

MACHINE FOR MAKING PAPER PULP FROM WOOD.

A Mr. Burghardt, of Great Barrington, Mass., has invented an improved machine for the purpose above indicated. It consists of a cylinder mounted on a frame, the cylinder being covered with a jacket of rasping, filing, or cutting material, formed by successive circles of steel or chilled iron segments. At one end of the cylinder shaft the power is attached, and at the other end the shaft carries a worm that engages with a gear turning on a shaft in bearings attached to the frame. (On this gear shaft are two cams, or eccentrics, that, turning between jaws or 'struts' of a sliding frame, give a gradual reciprocating motion to a hopper or receiver for holding the block of wood to be comminuted by the machine. The lower surface of the wood bears upon the rasping or cutting surface of the cylinder, and its gradual reciprocating motion insures equality of abrasion, without leaving the ridges which otherwise would correspond with the interspaces of the cylinder coating. A weight or spring, or any other suitable device, can be attached, if desired, to the block for the purpose of graduating its amount of pressure on the cylinder. * * * The material is deposited beneath the machine in any convenient receptacle. The fiber, as it comes from the machine, appears, under the microscope, and also when tested by the touch, to be well adapted for mixing with other paper stock. It is neither sawdust nor coarse threads, but a floss-like fiber similar to short-stapled cotton or flax."

The *Scientific American* of March 6th, has an illustration of the machine.

The Guelph Farmers and Mechanics' Institute has a balance on hand of \$381 14. They should invest it in lectures, books and evening classes.

"The fine arts do not interest me," said Theodore Parker, "so much as the coarse arts, which feed, clothe, house and comfort a people. I should rather be a great man, as Franklin, than a Michael Angelo—nay, if I had a son, I should rather see him a mechanic who organized use, like the late George Stephenson, in England, than a great painter like Rubens, who only copied beauty.

A fortunate fellow says that his waggon tires wear out before they get loose. The reason is, that before the tire is put on he saturates the felloes in hot linseed oil for an hour, making them water proof, so that the shrinking and swelling that loosens the tire are prevented. — A nail-hammer should never be used for pounding stones, or any other hard material. The face should be ground true and level, so that a line across the face will run parallel with a line cutting the middle of the handle. A hammer having a round face, when employed to drive nails, is very apt to bend the nails over before they are driven in.

PAINTING ZINC.—A difficulty is often experienced in causing oil colours to adhere to sheet zinc. Boettger recommends the employment of a mordant, so to speak, of the following composition: One part of chloride of copper, 1 of nitrate of copper, and 1 of sal-ammoniac, are to be dissolved in 64 parts of water, to which solution is to be added 1 part of commercial hydrochloric acid. The sheets of zinc are to be brushed over with this liquid, which gives them a deep black colour; in the course of from 12 to 24 hours they become dry, and to their now dirty gray surface a coat of any oil color will firmly adhere. Some sheets of zinc prepared in this way, and afterwards painted, have been found to entirely withstand all the atmospheric changes of winter and summer. — *Scientific American*.

COAL OIL TEST.—The Curry, (Pa.), Kerosene Oil Works recommend the following as a simple manner of determining the fire test of kerosene oil: "Take a cup or tumbler, fill it nearly full of water previously tested by the thermometer to be 110° or 111° Fah.), then take a tablespoon full of the oil, of which it is desirable to test the igniting point, immerse it in the water, and stir for a moment or two to permit the oil to reach the equal temperature of the water, pass a lighted match very closely over the surface of the oil once, which always floats on the water. If it does not ignite, it can be safely used, but if it does ignite, discard it, however low the price may be; this is a fair and sure test as far as safety is concerned. The other so desirable point—does the oil burn brilliantly and without charring the wick?—the experience of every family will soon detect. Something depends upon the wick, and something upon the lamp, but properly manufactured oil is the main thing needed."

TRADES vs. CLERKS.—He who would turn up his nose in scorn at serving an apprenticeship at a trade where his hours of labour would be but ten at most, possibly only eight, out of the twenty-four, and who, at the expiration of three, four, or five years would be a competent workman worth a handsome compensation, possibly capable of acting as foreman, superintendent, or employer, chooses to agonize and struggle for a place in some mercantile business where he is the drudge of his fellow employes, and almost a thrall to his employers for years, only to find himself a clerk for the best part if not the remainder of his life. As a journeyman in almost any mechanical business his pay would be absolutely greater than as a clerk, his hours of labour would, in most cases, be less, his responsibilities less, and the wear and tear on his body and mind less. But—the mechanic labours with his hands and soils them, and wears overalls, and coloured shirts, and rolls up his sleeves, and carries the honourable insignia of toil about with him, while the clerk may sometimes keep clean hands, and dress neatly, and show a white shirt front, and carry only a pencil behind his ear; consequently the choice of the show with its accompanying drudgery, rather than the subsistence with its independence. — *Scientific American*.