Bushing, Adjusting and Lubricating Millstones.

It entails often a large loss of time and expenditure of labor to raise the running stone of a mill for the purpose of lubricating the spindle. The difficulty, also, of properly adjusting the runner on the bed stone, so that the contact may be even, is a serious one. It is the object of this invention to obviate those difficulties.

The accompanying illustrations, with the explanation, will convey an accurate idea of the improvement. Fig. 1 is a vertical section of the lower stone, with the bushing supported on a convex circular plate. Fig. 2 is a plan or top view of the bushing, the convex plate, and an outer plate designed to support the stone.

At A is a bushing or box, inserted in the eye of the stone and bolted to the plate, B. At C is a hole through the plate designed to admit the hand into the eye of the stone, which is larger where the bushing is than above. The upper outer edge of the bushing is sharp, being beveled toward the spindle, forming a cup-shaped receptacle. This is to facilitate the lubrication of the spindle with tallow or other similar substances.

D, Fig. 2, is a circular plate bolted to the frame, E, sustaining the stone. The plate, F, same figure, is secured to the bottom of the stone, and is curved or concave to fit on the surface of B, and thus allow of an automatic adjustment of the bed stone to the face of the runner; the slots, G, receive pins secured in B, so that a slight lateral motion is allowed, sufficient to insure a perfect adjustment of the two stones at all times.

It will be seen that by this device the lubricating of the spindle can be effected without raising the runner or upper stone, which consumes considerable time and labor, and that the even working of the stones is always secured by the adjustment of the bed stone to the runner.

Patented through the Scientific American Patent Agency, Oct. 24, 1865. Application on other improvements pending. For particulars address the patentee, Charles T. Weston, Scranton, Pa.

Fig. 1

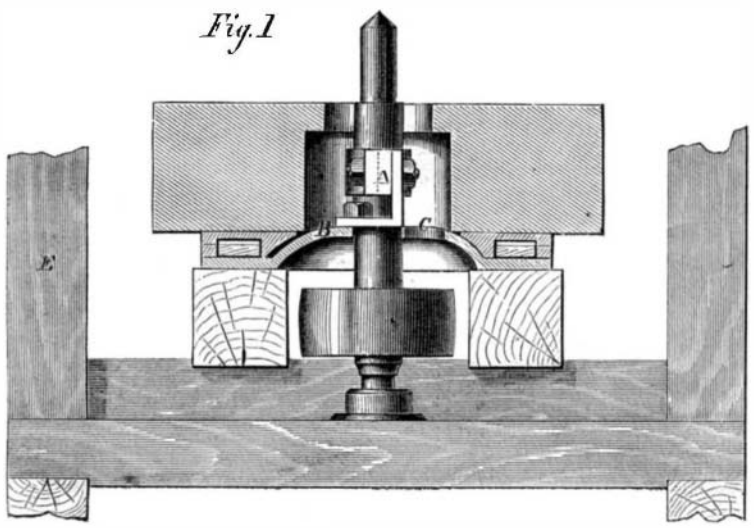
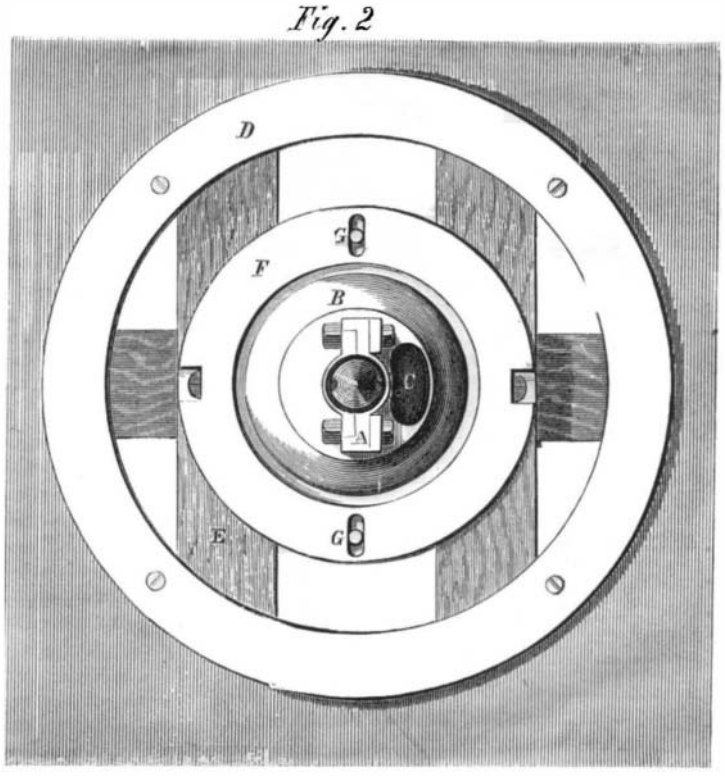


Fig. 2



WESTON'S IMPROVEMENT IN MILLSTONES.

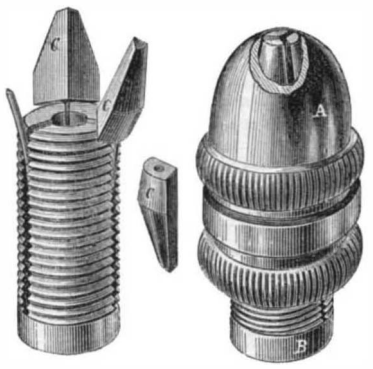
Water as Fuel.

Few persons are aware of the large percentage of actual moisture that abounds in most fuels. The careful housewife, desirous to economize her fire, "backs" it up with wet cinders. The poor employ wet tan. And there are not many who have not watched the nailer with curious interest, when, after a good sprinkle with his handbroom, previously dipped in water, he had made his smithy fire glow again with a very few blasts of his bellows. The Rev. M. Mouie, of Dorchester, has had constructed a cooking stove, in which the combustion, to a certain extent, of water is the principal feature. In the trials made a few years since for ascertaining the economy of burning wet fuel, the results obtained were perfectly marvelous. Fuel containing actually 70 per cent of moisture was burnt in an arched brick stove or furnace. The heat produced was sufficiently intense, the thick wrought-iron door having been previously closed, to raise to whiteness the arch of the oven. The fire, indeed, in the first instance, was lighted with dry fuel, but afterwards the wet fuel was exclusively resorted to. Surely, here are indications of no little importance, at a time when the exhaustion of our coal fields is under consideration.—*Mining Journal.*

[It is hard to argue against facts, and we have had repeated assertions through the press and by individuals, of the great apparent gain by the use of wet fuel, but common sense would say that the heat required to drive off or decompose the gases of water would be equal to that obtained from their subsequent combustion. Dr. Hagan's water-burning stove has been in use for some time, but whether it anticipates that of Dr. Mouie is a question.

OLMSTED'S PATENT DRILL CHUCK.

We well remember the time when the "live" spindle of a lathe was provided with a tapering square hole to which the shank of the centers and each drill used was fitted. Then came the round hole, and then the drill chuck, holding the shank of the drill by a set screw or by a flatted portion fitting in a transverse slot through the chuck. The idea of a



proper drill chuck, adapted to all sizes of drills and demanding only perfectly round chucks, is quite modern. Yet these chucks are considered now an absolute necessity in every well ordered shop.

The chuck hereby illustrated seems to be a very convenient form, easily adjusted and holding the drill securely. It is also well adapted for holding wire to be threaded. Every piece of which it is composed is of cast steel well hardened. It can be furnished with a shank to fit the hole for the center, screwed on the spindle, or slipped on the center. No wrench is necessary, the gripe of the fingers being sufficient to secure the shank of any drill. The inventor claims that he has used a one-inch drill, in tenacious wrought iron in one of them, receiving a shank of only three-eighths of an inch diameter without using a wrench.

A represents the shell of the chuck with milled bosses for the fingers. The core, B, is threaded and fits on the lathe spindle or center. The front of the shell is bored to receive the jaws, C, whose outer surfaces correspond with the incline of the inside of the shell, so that in screwing up the shell, the friction of the thread acts with the compression of the two inclines of the jaws and the conformation of the interior of the shell. The core, B, is slotted to receive a steel wire spring which is inserted into the rear of each jaw, so that when relieved from pressure, the jaws open automatically.

With this brief explanation, the operation of the chuck can be easily comprehended. These chucks are made of two sizes, one with an opening of three-eights of an inch, and the other of three-sixteenths of an inch, and they can be made of larger sizes. Patented May 15, 1866. For more particular information address L. H. Olmsted, Stamford, Conn. [See advertisement in another column.]

Water-proof Enamel for Card Photographs.

The following process for enameling cards is a very good substitute for the collodion transfer process, and is much easier of application. First apply to the surface of the card, with a brush, a solution of gum arabic in water, of sufficient strength to give considerable gloss when dry. As soon as dry, apply a coating of plain collodion in the same manner as coating a plate. If the collodion is not very tough, two or three coatings may be applied to advantage. Finish by passing the card through a roller, and you will have a fine gloss. Care must be taken not to have the gum solution too thick, or the surface will crack when dry, though there is but little danger if the collodion is applied soon after the gum is dry. Gelatin, instead of gum arabic, answers the purpose well, though it gives hardly as much gloss. Perhaps you or your readers may have a better process than this. If so let us have it.—*Philadelphia Photographer.*

VARNISH FOR PHOTOGRAPHS.—M. Bussi first brushes the prints over with a solution of gum arabic, and when this is dry, applies a coating of collodion. The following are the proportions recommended:—

1.—Clear transparent gum arabic, 25 grammes; distilled water, 100 cub. cents.; dissolve and strain.

2.—Gun cotton, 3 grammes; alcohol, 60 grammes; ether, 50 grammes.

By this double varnish the inventor insures the preservation of the proofs.—*Chemical News.*

THE engines and boilers for the new steam frigate *Ammonoosuc*, are constructing at the Morgan Iron Works, in New York, at a cost of $700,000, and are of the most powerful description.