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## Manufacturing Flour.

MESSRS. EDITORS—I read with considerable attention, in your valuable paper, Mr. Bonnell's patent flouring process; but where is its superiority over other processes? The objection to his process is two-fold:—first, the attention of an inventor should be directed to economy in construction, and that of the practical mechanic to constructing and arranging his machinery, so that the power which he has to apply may be used in the best possible modes on combined scientific and practical principles. Mr. Bonnell uses in his process an auxiliary mill and an extra pair of elevators; extra machinery in manufacturing the flour takes more power to drive it; and here he appears to have overlooked economy in his patent process. The second is, his process requires the bran to be fed into his auxiliary mill and ground along with the offal or middlings. By this means bran is always present with the offal, and keeps the meshes of the cloth open,—allowing of free bolting; the close grinding of the bran along with the offal, rubs off a quantity of snuff-colored stuff from the bran, which bolts through with the flour, and injures its quality; so that which is saved in quantity by this process is lost in quality.

And when we consider the fact, that wheat is composed of a very thin skin, filled with flour, which, if manufactured properly, ought to produce the following qualities, superfine flour, seconds, shorts, and bran, one grinding is enough, as all practical millers will admit. Of that quality called offal or middlings, which, when ground a second time, produces flour called "fine," it is unfit for bread, it being too dry to be palatable. If wheat is ground as it should be, the offal or middlings will be too poor for any other purpose than cattle feed. I never found any difficulty in keeping the millstones properly dressed and in good condition at all times, to make all the flour out of the wheat in the first grinding, taking out all the gluten necessary to give the flour "a strong and good body." Out of two hundred and fifty pounds of wheat, I make a barrel of flour. You cannot grind flour too fine, if the stones be properly dressed for that purpose. In manufacturing flour, and in making the best yield out of wheat, the stones are required to be kept in correct order, as they are the entire "key" (not the bolting process) which regulates the profits of the miller. Attention cannot be expended more profitably than in keeping the stones in proper order.

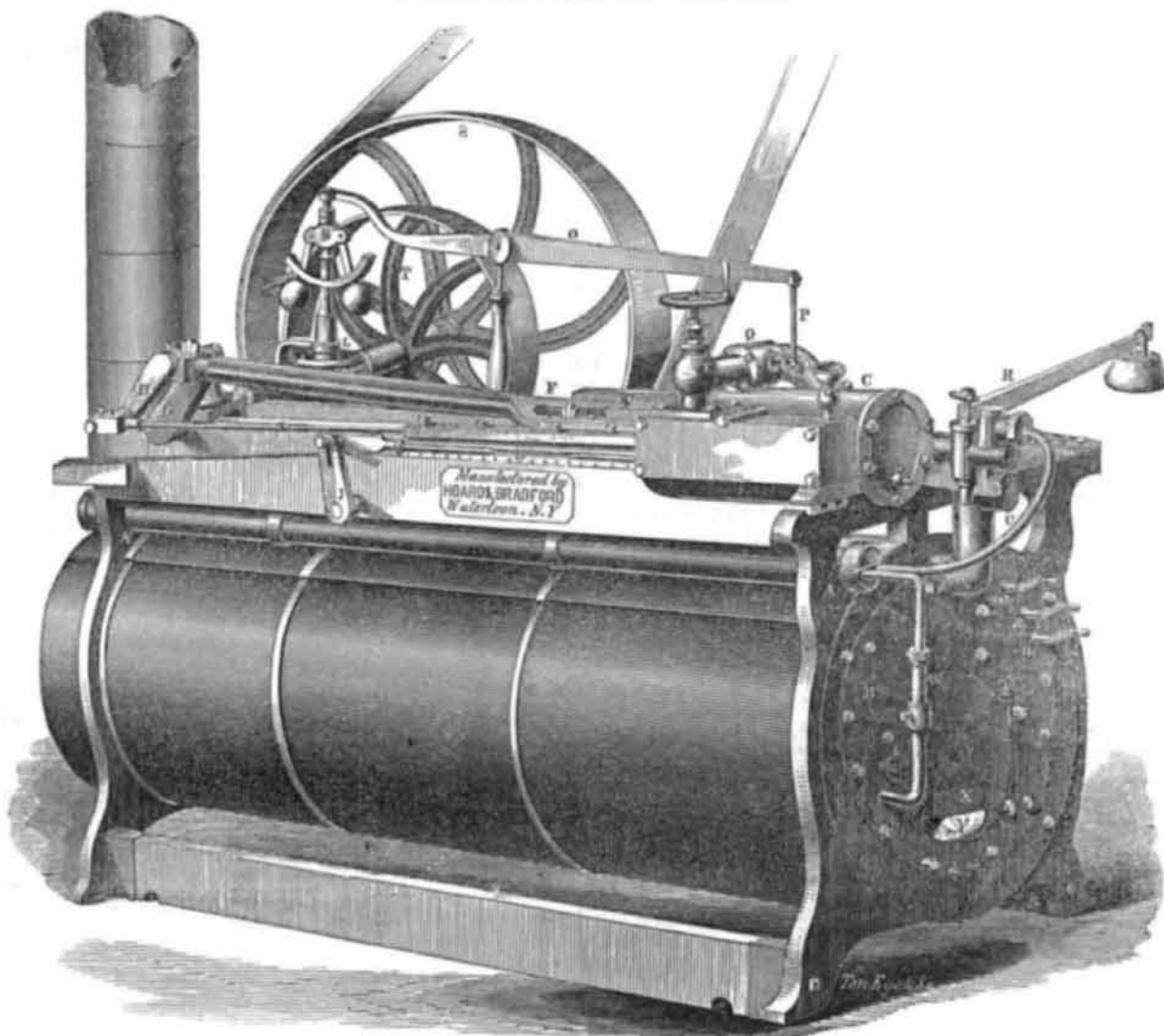
Birmingham, Pa. TOLL DISH.

## Resinized Oil of Turpentine.

F. Kuberth, in the "Chem. Pham. Centralblatt," presents the following method of obtaining a peculiar oil from turpentine resin:—

"Take the resin deposited from the oil of common turpentine, which is kept for some time in casks or other vessels, and pour some oil of vitriol among it, until it becomes of a cream like consistence. It is then distilled in a glass retort, and furnishes a colorless oil, which becomes brown when exposed to the air. Its odor resembles that of rue and rosemary. Oil of turpentine, when similarly treated, does not furnish this oil."

## PORTABLE STEAM ENGINE.



The world is growing wiser and lazier every day. People have found that in most varieties of hard labor, it is easier to employ the action of the elements than it is to drudge and toil themselves. Hence it is that the steam engine, which is, after all that has been said by the inventor of the *carbonic*, and *caloric*, and *static pressure* engines, the only reliable power which can be used in any and all places—is being applied to almost every conceivable variety of manual labor. It is compelled to spin and to weave, to wield the hammer and drive the plane; it has been harnessed to the car, and hitched to the plow; in short, all the tedious drudgery which our forefathers performed with their own muscles and sinews, is now done to a greater or less extent by this ready slave of the human intellect. Muscles tire, but the steam

engine never grows weary. So long as it is supplied with food and drink, and properly cared for, it will exert its ceaseless energies night and day without rest or sleep, obedient to the slightest beck of its guiding spirit, the engineer.

Hence the want of small portable engines is seriously felt by the public. The farmer wants them to thresh his grain and cut his straw, to saw his wood, and as soon as they are properly constructed to draw his plow. The mechanic wants them for the various operations of his workshop, the manufacturer in a small way wants those that require but little room, and can be easily moved about as he may change his residence, and we hope to see the day when they will be made so cheap and portable that almost everybody will have their steam engine,

that it will become almost a necessity of the household.

The engine and boiler, with their appurtenances, which are represented on this page is intended to supply to some extent this growing want. As our readers will perceive, it is all in readiness to kindle a fire and go to work. We shall not so far insult our readers as to give a detailed description, although our engraver, from the force of habit we suppose, has carefully lettered the engraving, but we present it in answer to enquiries which we are constantly receiving relative to such engines. Our readers can see it and judge for themselves, whether it be what they want. All further enquiries should be addressed to the manufacturers, Hoard & Bradford, Watertown, N. Y., or to their agent, S. C. Hill, in this city.

## Foreign Scientific Memoranda.

HEAT AND PRESSURE.—A very ingenious application of scientific principles to determine the point of fusion in a closed vessel, and a remarkable result from high pressure on fluids, were incidentally mentioned by the President of the British Association in his inaugural address.—Experiments were instituted by Mr. Hopkins, Mr. Fairbairn, and Mr. Jowle, to determine the effect of increased pressure in raising the temperature of fusion. The substance operated on was inclosed in a very strong metal chamber, and the pressure was produced by water forced by a plunger acted on by a long lever down an iron tube three quarters of an inch thick. Wax was the substance employed; and it was of course essential to ascertain the exact moment that it became fluid when heat was applied.—As all the apparatus must necessarily be opaque, the melting point could not be seen. The difficulty was ingeniously surmounted in the fol-

lowing manner: a small magnet was enclosed on the top of the wax, whilst outside the metallic chamber containing it, and on the same level, a nicely balanced magnetic needle was placed. The enclosed magnet acted on the needle and deflected it, at a certain angle, from its natural position; but the instant that the wax melted, the magnet fell to the bottom, and the vibration of the needle immediately indicated the fact. It was thus ascertained that under a pressure of thirteen thousand pounds on the square inch, wax requires thirty degrees additional heat to melt it; about one-fifth of the whole temperature at which it melts under the pressure of the atmosphere.

During the experiment, it was observed that the plunger gradually descended in the tube, and on examination it was discovered that the water had, under the influence of the enormous pressure, been forced through the pores of the iron, three-quarters of an inch thick. On

afterwards examining the tube closely with a lens, not the least opening could be seen by which the water could have escaped. This result far exceeds that of the celebrated Florentine experiment, by which the imcompressibility of water was supposed to be proved by its forcing a passage through the pores of a globe of silver, very thin in comparison with the three-quarter inch iron tube. It was not ascertained whether any of the melted wax had been forced into the pores of its containing vessel.

## Omission.

In our notices of the threshing machines in the Crystal Palace a few weeks since, we omitted to notice that of Ziramerhan & Co., of Charlestown, Va. The reason simply was, it was entirely removed from the others, being on the lower floor. We have seen it since, and should think it a very good machine, cheap and durable.