A NOVEL GAME BOARD.

The improved game apparatus shown in the accompanying illustration has been patented by J. W. Blackham, of No. 100 Schermerhorn Street, Brooklyn, N. Y. In its base portion are arranged numbered pegs, above which is flexibly suspended a chute, having at its lower end an angularly disposed delivery

BLACKHAM'S GAME APPARATUS.

spout. Secured to one side of the base by a set screw is a post, from an arm of which the chute is suspended by a chain. Different rules may be made for counting a game, to successfully play which the player must hold the chute in such position that the rings with which the game is played will be delivered onto the pegs, and not alongside of them.

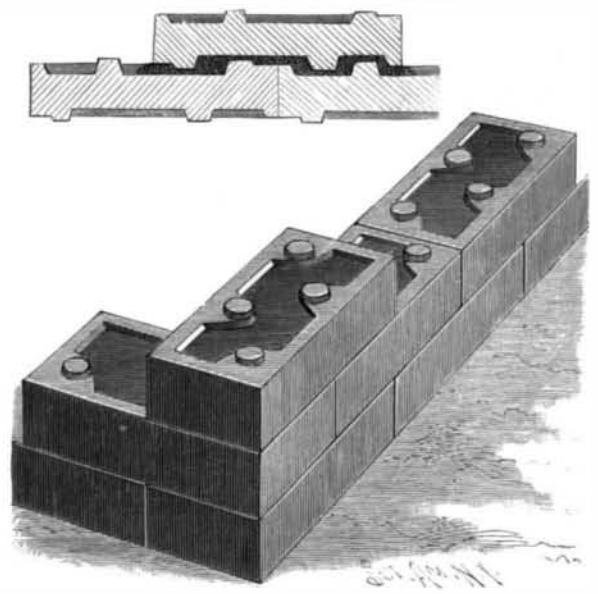
Where is the Best Butter Made?

A St. Paul, Minn., dairy company now claims to make the best butter in the world, having won the prize and first premium at the recent national butter and cheese convention at Cedar Rapids, Iowa, against more than 500 competitors, from Maine to California. The Minnesota butter scored 97·82 in a possible 100 per cent. The fine butter making industry has gradually worked toward the West. The center of production of the best dairy products in the United States was first established in Orange County, N. Y. Thence it took a long jump westward to Delaware County, Iowa, which for years maintained its prestige as a producer of the finest butter. Elgin, Ill., then captured the prizes and held the reputation, but now the glory and the prize, a $500 silver statue, are St. Paul's. The result is expected to operate as a great stimulus to careful and intelligent dairying in the Northwest.

INTERLOCKING BRICK.

The brick shown in the accompanying illustration, whether used in an outside wall or an inside partition, are designed to tie themselves together in such a way that the wall cannot be sprung outward nor cracked.

The improvement has been patented by Oscar Kleinberger, Nos. 411 to 415 North Eighth Street, Saint Louis, Mo., and is adapted to afford a very solid wall, as well as the best and strongest brick for arches, while a chimney built of this brick cannot crack. The engraving represents a portion of a corner of a wall in which these brick are used, the smaller figure showing a sectional view of bricks thus laid to break joints. Upon both the upper and lower faces of the brick are recesses and projections or nipples, the nipples being ordinarily made to extend a slight distance above the plane of the margin of the brick. In breaking joints, the nipples on one end of the under face of the upper brick come between the nipples on the end of the upper face of the lower brick, but there is sufficient space between the nipples to permit the bricks to be moved endwise or sidewise. The cement or mortar in which the bricks are laid may be as deep or as shallow as desired, for when even the margins of the brick are brought in contact there is sufficient quantity of the cementing material to form a firm tie.



KLEINBERGER'S BUILDING BRICK.

MANUFACTURE OF KID GLOVES.

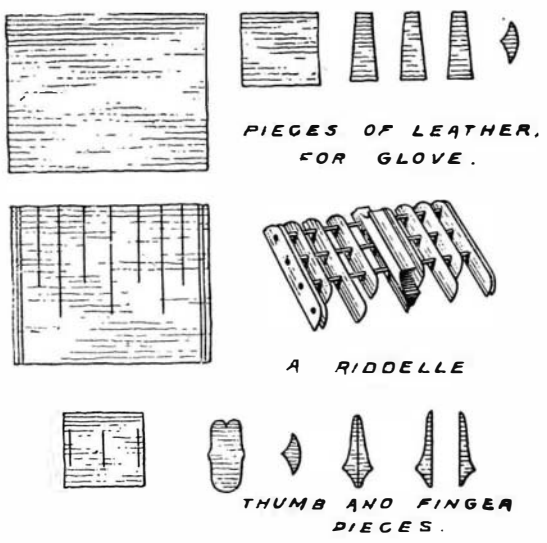
In our last issue we illustrated the various processes employed in the preparation of leather to be used in the manufacture of kid gloves. In the accompanying article and cuts we set forth the further steps in producing the finished article of an industry which is little understood by the general reader.

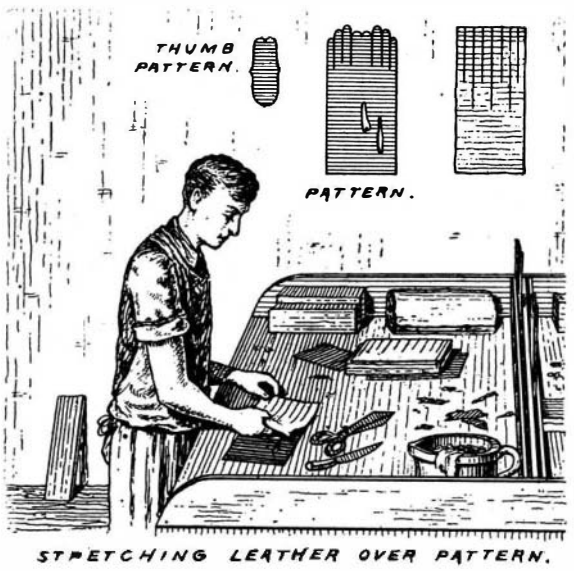
The leather used for gloves is manufactured from the skins of lambs and kids, the skins coming principally from Brazil, France, northern Italy, Germany and Switzerland. In Europe, where they raise the stock, the kids are allowed to roam about but very little, too much exercise tending to toughen the skins. The raw skins have to pass through a number of processes, such as washing, unhairing, fleshing, paddling, drenching, tawing, coloring, staking, etc., which makes the leather soft and pliable for working purposes. The skins from which ladies' gloves are made are taken from the kid when about five weeks old. For gentlemen's street gloves the skins are about two months old. The gloves mostly in use are the glacé, castor, and undressed kids. The glacé, or polished glove skin, is colored on the grain or hair side. The undressed kid is colored on the flesh side. The castor glove skin may be colored on either or both sides after the grain has been scraped off.

From 20 to 24 pairs of gloves can be manufactured from one dozen skins, including the pieces between the fingers, called fourchettes.

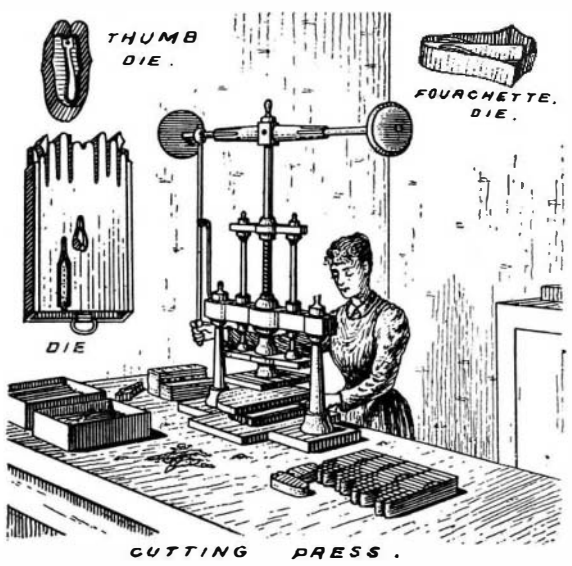
The prepared skins cost about $12 per dozen. The finished gloves for ladies range in size from 5½ inches to 7½ inches around the palm of the hand; for gentlemen, from 6¾ to 10 inches; and for misses, from 4½

SHAVING SKINS.

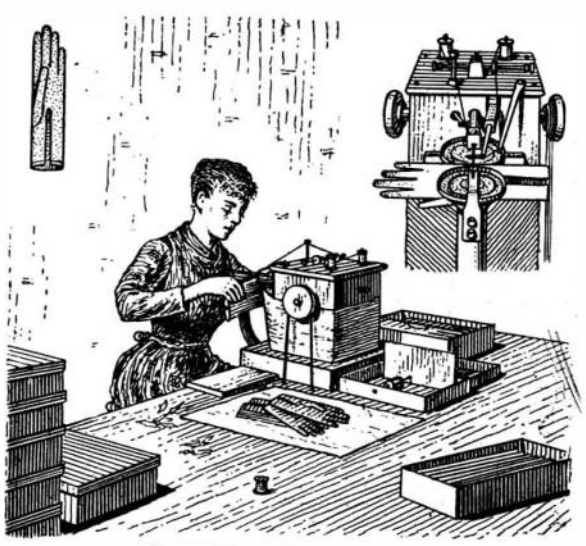




STRETCHING LEATHER OVER PATTERN.

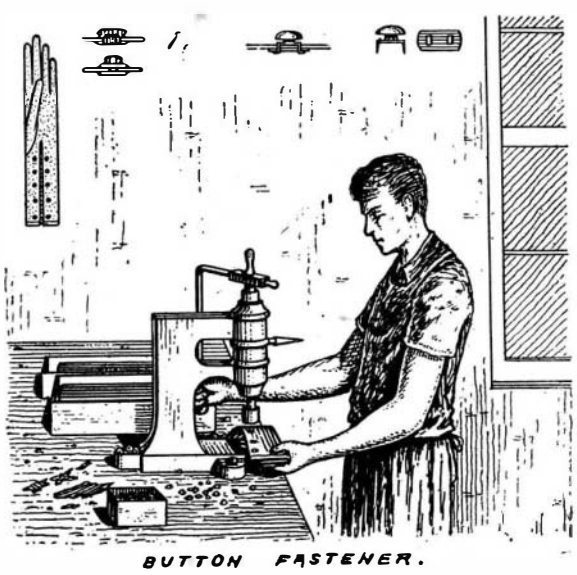


CUTTING PRESS.



SEWING GLOVES.

POLISHING GLOVES.



BUTTON FASTENER.

MANUFACTURE OF KID GLOVES.

to 6½ inches. The first operation in glove making is shaving, the object being to thin and soften the leather. The skin is first dampened and laid out perfectly flat on a black marble slab with the grain side down, an operator then taking a broad knife similar to a chisel, cutting and thinning the skin down to the proper thickness.

The knife or shaver used is about 8 inches in length and about 4 inches in width. During the shaving process a little flour is sprinkled on the skin to prevent the knife from slipping and making a bad or uneven cut. About six skins can be shaved per hour. After shaving the leather is stretched and then cut up by hand into glove parts the proper size, after which they are lined or riddelled. The riddelle is a stamp for marking lines on the glove pieces for forming the fingers, each size glove having a different stamp. The thumb pieces are marked in a similar manner. The spaces between the lines when marked are about double the width of the fingers, so that when the leather is stretched over the glove pattern the lines will draw closer together. The glove patterns are made of tough cardboard and range in size from 10¼ inches to 11½ inches in length and from 4½ inches to 5¼ inches in width. A separate thumb and fourchette pattern of the same material is also required for each size glove. A pattern is laid on a table and an operator places the lined end of the piece of leather on the finger end of the pattern, and with his hand stretches the leather until the spaces between the lines are of the same width as the fingers on the pattern beneath. The thumb and finger pieces are then done in the same manner. Each glove is then marked and the different parts, including a narrow strip for the top, is passed into the hands of an inspector, who looks them over thoroughly to see if there are any imperfections. After this inspection the parts are taken to the cutting presses. The dies used for cutting out the gloves are made of steel the proper shape and size. The section of the die for forming the glove is encircled by a sharp steel knife and is movable, it being connected on the under side to the bottom of the frame by means of a number of springs. Six pieces of the leather are first placed on top of the die, over which is laid a strip of paper. The die is then put in position in the press and a circular piece of rubber placed on top. The attendant, by pulling around the lever of the machine, forces an iron plate down on the rubber disk, which presses the leather against the sharp edge of the knife, causing it to cut through the material. The thumb pieces are cut in a similar press. About eight to ten pieces are placed on a thick piece of paper and placed in position in the press. The die is then placed on top of the pieces, bottom up. The lever is then turned around as before, the pressure of the plate against the die forcing the knife-like edge through the leather. About eight dozen pairs of gloves can be cut out per hour. The backs of the gloves are then embroidered by a machine, and the proper size and color of the fourchettes picked out to match the fingers. They are then laid inside of the folded glove, taken to the press, and the fourchettes cut out with a die. The die is made to cut out two fourchettes in one piece. They are cut out in the same manner as the thumb pieces.

The next operation is the sewing of the gloves together. The piece between the thumb is sewed on first, then the thumb and then the fourchettes, and so on. A narrow strip of binding is sewed on the inside to keep the leather from tearing out where the hook or buttons are placed. Sharp-pointed pincers are used to bring the parts together for sewing. The glove is sewed with an over-seam stitch. The glove is held in position by means of two circular pressers. These pressers revolve when the machine is in motion, causing the glove to move forward during the sewing operation. The silk threads, when carried through the glove by the needle, form a loop, a lever then holding the thread tight until a threaded hooker, which works back and forth across the needle, catches the loop. As soon as the hooker has the loop, the lever loosens the thread, the needle goes forward, the hooker drawing back, pulling the thread through and dropping the loop, which is drawn tight by a spring on top of the machine. After the gloves are sewed they are laid, for about ten minutes, in a damp cloth. The gloves are then flattened and pulled into shape by rubbing the hand over them on a smooth table. If there is any unevenness, a wooden roller is used to flatten them. About one dozen pairs per hour can be flattened out by a good hand. For giving black gloves a luster, a solution composed of neatsfoot oil, soap, vaseline and grease is rubbed on the surface by hand. Glacé gloves are polished on a plush covered wheel about 18 inches in length and about 12 inches in diameter.

The attendant places a stiff piece of cardboard on the inside of the glove and presses it against the wheel, the revolving of which, traveling at the rate of 350 revolutions per minute, gives the gloves a polished appearance. About six dozen are polished per hour. The gloves are then ready for the buttons or hooks. Holes are first made in the glove where the buttons or clasps are to go, by forcing through the leather a conical shaped instrument connected to the front of the machine. Eyelets are then inserted in the holes and hollow tops or clasps placed on top. The two parts are then pressed firmly together between two dies, by means of a lever drawn around by the attendant. The head of the clasp, as the upper die descends, passes into a circular hole in the bottom, preventing the top from being crushed. Both sides of the opening are done in the same manner. Two or more of these machines generally work together, the attendant of one making the holes and putting in the eyelets and the others stamping the parts together. About sixty of these fastenings can be made per hour. The sketches were taken from the plant of Foster, Paul & Company, Jersey City. From their plant in Grenoble, France, they turn out about 500 dozen pairs daily.

Women as Inventors.

An observing woman, a few years ago, saw the necessity of improving the ordinary buckle used on hose supporters and the like, and succeeded in producing an article which prevented scratching and otherwise injuring the body and tearing the clothing. After she had protected her rights by obtaining a patent, she did not look around and wait for a purchaser of it, but bent her energies to manufacturing and introducing the article. From small beginnings she has now a well equipped factory with a force of five hundred employes, and is hardly able to fill the orders she steadily receives from the largest wholesale houses.

If it be true that "what man hath done man can do," a precisely similar remark is no less applicable to woman, and the number of women to whom the way of practical success in life stands open, as really as in the case we have above recorded, is almost unlimited. There are, it is true, avenues of invention which seem more appropriately to belong to men, although in most cases this is only a surface view of the matter, but see how very large is the field in which it may be said that women have really the superior claim, the pre-empted right, as it were, to be much the more numerous inventors. In all that pertains to household economy, in the preparation of food, the beautifying and making comfortable the home, the providing of the wearing apparel and the bringing up of children, her sphere is by far the most active, practical and influential, and her wit and discernment should, therefore, in such lines, be quicker to apprehend and keener to discern improvements likely to be of advantage, and possessing also possibilities of bringing pecuniary reward.

According to an abstract we published a few weeks ago, it appears that there have been 7,663 patents issued on laundry appliances; 4,389 on different kinds of chairs, and 4,854 on furniture other than chairs; 2,103 on knives, forks and spoons; 3,184 on scrubbing brushes and brooms; 1,747 on kitchen ware, and 2,005 for devices for use in cutting and preparing vegetables; 4,453 on games and toys; 175 on different varieties of needles and pins; 11,795 on buckles, buttons and fastenings for clothes; 5,014 on beds and lounges; 2,435 on window shades; 1,541 on making preserves, and 1 506 on crinolines and corsets, besides great numbers of others which appeal to women directly as customers or are dependent solely upon the judgment of women for their success or failure. If we concede, then, that there are some departments which more naturally attract the inventive genius of men, as the improvement of farm implements, the building of engines and machinery, etc., is it not just as true that the inventive faculties of women would seem to be equally adapted to devise improvements in the specialties we have noted? In the line of new inventions and discoveries, notwithstanding all that has been already achieved, there are, without doubt, as many brilliant successes lying before the inventors of the future as have been credited to the inventors of the past. The way is open to all.

GALVANIC ETCHING.—A process for etching letters, names, or designs on metallic goods, such as knives, for instance, is described in the Zeit. f. Electrochem. The objects are covered with the following mixture: One liter of naphtha, ⅛ kg. of carbon bisulphide, 2 kg. of pulverized resin, and 1·5 kg. of chloride of copper. After covering with a thin layer of this, the stencil or type is washed with a weak solution of potash and pressed on the surface, which is then washed, after which it is wet with a weak solution of sal-ammoniac through which a current is passed, which then etches the metal where the insulating coat has been removed.—Electrical World.

IN a recent opinion of the Michigan Supreme Court it is held that when an author places his book before the public he invites criticism, and however hostile that criticism might be, and however much damage it might cause him, the critic was not liable in an action for libel, if he made no misstatement of any material facts contained in the book and did not attack the character of the author.

Science Notes.

Fish with Sand Ballast.—A highly original observation upon the behavior of fish in deep water is attributed to a long experienced captain of a steam fishing smack, so remarkable as to deserve special notice. The fishing boats belonging to the southern portions of the North Sea found in their catch, lately, a disproportionately small quantity of codfish. The captain maintained that he had foreseen this for eight days, because most of the fish caught had sand in their stomachs. He claims to have often observed that just before the fish left the shallow water of the southern banks, they took sand into their stomachs, and soon after fish caught in deeper northern waters showed the same peculiarity. Then when the time for migrating from these deep waters came again, the fish disposed of the sand. The theory has been advanced that the sand is taken in as ballast, and is rejected when shallow water is to be returned to. The sand often differs in color and grain from that of the bottom where the fish are found. It is claimed that this sand may supply a guide for the fishermen.—Hansa.

A Metal Bird's Nest.—There is said to be a metal bird's nest in the Museum of Soleure, Switzerland, which is made entirely of steel. Soleure has a number of clock factories, and broken springs are often thrown out in the yards. One day a man noticed a peculiar looking nest in a tree in his yard. He found on examination that a pair of wagtails had built a nest almost entirely of clock springs. The nest was four inches in diameter. After the birds had reared their brood it was taken to the museum.

The danger of liquefied acetylene gas is considerable, for if it is stored in a steel cylinder at six to seven hundred pounds pressure, in the event of a fire breaking out in a building containing it, it would be decomposed, forming carbon and hydrogen; the latter would have a pressure of 20,000 pounds per square inch, which would burst the cylinder and cause widespread damage. Even a slight leak in the cylinder would be very dangerous, for three or four per cent of the gas in the air would cause a violently explosive mixture. Acetylene gas can also be exploded by fulminate of mercury, and the gas also makes explosive compounds in coming in contact with copper.

In the new edition of the British Pharmacopœia, the metric system of weights and measures will be adopted.

Several hundred persons attended the unveiling, on March 8, of a memorial tablet that has been erected on the site of the villa at Passy, near Paris, which was occupied by Benjamin Franklin from 1775 to 1785. It was at this villa that Franklin erected his first lightning conductor. The dramatist, M. Manuel, president of the Passy Historical Society, presented the tablet, and M. Faye, a member of the French Academy, spoke of Franklin's scientific researches. The Hon. J. B. Eustis, the American ambassador, acknowledged the gift of the tablet.

Herr Wilckens, of Vienna, has found that two full-blooded English horses transmitted the color of their coats to their offspring in 586 cases out of 1,000. Where the parents were of different colors, he found the hair of the foals, in most cases took the color of that of the mother.

The Cocopah volcanoes, seventy-five miles southwest of Yuma, Arizona, were in violent eruption a short time ago. The larger ones were emitting great volumes of smoke and some flames, and the smaller ones were throwing out quantities of water, stones, and mud. The noise of the eruptions could be heard at a long distance.

A short time before he died Dr. Charcot stated, in a lecture, that semi-scientists had for more than fifty years ridiculed the idea that the full moon is a dangerous time for insane persons. Dr. Charcot stated that scientists were now going back to the old-time notion, as a result of increased learning on the subject of earth tides, which are similar to the oscillation of sea tides.

A shower of dust fell on the ship Scottish Dales, when she was far out at sea in the Pacific Ocean, off the coast of the Argentine Republic. The captain states that the dust was very fine and of a light buff color. As the dust storm blew toward the ship, it looked very much like snow. The dust fell in considerable quantities upon the deck and rigging. It is supposed it came from some volcano in active eruption.

The entomological collection of M. Jules Fallon, which includes twenty-five thousand moths and butterflies, has been presented to the museum of the Jardin des Plantes, at Paris, by his grandsons.

By a special permit, and in mailing packages approved by the Post Office Department, bacteria or disease tissues may now be sent through the mails to United States or municipal laboratories.

An agitation has been started by a number of scientists urging the appointment of a permanent director-in-chief of the scientific bureaus and investigations conducted under the charge of the United States Department of Agriculture, this officer to be a broadly educated and experienced scientific administrative officer, who would not be at the mercy of politics, but who should hold office during good behavior.