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[FOR THE MECHANICAL AND MILLING NEWS.]

## HINTS ON PURCHASING MACHINERY.

BY "MACHINIST."

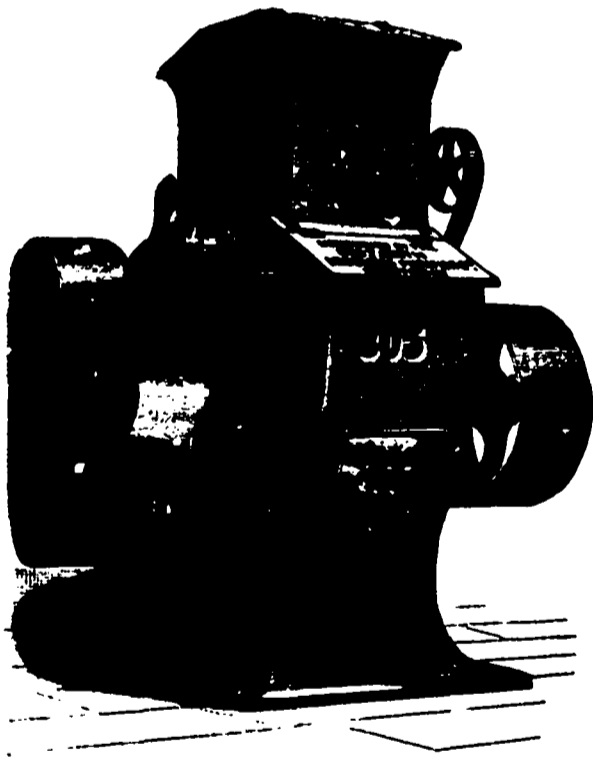
HOW often we see a person set out to accomplish a certain undertaking, and end up with something quite different from what they had at first in view. In the purchase of machinery, this is frequently the case. One man will say: "I am going to put in a new engine to drive my stave mill—present one is not large enough, or costs too much to keep in repairs." He determines in his mind to "look around" and "pick up" an old slide valve of larger size than present one, having heard of some dealer in such truck who sold his neighbour one "just as good as new," for his old one and two or three hundred dollars. Well, he does look around—goes to see one or two dealers, is offered a fair second-hand engine of the "Corliss" pattern, for, as the dealer assures him, about one half its cost, and, of course, the old engine thrown in. Well, he will let the dealer know in a few days; wants to see if he has room, &c., &c.; but, in reality, wants to get time to correspond with the maker or probably see him to ascertain what such an engine is worth new, and is surprised to find he can get a new engine of the very latest style for a few dollars more than the dealer asks. The result is, that after trying to beat the dealer down in his price and not succeeding to the extent he anticipates, he gets in a hurry, as the old one in his factory has probably failed in the meantime, and orders a brand new outfit from the manufacturer. Now, we do not say he has done an unwise thing by any means, but the chances are that he is no better off, and has spent more money than he would if he had adhered to his first intentions, as economy of fuel in his case was not an object, but simply power.

Or again, friend "Dusty," finding his stone mill with all his skill at stone dressing, fails to satisfy his customers. His neighbour, Mr Tape, having built a roller mill and hired a man to run it, now gets all "Dusty's" old customers. Well, "Dusty" made money once in the old mill, and some of it is out on mortgages on farms in the vicinity; so "Dusty" wakes up and determines that he will have one of the best "rolling" mills that wealth can buy. He writes to Slap, Bang & Co., Sweat & Bust, and in fact, all the people he knows of that ever built or are going to build mills of that kind. The result is, that he gets so bewildered by Puffer, of Slap, Bang & Co., and his percentages of middlings, low grade, high patent, &c., &c., to say nothing of Snorter, of Sweat & Bust, with his granulation and semolina, his patents, and royalties, that he don't know whether it is a mill or a washing machine he wants. After a while along comes Nipper, of Snap & Ketchum, sizes him up, takes him to one of his firm's mills, pays all expenses with may be a little liquid refreshment occasionally, and finally succeeds in getting "Dusty's" name to an order for about enough machinery to fit out a poor 25 barrel mill, and money enough to build a good 75 barrel mill, if properly laid out. In this case, the result is not as harmless as it was in "Stave Cutter's," for every day the wonderful mill runs, the pile of shorts—"too good too sell; too poor for flour"—increases, till "Dusty" finally awakens to the mournful fact that short system and short piles go hand in hand, and that instead of having one of the best "rolling" mills, he has only the nucleus around and upon which to patch roll after roll, and reel after reel. I need hardly add the moral: first decide what you will need, then go straight ahead, and rather trust to a first-class established firm of well known reputation in the line of goods you wish to purchase, than listen to the blandishments of those who are only interested in getting their commission on what goods they sell.

## ANOTHER ATTACK UPON THE MILLSTONE.

THE accompanying illustration represents a new three roll for chopping corn, screenings and feed of all descriptions, which possesses so many advantages over the old millstone, that there is little doubt about the stone being retired from the field for chop purposes, as surely as it has already been for grinding wheat. Its enormous capacity, economy of power and space, and the simple drive, make it particularly desirable for new mills, and it is rapidly replacing the old chop stone in mills already completed.

It has a solid iron frame with perfect devices for adjusting and spreading the rolls, which are of best chilled iron of Ansonia manufacture. It can be driven from the roller line with a single open belt, and is furnished complete ready to put on driving belt. It requires very little attention, and can be run empty without injury. It makes two reductions, and will grind 75 bushels of screenings, or oats and peas, or barley, per hour, in an even granular manner, with less than one half the power required by the buhrs and no stopping to dress mill stones.



The mill is sold on 30 days trial if desired. For further particulars address The Geo. T. Smith Middlings Purifier Co., Stratford, Ont.

## THE MOTIVE-POWER OF THE FUTURE.

IT is a recognized fact says *Power and Steam*, that the steam engine makes use of only a small fraction of the amount of fuel that is burned to run it. The nature of the machine is such that this fact is a necessary one. The fault does not lie in the workmanship, for the actual loss of power from imperfections in this respect is found (by the indicator) to be about twelve or fifteen per cent. The cause of the low efficiency lies too deep to be overcome by any mechanical device, and it has often been remarked that the motor of the future must work on an entirely different principle.

Mr. Edison has invented a motor which transforms heat into mechanical energy without the intervention of either boilers, pistons or cylinders, and he is very hopeful of improving it so that it may become of practical use. We have examined drawings of it, however, and have become skeptical. The motor is electrical in nature, and in order to make it run it is necessary to heat and cool a

piece of iron rapidly. We doubt if this can be satisfactorily done.

The hot air engine is very inviting, but men like Ericsson and Siemens, after years of thought, have not brought it into successful competition with steam, although they were well acquainted with the theory of its action, and were vastly better prepared to make experiments than the fathers of the steam engine were.

The windmill is too uncertain in its action to compete with steam, though the fact that it consumes nothing must become a very weighty consideration in its favor when our coal supply gives out.

The tide mill has never been very widely adopted, and hardly any one thinks of it seriously as a rival of steam; but it is nevertheless possible to construct one that can produce power enough to supply the entire United States. A reservoir forty miles square, at or near the head of the Bay of Fundy, where the tides are very great, would contain sufficient water to generate 700,000 horse-power for twelve hours; and this might be distributed electrically and sold in every state in the Union. When coal has become scarce the construction of such reservoirs may be attempted, so that the power and light and perhaps heat also, generated in Nova Scotia, may be sold all over the continent.

Power obtained in this way would not come from nothing. If a tide plant like that we have suggested is ever constructed, it will lengthen the time of day. It will slow down the earth's rotation just as certainly as a big gear wheel would, if placed on the earth's axis and made to drive machinery; though the defect would be so slight, owing to the immense size of the earth, that the increase in the length of day would not be measurable for thousands of years.

The gas engine has proved itself very convenient in many places, and oil and powder engines are also in use; but all of these use fuel, so that, equally with the steam engine, they fail to solve the great problem that must face the world sooner or later, when the coal is gone. The engine of the future must draw its energy from some of the forces of Nature, and it seems that it must be operated by winds, waves or tides, or by rivers, ocean currents or the direct rays of the sun.

THE United States Government might very profitably devote some of the attention it is bestowing upon the construction of modern war ships, to the improvement of its merchant fleet, upon which its trade with foreign countries so much depends. We, as Canadians, are much better off than our neighbors in this respect, as the following extract from the *Northwestern Miller* will show: "If the flour trade of China and Japan is to be controlled by American millers, there must be a reduction in rates and in transportation facilities across the Pacific ocean. According to a recent report of our consul to Japan, flour can be shipped from New York to Liverpool and thence via the Suez canal to Japanese ports at less cost in freights than from our Pacific ports direct to Japan. This is not as it should be, and if we had a government which was able to distinguish the difference between a ship and a washtub, we might have a mercantile navy which would do something for our merchants and manufacturers. The Canadian Pacific railway has already established a fine steamship line from its western terminus to China and Japan, and Manitoba millers are already in direct competition with those of Oregon and California for this trade. The matter is one which might very properly be taken up by the special committee appointed at the St. Louis convention to work on the Brazilian question." The American Government will require very prompt action indeed in order to prevent Manitoba millers from getting a firm grip on the Chinese flour market. As our contemporary says, our Northwest millers are now in direct communication with China and Japan, and this fact, together with the superiority of their flour, should place them in a position to develop a large and profitable trade, and hold their own against all comers.