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Durable Wooden Water Pipes.

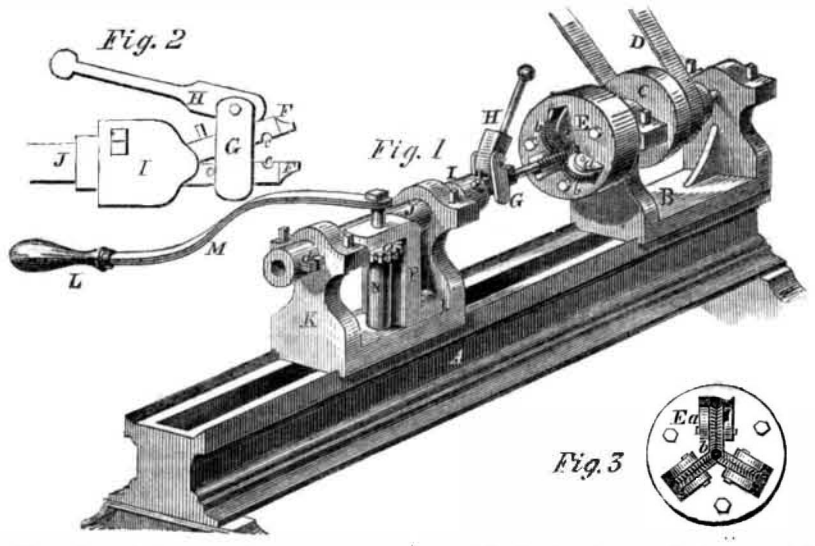
Some wooden pipes laid down for conducting water at Springfield, Mass., by Charles Stearns, Esq., appear to demonstrate the fact that they are more durable in certain situations than pipes made of lead. This plan is to lay them at such a depth as to prevent atmospheric action upon them. In sandy or porous earth, he lays them six feet deep; in compact soil four feet deep, and in peaty or swampy soil three feet deep. In one place heavy lead pipe was laid through a wet meadow, and it required repairs in four years, and had to be lifted in ten. It was replaced by wooden pipes which have now been twenty years in use, and are in good condition yet. The aqueduct pipes which supply Springfield with water have been in use fourteen years, and are still in good order. They are bored logs, the opening being seven inches in diameter, and charred on the inside surfaces by forcing flame through them. The charring of the surfaces of wooden pipes or boards has a wonderful effect in preserving them from decomposition.

It is undoubtedly true that timber sunk deep beneath the surface of the earth, and kept from contact with the air, endures for centuries. We have seen an oak log taken from the bed of a river, in which place it must have remained for hundreds of years, owing to the depth of sand which covered it, and yet it was as fresh as when first submerged. Cedar logs taken from the Jersey swamps, in which they have reposed for a thousand years, are found to be fresh and strong. Wooden pipes are cheaper than those of metal, and are preferable if they can be rendered as durable.

Ginning and Spinning Cotton.

In a letter received from G. S. Yerger, Esq., of Jackson, Mississippi, he informs us that he has put up on his plantation one of Henry's machines for spinning the cotton as it comes from the gin, and that it has been eminently successful. It has now been in operation for two months, and spins No. 5 and No. 10 yarns equal to any in the United States. This combination of the spinning frame with the cotton gin on plantations, whereby the cotton is made into yarn in the ginhouse, saves the expense of packing the cotton, and in the state of yarn transports it to market in a more compact form. If this method of operating cotton is found to be profitable on plantations, we shall soon see it extended so as to embrace the weaving of coarse cotton goods also for the market. This is simply a question of economy with planters. It has appeared to us that it would not be economical unless upon large plantations, where the machinery could be kept running the year round, because we know that machinery in factories deteriorates nearly as rapidly when standing idle as when running.

EVART'S SCREW CUTTER.



The utility of the screw is never to be too highly estimated, as it enters into the construction of nearly everything we use, and is a most essential aid in the manufacture of all machinery. For wood-work they are almost indispensible, and from the vast number which are used, any process or invention which can lessen the cost of their production must in the end, prove a public boon. Such an invention is the subject of our engraving, Fig. 1 being a perspective view of the machine.

A is the bed, exactly the same as a common lathe, on this slides a head, B, capable of being secured in any desired position by a clamp and screw underneath. In this head is a belt pulley, C, receiving motion from a belt, D, and on the mandrel, the cutter, E, is screwed in the position usually occupied by a chuck. This cutter is a circular block of metal, having three grooves in it, placed radially from its center, and it can be adapted to any hand or power lathe. In the grooves slide bearings, *a*, that can be brought nearer together or further apart by screws, to accommodate any (within certain limits) sized bar. These bearings support cutter wheels, *b*, of cast steel, which can freely rotate on their axes, and they have angular grooves cut on their peripheries, so that when the three meet together they exactly form one thread of a screw.

The rotation of these cutters enables them to last much longer than the ordinary ones, and as they are easily replaced, here lies the economy, namely, in the substitution of rotary cutters for the common dies, which are soon injured by the hard scale on the rod, and have to be frequently replaced; and moreover, when the screw is cut it can be immediately withdrawn without stopping the machine, thus effecting a great saving of time.

The screw is placed between a pair of jaws, F, seen enlarged in Fig. 2, and held tight, with its head in the groove, *c*, by the link and clamp, G H. These jaws are secured in a piece, I, attached to a sliding bar, J, that can move freely back and forth in the head, K. The screw blank being fastened in the jaws, it is fed between the cutters, which are rotating, by the operator pulling the handle, L. This handle is at the end of a lever, M, attached to a small upright shaft, N, that carries a cog wheel, O, and supported in a suitable bearing, P, on the head, K. The cog wheel, O, gears into teeth, *d*, on the sliding bar, J, and so when L is pulled, J is moved in its bearings, and the screw fed to be cut. When it is cut, by operating L in a reverse direction, the screw can be withdrawn, and another blank placed in the jaws. Fig. 3 is a front view of the cutter, E.

This valuable machine is the invention of James M. Evarts, of Westville, Conn. Any further information can be obtained from him, or M. Merriman, Jr., & Son, of the same place. The rights for all the States except Connecticut are for sale. It was patented June 16, 1857. Mr. Evarts had this operating machine on exhibition at the Crystal Palace, from which our engraving was taken. The machine was, of course, destroyed by the late fire.

Leach's Music Stool.

The wooden stools usually accompanying a piano are, as every one knows, expensive, and far from being a firm and secure seat, therefore to provide one which is at once light, elegant, cheap, and strong, this inventor —Edwin Leach, of Norwich, Conn.—has produced the subject of our engraving. An elegantly shaped iron rim, A, stands on three knobs or castors, and from it rise six or more light wrought iron rods, B, which are bound together by a hub, *b*, and from it they again slightly expand, and then pass quite straight to the piece, *c*, in which they are firmly secured. This piece, *c*, is a nut in which the screw, D, that supports the seat, F, works, so that by turning the seat round it can be raised or lowered to suit the comfort of the person who is about to sit down. The screw, D, when between the rods, B, is covered with an ornamented case, E, so that the appearance of the stool is always graceful, tasty and convenient. They can be made much cheaper than wooden ones, and are in every respect preferable, as being capable of enduring infinitely more wear, and present an elegant piece of furniture as an accompaniment to a musical instrument.

It was patented August 24, 1858, and the inventor will be happy to furnish any desired information upon being addressed as above.

Glycerine.

A correspondent asks us if there is any cheap process of obtaining glycerine, asserting it would reduce the price of soap, by turning the soapmakers' waste to some account. There is such a process in extensive operation at Price's candle works in London, England, and it is so simple and cheap that any soapmaker may put into practice. A continuous current of steam of 600° Fah. is led into a distillatory arrangement containing neutral glycerine fat, and in due time produces the decomposition of the latter into fatty acids and oxyd of glycerine, which distil over in combination with their constitutional water. The glycerine, from its greater density, forms the lower stratum of the distillate, and therefore may be easily separated from the supernatant fatty acids. In this state it is very dilute, and must be concentrated by evaporation until it reaches a specific gravity of 1.240 at 60 Fah., when it is ready for the market.

Shaving Soap Powder.

Most of the soaps in use for shaving may with justice be found fault with. They either do not lather freely, or else they excite an unpleasant sensation, arising from an excess of caustic alkali used in their manufacture. The alkali acts upon the skin as well as upon the beard; and to obviate these inconveniences, or at least to mitigate them, the following process has been invented :—Take about a quarter of a pound of the finest white Windsor soap, cut it into pieces the size of a walnut, place them in a dry and warm situation for several days, until perfectly hard. Now grate the soap up to powder with a nutmeg grater. Place the soap powder in a shaving dish, and pour over it just as much alcohol as will cover it; next day it will be fit for use. Thus prepared, the soap has lost all action hurtful to the skin, and has acquired a remarkable mildness and unctuousness. Instead of plain spirits of wine, any perfumed spirit, such as Hungary water, adds the charm of fragrance. Brown soap does not answer so well as white, because all the brown soaps are of commoner quality than the white, and are artificially colored with burnt umber, &c., which is not only dirty on the towels, but is used purposely to hide by its color other imperfections in the soap.

SEPTIMUS PIESSE.

African Cotton.

Recent intelligence has been received from Dr. Livingston's expedition up the river Zambesi, in Africa. They are now going up that river slowly, and have discovered a peculiar kind of cotton growing in a deserted garden. Its staple is longer than Angola cotton, and the seed does not adhere to it like that of American short staple. A sample of this cotton has been received in Manchester, England; it is clean, and looks very well, but is not to be compared to even the middling quality of South Carolina cotton.