

crowned with complete success, are worthy of notice as paving the way for subsequent experiments. His machine, which was brought out in 1732, consisted of a number of flails attached to a rotating cylinder driven by water power. It was capable of doing a considerable amount of work in a short time and attracted a good deal of attention. The frequent breaking of the flails, however, demonstrated the fact that the really successful machine would not make use of the flail motion in its original form.

The next threshing machine of which we have record was also invented by a Scotch farmer who succeeded in improving upon the Menzies' machine by constructing a rotary cylinder armed with beaters which for the first time correctly applied the principle of flail threshing to a power driven machine. His machine consisted of a vertical shaft supporting four cross arms all enclosed in a vertical cylinder. The grain was fed in at the top of the cylinder and the rapidly revolving arms beat the grain out of the straw during its downward passage. Both grain and chaff fell in a pile at the bottom and separation was afterward performed by hand in the usual fashion of the time by winnowing.

Twenty years later an attempt was made to solve the problem by using the rubbing principle of separating the grain from the straw. This machine employed a large fluted or corrugated cylinder which revolved between a series of small corrugated rollers which were held forcibly against the large cylinder by means of stout springs whose tension could be varied to suit the conditions of the grain. The friction between the corrugations of the rollers and the straw was depended upon to remove the grain from the heads. This machine was experimented with for some time with the hope that it would solve the problem. However, it, too, was found impractical, being slow in operation and liable to crack the grain. The rubbing or fractional machine appeared after these experiments to be valueless and again inventors turned their attention to the flail principle, which had been all but proven successful.

The pioneer work of the early investigators, whose work has just been discussed, led to the final solution of the problem a few years later by another Scotchman, Andrew Meikel by name, who constructed a threshing machine embodying all the essential features of the present successful machine. This machine, however, was a threshing only and not a combined threshing and separator such as we are so familiar with to-day.

The Boys of the Old Brigade.

Throughout Central and Western Canada it is estimated that there are fully four to five thousand ex-soldiers — veterans of Britain's and Canada's wars. In order to reach this great body of

men the aid of this paper has been asked, so that everyone who has ever served Great Britain or its Colonies may know of the proposed formation of a National Veterans' Association, and that all veterans are eligible to join free of all charge whatsoever. This proposed organization is entirely independent of, but expect to work in harmony with any existing veterans' organizations.

Elaborate preparations are to be made for a grand Re-union in a year or two when the organization will be completed. Some of the best and most prominent men in the West are supporting this movement and a full list of veterans will be published later on.

Anyone knowing any ex-soldiers or veterans are requested to ask them to send their name and full address, (as well as the corps they served with) to the Secretary, Organization Committee Veterans' Brigade, 183 Walnut street, Winnipeg Man.

THE INJECTOR THAT DOES THE WORK New Desmond Model "U"

The secret of the New Desmond Model "U" lies in the construction.

It is made with a two piece body with the parts connected by a Union Nut.

When loosened the upper part with suction connection can be turned in any direction desired.

When the connection is made to the boiler, the nut is tightened and the injector is ready for work.

The New Desmond Model "U" will fit any space, can be put in any position, or adapted to any conditions peculiar to your needs.

The New Desmond Model "U" starts low, at from 20 to 25 lbs. It works high, from 175 to 190 lbs., lifts water 25 feet, handles water at 130 degrees, and delivers it to the boiler at almost 212 degrees. It is absolutely automatic. It will not "buck" or "break" under the most severe and continued jars.

This means that the Injector can be connected with either side of the boiler.

It is "flexible" on New Desmond Model "U." Injector will answer your Injector needs in every way, shape and manner.

The piping and valves can be arranged to suit your needs and your convenience; not to fit the Injector.

All the tubes screw into the body and cannot fall out, be lost or damaged when the cap is removed. Neither can they get out of alignment.

We rigidly test every Injector and guarantee it fully to work under all conditions.

Now is the time to get busy. Give our New Desmond Model "U" a trial. If your dealer cannot supply you, write us direct.

Remember there is no trouble to attach a Model "U"; it attaches itself.

**Desmond-Stephan
Manufacturing Co.
Urbana, Ohio**

Sales Agents for Canada: CRANE & ORDWAY CO., Winnipeg



**Any Model "U"
fits any Old Con-
nection.**

**One Injector
that fits all Con-
ditions.**

A large number of names are already enrolled on the "Roll of Honor," among them being veterans of the Crimea, Indian Mutiny, Frontier Wars, Chinese War, South African Wars, Fenian Raids of 1866 and 1870, Wolseley Expedition, Nile Voyageurs, British Colonial Wars, North-West Rebellion of 1885, etc., etc.

Cattle Breeding in Japan.

Japan is keenly alert to improve her cattle and, for this purpose, representatives from that country have made visits to the United States and to Europe to buy such stock as appears suitable. Mr. Hashimoto, of the Japanese Government, the head of the cattle-breeding department, while in England, recently, said:

"Meat eating is on the increase in Japan. Its popularity is increased by the recently advanced theory that an overgreat con-

sumption of rice is a source of beriberi. The upper and middle classes, who have hitherto eaten large quantities of rice, are now slowly beginning to add meat to their dietary. Beef is the favorite dish. It is now ten or twelve years since we began to import European cattle into Japan to improve our native breeds. Our object is a dual one. We wish to produce a beast which will be serviceable for draft purposes, and will at the same time be of value when subsequently killed for meat. We also want to produce a good milk cow. For the first purpose a brown breed of Swiss cattle is found to make the best cross; for the milkers we are introducing Ayrshires. On an average we send over one hundred beasts a year, and I have paid as much as seven hundred and fifty dollars for a very good heifer. We also import Berkshire and Yorkshire pigs, and sheep from Russia."