THE CANADIAN MILLER

Old Series, Vol. X.
New Series, Vol. II. } Number 10.

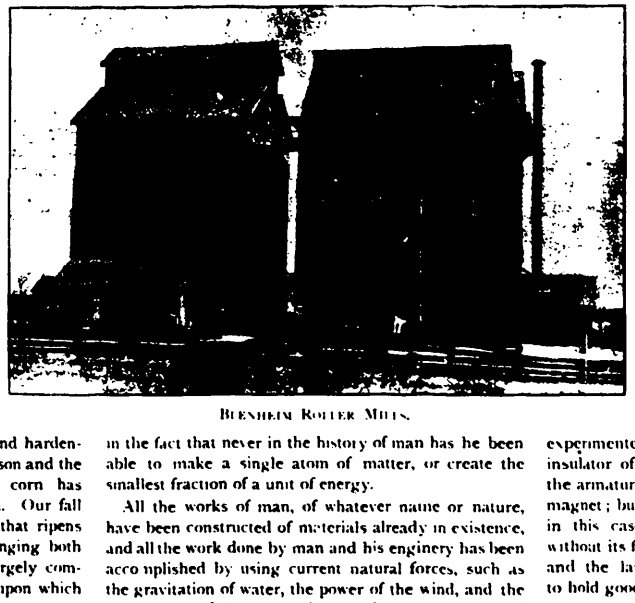
TORONTO, ONT., OCTOBER, 1892

{ Terms $1.00 Per Year
{ Single Copies 10 Cents

BLENHEIM ROLLER MILLS.

BY far the most important industry in Blenheim, Ont., are the roller mills of Campbell, Rutherford & Sinclair. The mill building proper is a five storey brick structure, with mansard roof, forty-eight by forty-eight feet in dimensions. It contains fourteen pairs of rolls, and all other requisite machinery for the manufacture of a superior quality of flour. Adjoining the mill on the east is an elevator building, forty-two feet square and eighty feet in height. It has a storage capacity for 50,000 bushels of grain, the machinery being capable of elevating 1,000 bushels per hour. The mill has a capacity for turning out 250 barrels of flour daily. For convenience of shipment a spur a quarter of a mile long extends from the mills to the main line of the Erie and Huron railway, which has a close connection with the Michigan Central, the Canadian Pacific, and the Grand Trunk railways. It is estimated that out of the 300,000 bushels of wheat annually grown in this vicinity and marketed in Blenheim, at least 250,000 bushels are converted into flour by Campbell, Rutherford & Sinclair, the product being shipped mainly to the Maritime provinces.

Blenheim possesses a soil that in some respects is peculiar. Whilst it is a most productive locality for fall wheat it is also a section of country where some of the best corn of the province is grown. By some agriculturalists this is not considered very probable, for the reason that corn requires hot weather with frequent showers, while wheat, at least when it is filling and ripening, needs just the opposite kind of weather. "*This is explained,*" said a member of the Blenheim Roller Mills concern, "in this way: Fall wheat, up to the time it enters the milk state and begins to fill, stands the rainy weather all right, hence the spring rains are good for both the wheat and the corn. About the time the wheat begins to fill the spring rains are slacking up and the weather gradually gets warmer, which is good for the corn and not detrimental to the wheat until it arrives at the hottest summer heat with warm parching winds, which, as a rule, does not occur until the fall wheat is filled, and hardening, after which, such is the length of the season and the heat of the second half of summer, the corn has plenty of time to fully develop and ripen. Our fall wheat is early enough to escape the weather that ripens the corn, hence the season is capable of bringing both to perfection. The soil in this district is largely composed of a rich gravel loam, the last ground upon which anything is frozen in the fall and the first to support vegetation in the spring. And when you add to this the facts that the land slopes south to Lake Erie and that we are in a direct line seventy miles south of Toronto, we think we can lay claim to being the richest part of the Dominion in the variety of cereals we can grow."



Blenheim Roller Mills.

IS PERPETUAL MOTION POSSIBLE?

THE reply to this question, says the Scientific American, depends entirely upon the limitations put upon the term "perpetual motion." If we understand these words to mean a machine that would start itself, furnish power for doing work, and continue in operation so long as required, or until worn out, without the assistance of any external agency, we may say with the utmost confidence, perpetual motion is impossible.

If, on the other hand, we define perpetual motion as a machine dependent for its action upon the variability of one or more of the forces of nature, we may say perpetual motion is possible. The thermal motor, in which expansion and contraction are produced by natural changes of temperature, is an example of a motor of this kind. In this machine, the changes in volume in a body are made to store energy to be used in continuous regular work. A perpetual clock has been made on this principle.

Sun motors of various forms have been devised, which might be used in connection with storage mechanism for furnishing power continuously. A sun motor of sufficient size with a suitable storage system, could furnish power the year round in almost any part of the world; success being a question of hours of sunshine and capacities of motor and storage system.

Of course, what is said with regard to the sun motor applies with equal force to water wheels, windmills, tide and wave motors. Without doubt, all of these prime movers will come more and more into use as time advances, and storage systems are perfected. Still they do not satisfy the seeker for the ideal perpetual motion. This should fill the conditions first mentioned; but, as we have already said, this is an impossibility.

The first and strongest reason for making this positive assertion in regard to the ideal perpetual motion is found in the fact that never in the history of man has he been able to make a single atom of matter, or create the smallest fraction of a unit of energy.

All the works of man, of whatever name or nature, have been constructed of materials already in existence, and all the work done by man and his enginery has been accomplished by using current natural forces, such as the gravitation of water, the power of the wind, and the heat energy of the sun, or the stored energy of coal and other fuels, or of chemicals.

Having the command of some of nature's forces, inventors have sought to circumvent nature's laws, so as to make water "run up hill," to cause masses of matter to act alternately in accordance with and in opposition to the law of gravitation; in short, to deprive matter of gravity while ascending, and cause it to act with the full force of gravity while descending.

Among perpetual motion devices of this class, proposed and tried, is the one having weights arranged on a wheel in such a way as to fall outwardly and increase the leverage on one side of the wheel, while they fold in and diminish the leverage on the opposite side of the wheel. This machine, it is needless to say, has never moved on its own account, although it has become classic.

In this device, the superior number of weights on the side where the leverage is least, exactly balances the weights at the ends of the extended arms. This is true of all the modifications of this type of machine.

A favorite device of the perpetual motion inventor is that of weights arranged around the periphery of a wheel and counterbalanced by springs on which gravity has no effect. Such weights being balanced are supposed to be capable of being moved upwardly in opposition to gravity without the expenditure of much power. After having been elevated, the weight, while maintaining its position relative to the wheel, descends, causing the rotation of the wheel. After it has done its work the weight must be restored to its original position before the operation can be repeated, and here comes the rub. Many very ingenious plans have been tried to accomplish this, but the result has always been a perfect balance.

In another device the attempt is made to utilize the Archimedian screw to elevate water to be used for driving itself. The inventors in this case fail to notice that although the water is running down an incline in the screw, this incline is always being elevated, so that the water must be actually carried up an inclined plane by a force as great as it would exert if allowed to descend through the same distance. In all these cases friction is left out of the question.

Capillarity has been tried as a means of elevating a liquid to be used as a motive agent, but in this case, as in all others, the defeating element is present the surface tension of the liquid prevents detaching the liquid from the upper end of the capillary conductor.

It seems strange that in these days the proposition should be made to run an electric motor with a current from a dynamo by the power derived from the electric motor, yet, absurd as this proposition is, it has often been broached in good faith. A mere superficial examination of this subject shows that the losses incurred in transforming the current into motive power, and vice versa, are such as to defeat any attempts of this kind. The permanent magnet appears to have suggested itself to many as a possible solution of the problem, and experimenters have searched the world over to find an insulator of magnetism to act as a cut-off for releasing the armature after it has been drawn forward toward the magnet; but no such material has been found. Nature, in this case as in all others, refuses to yield energy without its full equivalent of energy in some other form, and the law of the conservation of energy is found to hold good.

Although the efforts of inventors in this direction have been barren of results of the kind aimed at, yet their labor has not been fruitless; many experimenters who considered actual trial better than any amount of study or calculation have learned that "knowledge comes of experience," and while discovering the fallacy of the ideal perpetual motion, they have been led to consider more practical subjects; making inventions which have proved beneficial to the world and profitable to themselves.

If the inventor of machines intended to be self-moving will not accede to Newton's statement that "action and reaction are equal and opposite," third law of motion, and that there is a perfect and wonderful balance in the forces of nature, let him thoroughly acquaint himself with the principles of physics, and he will ere long be able to say with certainty just how the balance will occur in any and every perpetual motion machine of the ideal kind, and admit that he has not the power of creating energy.