

and any necessity to the existence of animals, and what of it is human's should be disposed of by hibernation for three or four months in the year. Why, Mr. Editor, it does me good just to think of the thing, and to go into it would more than rejuvenate me for another three-score and eleven.

JOHN WISE.

Elm Cove Cottage, near Louisiana, Mo., April 2, 1879.

IMPROVED BARREL FOR BREECH-LOADING SHOT GUNS.

The accompanying engraving represents an improvement in rifle barrels for breech-loading shot guns, recently patented by Mr. Joshua Stevens, of Chicopee Falls, Mass., Fig. 1 being a perspective view showing the gun and attachment; Fig. 2 shows the breech of the rifle barrel; and Fig. 3, a longitudinal section of the same.

The rifle barrel, B, is fitted to the shot gun barrel, A, and provided with a longitudinal recess for receiving the slide, D, in which is pivoted a lever, E, having at its rear end a short projection, c, extending inward. The rifle barrel, B, is inserted into the rear end of the barrel of an ordinary breech-loading shot gun, the flange formed on the end of it entering the recess made in the shot gun barrel for the reception of the cartridge flange. The cartridge is now inserted and the gun is used in the ordinary way. After the discharge the barrel of the gun is tilted down, and the extractor starts the rifle barrel out of the shot gun barrel; this operation moves the slide, D, slightly and starts the cartridge shell. Should this prove insufficient the rifle barrel is drawn out far enough to admit of raising the lever, E, which operation moves the slide, D, and ejects the shell. An attachment of this kind must prove a valuable acquisition for the sportsman.

THE GREAT CRAB-SPIDER.

The great crab-spider belongs to the typical genus of this family, and is one of the formidable Arachnida that are said to prey upon young birds and other small vertebrates, instead of limiting themselves to the insects and similar beings which constitute the food of the generality of the spider race. All spiders are carnivorous, the dimensions of their prey varying with those of the destroyer, and it is by no means an illogical supposition that a spider whose spread of limb equals that of a human hand, might suck the juices of some of the smaller and more helpless vertebrates.

In Madame Merian's well known work on the insects of Surinam, there is a careful and forcible sketch of one of these great spiders (*Mygale avicularia*) engaged in preying upon a humming-bird, which it seems to have taken out of its nest. She gives also a description of this spider, mentioning that it chiefly feeds upon ants, but that when they fail, it climbs the trees and catches the humming birds. For a time this account was believed, and the spider received the specific name of *avicularia* in consequence of its bird-catching propensities. After a while, however, several persons ventured to discredit the story, and at last both the account and the illustration were set down as simple fabrications of the imagination. Experiments were also tried, dead humming-birds being put into the dens of these spiders, without any result, and the whole of Madame Merian's account was bodily denounced as fabulous.

Lately, however, the *Mygale* has been seen repeatedly to kill the young, not only of the humming-bird, but of other vertebrates, and thus Madame Merian's reputation for veracity remains intact.

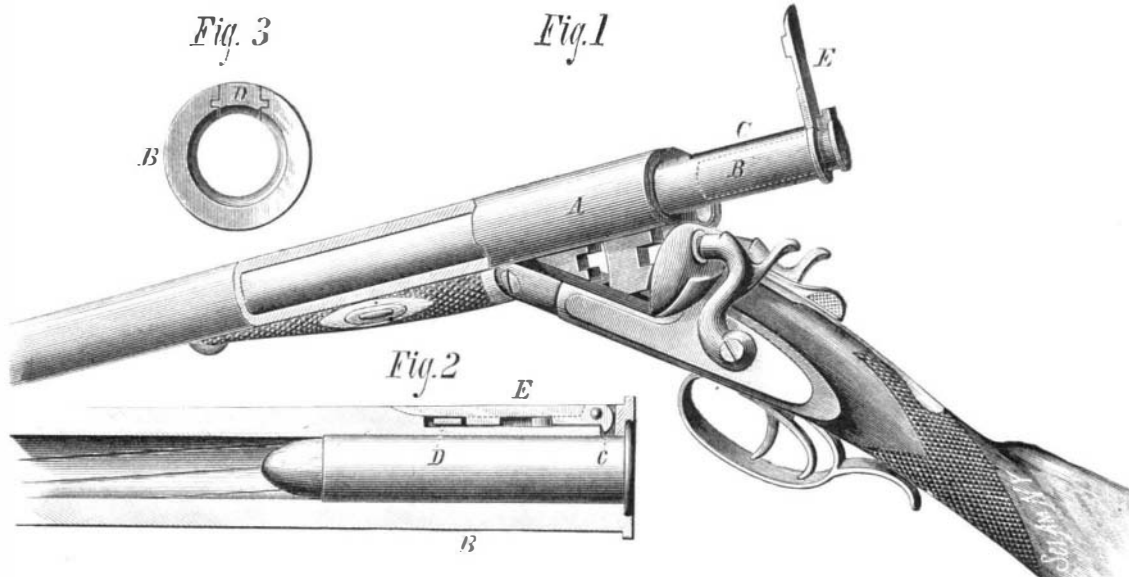
The *Mygale* spins no web to serve it as a dwelling. It burrows and lies in ambush in the clefts of hollow ravines, in volcanic tufas, or in decomposed lava. It often travels to a considerable distance, and conceals itself under leaves to surprise its prey, or it climbs on the branches of trees to surprise the colibris (*i. e.*, humming birds) and the *certhia flaveola* (a bird allied to our common tree creeper). It usually takes advantage of the night to attack enemies, and it is commonly on its return toward its burrows that one may meet it in the morning and catch it, when the dew, with which the plants are charged, slackens its walk.

The muscular force of the *Mygale* is very great, and it is particularly difficult to make it let go the objects which it has

seized, even when their surface affords no purchase, either to the hooks with which its tarsi are armed, or to the claws which it employs to kill the birds and the anolis (a kind of tree lizard). The obstinacy and bitterness which it exhibits in combat cease only with its life. Some, pierced twenty times in the corselet, continued to assail their adversaries without showing a desire to escape.—*Wood's Natural History.*

The Peanut Crop.

The following facts gathered by a Virginia peanut dealer, and submitted by him to the *Commercial Bulletin*, show the peanut crop to be of much greater importance than most



STEVENS' RIFLE BARREL FOR BREECH-LOADING SHOT GUNS.

people imagine. During the past five years the Virginia crop has ranged between 225,000 bushels and 780,000 bushels. The lowest crop of Tennessee was 175,000 bushels; the highest, 305,000 bushels. Of North Carolina, the lowest crop was 60,000 bushels; the highest, 125,000 bushels. The largest crop of the whole country was that of 1876-77, amounting to 1,405,000 bushels. The estimated crop of the coming season is 1,290,000 bushels. The Virginia nuts are the largest and have the finest flavor.

The grades of the Virginia nuts are, respectively, common, prime, strictly prime or choice, and fancy. The prices for nuts during the present season, on a basis of prime to strictly prime, have ranged as follows: October 7, first sale, new crop, at \$1.25; and during the rest of the month at

Unconsidered Uses of Wood.

The London *Timber Trades Journal* notes that there are countless ways in which wood is being consumed, besides the larger uses for fuel, building purposes, and the like; and that in the aggregate these unconsidered uses amount to a serious drain upon the forests, while little or nothing is done to insure a supply for future demands. The enumeration of the special uses of wood in the arts forms a very interesting chapter. One of the principal uses of the wood of the holly, dyed black, is to be substituted for ebony in the handles of metal teapots, etc., and the strong straight shoals, deprived of their bark, are made into whip handles and walking sticks. The lime tree forms the best planks for shoemakers and glovers upon which to cut their leather, and is extensively used in the manufacture of toys and Tunbridge ware, and by the turner for pill boxes, etc.; and the inner bark is made into ropes and matting. The sycamore furnishes wood for cheese and cider presses, mangles, etc.; and when the wooden dishes and spoons were in common use they were mostly made of this wood. It is used now also in printing and bleaching works, for beetling beams, and in cast iron foundries for making patterns. The yew is used by the turner and made into vases, snuff-boxes, and musical instruments; and it is a common saying among the inhabitants of New Forest that a post of yew will outlast a post of iron.

Where it is found in sufficient quantities to be employed for works underground, such as water pipes, pumps, etc., the yew will last longer than any other wood. Gate posts and stakes of yew are admirable to wear, and in France the wood makes the strongest of all wooden axletrees. Of the beech are made planes, screws, wooden shovels; and common fowling pieces and muskets are also stocked with it, and beech staves for herring barrels are not unknown. The sweet or Spanish chestnut furnishes gate and other posts, railing, and barrel staves, hop poles, and other such matters, such as strong and good charcoal, though scarcely equal to that of oak for domestic purposes, but considered superior to that of any other for forges.

Hornbeam is the best wood that can be used for cogs of wheels, excelling either the crab or the yew; but its application in this manner is about at an end. As a fuel it stands in the highest rank, emitting much heat, burning long, and with a bright clear flame. In charcoal it is highly prized, not only for culinary purposes and the forge, but also for the manufacture of gunpowder, into which, on the Continent, it enters in large proportion.

In Russia, many of the roads are formed of the trunks of the Scotch pine, trees from six inches to a foot in diameter at the larger end being selected for the purpose. These are laid down side by side across the intended road, the thick of one alternately with the narrow end of the other, and the branches being left at the end to form a sort of hedge on each side of the road. When thus laid, the hollows are filled up with earth, and the road is finished, being analogous to the corduroy roads of North America. In Germany casks are made of larch, which is almost indestructible, and they allow of no evaporation of the spirituous particles of the wine contained in them. In Switzerland it is much used for vine props, which are never taken up, and which see crop after crop of vines spring up, bear their fruit, and perish at their feet without showing symptoms of decay. The un-

injured state in which it remains when buried in the earth or immersed in water renders it an excellent material for water pipes, to which purpose it is largely applied in many parts of France. The butternut is esteemed for the posts and rails of rural fences in America, for troughs for the use of cattle, for corn shovels and wooden dishes. Shellbark hickory provides baskets, whip handles, and the backbows of Windsor chairs. The pignut hickory is preferred to any other for axletrees and ax handles. The sugar maple is used by wheelwrights for axletrees and spokes, and for lining the runners of common sleds. Dogwood is used for the handles of light tools, such as mallets, small vises, etc. In the country it furnishes harrow teeth to the American farmer, and supplies the harness of horses' collars, etc.; also lining for the runners of sledges. The mountain laurel



CRAB-SPIDER, OR MATOUTOU.

\$1.20 to \$1.10. November—Sales during month at \$1.05, \$1, 85 and 80 cents. December—80 and 85 cents. January—75, 80, and 85 cents. February—85 and 80 cents. March—80, 82½, 85, 90, 92½, and 95 cents.

Important and Excellent Appointments.

The appointment of Clarence King to the Directorship of the Consolidated National Surveys was confirmed by the Senate April '3. The same day the Senate confirmed the appointment of Dr. John B. Hamilton as Surgeon-General of the Marine Hospital Service.

A few days earlier Professor Francis A. Walker was appointed Superintendent of the coming Census.

It is doubtful if these offices could have been otherwise filled so wisely and acceptably.

is selected for the handles of light tools, for small screws, boxes, etc. It most resembles boxwood, and is most proper to supply its place. Bowls and trays are made of red birch, and when saplings of hickory or white oak are not to be found, hoops, particularly those of rice casks, are made of the young stocks and of branches not exceeding one inch in diameter. Its twigs are exclusively chosen for the brooms with which the streets and courtyards are swept. The twigs of the other species of birch, being less supple and more brittle, are not proper for this use. Shoe lasts are made from birch, but they are less esteemed than those of beech. Immense quantities of wooden shoes are made in France from the wood of the common European alder, which are seasoned by fire before they are sold. The wood of the locust is substituted for box by the turners in many species of light work, such as saltcellars, sugar bowls, candlesticks, spoons, and forks for salads, boxes, and many other trifling objects, which are carefully wrought into pleasant shapes and sold at low prices. The olive is used to form light ornamental articles, such as dressing cases, tobacco boxes, etc. The wood of the roots, which is more agreeably marbled, is preferred, and for inlaying it is invaluable. Of persimmon turners make large screws, and tinmen mallets. Also shoemakers' lasts are made of it equal to beech, and for the shaft of chaises it has been found preferable to ash, and to every species of wood except lancewood. The common European elm is used for the carriages of cannon, and for the gunwale, the blocks, etc., of ships. It is everywhere preferred by wheelwrights, for the navies and felloes of wheels, and for other objects. White cedar serves many subsidiary purposes. From it are fabricated pails, wash-tubs, and churns of different forms. The ware is cheap, light, and neatly made, and instead of becoming dull, like that of other wood, it grows whiter and smoother by use. The hoops are made of young cedars stripped of the bark and split into two parts. The wood also supplies good charcoal. The red cedar furnishes staves, stopcocks, stakes, and is also used for coffins.

A few special applications of wood in this country are mentioned, separated into trades, namely:

Sieves, usually of black or water ash for the bottom and oak or hickory for the circle; whipstocks, white oak; baskets, willow, white oak, and shellbark hickory; picture frames, white pine and sweet gum; saddle-trees, red maple and sugar maple; screws of bookbinders' presses, hickory and dogwood; hatters' blocks, sour gum; corn shovels, butternut; shoe lasts, beech, and black or yellow birch.

To attempt any comprehensive review of the list of American applications would require another column or more.

Reports on the Paris Exhibition.

Governor McCormick, Commissioner General to the Paris Exhibition, requested the Assistant Commissioners to complete and forward to him their reports by the 1st of April. The following is a list of these reports:

Governor R. C. McCormick, Commissioner-General: "The Administrative Bureaus of the American Representation at the Paris Exhibition of 1878."

F. A. P. Barnard, of New York, President of Columbia College, Assistant Commissioner-General: "The Exhibition at Large and the General Results thereof."

Daniel J. Morrell, of Pennsylvania, President of the Cambria Iron Works and President of the American Iron and Steel Association: "Iron and Steel."

Donald G. Mitchell (Ike Marvel), of Connecticut: "Household Furniture and Accessories."

William W. Story, of Massachusetts: "Art."

Henry Howard, of Rhode Island: "Textile Fabrics."

William T. Porter, of Delaware, artisan expert: "Machinery."

Thomas B. Ferguson, of Maryland, Commissioner of Fish and Fisheries: "Fish and Fisheries."

William A. Anderson, of Virginia, of the Tredgar Iron Works: "Transportation."

George W. Campbell, of Ohio, grape grower: "Horticulture."

John J. Woodman, of Michigan, President of the Michigan Grangers' Association, and practical farmer: "Grains."

A. J. Sweeney, of West Virginia, Mayor of Wheeling, artisan expert: "The Latest Devices in Machinery."

Samuel Dyshart, of Illinois, stock raiser: "Live Stock."

Thomas F. Jenkins, of Kentucky, Professor of Chemistry: "Chemicals."

Floyd B. Baker, of Kansas, Editor of the *Topeka Commonwealth*: "Forestry."

James D. Hague, of California, mining engineer: "Mines and Mining."

Pierce M. B. Young, of Georgia, planter: "Cotton."

Aristides Gerard, of Louisiana, inventor: "Steam Engines."

Joshua Q. Chamberlain, of Maine, President of Bowdoin College, and ex-Governor of Maine: "Education."

Eliot C. Jewett, of Missouri, mining engineer: "Technical Schools."

The following named reports have been requested from Honorary Commissioners appointed by the President on the nomination of the Governors of States:

William P. Blake, of Connecticut, Editor of the Reports of the Representation of the United States at the Paris Exhibition of 1867, Commissioner of the United States at the Vienna Exposition in 1873, and Commissioner to the Centennial Exposition at Philadelphia: "Ceramics."

Edward H. Knight, of the District of Columbia, Editor

of the "Mechanical Dictionary:" "Agricultural Implements."

The reports are carefully collated and indexed by the Commissioner General and will be delivered to the Government by May 1. They will fill four volumes royal octavo, uniform with the reports on the Paris Exhibition of 1867 and Vienna of 1873.

It is to be hoped that the printing of these reports will not be long delayed. The industrial world moves rapidly, and such reports soon become practically antiquated.

The Commissioner-General has learned from the Director-General of the Exhibition that in spite of delays in the execution of the medals, he may expect the medals at an early date. As soon as received they will be forwarded to those to whom they were awarded.

The Commissioner-General expects to close up the affairs of his office by July 1. It appears that there will be a handsome sum to the credit of the Government out of the \$190,000 appropriated for a proper representation of the United States at Paris.

GRAY POTTERY.

The composition of that class of potter's ware designated as "gray" pottery was known thousands of years ago to the Chinese and Japanese. At the Louvre, in Paris, there is



GERMAN GRAY POTTERY.

to be seen a large vase of Japanese origin, several feet high, and of great beauty. In Europe gray pottery was first manufactured in Germany, in the provinces of Saxony, Bohemia, and Silesia, at the beginning of the Renaissance Period. Later, Boettcher manufactured gray pottery at Meissen, previous to discovering the art of making porcelain.

Our engraving represents a vessel, probably used to hold water or wine, of Silesian origin. It shows elaborate ornaments of different colors, in relief, on a sky-blue ground. It is now at the Louvre Museum, and illustrates well the artistic taste of that period.

NEW AGRICULTURAL INVENTIONS.

An improved seed planter, having a rotating hopper, which rolls on the ground, and in which there are a number of seed pockets, which deposit seed in a furrow formed by a plow or furrow opener, has been patented by Mr. William J. Ellis, of Oakland, Ga.

Mr. John Clayton, of the Grange Farm, Clayton (Brainerd P. O.), Minn., has invented an improvement in gang plows, the object of which is to regulate the width of the cut or furrow of the plow, so as to suit the power of the different teams that may be used, and to accommodate it to soil in which it is used. The plow is also provided with an adjustment for varying the depth of the furrow.

An improved rotary plow colter, which is provided with means for excluding dust and dirt from its bearing, has been patented by Mr. John Clayton, of Brainerd, Minn.

An improved cutter for plows, which is designed to shield the mould board, and lessen the wear of the plow, has been patented by Mr. Charles W. Twigg, of Fincastle, Ind. It

consists of a cutter applied at the junction of the land side and mould board and extending to the beam.

Mr. Patrick Groom, of St. Louis, Mo., has patented an improved handle socket for shovels, spades, and scoops, which consists in making the shovel strap separate from the shovel blade, and securing it by rivets in a countersink formed in the blade.

A novel churn, that agitates and aerates the cream by centrifugal force, has been patented by Messrs. E. B. Older and F. E. R. Megow, of Independence, Iowa. This invention consists in a concave rotary dasher and a corrugated gatherer rotated by the dasher shaft.

A hay rack and fence, which is constructed so that the fence may be supplied with additional bars or rails, to convert a portion of the panels into feeding racks for cattle, has been patented by Mr. Louis Prince, of Nashville, O.

The Fate of a Herd of Buffaloes.

An army officer who recently arrived in Chicago from the Yellowstone Valley, tells a story of what happened to a herd of buffaloes as they were migrating southward. The herd numbered 2,500 head, and had been driven out of the Milk River country by the Indian hunters belonging to Sitting Bull's band. When they reached the river they ventured upon the ice with their customary confidence, coming upon it with a solid front, and beginning the crossing with closed ranks. The stream at this point was very deep. When the front file, which was stretched out a quarter of a mile in length, had nearly gained the opposite shore, the ice suddenly gave way under them. Some trappers who were eyewitnesses of the scene said it seemed as if a trench had been opened in the ice the whole length of the column. Some four or five hundred animals tumbled into the opening all in a heap. Others fell in on top of them and sank out of sight in a twinkling. By this time the rotten ice was breaking under the still advancing herd. The trappers say that in less than a minute the whole body of buffaloes had been precipitated into the river. They were wedged in so thickly that they could do nothing but struggle for a second and then disappear beneath the cakes of ice of the swift current. Not a beast in all that mighty herd tried to escape, but in a solid phalanx they marched to their fatal bath in the "Big Muddy." In a minute from the time the first ice broke not a buffalo's head or tail was to be seen.

Possibly occurrences of this sort, in ancient tertiary times, helped to form the remarkable deposits of bones found in the old lake beds of the great West and elsewhere. In these deposits the earth is literally crowded with the bones, sometimes chiefly of one type, sometimes comprising many distinct species. In the latter case the victims were probably swept away by sudden floods, their remains mingling confusedly in quiet basins.

The Textile Industries of Finland.

It is reported by the German press that a large amount of spinning and weaving machinery is being transferred to Russia from German mills, closed on account of declining trade. The Grand Duchy of Finland is becoming one of the principal seats of Russian textile manufactures.

There are five large cotton mills at Tammerfors, Abo, Nikolaistad, Forssa, and Kirokoski. The imports of raw cotton have nearly trebled since 1866. The spinning mill of Forssa has 18,000 spindles and 500 looms, and employs 1,500 hands. The mill at Abo manufactures thread only, and Kirokoski only textiles. Mostly all the domestic weaving of linens has been superseded by the great linen mill of Tammerfors, the only one in the country. It has five turbines, and employs about 900 hands. There are six manufactories of cloth, one of knit goods, and five mills for the manufacture of woolen yarns and textiles. The largest woolen cloth factory is near Abo, and turns out about 65,000 or 70,000 yards of cloth. The proximity of the Southern provinces to cotton supplies from Egypt will, of course, give them an advantage over such distant provinces as Finland.

Curiosities of Bismarck's Brains.

In Dr. Busch's "Book on Bismarck," the Prince describes a horse accident he once had when riding home with his brother. He fell violently on his head. "I lost consciousness," he says, "and when I recovered it I had only half. That is, one part of my intellect was clear and good, the other half had gone." Finding (on examination) his saddle broken, he called for his groom's horse and rode home. When the dogs there barked, by way of salutation, he thought them strange dogs, and scolded them angrily as such. Then he said the groom had fallen with the horse, and they should go and fetch him, and he became angry when they would not do that (because of a sign from his brother). He seemed to be himself and at the same time the groom. After eating and sleeping he was all right next morning. He points out that he had done all that was necessary in a practical respect; herein the fall had caused no confusion of ideas. "In short, it was a remarkable illustration of the fact that the brain lodges different mental powers; but one of these had been stupefied for some longer period of time by the overthrow."

THE AFRICAN CABLE.—The steamer Kangaroo, with part of the cable to be laid between Natal and Aden, left the Thames April 7 for Natal via the Suez Canal. The Natal and Zanzibar section will be open for business in July. This will place South Africa within a week's communication of London. The remainder of the line will be completed before the end of the present year.