ki-king-lu," who seems to possess a special aptitude for that species of literary work. The volume is published in China; and the author, who has resided in England, returns home and accounts for British scientific progress by the fact that the English have undoubtedly robbed the Chinese of their learning. One method adopted by English scientists has been the making of an extract from the eyes of Chinese who have become Christians, and touching the eyes of foreigners with it, by which they have been enabled to understand astronomy and perceive the mineral wealth of the earth. This clearly accounts for Professor Proctor's remarkably rapid mastery of the science of the stars. Another valuable medicine for the promotion of intelligence has had, for one of its ingredients, the brains of a Chinese girl who had embraced Christianity. Other medicines have been mixed with the brains, and the compound made up into pills, which received their final touch in the shape of incantations instead of sugar coating.

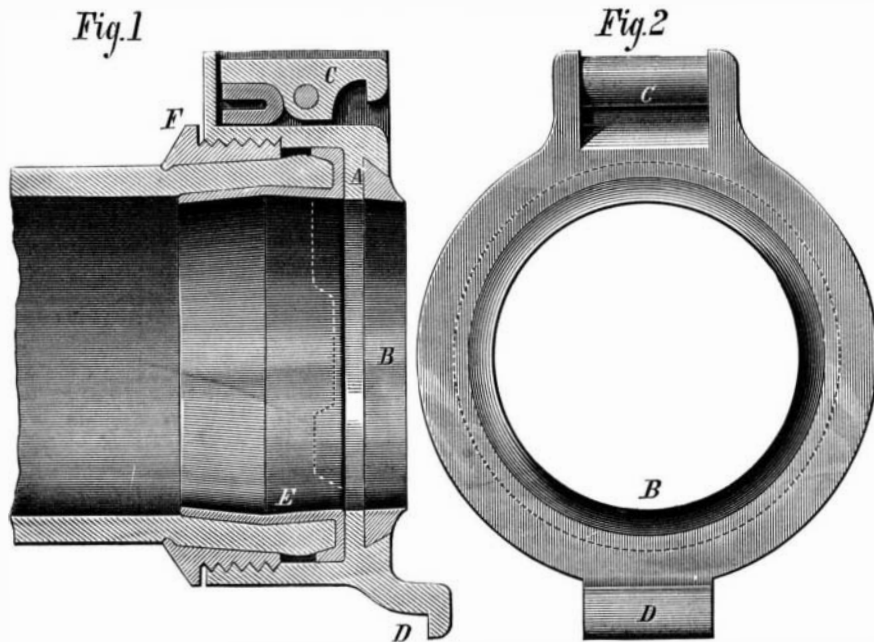
Our English readers will perhaps identify the author of this remarkable book from his statement that he lived three years in England, during which time he had three princesses given him to wife by Queen Victoria, and that he was only permitted to return to China upon giving a promise not to expose

the British improprieties which he had witnessed.

A Curious Grain-Drying Process.

A correspondent of the Chicago *Inter-Ocean* describes a new process for drying grain, which he states is now in successful use in St. Louis and other cities, and by which grain, in any condition short of actual decay, can be restored to a merchantable grade and rendered safe to ship to any part of the world. The machinery consists of two conical-shaped revolving cylinders, the inner one being heated by confined steam, and the outer one fitted with appliances by which the grain is carried up and dropped through several feet of heated space upon the hot smaller cylinder. The cylinders being of conical shape, a draft is created, and the damp and impure vapor arising from the curer is carried off at the larger end of the curer in stifling clouds. Upon both cylinders electro-magnetic metals are attached in such manner as to generate a constant current of electricity, which is said to act upon the grain in some such manner as electricity acts upon the human skin. The grain becomes electrically excited. The result of the process upon grain is scarcely less than wonderful. Corn, wheat, and oats, in such wretched condition when they went into the machine that no one would ever think of doing anything with them but throw them away, came out entirely dry and thoroughly cleansed of mold.

[The foregoing may relate to some new process, but the description is evidently absurd. There are no "electro-magnetic metals," and we cannot perceive wherein "electricity" could, under the circumstances, exercise any effect, beneficial or otherwise, on the grain. Possibly some one can send us definite information regarding the process to which the writer refers.—EDS.]



PRICE'S HOSE COUPLING.