

**DONALD AND WADDELL'S DRY DOCK.**

Messrs. Donald and Waddell propose to do away with foundations in the construction of dry docks, so as to permit of establishing the latter at points where the nature of the ground would necessitate a great outlay of money for foundation work, or in countries that are subject to earthquakes.

To this effect they construct the dock in the form of a large, double-sided caisson of metal or wood. Thus constructed, the caisson can be towed or taken under sail to the place that it is to occupy. Here it is ballasted by filling the space between its double sides with ordinary masonry or with beton, so as to sink it to the bed previously prepared for it by dredging and leveling.

These docks are provided with the usual apparatus for emptying and filling. Figs. 1, 2, 3, and 4 represent one of them resting upon the ground, and in service. It is accompanied with a wharf and with a platform upon piles for maneuvering.

The dock, decked and equipped like a steamer, is capable of proceeding to its destination without other aid. In this case it is driven by helices actuated by separate motors; and the rudder bars traverse the caissons in the stern. These bars are connected with a transverse rod that acts under the impulsion of a toothed sector. When the caisson has reached the place that it is to occupy, it is loaded with masonry again, and the deck and machinery are removed.—*Le Genie de Civil.*

**IMPROVED GRINDING MACHINE.**

In the machine tool department of the Inventions Exhibition, Messrs. Brinjes & Goodwin, of London, exhibit in operation a new description of paint grinding mill, which we illustrate here, from *Engineering*. As will be seen, this consists of three horizontal rollers which are made of granite. They are placed one above the other. Above these are placed the two feeding hoppers, which also supply the place of the usual mash tubs or pug mills that are used in conjunction with the ordinary paint grinding mills. In these mashers are horizontal shafts having suitable knives mounted on them, corresponding blades being attached to the inside of the vessel. The shaft is worked by spur gearing, and is thrown in and out of gear by the clutch shown in the engraving.

When the machine has to be operated, the dry color and oil are put into the mashers and the shaft arranged revolving. The knives are set with their surfaces at an angle to the axis of the shaft. The pitch of the blades is set so that the material is constantly worked up to the end where the discharge op-

ening is placed. When the grinding rollers are in action, the amount of opening is regulated by a valve and handwheel, as shown; and as the material is propelled forward in the mixer at a much quicker rate than it can be discharged, it constantly falls back to the feed end by its own gravity. There are thus two currents of the materials, one below toward the discharge orifice, and that above from it.

The color and oil having been sufficiently mixed in the mash tub, the valve is opened and the material al-

pressure between revolving rollers, the result being that an extremely fine paint is produced in a very short space of time.

Springs are fitted so that a pressure may be put on appropriate to the material being ground, and also to guard against damage to the gear should any hard substances be accidentally introduced. The mixers are especially designed for oil paint, but the mill is used for a variety of purposes, such as cocoa grinding, starch making, and printing ink grinding, this design having met with considerable success in the latter industry. The apparatus is shown in operation at the Exhibition.

**A Still Tongue.**

An old, experienced Wall Street banker remarked in course of conversation with a reporter on one of our exchanges, a few days ago, that "a still tongue was often a fortune." The idea he wished to convey was that men who talked too much expose the secrets of their business. A silent man is generally the safest adviser; he thinks before he speaks, and weighs well his words. Some men are as ready with their opinions as a hungry man for dinner; all that is required

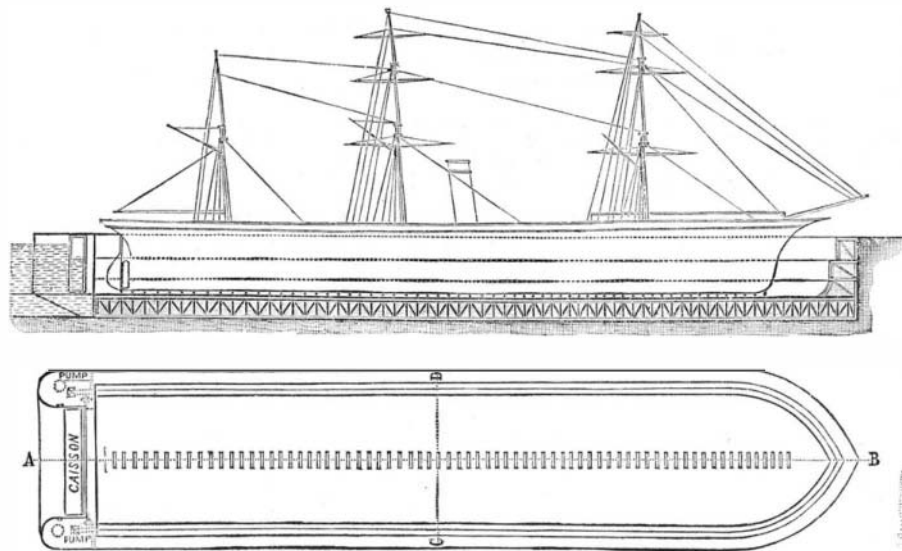
is the opportunity to air them. Others are so voluble they tell all they know about their own business, and their neighbors' as well. Generally, you can take the measure of an inveterate talker, as it's wind and froth. On the other hand, the man who holds his tongue is not easily fathomed. "Still water runs deep," with but little noise and friction, while the shallows foam and fret with constant tumult.

As a rule, the silent man is methodical, painstaking, careful. He weighs his words and pounds accurately. In business he makes no fuss or parade; he transacts it, however, with diligence and prudence. Brag and vanity are twins; together they were born and together they will die.

Conceit and boasting are poor elements in trade; airs put on as soon as a little money is made usually have a chill. Boasting of big profits and a speedy fortune to every listener shows a lack of good sense and sound judgment. Men have been hung on their own testimony, and merchants have failed from too much tongue.

Why should the secrets of the store or counting-room be proclaimed on the street corner? A merchant's knowledge of his business is the safest in his own breast. If he is making money, the fact will disclose itself soon enough, in a solid, substantial way. If you must have a confidant, let it be your wife. She is entitled to it, and is your help-mate.

COCAINE hydrochloride as a local anæsthetic is frequently used for toothache and neuralgia; its effect is of course but temporary.



Figs. 1 and 2.—LONGITUDINAL SECTION AND PLAN OF DONALD & WADDELL'S DRY DOCK.

Fig. 3.—TRANSVERSE SECTION.

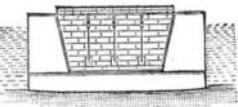
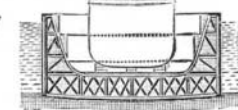
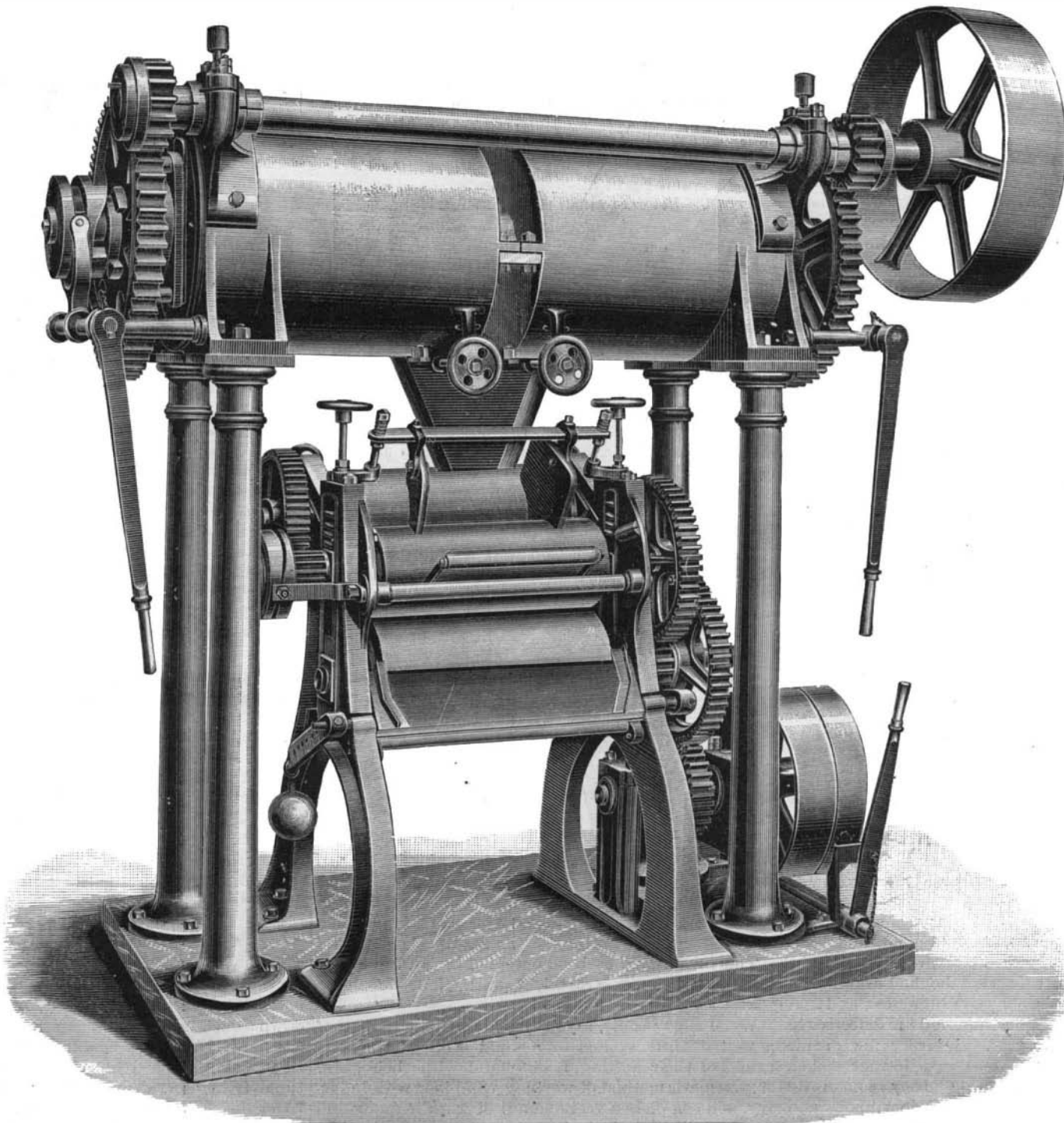


Fig. 4.—SECTION OF CAISSON.

lowed to fall on to the rollers. The bottom one of these is larger in diameter than the one above it, and the latter has a horizontal reciprocating as well as a rotary motion given to it by means of the cam arrangement, which is clearly shown on the left of the engraving. The pinion of this roller is made with teeth of sufficient length to accommodate this action.

By this reciprocation of the middle roller and the greater diameter of the bottom roller a cross motion is set up, which is far more effective in thoroughly incorporating the paint and oil together than simple



IMPROVED COLOR GRINDING MACHINE AT THE INVENTIONS EXHIBITION.