

the knives are made to be reversed for slicing whenever required.

We also show a cut of the combined side wheel (Fig. 5). This machine, like the combined cylinder, and for the same reasons as before mentioned, comes far short of what is required in either capacity; hence, the necessity of having separate wheels for the satisfactory performance of either pulping or slicing. Hence, the demand for a double machine which would surpass any single machine in either capacity brought forth this latest production, as herein set forth, in which three very essential and important features are not lost sight of in its construction, viz., that of being a safe, rapid and easy root cutter. A sketch of this double machine is seen in Fig. 6.

In this double machine many objections to its predecessors are successfully overcome. First of all the wheels are both internally shielded which not only is necessary for safety to the operator but relieves him wonderfully in not allowing the roots to come in contact with wheel until they get to the right place for cutting. This prevents them from acting as a brake on the



Fig. 5.

wheel and also from turning or jostling the turnips about (the latter being very disastrous to rapid cutting), makes a grand feature in this machine. The increased size of hopper which is placed between the wheels with large lower pockets prevents choking, and the partition grate can be turned either way in a moment at will so that at the one feeding either fine pulp or sliced product can be had without any delay or inconvenience to the operator, or where coarse pulp is preferred to sliced roots it can be so constructed, there being two separate wheels especially adapted for the work it has to do, with the knives placed in their respective wheels in a manner to obtain the very best results (three for slicing and six for pulping), and the united force of both wheels is always used in doing the work in either capacity, and being equipped with roller bearings accounts for it being a steady, easy running, and rapid root cutter.

With such a machine as this the operator is master of the situation, being in a position at all times and

with no inconvenience or loss of time to cater to the wants of his stock. The best of stockmen will concede the point that the more cleanly and tastily the provender is dished up to them the better they will eat and consequently thrive and grow, and beside this the mixing of pulped roots with other chaff or cut feed is not only a

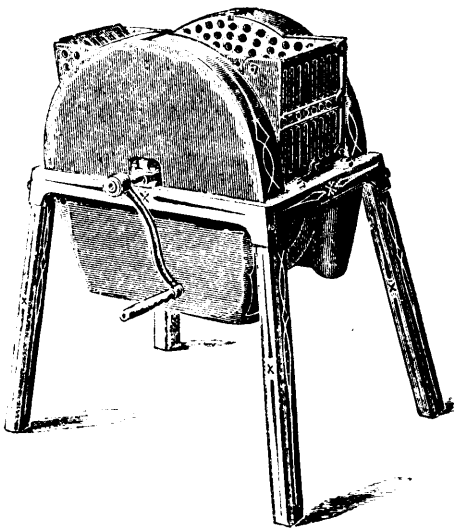


Fig. 6.

saving on the roots but makes coarser feed much more palatable for the beast. This pulp can also be used successfully in feeding fowl, young pigs, calves, etc., which when all told is one of the most profitable implements the farmer uses. The thorough mastication of the roots for the stock enables them to get the full benefit of their growing and fattening properties while passing through them.

The Gasoline Engine as a Farm Machine.

By H. S. Pell, Toronto, Ont.

The modern farmer finds in machinery one of his most powerful allies, and almost every day sees the production of some new labor-saving implement or machine, intended especially for farm work. In the class of

understood and partially utilized over a century ago (1791), it is only within the last ten years that radical improvements have so far simplified the engine that it can be readily and successfully handled by the public at large.

To-day the gasoline engine is operated by household domestics, farm and market-garden hands, dairymen and many others who are not usually supposed to be competent to handle machinery, and it follows that the simplicity of management which has been attained has resulted in a widespread and increasing demand for this class of engine. To the farmer particularly this feature is invaluable, as simplicity and ease of management are usually associated with freedom from constant repairs or breakdowns.

We will suppose that our reader is looking for a power which will enable him to run a grain crusher or grinder, cut ensilage, pulp roots, pump water, operate a cream separator and churn, saw wood or perform other like offices. He will naturally look out for a machine which most nearly fills his conditions of service, and these conditions are about as follows: 1. Simplicity and ease of management. 2. Comparative lightness and portability. 3. Low first cost and running expenses. 4. Freedom from danger of fire or explosion. 5. Prompt service at all times. 6. Automatic working, so as to avoid the necessity of standing by to fire up, etc. 7. Convenient and easily handled fuel. 8. Small water supply and no danger of freezing up in cold weather.

This appears to be a very exacting set of requirements, but the builders of gasoline engines claim that they are all met by their machine satisfactorily.

As to the first requirement, the statements on the subject made in the first part of this article, are, we suppose, capable of proof, and if so should be satisfactory. That these machines are comparatively light and portable is undoubted. Most of the sizes can be readily moved about on a stone-boat, a two-horse power engine

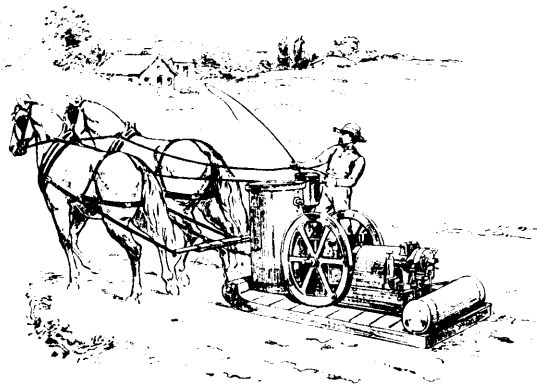


Fig. 1.

newer machines may be included the subject of our sketch, for, though the working principle of the gasoline engine (or as it is scientifically termed, the internal combustion motor) was

being arranged on a wooden base to be carried by four men. (See fig. 1.)

As regards first cost, two hundred and fifty dollars is about the price of a four or five horse engine complete,