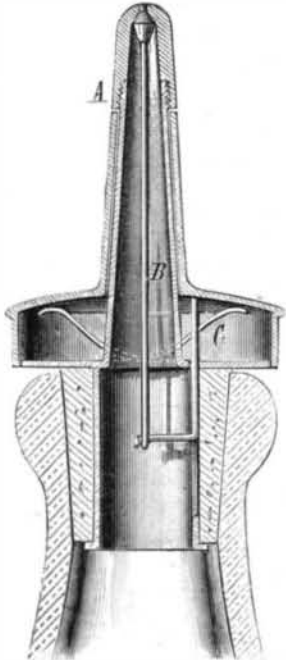


Serviette Magique.

In France, a species of cloth for polishing metal ware is manufactured under the name of serviette magique. It consists of small pieces of woolen cloth which are saturated with soap and tripoli and colored with fuchsine. It is manufactured by dissolving 60 grains of Marseilles soap in 300 grains of water and adding 30 grains of tripoli. The mixture is colored red by means of fuchsine, and the pieces of cloth are saturated in it and afterwards dried.

IMPROVED BOTTLE STOPPER.

The bottle stopper represented in the engraving consists of a flanged tube provided with a perforated screw cap, A, and a larger spring actuated flanged tube set over the inner tube and connected with the rod, B, of the valve which closes the opening in the cap of the inner tube. It will be seen that whenever the flange, C, of the outer tube is pressed down the valve will be drawn from its seat, when the contents of the bottle may be discharged through the perforated cap.



HOUTS' BOTTLE STOPPER.

This novel bottle stopper was recently patented by Mr. John Q. Houts, of Sioux Falls, Dakota Territory.

Guatemala's Exhibition.

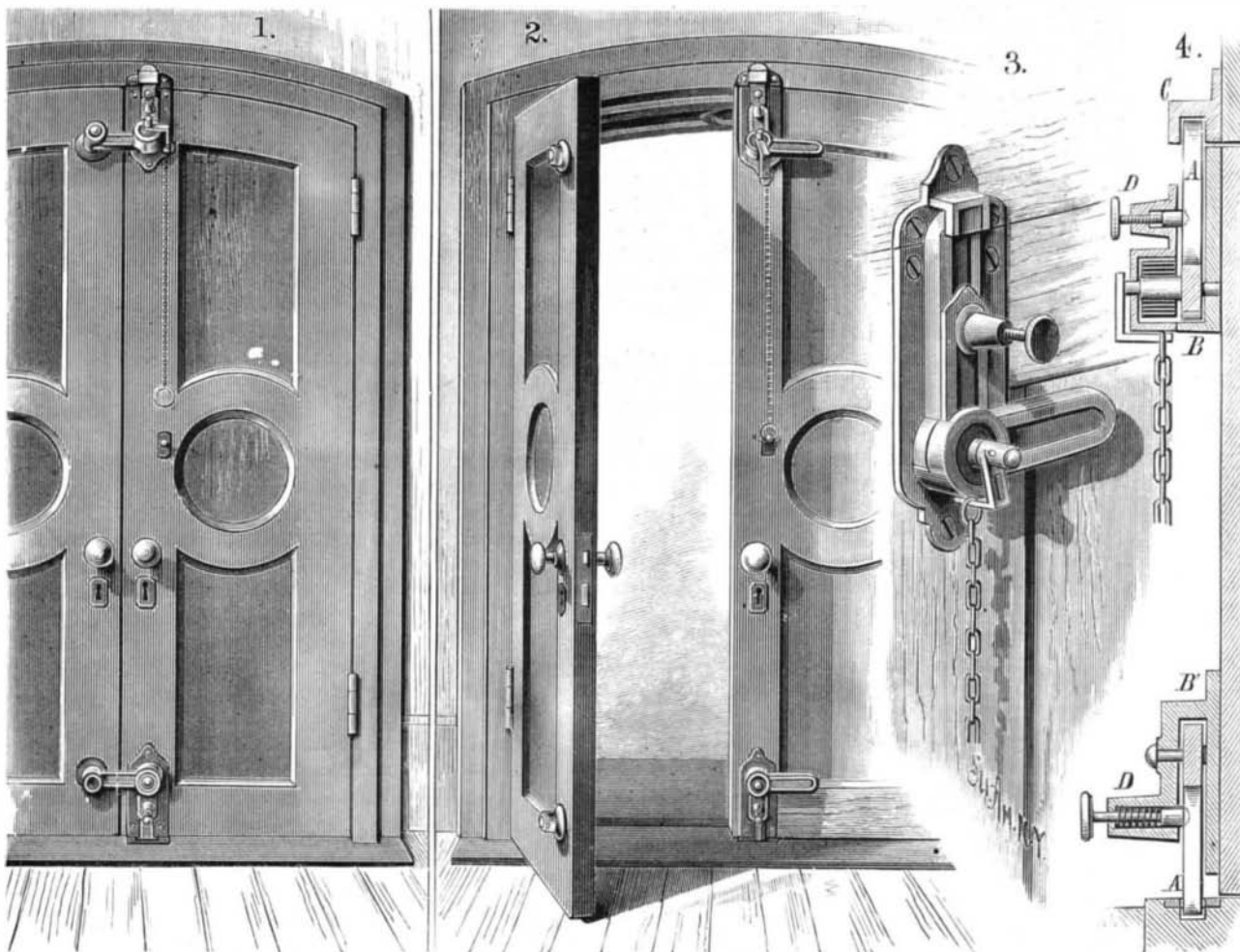
The largest and most enterprising of the Central American States, Guatemala, has entered the list of exhibitors, and announces the intention of holding an industrial exhibition in 1882. This is likely to furnish American manufacturers of articles suitable for the markets of that region a convenient opportunity for placing their products in a favorable way before the Guatemalan dealers and consumers.

IMPROVED BOLT FOR DOUBLE DOORS.

The engraving represents a novel bolt for double doors recently patented by Mr. William P. Brachmann, of 147 Walnut street, Philadelphia, Pa. This bolt is in the form of a right-angled lever pivoted at its angle, and provided with a spiral spring acting on its pivot, and having screws or spring pins for locking it in different positions. The bolts fit in appropriate sockets in the sill or jamb.

Fig. 1 shows the bolt applied to double doors with both doors fastened. Fig. 2 shows one door bolted and the other unfastened. Fig. 3 is an enlarged perspective view of the bolt, and Fig. 4 is a vertical section of the door and the bolts.

The bolt, A, is in the form of a right-angled lever, pivoted at its angle in a casing, B, attached to the door. Each arm of the bolt is provided with a recess for receiving the end of the spring pin, D, which serves to hold the bolt in either of its positions by engaging one or the other of the recesses. The pivot of the upper bolt is provided with a short arm to which is attached a chain for operating the bolt, and the pivot is provided with a spiral spring which tends to throw it into the position shown in Fig. 1, with one of its arms in the socket on the jamb and the other one in the socket on the other door. The chain is drawn down to throw the bolt into the position shown in Fig. 2, and to retain it in this position the ring at the end of the chain is placed on the pin projecting from the door.



BRACHMANN'S BOLT FOR DOUBLE DOORS.

The lower bolt, A', has no spring, and is kept in place by the spring pin, D'. One arm of the bolt enters the socket attached to the door, and the other enters a slotted socket in the door sill, as in Fig. 1, when both doors are bolted. When only one door is bolted, the lower bolt is in the position shown in Fig. 2.

This bolt fastens both doors with a single operation, and to securely bolt the top and bottom of both doors requires only two bolts instead of four as in the ordinary method, and the shrinking or swelling of the doors makes no difference in the operation of the bolt, as it engages a simple, open-hooked socket which admits of the lateral movement of the bolt without interfering with its working.

The bolt is made in very handsome shape, and is an ornament to the doors rather than otherwise.

The New Steamship City of Augusta.

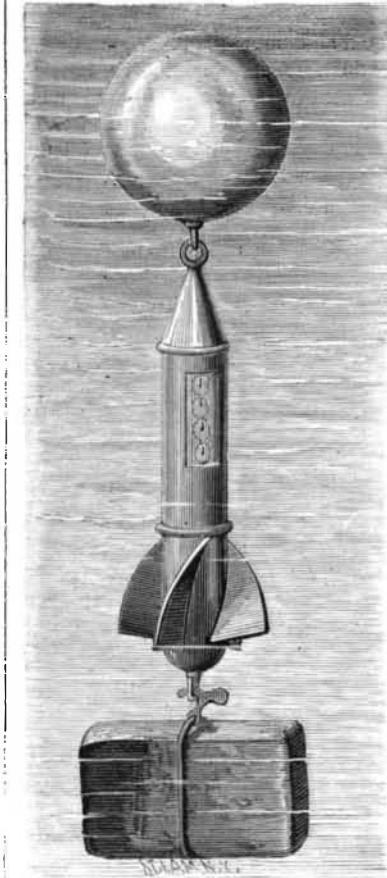
The new iron steamship City of Augusta, of the Ocean Steamship Company, is described as the largest ship engaged in the coast wise trade. Her capacity is 6,000 bales of cotton, or 3,000 tons. She is 310 feet long at the water line, 323 feet over all, and is of 40 feet beam. Her cabin accommodations are for 100 first class passengers. She is equipped with a compound engine, with two inverted cylinders, 42½ and 82 inches respectively in diameter, and each of them with 54 inches length of stroke. These engines are capable of a speed of sixty revolutions per minute. The screw is 16 feet in diameter, with 26 feet pitch. The working pressure is 100 pounds of steam. In addition to this there is an auxiliary or independent engine, with force pumps attached and an air circulating pump. Steam is furnished by six tubular steel boilers, 12½ feet in diameter and 11 feet 5 inches long, with one superheater 12½ feet in diameter and 13 feet high. These boilers are ample to furnish all the steam required for a speed of sixteen knots. There are steam steering gear, steam capstans and windlass forward and steam capstan aft, with donkey engines for freight hoists at all the holds.

The City of Augusta was built by John Roach, of Chester, under the supervision of Captain Lefevre, marine superintendent of the Ocean Steamship Company.

THE new dump car of the New England Car Company, which was illustrated in the SCIENTIFIC AMERICAN some time since, was recently tried at Brookline, Mass. The stockholders of the company and several railway men were present. The car, which was built by the Watson Manufacturing Company, is probably the longest and largest dump car in practical use in the country, and its size made the test of its workings all the stronger. It is thirty-two feet long, weighs 19,860 pounds, and contained 36,590 pounds, or over eighteen tons, of coal. All things being in readiness, a medium-sized man turned the crank, the machinery responded, the car tipped, the coal was

DEEP SEA-SOUNDING APPARATUS.

The engraving shows an improved sounding apparatus recently patented by Paul C. Rousset, of St. Petersburg, Russia. The invention consists of a novel device for connecting the sinker with an ordinary registering log, and in the arrangement of a buoy of sufficient capacity to raise the log to the surface after the sinker has been detached.



ROUSSET'S DEEP SEA-SOUNDING APPARATUS.

This device renders a sounding wire or line unnecessary, and insures more accurate soundings than can be obtained in the ordinary way.

The registering mechanism of the log is provided with a ratchet and pawl that prevents it from operating as the log descends, but allows the register to operate when the log ascends. A sinker is suspended from an eye on the lower end of the log by means of a hook which is weighted so that as soon as the sinker touches bottom the hook drops out of the eye, and the log being released is carried to the surface by the buoy, the screw meanwhile actuating the mechanism of the log, which records the distance through which the log passes.

RECENT INVENTIONS.

A ball and instep stretcher for boots and shoes, so constructed that it can be readily inserted into and removed from the boots and shoes, has been patented by Mr. Francis A. Fay, of Brooklyn, E. D., N. Y.

An improved milliner's steamer and presser has been patented by Mr. Thomas Hicks, Jr., of Gravesend, N. Y.

This invention relates to that class of devices designed for milliners' use for the purpose of raising the pile on velvets, etc.

An improved mechanism for changing and adjusting the height of revolving seats of stools and chairs has been patented by Mr. John M. J. Wernert, of Paw Paw, Mich. The invention consists of a spring-actuated rod enclosed in a slotted cylinder that projects downward from the under side of a chair or stool seat into a grooved socket which is fixed vertically in the central standard of the stool or chair, said rod being provided on its lower end with a laterally projecting lug, which is made to engage in the grooves of the socket and thereby hold the stool or chair seat at any desired elevation.

Mr. John R. Hastings, of Lampasas, Texas, has patented a military saddle so constructed that the valises and other equipments may be connected with the saddle

in such a way as to distribute and balance their weight, and at the same time make the saddle comfortable for the rider.

Mr. John S. Worth, of Coatesville, Pa., has patented an improvement in gearing for rolling mill rolls and other machinery. The invention consists in gear wheels, each of which is provided with several longitudinal rows of epicycloidal

teeth set in echelon, the teeth of each row being in end contact or union with each other, and set so that the first tooth in any one row enters in gear with the opposite wheel while one or more teeth of the preceding row are yet in gear, whereby a majority of the sectional rows of teeth will always be engaged in the opposite wheel at one time, the precise number thus engaged depending on the number of sectional rows of teeth in the wheel, whether two, three, four, or more, also upon the height of the teeth and coarseness of the pitch.

Mr. John H. Holmes, of Charleston, Kan., has patented an improved rotary dasher or breaker for employment in vertical churns.

THE HUNTING FALCON.

Among falcons the hunting falcon is the most conspicuous on account of the great size and the striking power of its wing. This bird is a native of northern Europe, being mostly found in Iceland and Norway, and it also inhabits parts of both North and South America.

Some naturalists believe that the Norwegian and Icelandic birds ought to be reckoned as different species, but others think that any differences between them are occasioned by age and sex. The power of flight of these birds is marvelously great. When it comes within sight of its prey it bounds upward, every stroke of the wings producing a perpendicular leap, as if it were climbing a giant stairs. After having risen to the proper height it dashes itself upon its prey with a stroke that is as unerring as its motion is swift.

When at liberty it seems to prefer birds to any other kind of prey, and will resolutely attack birds of considerable size, such as herons or storks. It will also chase hares and rabbits, and in the pursuit of this swift game is so eager that after knocking over one hare it will leave the maimed animal struggling on the ground while it goes in chase of another.

Although its home is in the chilly wastes of the northern regions, the bird is in no want of food, finding ample supply in the sea birds which swarm around the tall cliffs that rise from the waves.

On account of the singular power, swiftness, and courage of this bird it was in former days held in the highest estimation, and could only be purchased at a most extravagant price. The training of this bird to fit it for the chase is a long and tedious process, requiring a longer time than the training any other bird.

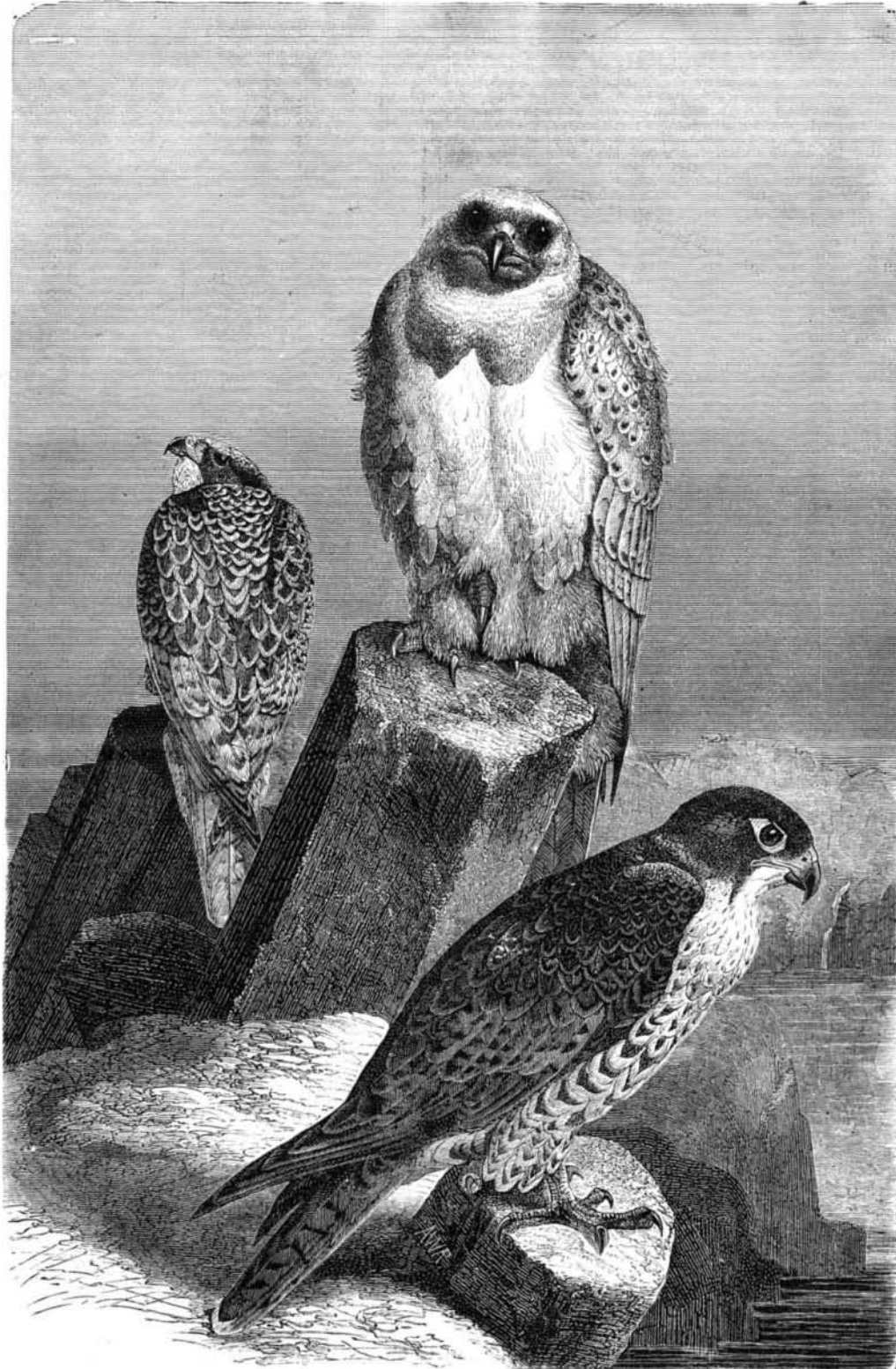
The color of the adult bird is nearly white, being purely white on the under surface and flecked with grayish-brown spots on the upper side. The sharp claws are black, the beak of a bluish tint, increasing in darkness toward the point, and the cere, tarsus, and toes are yellow.

When young the bird presents a different aspect, and would hardly be recognized as belonging to the same species. In its earlier life it is almost wholly of a grayish-brown tint, the feathers being slightly marked with a little white upon their edges. As the bird grows older the white edges become wider by degrees until the entire feather is of a snowy whiteness.

Landscapes Changed by Animals.

All animals, says Professor Mivart in the *Contemporary Review*, are directly or indirectly supported by plants, and the range of plants and the very existence of species are often wonderfully affected by the appearance on the scene of even one new kind of animal. Thus a great grazing district at the Cape, called the "Midlands," was, in Burchell's time, covered with luxuriant greensward, with a few trees and bushes, with willows and acacias along the sides of its streams. The introduction of sheep first destroyed the grass and then most of the shrubs—a change which affected the rainfall, so that this region has been invaded by the hardy plants of the adjacent Karroo desert, and is fast becoming an extension of the desert itself. St. Helena, when discovered by the Portuguese, in the year 1502, was entirely covered with forests (the trees drooping over its high preci-

pices overhanging the sea) and with a rich flora of absolutely peculiar plants. In 1513 some goats were introduced, and in fifty years had multiplied into thousands. Yet in 1709 trees still abounded, and the peculiar native ebony tree was still so abundant that it was used to burn lime with. In another hundred years (1810), the goats had entirely destroyed the great forests, yet so rich was the soil that it was hoped, with the destruction of the goats (and they were destroyed) the island would regain its wood by a quarter of a century. But this was not to be, for the government of that day most unhappily planted the island with trees and shrubs from other countries, which have so grown and spread that now the old indigenous flora is almost confined to a few patches on the central ridge of the island, at a height of 2,700 feet. What has been lost may be judged by the fact that of the forty-five kinds of flowering plants and twenty-three species of ferns which yet survive, no less than



THE HUNTING FALCON.

forty of the former and thirteen of the latter are absolutely peculiar to the island.

Preserving Timber in Ground.

In speaking of the well known methods of preserving posts and wood which are partly embedded in the earth, by charring and coating with tar, it is said these methods are only effective when both are applied. Should the poles only be charred without the subsequent treatment with tar, the charcoal formation on the surface would only act as an absorber of the moisture, and, if anything, only hasten the decay. By applying a coating of tar without previously charring, the tar would only form a casing about the wood, nor would it penetrate to the depths which the absorbing properties of the charcoal surface would insure. Wood that is exposed to the action of water or let into the ground should first be charred, and then, before it has entirely cooled, be treated with tar till the wood is thoroughly impregnated. The acetic acid and oils contained in the tar are evaporated by the heat, and only the resin left behind, which penetrates the pores of the wood and forms an air-tight and waterproof envelope. It is important to impregnate the poles a little above the line of exposure, for here it is that the action of decay affects the wood first, and where the break always occurs when removed from the earth or strained in testing.

Taking Care of Fresh Meat.

The time for slaughtering beef and pork for home consumption is close at hand, and it is a busy time for housekeepers; and if the truth is told, it is not a very pleasant task to contemplate; but as the comfort and happiness of a family depend very much on the manner in which meats are prepared, it is an essential item in every farmhouse that it should be done in a judicious and proper manner.

It is to be hoped that the good man of the family is both competent and willing to cut up the meat when cool without the assistance of his wife, and also to pack and salt the pork in the barrels in the cellar. If he does not know how, it would be highly advisable for him to take a few lessons of an experienced teacher, for it is a job that no woman ever ought to attempt. She of course would see that the pork barrel was perfectly sweet and clean before it was used. The brine, if kept nicely, will answer to use year after year

by scalding and skimming and letting stand till cold before turning it over the pork. Pork must be cold before it is packed—all the animal heat entirely out of it—then, when packed down, an abundance of good coarse salt must be freely spread over every layer of the pork, then allow it to stand two or three days before turning on the brine. Place a heavy flat stone on the top of the barrel, so that the meat will be kept solid in its place. It is best to keep the stone on meat the year round, so that none of the pieces can float on the brine, as they are apt to do unless kept in place by a heavy weight. Have the brine cover the entire mass of pork, so as to exclude air. There is so much lean meat in the hams and shoulders of a hog, that they never ought to be salted with the solid pork. A pickle should be made expressly for their curing, as they can be made so much more palatable than when simply salted. The spare ribs of pork are better to be frozen and kept fresh until needed for cooking. The tenderloin can be frozen, too, and it is one of the most delicious parts of the whole, either broiled and buttered or fried. The head needs to be cleaned nicely, and soaked in a weak brine till the blood is all out. Some like it boiled, and others prefer it made into head-cheese and kept for cold meats. The feet and legs are to be scraped thoroughly, boiled till tender, and prepared as souse, or eaten hot, with turnip sauce for a relish. The trimmings of the pork—the neck pieces and the jowls—are nice made into sausages, and they keep all through the winter, to use at pleasure. The lard of course needs care immediately, but it is much better to let it soak in water over night before trying it out. Always keep the roundabout and leaf separate, and use the lard from the roundabout in cold weather, as it is liable to have a strong taste if kept till summer. The tongue and heart make good meat for mince pies, and the liver is pal-

atable and wholesome, either boiled or fried. Beef that is kept fresh for winter use ought to be frozen as soon as possible, and then packed in tight barrels and set in a cool place, where the changes of atmosphere will not reach it. Some bury the barrel in an oat bin; others cover it with snow or put it in the hay mow—the main object being to keep it from thawing out. Beef hams must be cured in a nice pickle for some six or eight weeks, and then taken out and drained, put into either cloth or paper bags, and hung near the kitchen stove to dry for summer use; the tongue can be pickled with the hams, and kept for any length of time. The neck pieces and heart are used for mince pies, and need a thorough soaking in water to extract the blood. The beef to corn must be soaked two or three days in a weak brine, then packed in a tight cask or barrel, with salt sprinkled freely between the layers, and held down by a stone, in a pickle made and poured over it. It should be kept in a cool place in the cellar during the summer, and a sprinkling of black pepper over the top of the brine will keep the flies at a distance.

There is a great amount of work and care required to keep a year's stock of meat in good, wholesome condition, but if it is properly cured to commence with, two thirds of the labor is saved, and all the worry. No farmer can afford to