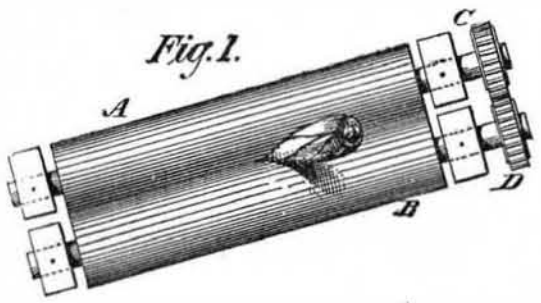
[From a Correspondent of the Scientific American.]

SOME INVENTIONS FOR HUSKING CORN.

The production of a machine to successfully husk corn has of late years engaged the attention of many mechanics. Numerous devices have been made and patented, but none of them has thus far been adopted by the corn raiser. Many of the earlier machines were intended to first strip the ears from the stalk and then strip the husk from the ears. It is the latter operation which has so far baffled the efforts of inventors.

The first method tried was that of providing two revolving inclined rollers, made of an iron rod covered with a rubber tube. The rolls were kept in contact by springs acting upon the journal boxes, which were made to slide. The ears of corn were fed in at one end of the apparatus, and traversed by gravity along the two rollers, as shown in Fig. 1. The rollers, A B, are revolved by the gear wheels, C and D. E represents an ear of corn sliding down between them. The action of the rolls was designed to strip the husk, by friction, from the cob, the ears passing down the rollers and falling at the end. The husk was to be carried through the rollers and fall beneath. This simple device

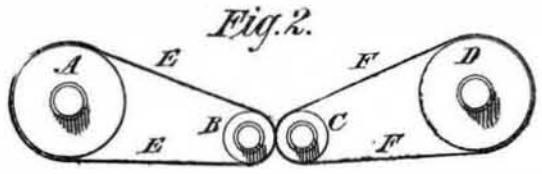
Fig. 1.



would husk dry corn fed into it in small quantities, say, one ear at a time, providing that the husk was dry and somewhat ragged or loose upon the ear. It would husk small sized ears much more readily and perfectly than the larger sized ones. Its defects were that the rubber rollers elongated, and the silk lapped around the ends.

Another inventor used the device shown in Fig. 2, in which A B are one pair and C D another pair of rollers. E E and F F are endless bands, made of sheets of rubber pass-

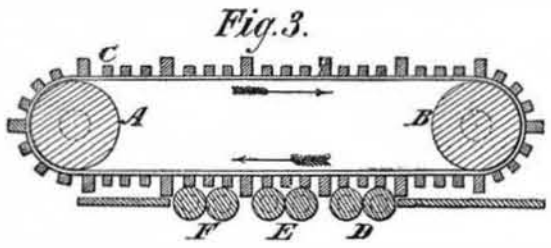
Fig. 2.



ing over their respective pairs of rollers, of which B and C were the ones driven. This is the representative of numerous devices, the fault of which is that when several ears of corn fall upon the rollers together, the top ones are apt to ride without coming into contact with the rollers, and therefore pass out unhusked. This defect is incident to all machines of this class, in which gravity alone is depended upon to feed the unhusked corn through the rollers.

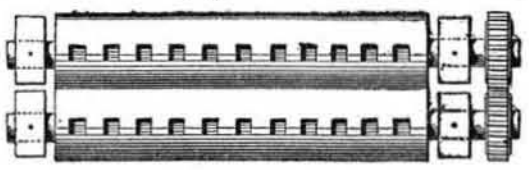
The next step was to give the corn a positive feed by means of an apron. This is shown in Fig. 3, in which A and B are two revolving drums around which passes a leather belt at each end. Fastened to the two belts were strips or slats

Fig. 3.



of wood, C, every fourth one being higher than the others, being designed to take hold of the corn and carry it to the rollers. It was found that the short slats would press the ears of corn to the rollers and leave them there, the high slats carrying them off after the husks were removed. A difficulty was found, that to use such a feed, the corn requires to pass across and not along the rollers, and thus necessitating the use of at least three pairs of rollers, as shown at D, E, and F. Rubber rollers were first used, but being found deficient, eccentric rollers were substituted, the object being to induce friction upon the husk by reason of the eccentricity of the rollers. Next, rollers were made composed of small disks of wood, supposing that the end grain of the wood would afford a sufficient grip upon the husk without catching hold of the silk. These rollers were found defective in husking capacity, and a resort was made to iron rollers, the first of which were made with isolated cavities about half an inch wide by three quarters of an inch long, as shown in Fig. 4. The edges of these slots were intended to catch hold of the husk and carry it between the rollers. There were two rows of the slots in each roller, and the rollers were so geared together that the slots of each would simultaneously grip the husk on each side of the ear. After the slot edges had thus gripped the husk and carried it down between the rollers, it was intended to have the plain part of the roller behind the row of slots strip the husk from the ear. These rollers were found to husk some corn well

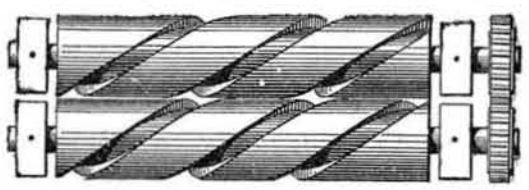
Fig. 4.



enough, but they were not adapted to husk in sufficiently large quantities, nor to husk various sizes and kinds of corn.

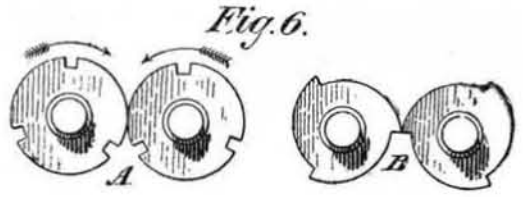
The next invention was to make the rollers with a spiral groove, as shown in Fig. 5. This was found to be an improvement upon large ears of corn, but was found deficient in husking when the husk was damp or not held close upon

Fig. 5.



the ear. The grooves were then changed in shape, the back edge being eased off, as shown in Fig. 6, in which A represents an end view of the rollers of Fig. 5, and B an end view of the grooves as changed. By this change keener husking edges were obtained, but the liability to shell the corn from the cob was increased, the edges of the grooves being so

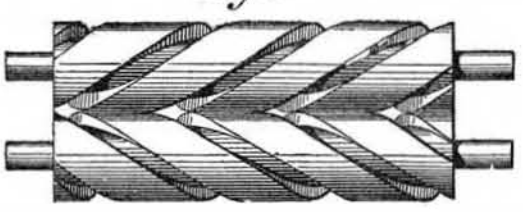
Fig. 6.



prominent as to shell a large proportion from some ears while other ears could be passed through the machine several times in succession without ever being husked.

Another inventor conceived the idea further, and made more husking edge, but with the former style of groove. His first idea was to make iron rollers as represented in Fig. 5, but with right and left hand grooves, as shown in Fig. 7. The object being that the edges of the grooves would grip the husk simultaneously on opposite sides of the ear. This plan was abandoned because of its inadaptability to

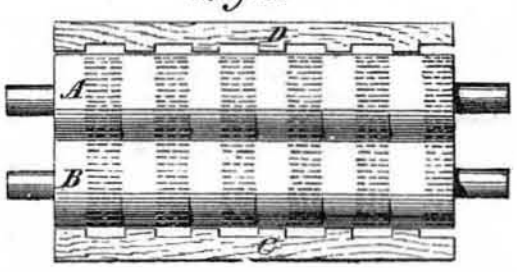
Fig. 7.



husk ears of varying sizes. The amount of twist suitable for small ears being inadequate for large ones, and *vice versa*.

Another inventor conceived the idea of giving a large and continuous amount of husking edge by roughing the surface of the rollers, but in that a new difficulty was encountered, as the silk and husk clung to and wound around the rollers, thus increasing their diameter in places and throwing them apart. To remedy this defect, plain spaces were left, and a scraping attachment was added as shown in Fig. 8, in which

Fig. 8.

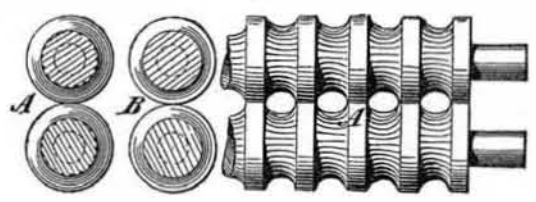


A and B are the rollers, and C and D are the scrapers. It was found that the silk and damp husk, as cleaned from the plain spaces, would lap around and clog the roughened parts, and the device was abandoned.

During all these experiments it was found that ears of corn that would pass over rollers several successive times, without being husked, would be denuded very readily if the husk was jagged by some sharp instrument like a knife, even though the jagging were performed upon one small spot upon the ear only; and the next experiment was to attach to the slats of wood which formed the feed apron, as shown in Fig. 3, a series of sheet iron strips serrated at the edge similar to a saw, but it was found that these edges would sometimes take hold of the ears and drag them unhusked through the machine.

Another inventor achieved considerable success by making a roller with a deep spiral groove, and placing at the bottom of this groove a row of small cylindrical projections which were intended to loosen the husk so that the groove edge would remove it. Another effort was made with the rubber rollers, by giving to the surface of the rollers a series of raised rubber projections intended to firmly grasp the husk and drag it off, but this was found to not equal the expectations formed of it. One more effort is worthy of note. This was to pass the stalks of corn, butt end first, through two pairs of rollers, such as shown in Fig. 9, in which there is shown at A a pair of rollers containing a series of grooves, each groove being provided with a series of husking edges of a form made in the same way as shown in Fig. 6, at B. Behind these rollers was another plain pair, as shown in the end view of Fig. 9, at B, the idea being to pass the corn stalks, butt end first, through the revolving grooved rollers, which would carry the stalk through to the

Fig. 9.



rollers, B, which were made to revolve somewhat faster than those shown at A, so that when an ear of corn met the grooves, the two pairs of rollers, A and B, would pull it violently and firmly against the grooves, the edges of which would cut off just so much of the end of the ear as would detach the husk therefrom; but only a partial success, however, was by this method obtained.

A New Glacial Period in Progress.

A Swedish paper states that in the Bay of Komenok, near Koma, in Greenland, fossil and very characteristic remains of palm and other trees have been discovered lately, which tend to show that in these parts formerly a rich vegetation must have existed. But the ice period of geologists arrived, and, as a consequence of the decreasing temperature, this fine vegetation was covered with ice and snow. This sinking in the temperature, which moved in a southerly direction, as can be proved by geological data, that is, the discovery of fossil plants of certain species, seems to be going on in our days also. During the last few years the ice has increased far towards the south; thus between Greenland and the Arctic Sea colossal masses of ice have been accumulated. On European coasts we now frequently find ice in latitudes where it never existed before during the summer months, and the cold reigning upon the Scandinavian peninsula this summer results from the masses of ice which are floating in the region where the Gulf Stream bends towards the British coasts. This is a repetition, says *Nature*, of the observations made in the cold summer of 1865. The unaccustomed vicinity of these masses of ice has rendered the climate of Iceland so cold that corn no longer ripens there, and the Icelanders, in fear of a coming famine and icy climate, begin to find new homes in North America.

Petroleum for Removing Scale in Boilers.

Petroleum has recently been successfully employed for the removal and prevention of scale in steam boilers, also for the removal of deposits from water pipes where the water contains large quantities of lime. It has the effect of penetrating and rotting the scale, causing it to become porous and disengage itself from the surface to which it is attached. It is a very simple remedy and can be used in small quantities without any difficulty whatever, say about a quart every week for a twenty-five horse power boiler, and in quantities more or less, according to the size of the boilers. It may be introduced in the feed water or through the safety valve, or in any way most convenient for that purpose; but to be effective it must be pure. The heavy oil used for lubricating purposes in cold situations is the most efficient, as the refined oil of this description is of no use, as it is soon expelled by the heat.—*Oil, Paint and Drug Reporter.*

Progress of the Western Union Telegraph Company.

On the first day of July, 1877, there was in operation 76,955 miles of line, 194,323 miles of wire, and 7,500 offices. There are in use on the lines of the company, 10,306 sets of instruments for reading by sound, 9 printing instruments, 1,639 recording instruments, 220 repeaters, 183 duplex instruments, 113 quadruplex instruments, 98,558 cups of main battery, and 21,996 cups of local battery. The number of messages transmitted during the year ending June 30, 1877, was 21,158,941, being an increase of 2,429,374, or 12·9 per cent. This includes press reports *sent*, reduced to messages on the basis of 30 words to each message. The average tolls upon each message for the year were 43·6 cents, average cost 29·8 cents, and average profit 13·8 cents.