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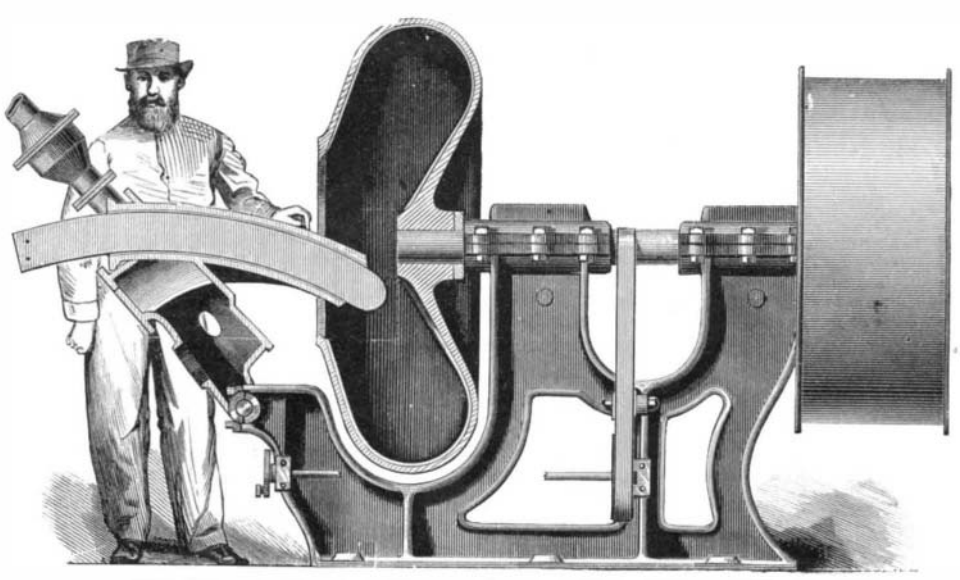
Preserving Fence Posts.

A correspondent at Benton Harbor, Mich., sends us the following statement by Parker Earle (a widely known horticulturist), in the Chicago *Times*, and requests our opinion of his mode for preserving fence posts. In answer it may be stated that no single experiment, or no single series of experiments under like circumstances, can be adopted as a rule for unlike conditions. Our own observations and experiments have led uniformly to the opinion that coal tar (applied warm to dry wood) is a good preservative for timber underground, or exposed to wet and shade, but does more harm than good if exposed to the action of the sun and weather. But varying circumstances may vary the rule. The character of the soil may have a controlling influence, and experiments should be repeated in different places and on different kinds of wood.

The experiments of Mr. Earle are a valuable contribution to such a series of trials. For general application, we would recommend first impregnating the whole of the post with crude petroleum as a general preservative, and when dry apply hot tar to the portion going into the ground, but none above. The petroleum will penetrate the pores, and the tar coating will hold it there. The following is Mr. Earle's statement:

In building a fence around our young orchard, several years ago, we tried many plans for preserving the posts. Having occasion to remove the fence this winter, we noted the condition of the posts as follows: Those set with no preparation were decayed an inch or more in thickness; those coated with a thick wash of lime were better preserved, but were quite seriously attacked by worms; those posts coated with hot tar were perfectly sound as when first put in the ground; those painted with petroleum and kerosene were equally sound and as good as new. In future we shall treat all posts in the following manner before setting: Let the posts get thoroughly dry, and then, with a pan of cheap kerosene and a whitewash brush, give the lower third of the post, the part to go into the ground, two or three good applications of the oil, letting it soak in well each time. Posts so treated will not be troubled by worms or insects of any kind, but will resist decay to a remarkable degree. This we find to be the simplest, easiest, cheapest, and best method of preservation.—*Country Gentleman.*

ALUMINUM SILVER is made by melting together 1 part of silver with 3 or 4 of aluminum, and is very valuable for articles in which one of the main objects is to obtain lightness, such as the instruments used for marine observations. Octants and sextants of this alloy have been received with great favor by practical navigators. Those parts of such instruments which, if made with other metal, would weigh 4 lb., will, when made of the above alloy, only weigh 1 lb. Mechanics like to work this alloy, as it can be turned and filed away, which is not the case with the pure aluminum, which is too soft, and, as no doubt all know who have worked this interesting metal, it has the objectionable property of sticking to the file.



VERTICAL SECTION OF DUC'S MECHANICAL ATOMIZER.

DUC'S PATENT MECHANICAL ATOMIZER.

One of the most successful of the many machines recently brought to the notice of milling people is the Duc mechanical atomizer, which we represent on the title page of the current issue. It is the invention of Mr. Henry A. Duc, Jr., of Charleston, S. C., and was designed to meet a necessity long felt by the large fertilizing interest of the State of South Carolina.

Heretofore, and at the present time, in fact, the immense quantities of phosphate rock mined in the neighborhood of Charleston have been ground for the purpose of manufacture into fertilizing material by means of the ordinary burrstones, a slow and expensive method. Owing to the hardness of the rock, the wear on the stones is excessive, necessitating frequent dressing, and consequently a renewal of the stones at very short intervals, entailing not only the cost of new stones, but a loss of time in placing them in position, which is of no small importance in a busy season. As overcoming the many objections which belong to the use of burrstones for this purpose, the Duc atomizer is certainly worthy of notice, and will undoubtedly fill a long-felt want.

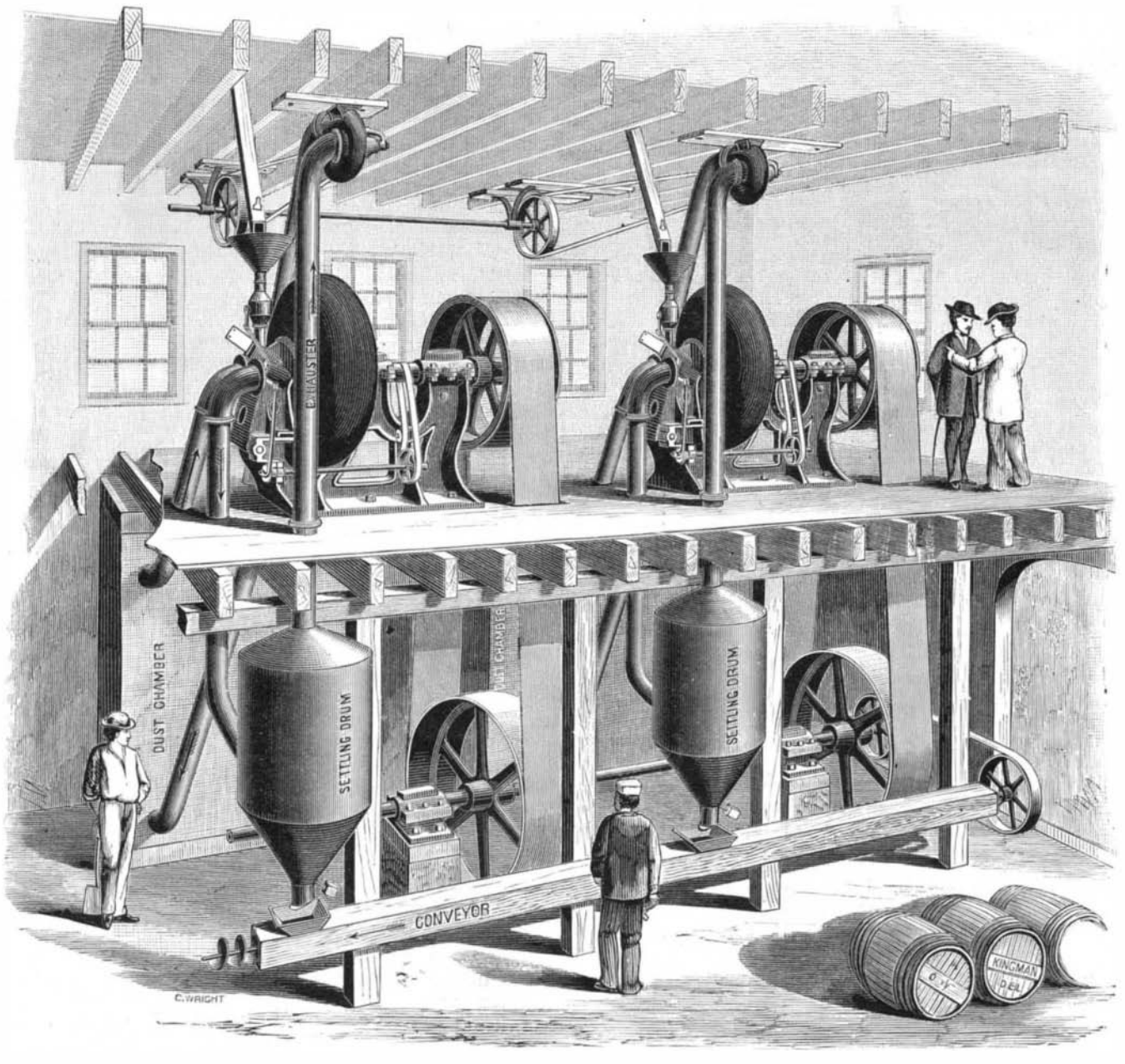
It is purely an "attrition mill," that is, one in which the material grinds itself, thereby relieving the machine from all excessive wear, a great detriment to most of the mills designed for this class of work, in which the machine itself must take half the wear, and the material to be ground the other half.

The action of the machine may be best understood by reference to the illustrations.

The material to be ground is broken to about the size of chestnuts, dried, and then fed into the mill from the storage bins, the amount of feed being regulated by means of a variable feed movement, the same as would be necessary for burrstones.

The broken rock enters the cast iron shell (which is revolved at about one hundred and fifty turns per minute) and is acted upon by centrifugal force, which causes it to form a ring or belt of rock, adhering to the inner surface of the shell, and revolving with it. This belt is allowed to accumulate to the thickness of an inch and a half, and is prevented from becoming any thicker by the plow bar (a segmental bar of chilled iron) which extends into the shell, and to within about an inch and a half of its inner periphery. This bar is stationary and of the hardest material, to prevent undue wear of its lower extremity in

[*Continued on page 147.*]



DUC'S MECHANICAL ATOMIZER—MADE AT THE CONTINENTAL WORKS, BROOKLYN N. Y.