

upper pair being small and serving as covers for the lower ones, which, when expanded, measure two and a half to three inches from tip to tip. They fold up very much in the manner of a lady's fan; and when in this condition, the points project somewhat beyond the end of the body.

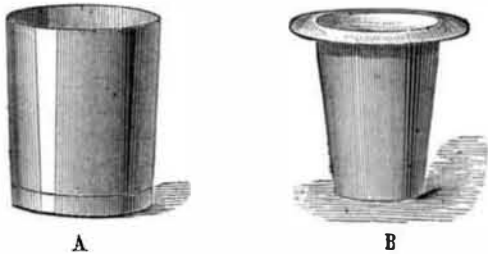
In May or June the female lays 300 or 400 eggs, which are about the size of turnip seed, but oval and yellowish, in a nest which she makes for the purpose underground, and which is thus described by Gilbert White: "There were many caverns and winding passages leading to a kind of chamber, neatly smoothed and rounded, and about the size of a moderate snuffbox. Within the secret nursery were deposited near 100 eggs, of a dirty yellow color, and enveloped in a tough skin. The eggs lay but shallow and within the influence of the sun." In a few weeks, according to the heat of the weather, the young are hatched. At first they are very small creatures, somewhat resembling black ants, very active and voracious in their habits. They grow rapidly, changing their skins three times before winter, when they hibernate, and, according to Röscl, cast a fourth skin during this period. The warmth of spring revives them, when they appear, having the rudiments of wings; and after one more change they become perfect insects, possessed of ample wings and in all respects similar to their parents.

Though having such large wings, the mole cricket does not appear to make as much use of them as might be expected. They never fly by day, remaining concealed in their burrows, but towards evening they may be found sitting at the mouths of the tunnels, uttering their "low, dull, jarring note," caused by the friction of one wing case over the other; and it is at this time, and during the night, that they are occasionally found upon the wing.

So destructive are these insects that they have been known to destroy a sixth, nay, even a fourth part of a crop of young corn. They are particularly fond of barley, young peas, and beans, and Mr. Brackenridge says "nothing in the herbaceous way is proof against its ravages." Many and various schemes have been suggested for their extirpation. Louis XV. even purchased a recipe to kill them by first filling their burrows with water, and then adding some oil. Turpentine, soapsuds, soot, lime, and similar materials have also proved efficacious.

#### A SELF-COOLING GOBLET.

M. Toselli proposes the convenient little device illustrated herewith for cooling a tumbler of water by refrigerating mixtures. It is well adapted for localities where ice cannot readily be obtained, as by its aid a glass of fresh cool water can be produced in a few moments.



A is a simple cylindrical vessel which holds the water or beverage to be cooled. B is a smaller vessel with a flange around the rim, and which is placed within the goblet or tumbler, A. In the inner vessel, B, is dissolved the refrigerating mixture, about five ounces of nitrate of ammonia in water. The solution is agitated and in a few minutes the cold produced is said to be sufficient to lower the temperature of the water in the outer vessel some 50° Fah. The salt can be used over and over again, indefinitely, as it is merely necessary to pour the solution on a flat dish, when re-crystallization will take place as evaporation progresses.

#### The Great Lick Telescope.

Richard S. Floyd, one of the trustees of the Lick Trust, has just returned from an extended European tour. During his absence he has talked with many scientific men of this and other countries, but almost invariably found them afraid to commit themselves to an opinion as to whether a greater success can be obtained with a reflecting or refracting telescope. Professor Newcombe, of the Observatory in Washington, after his visit to Europe to look into this matter for Mr. Lick, reported warmly in favor of a gigantic refractor, and forwarded estimates as to cost. He has since changed his opinion, however, and now recommends a silver-on-glass reflector of about seven feet diameter. Ross's, Herschel's, and other celebrated telescopes have speculum metallic reflectors, which have until lately been considered the best. Now the palm is claimed for an invention of Leon Foucault's by which silver in solution is deposited on glass. Foucault made a reflector upon this system about thirty-one and one fifth inches in diameter, and excellent work has been accomplished with it. After his death a reflector upon his plan about four feet in diameter was constructed for the observatory. Owing to some not thoroughly explained cause, this has not proved a success, and another of the same dimensions is being constructed to replace it. Great interest is manifested in the result of this second experiment, which cannot be proven for a year yet. Dr. Huggins, the well known astronomer, also favors a large reflector, as it is better for spectroscopic analysis, his favorite study. It is natural that he should prefer a reflector, as he desires to have the field of physical astronomy enlarged.

Theoretically, a reflector of 4 feet in diameter is about equal to a refractor of 26 inches. The Ross reflector is 6 feet in diameter, only 4 feet of which are effective, and so far it has not been proven that more than 4 feet of a reflector can be made effective. The great trouble with the reflector is that it is very sensitive to atmospheric changes, while with the refractor the difficulty lies in the secondary spectrum. The object glass of the refractor is composed of two glasses joined, the outer being of crown glass, the inner of flint. Rays passing through the crown glass are refracted. The consequence is that perfect achromatism is impossible, and the difficulty of compensating these refractions increases with the size of the object glass. The largest refractor in the world is that in the Washington Observatory; it is 26 inches in diameter, and is an excellent instrument.

Mr. Floyd said that, after as careful an examination as he could make, he is inclined to believe that the best interests of the fund will be served, to have constructed a larger refractor than any yet made. This ought not to cost complete more than \$150,000. Then there will be a subsidiary refractor, about four feet in diameter, supplied with both silver-on-glass and speculum metal mirrors. Such an instrument has been offered, or rather parties have agreed to construct one, for about \$20,000. Tell, of Paris, will undertake to make crown and flint glass disks for the object glass of a forty inch refractor for \$20,000—stipulating that he shall be allowed two years for construction.—*San Francisco Bulletin*.

#### Preventing Suffocation by Smoke.

I will give some suggestions for the prevention of suffocation by smoke. A pillow case, well saturated with water, and having a small hole torn in it to look through, placed loosely over the head, will be found an admirable impromptu respirator in the densest smoke. I am indebted for the idea to Vice-Admiral Jerningham, who told me how, when he commanded the Cambridge training ship at Plymouth, he made his first experiment with this pillow case respirator. He had 12 lbs. of loose powder exploded in a confined part of the ship, which, although screened off with fear nought, emitted so dense a smoke that those outside had to lie down on the deck. A common pillow case, with a small eye hole, was placed over the head of a man, who, with the hose in the hand, went inside and remained ten minutes, when, to assure his friends outside of his safety, he sang a comic song.—*W. H. Lewis, in London Times*.

#### Fight between a Turkish Monitor and Four Torpedo Boats.

A most interesting affair occurred on the Danube here during the operations attending the passage of the Danube—a fight between a Turkish monitor and four Russian torpedo boats. It was somewhere near the mouth of the Aluta. This monitor had been giving the Russians a good deal of trouble, and showed an amount of activity and energy very unusual with the Turks, continually shelling the Russian batteries, and destroying the boats. The Russians accordingly determined to destroy it.

Four torpedo boats were prepared and sent against the monitor. Hiding behind an island, they laid in wait, and when the vessel was steaming past suddenly darted out from their hiding place, and bore down on her in broad daylight. This monitor, it soon became evident, was handled and commanded in a very different manner from others with which the Russians have had to deal here. With wonderful quickness and skill she was prepared for action, and nothing daunted by the fate of others, made a successful defence against the four terrible enemies, a defence of which the Russians speak with the greatest admiration.

Her commander began by likewise thrusting out torpedoes on the end of long spars, thus threatening the boats with the danger of being blown into the air first, at the same time opening a terrible fire on them with small arms and mitrailleuses. He beside manœuvred his boat in a most skillful manner, with a dexterity and address which, with the torpedoes protecting, made it impossible for the Russian boats to approach sufficiently near. He beside tried to run them down and very nearly succeeded in doing so. The reason soon became evident. The commander was a European, whom the Russians believe was an Englishman, and who directed the movements from the deck. He was plainly visible all the time, and was a tall man, with a long, blonde beard, parted in the middle. He stood with his hands in his pockets, giving orders in the calmest manner possible.

The torpedo boats continued their attempts for more than an hour, flitting round the monitor and seeking the opportunity to get at her, but without success. The monitor was equally active in trying to run them down, avoiding a collision by quick and skillful movements, backing and advancing, turning, and ploughing the water into foam as she pursued or avoided her tiny but dangerous adversaries—a lion attacked by a rat. At one moment one launch, in rapid manœuvres, found itself between the monitor and the shore, with no great distance between them. The monitor's head was in the other direction, but her commander instantly began backing her down on the torpedo boat, with the intention of crushing it against the bank.

Just at this moment the engineer of the launch was wounded. There was some confusion and delay in starting the engines, while the current carried her head aground in such a position as to render escape impossible. One of the crew sprang out into the water and pushed the ground, while another started the engines just in time to escape with a scrape, the shave was so close. One Russian officer sprang

ashore, and seeing the captain of the monitor coolly standing on the deck with his hands in his pockets emptied his revolver at him, three shots, at a distance of not more than forty feet. The captain of the monitor, in answer, took off his hat and bowed, not having received a scratch. Later, however, the gallant fellow seems to have been killed or wounded, for he suddenly disappeared from the deck. The monitor immediately afterward retired precipitately from the scene of action.—*London Daily News' Turna-Magurelli Correspondence*.

#### Iron Ship Building.

The report of the Secretary of the American Iron and Steel Association furnishes the following statistics of iron shipbuilding. Of the 25 vessels built in the fiscal year 1876, 2 vessels, aggregating 139,78 tons, were built at Buffalo; 1 vessel of 12,99 tons was built at Burlington, N. J.; 11 vessels, aggregating 11,980,94 tons, within the jurisdiction of the port of Philadelphia; 9 vessels, aggregating 8,298,08 tons, in the State of Delaware; and 2 vessels, aggregating 915,12 tons, at New Orleans. At the present time there are building or under contract on the Delaware river, 9 large iron steamships of the best class, ranging from 1,800 to 2,500 tons burden, including two monitors for the United States Government, besides a number of powerful iron tugs of 200 or 300 tons burden, and other small craft.

#### Cutting off Strawberry Runners.

When it is not desired to propagate young plants, strawberries should have their runners removed several times during the growing season; and where half an acre or more is cultivated, the trouble and expense are considerable. The operation is usually performed with shears, or by pinching or pulling off by hand. To save the back ache induced by the operation, we publish (Fig. 1) an engraving showing an attachment to the shears by means of which the work may be done in an upright posture. The *Rural New Yorker* gives two other devices which expedite the operation, and make it far less wearisome. In Fig. 2, B is a circular piece of iron, from seven to ten inches in diameter, one inch wide, about one quarter of an inch thick at the top and beveled to an edge at the bottom; two iron strips, P P, are welded or riveted at opposite sides, as shown, and bolted to the handle. By placing the cutting ring, B, around the hill and pressing downwards, all the runners underneath the edge are instantly severed. Should the soil be hard, or the cutting edge dull, a quick thrust with the foot upon the rest, A, will do the business.

By this plan a large patch can be freed from runners in a few hours.

A cheaper implement is shown in Fig. 3. H is a circular and thin wheel, of iron or steel, from four to six inches in diameter, ground sharp at the edge, and attached to a stick

Fig. 3.



(an old hoe handle will answer). If inserted in a slit made with a coarse saw and held in place by a rivet, it revolves easily. Run it half round the hill in one direction, then as far in the other, and it is done; you can cut as close to a hill or as distant from it as you like. It may also be used for cutting sods in squares, preparatory to being cut loose at the bottom with a shovel.—*Weekly Globe*.

#### Earthquake in Tennessee.

The afternoon of July 14, a distinct shock of earthquake was heard by the residents of Memphis, Tenn. There were two heavy shocks, accompanied by a rumbling noise which once heard can never be forgotten. The "shocks," so to speak, lasted several seconds, in fact almost half a minute, during which time buildings quivered and windows rattled, as moved by the mysterious force within. In several instances the floors of the dwellings were sprung and caused no little alarm to the occupants, but no further damage was done.

#### Coal Area of the United States.

There are only 450 square miles of anthracite coal in the whole United States. The Reading Company owns no less than one third of the whole. Of bituminous coal land there are in America 200,000 square miles, and 8,000 square miles in Great Britain.

One of the old landmarks of Baltimore, the City Hall, on Holliday street, is soon to be torn down. It was built by Rembrant Peale in 1813, as a museum, and was a popular place of resort for nearly seventeen years, when it was purchased by the Common Council. It was the first building in the city that was lighted with gas—Mr. Peale charging a small fee in 1816 for the exhibition of carburetted hydrogen gas.

**About Nails.**

Most people have to use nails of one kind or the other every now and then, yet few persons know how or where they are made, or have given any thought as to the way in which they are disposed of. As in the case with pins, nails are to be bought very cheaply, and are so abundant that one naturally inquires where they all go. Hardly any description of hardwares can boast of a more respectable antiquity than nails, inasmuch as they are mentioned in the fourth chapter of the Book of Judges in conjunction with the killing of Sisera by Jael, and in sundry other parts of the Bible. There can be little doubt, nevertheless, that the nails of olden times were but clumsily shaped pieces of iron, which undoubtedly served the purposes for which they were used, but would be very unlike the articles bearing the same name nowadays.

Throughout the Middle Ages the only way in which nails were made was by hand, and it was not until the seventeenth century that it dawned upon one mind, at least, that it was possible to produce them by means of machinery. The first evidence of this interesting fact we find in a State paper, which records that in the year 1606 letters patent were granted by our well beloved monarch, King James, to his trusty knight Sir Bevis Bulmer, for the latter's invention of this ilk. We find it recorded that the said Sir Bevis Bulmer "hate invented a new, Apt, or Compendious forme or Kinde of Engine or Instrument to be put in vse, driven, and wrought withall by Water or Waterworkes as well for the concerning a Quicker and more Apt and Speedy Ways and Meanes then Knowne, expimented, and vsed within our Realmes and Domyinions within the Tyme of Man's memory for, in, about the cutting of iron into small Barrs or Rodd to serve for the making of Nayles, for the necessary vse and service of vs and our subjects," and so on, with much more ingenious, but tedious, legal verbiage. Sir Bevis, however, does not appear to have been very successful with his nail rod machinery, and as time grew older other trusty subjects of various subsequent sovereigns tried to mend matters, with no very encouraging success—in fact, it was not until the beginning of the present century that machinery began to be utilized in a practical and commercial way.

In the year 1811 a Birmingham firm made the experiment of cutting nails out of sheets of iron by ingeniously contrived machinery, and by the year 1820 such improvements had been made as had placed the experiment beyond the bounds of hypothesis, and within the circle of trade routine. About the same time some American manufacturers adopted similar processes, so that the use of this kind of machinery would appear to have been almost contemporaneous in both countries. Since that time there have been hundreds of patents taken out in this and other countries for inventions and improvements in the making by machinery of the multitudinous sorts of nails; but in all, the leading principle has been the same, so that the inventions of to-day are simply more or less ingenious variations of the original idea.

Despite the great and important magnitude of the cut nail industry—all machine-made nails are called cut—at the present time, there is still a large business done in hand-made articles, and many thousands of workpeople, of both sexes, are employed in their production. The Black Country—at Dudley, Netherton, Sedgley, Gornal, Wordsley, Rowley, Cradley Heath, Lye Waste, Harborne, Birmingham, Stourbridge, West Bromwich, and other towns and villages—is the center of the wrought or hand-made trade; but it is also very extensively carried on at Sheffield, Rotherham, Grenoside, Belper, and many smaller places in Derbyshire, Worcestershire, and South Yorkshire. Prior to the general use of machinery there were something like 50,000 hands employed in the trade in Staffordshire alone, whereas at the present time the number of wrought nailers in that district does not exceed 17,000 or thereabouts.

Formerly the great London dock companies—the East India, West India, London, etc.—used to contract for nearly 200 tons of hand-made nails annually—most of them for tea chests; but now they only use an infinitesimal proportion of the same goods. In the same manner the Admiralty, 50 years ago, had nearly 700 tons of wrought nails yearly, a quantity which has dwindled away to almost nothing before the growing cheapness and quality of cut nails. Then, too, foreign competition has been a serious matter for the hand nailers, inasmuch as the American manufacturers have not only learned to supply the requirements of their own country, but now also furnish the Canadians with all the cut nails they need. On the continent of Europe the same thing has taken place, the Belgian production of machine-made nails being, roughly speaking, 30,000 to 35,000 tons yearly—a portion of which is sent to this country. The hand workers, however, have all along made a running fight against the machinery, which has, nevertheless, so surely usurped their places, and have on many occasions committed acts of such violence as have placed them beyond the pale of public sympathy. Their employers—all of whom find the iron and pay so much per 1,000 or per lb. for the nails made therefrom—reduced their wages in 1837, in 1838, and in 1842. In the last mentioned year there were very serious disturbances in the neighborhood of Dudley, but in the end the poor nailers were worsted, as they have been on many subsequent occasions. At one time the vile truck system flourished in no trade so boldly and mischievously as in this, but since 1850 the practice has to a great extent fallen into desuetude, although still in vogue in an underhand and surreptitious manner here and there. The men work at their trade in little smithies attached to their dwellings, and in many instances their wives and children also labor in the same manner. The men can earn

about 10s. to 16s. weekly, women 6s. to 8s., and children from 3s. to 5s. weekly. The work is not, as a rule, heavy, yet requires a dexterity only to be acquired by long practice and powers of endurance which the younger workers cannot possibly possess, and the want of which is necessarily most prejudicial to their wellbeing.

In one branch of nail making, however, the application of machinery has not as yet been attended with any very marked success—that is, the manufacture of horse nails. As a consequence the men that make them are better paid than the common nailers, and they are more self-assertive or independent, as is evinced by the numerous strikes that are constantly taking place. The chief seats of the horse nail making branches are near Dudley, in Staffordshire, Belper in Derbyshire, and Sheffield in Yorkshire. Altogether it employs nearly 3,000 persons—about 2,000 at Dudley, 500 at Belper, and 250 or 300 at and near Sheffield. Belper is supposed to be the most ancient seat of the industry, and claims to have ruled even Staffordshire at one time in the matter of wages and prices. Continual disputes—particularly one in 1850—drove away the trade, however, to a great extent, and it seems now to be centralized around Dudley.

Horse nail makers are paid at rates varying from 4s. to 4s. 8d. per 1,000, at which prices good workmen may earn 23s. to 30s. weekly, when work is abundant, as is generally the case in this branch of the industry. The men aver that horse nails will never be successfully made by machinery, and have, in consequence, pursued the suicidal policy of keeping up wages, by restricting the number of apprentices and other artificial means, which in the end must of necessity prove abortive.

The cut nail trade is very extensive nowadays, being carried on not only at Birmingham and in various parts of South Staffordshire, but in Wales and Scotland, as well as at Newcastle, Darlington, Leeds, Sheffield, and Warrington. All machine-made nails are cut from sheets, strips, or bars, and can be produced in great quantities at a very cheap rate. About 20,000 to 25,000 tons are made every year in Birmingham alone, and fully as many more in the other places just alluded to. The men who attend to the machines are paid at the rate of 30s. to 50s. weekly, women 10s. to 17s. 6d., and the mere laborers 20s. to 25s. per week. As may be imagined, there is an immense variety of nails, whether wrought or cut, each of which has its distinguishing name and peculiarity. Some of them are so small that 1,000 only weigh an ounce and a half, whilst the "tenpenny" sort, eight inches long, weigh a hundredweight to the same quantity. Altogether there are about 2,200 different sorts of nails and rivets—which come in the same category—made, and used for an almost infinite variety of purposes. They are made, too, not only for this country, but for use all over the world, as is evinced by the fact that we annually export something like 17,000 tons of them. Our best country is Australia—that great colony which is yearly becoming of more importance to us as a manufacturing nation—to which we send 4,000 tons annually. British India ranks next on the list with about 1,800 tons, the British West Indies next with 1,500 tons, and then British North America with 1,300 tons. Russia, too, is not a bad customer, as she takes from us 800 tons yearly, and the Foreign West Indies contribute over 600 tons toward the aggregate. Brazil is a capital buyer, her last year's purchases of this class having reached over 900 tons; Germany takes over 300 tons per annum, Holland 400 tons, France 300 tons, Spain 250 tons, British South Africa 400 tons, and other countries, or our own colonies, quantities ranging from 100 to 200 tons.

**\$20,000 Prize for a New Sugar Extraction Process.**

The General Council of Guadeloupe offers a prize of \$20,000 to the inventor of a new process of extraction of juice of sugar cane or of sugar fabrication. This prize will be given to whoever obtains from the cane a yield of 14 per cent of sugar. The cost of application of the new process should not exceed 40 per cent of the value realized. Experiments will continue four years, terminating June 30, 1880, and will take place at Guadeloupe under the auspices of a government commission. All cost of transport, etc., must be defrayed by competitors, and applications, etc., must be addressed to the Director of the Interior, Basse Terre, Guadeloupe.

The cane raised at Guadeloupe contains 18 per cent of sugar. Hitherto a percentage of 9.4 on an average has been obtained by the ordinary factory machinery. Recently M. Ducharsaing has invented an imbibition process, the details of which are not given in the legislative document before us, but which it appears increased the yield from 9.4 to 11.64 per cent. The inventor himself claims a greater advantage, and insists that the additional percentage of gain by his process is 2.33 instead of 1.64. Even on the lower estimate M. Ducharsaing's invention was deemed sufficiently important to warrant the awarding to him of a \$20,000 prize. The present premium is therefore a second one, and the winner is called upon to make a still further improvement. The experiments must be conducted on at least 660,000 lbs. of cane.

**The Sutro Tunnel.**

A correspondent of *Engineering and Mining Journal* declares the Sutro Tunnel second to no enterprise in the West. He says: "Its mouth is in the valley of the Carson river, a stream which washes the eastern base of the Washoe range, in which the Comstock lies. It has been driven a total distance of 17,000 feet up to date, and is making progress at

the rate of 300 feet per month. Not more than 2,800 feet now intervenes between the breast and the nearest mine on the Comstock, the Savage, so that, if the present rate of progression be maintained, about 10 months more will suffice to complete the connection. The lode will be cut at a depth of about 1,800 feet perpendicularly below the surface, and very nearly the center, measuring by the extent of the surface workings. It is then proposed, either by the Sutro Company or by a combination of owners along the vein, to run a drift north and south through each claim until the ends of the veins laterally are reached. This will connect every mine on the vein with the tunnel; will drain the entire workings; and, should these lateral drifts be put under one management and made a common highway, will afford the means of working the entire vein through one opening. It is now eight years since work was first begun at the town of Sutro on the Carson river. The expense of prosecuting the work has averaged about \$1,000 per day, and when the Comstock is reached the total cost will have amounted to about \$3,000,000. The tunnel is double-tracked, as straight as an arrow in its course, with a rise just sufficient for drainage. Three air shafts have been sunk along its course. At the mouth of the tunnel the Sutro Company have laid out a town, have secured magnificent water powers, and expect to realize largely on that part of their investment by the removal of most of the mining and milling operations on the vein from Virginia City to Carson."

**The Wool Clip for 1876.**

The wool clip of the United States for 1876 was about 200,000,000 lbs.; of England, Ireland, and Scotland, about 162,000,000, mostly combing; of the Continent of Europe, about 463,000,000; of Australasia, about 350,000,000; of Buenos Ayres and River La Plata, about 207,000,000 lbs. These are the principal wool-growing countries of the world, and produce 1,382,000,000 out of the estimated 1,419,000,000 produced on the entire globe. The selling value of the total clip would probably aggregate \$450,000,000. Out of fourteen hundred and nineteen million pounds of wool (the estimated clip), there would be fully a loss of 567,000,000 lbs. in scouring, making the net yield of clean wool about 852,000,000 lbs.

**The First English Book.**

At the Caxton Exhibition in the South Kensington Museum in London may now be seen the earliest book printed in the English language, the "Recuyell of the Histories of Troy," upon which William Caxton began his career as a printer about 1474. The copy on exhibition is particularly interesting as having once belonged to Elizabeth Woodville, Queen of Edward IV. and sister of Earl Rivers, Caxton's patron. It now belongs to the Duke of Devonshire, having been bought by the late Duke at the sale of the Roxburgh library, in 1812, for 1,010 guineas.

**Effect of Smoke on Trees.**

Mr. Alcock, who for twenty-five years has been making experiments with trees planted in the vicinity of his cotton mill, near Manchester, England, finds that the plant which does better than any other tree in London smoke will not grow at all in that of Lancashire; but, on the other hand, he has been very successful with the beech, sycamore, birch, wych elm, and Turkey oak, but the lime does best of all. Here is a hint for Pittsburgh and Cincinnati. There is a society in Manchester called the Field Naturalists' and Archæologists' Society, which is urging the planting of trees in and about Cottonopolis.

**Horseflesh for Human Food.**

In 1875 the horse butcheries of Paris furnished for public consumption 6,865 horses, asses, and mules; in 1876 they furnished 9,271, giving 1,635,470 kilogrammes of neat meat. At Lyons, the number has diminished from 1,262 in 1875 to 1,088 in 1876. On the 1st of January there were 58 butcheries in Paris and only 7 in Lyons. At its meeting, on January 9, the committee *de la Viande Cheval* awarded a silver medal to M. Petard, who has nine butcheries in Paris, as a reward for his enterprise.

**A New Air Gun.**

A patent has recently been granted to a well-known fire-arm manufacturer in Gotha, in Germany, for an improved air pistol, which is likely to be largely adopted by the German army, not for use on actual service, but as a means of instructing men in shooting. The advantages claimed for the new weapon over any pattern of air gun previously designed, are simplicity of construction and ease in manipulation. The principle, it is said, can easily be adapted to any firearms at very little cost.

**Lawns.**

Mow lawns sufficiently often to preserve a neat appearance, as, when the grass is allowed to get too long without cutting, instead of saving it entails more labor. During the summer months mowing machines should be set so as to leave the grass half an inch longer than earlier in the season and late in the autumn; this is especially needful where the land is dry, and the roots of the grass are liable to be burnt up.

A LINE of steamers is established between Boston and London, to sail under the Belgian flag; and two steamers of 1,800 tons each have been purchased. The first left London for Boston direct July 5th.

