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BOOT AND SHOE SEWING-MACHINE PATENTS.

The expiration, August 14, of two of what have heretofore been considered the "controlling" patents of the McKay Sewing Machine Association, is a matter in which the general public, and every one connected with the boot and shoe manufacture, is interested. These machines, first patented in 1858, and generally introduced in the shoe manufacture from 1860 to 1862, worked a revolution in the business of making boots and shoes. To them, more than to any other one cause, do we owe the fact that a custom shoemaker is now but rarely employed by the general public, except for cobbling and repairing, and the great bulk of all the boots and shoes worn are produced in factories. The original patents were obtained by Lyman R. Blake, but they subsequently came into possession of Gordon McKay, the organizer of the McKay Association, and Mr. McKay has, since 1859, devoted abilities and energy of no ordinary character to the improvement of these and other machines used in the shoe manufacture, for which he has obtained many patents.

The patent on the original sole-sewing machine expired July 6, 1879, and that on the revolving horn and some other features August 12, 1879. Previous to that time it had been the opinion of many manufacturers that they would then be free to make boots and shoes with the machine without further payment to the patentee, but two other patents had been obtained, within two years of the introduction of the invention, which, with the extensions, practically extended the life of the machine patent to August 14 last. These were: One on the shoe made by the machine as a new product, and one on the process of making. The shoe made differed from preceding hand-made styles in that it was without a welt, the stitches being taken directly through the insole, the inserted edge of the upper, and the outsole, a mode not altogether new, but which, without the machine, was not a practical success. The validity of these two patents was contested in the courts, and it was argued that the patent on the machine itself necessarily covered the process of making and the kind of shoe made, but Judge Blatchford, in the United States Court for the Southern District of New York, sustained the patents. These were the ones which have just run out, but, in addition thereto, nearly all the sewing machines now in use contain other patented improvements owned by the McKay Association. One of these, for which the patent expires December 13, 1881, is the "variable stroke," by which the machine is made to automatically adapt itself to the work for soles differing in thickness, so that the needle will take up a loop just sufficient to draw the thread tight, without "rendering" or slipping in the eye. This is a point which is very essential to firmly fasten the sole and retain the full strength of the thread. Another patent, for what is known as the "high speed" improvement, does not expire until Sept. 6, 1887. With this improvement one thousand pairs of shoes per day can be bottomed on the machine, and an operator in an Eastern shoe factory recently sewed the bottoms on twelve hundred pairs of women's shoes in ten hours.

Besides the above, there are several other patents on various improvements which have been added from time to time, and which run for different terms, the comparative value of which is, just now, one of the exceedingly "live" questions in the shoe manufacture. The machines, as originally put out, were leased for one dollar, the patentee to be compensated by stamps to be put on each pair of shoes made, equaling an average royalty to him of about two cents per pair. It is estimated that such royalty has been paid to the McKay Association on fully 500,000,000 pairs of boots and shoes, which, at the above rate, would equal \$10,000,000. In his testimony on the trial before Judge Blatchford, Mr. McKay gave, as the returns to him of stamps purchased up to August, 1880, the number of 441,490,380. He also stated that there were at that time 1,011 licensees of these machines—the number of machines now in use being about 1,300. The royalties paid, while they seem trivial for single pairs of shoes, come to a considerable sum for manufacturers making several thousand pairs a day; and with these successive expirations of patents the trade have been anxiously looking for the time when they need pay no further royalties. The association, however, has from the first been constantly introducing machines with their later patented improvements, and their contracts with the lessees provide that the leases shall run until the expiration of "all" the patents, after which the lessees shall have the privilege of purchasing the machine for one dollar.

Many of the manufacturers had supposed that on the 14th of August they would be entitled to their machines for this nominal price, and need pay no further royalties, but, although the most important patents have expired, substantially all the machines in use contain some improvements covered by more recent patents. These the manufacturers are unwilling to do without, but most of them strongly object to continuing the payment of royalties as provided for in their leases. The association claim to have practically no machines now in use which would come under the one dollar purchase provision, but are selling non-royalty machines made according to their expired patents, and still claiming royalty on all others.

It is not unlikely that some of the questions involved will become matter of litigation, for, although the improvements introduced by the McKay Association have undeniably had a vast influence in promoting the boot and shoe manufacture, there is a very strong opposition in the trade to the continuation of these large royalty payments, and comparatively

few of the lessees have ever taken the trouble to thoroughly inform themselves as to the full force and meaning of all the specifications of the elaborate agreement to which they bound themselves in signing their leases. The foregoing facts attest that the patentees have been munificently compensated for their inventions and improvements, but this is in no way a legal offset against, nor can it be made to invalidate any claims they may be able to maintain for patented improvements, the patents for which still have some time to run.

STEAM VERSUS SAILS IN OYSTER CULTURE.

A lively controversy is being waged in Connecticut between the owners of steam dredges and the sail boat owners with regard to the use of steam in dredging the natural oyster grounds of Long Island Sound. Last winter the State Legislature passed a bill prohibiting the use of steam dredges. The steam dredging men are trying to secure a reconsideration of the matter, looking to a repeal of the act next winter. The oyster trade of Connecticut is the basis of an important industry. It is said that there are 3,000 persons engaged in the business, and 10,000 who derive their living from it. Formerly, nearly all the oysters used for seed came from the Chesapeake Bay, but during the last few years they have been taken from the waters of the Sound. When the first steam dredge was put to work a few years ago it was a small affair, and did not meet with much opposition, but as the dredges have increased in size and number those in the business with sailing vessels found that they could not compete with them, and claimed that the steam dredges did very serious injury to the natural beds. There were seven steamers engaged in this work when the present law was passed. There are about 6,000 acres of natural oyster beds in the waters of the State of Connecticut, and it is stated that the annual average production of seed from these beds does not exceed 150 bushels of oysters to the acre, making a total annual production of 900,000 bushels. There are about 800 sailing vessels engaged in the oyster business. The average daily catch of one sailing vessel with three men is about 25 bushels. A sailing vessel averages about two and a half days' work each week, making a total weekly catch of 62½ bushels. A steamer with three men averages four days' work a week, with an average daily capacity of 500 bushels, making a total of 2,000 bushels per week. One steamer will, therefore, take the place of 32 sailing vessels, and the seven steamers, with 21 men, will displace 224 sailing vessels, with 672 men. It was claimed that unless the law was passed a monopoly would control the business, that the grounds were being seriously damaged, and that in the course of a few years the natural oyster beds would be out of existence.

The steam dredging men claim that so far from injuring the beds their operations are beneficial: that for every seed oyster removed, by the necessary stirring up and scouring of the shells and gravel, at the time when the water is full of newly spawned young, clean stools are secured for the "setting" of hundreds of oysters which would otherwise be smothered in the slime which naturally covers objects under water. Systematic dredging for seed therefore results in the steady extension of the area of the natural beds, and secures a plentiful setting of spat every season. The crop is, therefore, made more certain, abundant, and cheap. Further, the dredging is done at the season when star-fish are most abundant and destructive, and it is only by steam dredging that these pests can be economically captured and removed. Natural as well as planted beds of oysters are often completely destroyed by star fish and made permanently barren. The steam dredge is the only efficient remedy.

An important distinction should be made between dredging for seed and for market oysters. Natural beds have frequently been stripped by over-dredging during the fall, winter, and early spring, when oysters are in season. At such times there are no free-swimming spat in the water to "set" for a new crop. The oysters are taken and the ground left bare until a chance storm at some subsequent spawning time shall stir up the bottom and wash the dead shells and gravel clean and suitable for fresh stools for a new natural crop. Dredging for seed oysters is usually done in summer, the vacation of the oyster trade, when the more the bottom is disturbed the more plentifully the new crop will set.

The question at stake seems to be the old one between the progressive and the non-progressive men in every industry. It is safe to assume that the latter in this case, as in all others, will only succeed in delaying the inevitable.

THE FISHING FISH.

In our paper for December 28, 1878, we gave an engraving of a curious mode of catching turtles practiced in the West Indies, which consisted in attaching a ring and line to the tail of a species of sucker fish known as the remora. The live fish is then thrown overboard, and immediately makes for the first turtle he can spy, to which he attaches himself firmly by means of a sucking apparatus arranged on the top of its head. Once attached to the turtle, so firm is his gripe that the fisherman, on drawing the line, brings home both turtle and the sucker. The latter is then ready for a new excursion. The account we published stated that the white tailed species of remora (*Echeneis albicauda*, Mitch.) frequents our North Atlantic coast, and is sometimes taken in Long Island Sound, where it is known as the shark sucker. During the past few weeks sharks have made their appear-