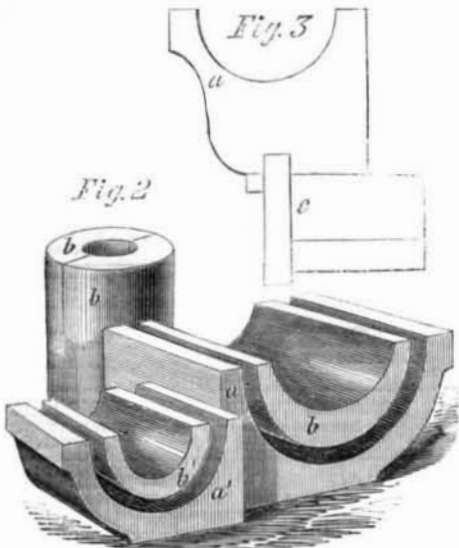


FIELD'S MACHINE FOR CUTTING WOODEN GUTTERS.

The subject of our illustration is for producing wooden gutters with great economy of lumber, two gutters being got from one piece of wood, and with great rapidity and neatness. It was patented Feb. 1, 1859, by the inventor, Samuel T. Field, of Worcester, Mass., and its chief novelty lies in the arrangement of the saw and a rotating cutter. The saw, A, is cylindrical, and it is rotated by a belt, B, passing over it, its bearings I, being flush with its surface, and they offer no obstruction to the passage of the gutter over the saw after it has been cut and as it is fed along. A rotating cutter, C, cuts out the groove to make the inner gutter, G, and the saw, A, passes around it and cuts it from the stick, and at the same time makes the larger gutter, R; and a vertical cutter, D, rotated by a belt from L, shapes one side of it so that it is suitable for the exterior of a house, and with the skeleton, c, Fig. 3, enables it to form a cornice. The stick moves between guides, H, on the table, M, and the rotating cutter is moved by a belt from the wheel, L. Fig. 2 shows

the gutters ready for use, *a* and *a'* being the largest gutters, and *b* and *b'* the smaller ones, placed as they come from the saw, *b*, is of a slightly different shape, internally, from *b'*, each being best adapted for certain purposes. Conductors for carrying water down the sides of buildings, or to be used for drain-pipes, can be made by nailing two segments, *b*, together, and when protected by tar or paint will last a great length of time. The saw mandrel is rotated from the shaft, V, and a tightening pulley is placed on the frame, E, to keep the belt, B, at the proper tension.



These eve-troughs, gutters and conductors can be made of every size necessary for all kinds of buildings; when made from good spruce or pine are very enduring; they have the advantage over the ordinary ones in that their interiors are regular, and they give no opportunity for the water to lodge and prematurely rot the wood. The vertical cutter, D, can be removed, and both sides of the eve-trough left perfectly vertical, without any ornament or shaping off. The inventor has the machine in use, and makes a great number of all its various productions, and those persons who feel interested in the invention can obtain any further information upon addressing Messrs. Holt, Field & Bros., Worcester, Mass.

THE SO-CALLED ALIZARIN INK.

Every one who knows alizarin, the red coloring principle of dyer's madder, will expect a red ink to which the name of alizarin ink is applied, and he cannot fail to be astonished to find it, instead of a red, of a dark green color, and the writings with it soon change to dark blue and black. The above name, therefore, is a mystification, invented to conceal its ingredients and mode of preparation, and to mislead an attempted analysis. No

every effort and essay, it seems reasonable that, generally, and in the main drift, they should aim at popularity and service. There is very little significance to any effort of man unless it relates to life—to the discovery of the divine thought and the divine mode of life and manifestation, or the life of men. Science, pursued for the sake of science, is as ridiculous as making newspapers for the sake of newspapers, or frying sausages for the sake of the sausages." A good comparison.

QUARTZ MILL.—

G. T. and W. F. Kearsing, of Butte City, Cal., have invented an improved quartz mill in which the step of the vertical driving shaft is sufficiently elevated to be out of the way of sand, and capable of being easily reached for lubricating purposes. The runner can be raised and lowered without making it necessary to disconnect any of the parts except the removing of one pin, the runner being suspended from arms extending in a horizontal direction from the vertical driving shaft by means of rods furnished with screws and nuts so that by turning the nuts the runner is elevated. The patent was granted July 26, 1859.

NEW MACHINE FOR CUTTING WOODEN GUTTERS.

doubt many have tried in vain to prepare such an article as it has appeared in commerce a short time since, from madder, but obtained an entirely different product.

The author has made an analysis of alizarin ink of commerce, and found it to consist of ordinary nutgall ink, with an admixture of crude wood vinegar and solution of indigo. He gives the following formula for preparing such an ink, which, in all its properties, is identical with the commercial article:—

One hundred parts of powdered nutgalls are digested with twelve hundred parts, by weight, of crude wood vinegar at a moderate heat for several days, then transferred to a filter, and washed with crude vinegar until the filtrate weighs twelve hundred parts. In this clear brown liquor, twelve parts of green vitriol and fifty parts of gum arabic are dissolved, this solution, under frequent agitation, set aside for several days, and at last so much solution of indigo added to make the whole fifteen hundred parts, when immediately the ink assumes that peculiar dark green tint. The solution of indigo was made by dissolving one part of indigo in four parts of Nordhausen oil of vitriol, diluting with water, precipitating with carbonate of potassa, filtering and washing the precipitate with water. When the sulphate of potassa is nearly washed away, the blue precipitate commences to dissolve; and this solution of the precipitate—the so-called indigo-carmine—was used.—*Wittenstein's Vierteljahrsschrift.*

SCIENCE AND ITS VOTARIES.—The following is an extract from the Springfield, (Mass.) *Republican*; we endorse every idea in it:—"We have listened to the reading of some of the papers presented to the Scientific Association, and examined the published abstracts of others, with the view of ascertaining their absolute value to the world of practical life. We presume that our opinion will coincide with that of the association itself, on the point of public utility. Much of the knowledge conveyed is simply curious. Much is only interesting to scientific men. Fanciful theorizing swells the aggregate of that which the public cannot appropriate with profit, while only here and there do we find a fact, or a thought, which has a vital value to the world of practical life. Now, while we would be the last to bring scientific investigation and revelation to the rigid test of utility, in

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