ONE HUNDRED YEARS AGO.

A Lecture by James Parton.

The speaker began his lecture by the assertion that to-day is the best of all the days the world has seen, which he illustrated by contrasting the habitations of the olden time with those of the present day. He described the noted old mansion of Major Ben Perley Poore, at Newburyport, which three generations of antiquarians have filled with ancient utensils and furniture, and where there are whole suites of rooms furnished in the style of 1700. The speaker fully appreciated the taste and liberality which have created so interesting a museum, in which the whole life of old New England lives again. But, as the residence of a family, how inferior is this old house to the country villa of the present time, with apartments lofty and spacious, and all its implements happy hits of inventive talent—the whole house warmed by one invisible fire, and lighted at night by a turn of the hand! In these two houses we behold the interesting and musty past—the bright and better present.

The lecturer proceeded to descant upon the simple, contracted, provincial life lived in the old houses, illustrating every point by some fact, unimportant in itself, but indicating more than it told. He described the way in which a country clergyman, seventy years ago, had a chaise built—taking into his family a carriage-maker, under whose direction trees were felled in the forest, and the best timber selected. It was all this artist, assisted by the village blacksmith, could do, to get the carriage done in five months; and when it was driven out, the whole population of the village came out into the streets to see it go by, and remained gazing at it as long as it could be seen.

He gave some curious particulars of the incredible ignorance that prevailed in Christendom, especially on scientific subjects, in the last century. In 1770, Louis XVI., of France, touched 2,400 persons for the king's evil, and in 1787 a poor old woman was stoned in Philadelphia as a witch. John Wesley and Dr. Johnson both believed in witchcraft, apparitions, and haunted houses; and Dr. Johnson himself was touched for the king's evil by Queen Anne. The German Goethe, the most gifted young man then living, was seeking the "virgin earth"; and many men in German universities were passing sleepless nights in trying to make gold.

When Prof. Silliman was appointed Professor of Chemistry in Yale College, neither he nor any other man in New England knew anything about chemistry, and he was obliged to go to Philadelphia to learn the merest rudiments of the science. When at last he began to lecture, in that famous old vault sixteen feet under ground, he wanted some glass retorts, and sent to the glassworks, as a pattern, the only retort the college could boast, the bulb of which was broken off from the neck. The glassmaker copied the model with Chinese fidelity, and sent all the new retorts home with the bulbs and necks nicely separated.

The state of medical science, the lecturer thought, was pretty fairly shown by a remark of Figaro, in the "Barber of Seville": "All the garrison take physic to-morrow morning, and I have had interest enough to get the contract for giving them their dose." In the olden time, doctors bled for almost every disease, drawing blood sometimes from the arm, sometimes from the foot, according to their fancy. Mr. Crawford, a candidate for the Presidency in 1824, was stricken with paralysis in the midst of the campaign, and was bled twenty-three times in three weeks, very profusely each time, and then people wondered that it took him three years to get well.

Along with this gross ignorance, there existed a certain dread of the advance of knowledge, as if it were impious for man to pry into Nature's secrets. When Dr. Franklin invented the lightning rod, a Harvard professor had to come forward in a pamphlet and defend Franklin against the charge of presumption. The speaker quoted from an article of 1759, in which the actors of Drury Lane theater were severely reprimanded for imitating thunder and lightning in the tragedy of Macbeth. A similar feeling exists to this day, where a dealer in lightning rods is often obliged to discuss theology before he can drive a bargain.

In point of humanity and benevolence, the progress of man has been so signal that even the cynical and despairing Carlyle could scarcely deny it. It is only ninety-eight years since Howard found the jails of Europe to be filthy dungeons, the keepers of which had the privilege of selling liquor and tobacco to the inmates; so that the jail was only an infernal tap-room, wherein men and women, old and young, festered and rioted together. The very year in which Howard began his work, a woman was burned at the stake in Spain on a charge of having made a compact with the devil. The lecturer drew a hideous picture of the torture and execution of poor Damians, a crazy fanatic, who grazed the skin of Louis XV., of Europe, with a penknife, and was torn limb from limb by four horses, after undergoing unspeakable torments of various kinds. The awful fact of this case was that all France applauded the punishment, and Europe was not shocked at it. No one protested or interceded; and, if we may judge from the memoirs of the time, all Christendom seemed to regard the penalty as just and proper.

Mr. Parton alluded, also, to the criminal system of England at that time, when, after each assize, whole cartloads of malefactors, men and boys, were taken to Tyburn, and executed—sometimes five or six carts, full of criminals, going to the place of execution, one behind the other, the criminals themselves laughing and singing.

Turning from these graver aspects of the subject, the lecturer commented, in a ludicrous vein, upon the manner in which children were treated in the good old times, and gave an amusing account of his own experience, in a New York

school of ancient pattern. Washington Irving, he said, who went to school in New York soon after the Revolutionary war, was so affected by the sight of the punishments inflicted, that the teacher had to let him go home with the girls before whipping time came. Gibbon also records that his knowledge of the Latin syntax cost him a good many tears and some blood. The first President of Harvard College was a great whipper of the students, and at last he pummeled one of them so severely with a cudgel that even the old Boston Puritans could not stand it, and turned him out. At the same time, the speaker contended, weak parents were just as foolishly indulgent toward their children as they are now. He gave, in illustration, that curious scene from the memoirs of the Countess de Genlis, where a spoiled child insists on having the flowery head-dress of the Countess to play with, and sticks to the point until the Countess is obliged to take it off.

The speaker remarked upon the tendency we all have to regard the great evils of the day as things new or very recent. He used to suppose that the contentions of the bulls and bears in Wall street was peculiar to the present time. But when Blennerhassett arrived in New York, toward the close of the last century, he found plenty of bulls and bears here, although the objects of the strife then were lands and lots. There were cornering and rings, and selling short, and all the other devices now practiced, though not called by their present names. Corrupt politics were not new. When Palmerston entered Parliament, he bought his seat for £5,000, which he tells us was the market price in 1804. Lord North's majority in the House of Commons, by which he fought the American Revolution from beginning to end, was a majority bought and paid for; and it was that corrupt House of Commons which dismembered the English Empire, and lost England her chance of ruling the world from the banks of the Hudson. Ireland, Poland, France, owed their disasters to corrupt politics, and the bandit Bonapartes were the penalty which France has paid, and is paying, for the harlot governments of the Bourbons.

Nor were politics in the Colonies entirely pure, as the lecturer showed by some amusing anecdotes. Bishop Kip, of New York, has lately told us how agreeable and dignified New York society was in the time of the Schuylers, the Van Rensselaers, and the Livingstons; but, at the same time, he has given us to understand that to maintain one of those fine families required half a county. This was too expensive; for nothing must be accepted as victory for the human race until every honest and worthy family shall be as truly refined and dignified as the best aristocrat that ever lived.

The lecturer concluded with a number of items, short and sharp, in which the progress made in various provinces was indicated rather than expressed. The *Press*, for example, in London, paid two pence a dozen for paragraphs of news; but recently the New York *Tribune* had paid \$3,000 for a simple cable dispatch. From pack-horses to palace cars—what a step was there!

After continuing in this strain for several minutes, the speaker remarked upon the great difficulty of getting a genuine knowledge either of the past or the present, owing to the fact that crimes, wars, and disasters are recorded at great length, while virtuous actions and the nobler triumphs of peace often escape record altogether. About Napoleon, whom the speaker seemed to regard with contempt, there is a whole library; but of the illustrious Newton we have not a tolerable biography. In illustration of this point, Mr. Parton gave a passage from his own experience, when he held the post of paragraph-maker to a New York weekly. Thinking it unjust that the press should report men's evil deeds at so much length, while passing over good actions, he determined to found a new department, which should record good deeds only. But, after ransacking all the world of journalism, and even keeping a bright lookout in the streets for acts of benevolence and heroism, he was obliged to give up the idea from the impossibility of procuring sufficient material. And yet, during that very time, as at all times, the vast majority of all the actions done in the world were virtuous. It is only those who familiarly know both the past and the present that can realize the consoling truth that, during the last hundred years, there has been improvement everywhere, and real retrogradation nowhere.

WOOD AND IVORY CARVING.

BY J. D. CRACE.

The grain and texture of wood vary so considerably that comprehensive rules of general application cannot be laid down. It is not difficult, however, to show in what respects general rules may be observed, and at what points they must diverge, according to the material to be dealt with. Some woods are of so fine a grain and so close a texture that they are capable of almost unlimited delicacy of finish; and of these, the harder sorts will take a soft-hand polish which places them almost on a par with ivory. I need only refer to that wonderful specimen of wood carving, the cabinet by Fourdinois, of Paris, from the Paris Exhibition of 1867, now at Kensington. Work of this description is, however, so exceptional as not to demand so much notice as the carving of the various woods in ordinary use. In such woods as oak, walnut, or mahogany, we have materials with a more or less pronounced grain or texture, in color not quite even, readily cut with a sharp edge, and of a tenacity altogether different from the brittle nature of stone, enabling it to bear considerable undercutting or perforation without risk. These are all qualities admitting of or requiring special treatment.

To commence with the first-named condition—the visible grain or texture. It is obvious that the workman will select for his carving that wood which is most *even* in texture,

grain, and color, since all strongly marked grain or figure tends to confuse and destroy the effect of his work. Still, even when he has done this, he has in oak a very apparent grain, and here and there some amount of "figure." The carver in oak, therefore, must seek carefully to execute his work in such a way as to overcome the opposition which these qualities present. His lights must be preserved broad, clear, and in high relief, the leading intention of all foliage distinctly marked, the finer lines or stems preserving a sharp outline. The shadows must be bold enough to explain the forms, intensity being given by bold undercutting. Much assistance to the expression may be given by the actual tool marks. Nothing is so fatal to the spirit of wood carving as glass paper. Yet, bold though the execution of the work be, it need not appear coarse; the strength and tenacity of the material allow of thin edges and considerable freedom as to detached and perforated work. But, above all things, let the wood carver avoid a thick, square edge—an edge at right angles with the face of the work. This at once gives his work a *stony* character, which no mere finish will obviate.

I know no examples better illustrating the exact capacities of oak than the exquisite stalls of Amiens (1528), and the beautiful paneled door inclosure by Paul van Schelden, in the Town Hall of Oudenarde. There is an excellent model of the latter in the Crystal Palace. In walnut wood we have a material extremely suitable for the carver's art. There are many varieties, differing greatly from each other; some abounding in strongly marked and often beautiful figure; others presenting a mellow, even grain (with but a slight "streakiness"), and an agreeable gray-brown tone of color. When this latter class of wood is used (and its fine pores are, upon the completion of the work, filled up by a judicious wax rubbing), results may be obtained as satisfactory in the way of wood as those from bronze are in the way of metal.

To those who would learn the style of finish and execution adapted to walnut wood, I would point out the numerous works of the Siennese carvers, the stalls of S. Pietro at Perugia, and of Santa Maria Maggiore at Bergamo, both by Stefano de Bergamo. There are also some admirable benches and a desk in the Sala di Cambio, at Perugia, and the numerous grand doors in the Vatican likewise present excellent specimens. In the museum at Kensington there are a few good works of this class; modern Siennese work they are, but the artist has well caught the style and method of the old carvers.

I do not call to mind any prominent good example of *ancient* carving in walnut wood in the latter collection. The numerous coffers in the Cartoon Gallery have no special merit of execution. I must not be understood to proscribe the use of the figured class of walnut wood. On the contrary, this, beautiful in itself, should be used for such plain, flat surfaces as will exhibit and derive embellishment from its beauty.

It will be observed in the examples I have quoted that a certain *precision of touch* is common to all of them. The lights are crisp and well preserved, always with a view to carrying the eye along the motive of the ornament. If it be a scroll with a fine stem connecting foliage or husks, observe that the eye is always made to travel along the center line of the curve. The section of foliage or stem is such as to take the light in the proper direction. The fine stem is so sharply cut (though sometimes a mere thread) as never to fail in expression, either by means of its fine high light or sharp little shadow. In this way even the finest lines are not allowed to be lost in the dark color of the wood. It will be found also that excellent use is made of the tool marks, which greatly assist the expression of the work.

Holding a place superior, but closely allied to the finer woods, is ivory. This beautiful material has been very highly prized for the purposes of art from the earliest times. Its close, homogeneous texture peculiarly fit it for the finer kinds of carving, and the beautiful surface of which it is capable, together with its soft, even tone of color, have frequently induced artists to adopt it for works of a size considerably beyond what we need consider now. The form and size of its natural growth may, in a general way, be taken to limit the size of its use, which is therefore ordinarily confined to a surface of a few inches. There is hardly any limit to the finish and elaboration of detail which may be given to a few inches of ivory. High relief or low relief appear to equal advantage, and the conditions attached to it appear most simple. The work must never be rough or coarse, and must always exhibit the exquisitely delicate texture of surface which is natural to it. Its strength admits of its being undercut to almost any extent, and of being worked to almost any degree of tenuity, whilst the remarkably soft gloss of its surface exhibits to advantage either the boldest or most delicate roundings.

THE engineering establishments of the Clyde, Scotland, have been well employed. The demand for sugar mill machinery for all parts of the world, has exceeded all previous experience. The value of the general exports of machinery for the past year, were some hundreds of thousands of pounds in excess of those of 1869. The value of the vessels built and supplied with machinery, for 1869, in the Clyde, was estimated at \$25,000,000, and the business in ship building and marine engineering for 1870 was fully equal to that of the previous year. The opening of the Suez Canal has, for the time being, given a direction to the construction of screw steamers, to the displacement of sailing vessels. There are probably not more than four sailing vessels at present being built on the Clyde.

A VEIN of copper has been found in Lycoming county, Pa

Mr. Lockyer on the Eclipse.—American Observers.

Mr. Lockyer, the English astronomer, in speaking of the eclipse, says:

Cloud in Sicily, cloud in Spain, cloud in Africa. Such, at first sight, might seem to be the only result of all the observations made on the eclipsed sun of 1870; such the reception given by Nature to those who wooed her as she had never been wooed before; who approached her full of the rarest gifts which science has placed at man's disposal. But, after all, has the oracle been silent? I think not. Dare we, however, say that the great problem of the corona, that one among the many still outstanding difficulties which the eclipse was invoked to settle, is settled? This, perhaps, would be saying too much; but still, I think, a step in advance has been made. The oracle has spoken darkly, perhaps, but it has spoken.

The system of sketching, introduced for this eclipse, is at once so simple and final, that the only wonder is, it has not been introduced before. The corona must be either solar, atmospheric, or subjective; that is, more or less built up in the observer's eye, while this more or less depends, *ceteris paribus*, upon the brilliancy of the undoubted solar portion. If at all stations, the stations being as wide apart as they have been this time, the drawings be similar, the corona would be undoubtedly cosmical; if dissimilar, then it would either be terrestrial or subjective; and this point could and would have been settled this time, if the weather had permitted, by arranging the observers *in pairs*—that is, dealing with two observers instead of a single one, and so obtaining the eye-variation.

This being premised, what is the result of the very few observations, comparatively speaking, which have been made? In the first place, I submit that the fact that the corona is a compound phenomena comes out in an unmistakable way. We have, first of all, a ring some 5 min. or 6 min. high round the moon, which almost all observers alike have seen; and then we have light beyond, which some observers have seen of one shape, and some of another, now stellate with many rays, now stellate with few, now absolutely at rest, now revolving rapidly.

This, I think, is the keynote of all the observations with which I have become acquainted. I need scarcely say that it is exactly what has been predicted.

First among the fortunate ones who observed the corona, with the telescope, was Professor Watson, of Ann Arbor, who took up his station at Carlentini, and appears to have been the best favored among the Sicilian observers. From his account I gather that there was an almost perfect shell around the sun, 5 min. high, and that outside this shell were less definite rays.

Next I must mention Professor Pierce, the head of one of the American parties, who observed two miles north of Catania, at a private casino of the Marchese Sangiuliano. I believe that he also saw the shell, but of this I am not absolutely certain; but he distinctly observed that the outer corona over the prominences was rosy red, although he did not see the prominences himself. A more beautiful proof of the terrestrial nature of this portion of the corona it would be difficult to imagine; for, of course, at the sun, the hydrogen, which thus tinged it, is incapable of coloring anything, as its own light is absorbed by the transcendent brilliancy of the photosphere; while nothing would be more natural than to suppose that the light, which, in its own atmosphere, should strongly tinge any thing radially illuminated, should be that of the prominences.

But the strongest proof of the variability of the outer portion, and of the constancy of the inner portion, is afforded by the observations made on board the small fleet attempting to save the *Psyche*, off Aci Reale, where the eclipse was observed in unclouded splendor. Here were the ironclads, *Lord Warden*, *Caledonia*, and *Royal Oak*, and the tugs *Weasel* and *Hearty*; besides the Italian gunboat, *Plebiscito*, all within a stone's throw of each other. In all the drawings, and many have been received, we have a ring 5 min., or thereabouts, while the outer portion is as variable as may be.

I think that if the records of former eclipses be now examined, especially Mr. Carrington's drawing of the eclipse of 1851, and compared with the others taken at the same time, additional evidence will be gathered in favor of the compound nature of the corona, which, on the evidence now before me, I consider the great teaching of the present eclipse.

The Characteristics of Silver.

Professor Dembinsky, in the *Mechanics' Magazine*, gives the following facts in regard to silver:

Silver is malleable, ductile, laminable to a high degree, though inferior to gold; it is not changed by the air.

A wire 1-10 inch will support 270 pounds of weight. It is fusible at 1873° Fah., and remains in fusion at a lower temperature than is required to bring it into fusion.

If by means of a solution of borax a small bit of leaf silver be stuck to the top of a small glass cylinder and melted into it, it will give it a golden tinge.

By long exposure to violent heat it has been converted into a glass of an olive-green color. In the focus of a burning glass it yields a white pulverulent matter, and there appears to exist but little affinity between it and oxygen.

Gold and silver readily combine and form a useful alloy. Having different solvents, they may be parted three different ways:

1. By dissolving the silver of the alloy by nitric acid; but for this process it is necessary first to take care that the gold is more than a quarter part of the mass. This process is called quartation.

2. By cementation, or parting by concentration, the alloy

being placed in a crucible, in strata, with the cementing powder. The ingredients of this powder must be such that by an intense heat it will yield either pure nitric or pure muriatic acid vapor, as these will lay hold of the silver and leave the gold untouched.

3. By dry parting, which is by fusion with sulphur, the silver quitting the gold to unite with the sulphur. When silver is alloyed with copper it is rendered hard and fit for silversmiths' work and for coinage.

The alloy for the British coinage is 11 ounces, and one pennyweight fine.

With sulphuric acid, if concentrated, the silver is converted into a true oxide of silver, mixed with a small quantity of sulphate of silver. It is dissolved in nitric acid with rapidity if water be added to the acid, and much nitrous acid gas is disengaged.

The solution is at first blue, but this color disappears when the silver is pure, and degenerates into a green if it be alloyed with copper.

Nitric acid will dissolve more than half its weight of silver, the solution letting fall crystals in hexagonal, triangular, or square plates, which are called nitrate of silver, or lunar crystals, lunar niter, or caustic of silver.

This, melted with a gentle heat and poured into molds as soon as fused, forms the *lapis infernalis* or lunar caustic.

By fixed alkalies, silver is precipitated from its solution white, by ammonia grey, and by lime water olive green. It may be precipitated from a dilute solution by a plate of copper. The silver adheres like moss to the copper, and the liquid acquires a blue tinge from the copper, which is dissolved in place of the silver. It is likewise precipitated by mercury, with which it will also amalgamate. These crystals being articulated into each other give them the form of a vegetation, known by the name of the Tree of Diana, Arbor Diane, etc.

Nitrated silver, being precipitated and separated from the solution, exposed three days to the light and air, and mixed with liquid ammonia, becomes, when dry, fulminating silver. This exceeds gunpowder, and even fulminating gold, in power.

Once obtained it cannot be touched without a violent detonation, the weight of one grain being sufficient to give rise to a dangerous fulmination, and the silver is then found reduced or revived, its oxygen having combined with the hydrogen of the ammonia, by which water is produced. This water instantly vaporizes, and possessing all the elasticity and expansive power of that state is the principal cause of the phenomenon, in which the nitrogen of the ammonia with its whole expansibility bears a part.

It is readily combined with muriatic acid by adding this acid to a solution of silver in the nitric acid, the muriate of silver being precipitated. This muriate is very fusible, running into a gray and transparent substance, like horn, which is then called Luna Cornea, or horn silver. This, being fused with four parts of potash, the silver is found in the purest state, and under a stratum of sulphate of potash and the remaining alkali.

It may likewise be decomposed by several other metals. If re-dissolved in pure nitrous acid, horn silver will be obtained, and a small quantity of a black powder remain at the bottom, which seems to have the property of gold. To appearance, part of the silver is converted into gold, but this is accounted for by the silver containing it, although called pure.

The muriate of silver exposed to the light of the sun soon becomes brown, oxygen gas being disengaged.

Nitrated silver and most of the solutions of metals thus emit their oxygen and become colored.

Carbonate of silver may be obtained by precipitating it by the carbonate of alkali.

Sulphur unites with it, and this sulphuret of silver is known as vitreous silver ore.

An alkaline sulphuret of silver may be obtained by fusion with alkaline sulphuret, and from the solution of this a hydro-sulphuret of silver may be obtained by precipitation by an acid.

Phosphuret of silver is obtained by the fusion of silver and phosphor. A mixture of vitriolic and nitrous acid has the peculiar effect of dissolving silver copiously, also oxidizing tin, mercury, and nickel. dissolving, however, a small quantity of the latter, and having little or no action on other metals.

By dilution the mixture becomes less capable of dissolving silver, and more capable of acting on other metals.

Stucco and Plaster Work.

The treatment of stucco and plaster work may be classed under two heads: that molded by hand, and that cast in molds. The two methods may also be blended. In working plaster-relief ornament by hand, a great freedom of touch and variety of form are attainable and desirable. At the same time, thin edges or deep undercutting are rendered undesirable by the friability of the material. The degree of finish must depend rather on the conditions of application, since its texture may be rendered as fine as that of ivory, and a pure and even tone of color may be obtained, either in the material or by subsequent tinting. Almost any degree of vigor may be given by bold modeling, keeping the lights broad, and not too much softening away the tool marks.

Excellent examples of plaster treatment may be seen in the ceilings of many old London houses of the period of the Georges, and the elegant and spirited stuccoes of both ancient and medieval Italy afford valuable teaching. Where the ornament is intended to be painted or colored, care should be taken to avoid narrow quirks, which may become stopped, and thin edges, which will easily be broken. If the relief be very low, an indented outline is useful. For the

treatment of plaster ornament cast from molds, we cannot do better than observe Arabic or Moorish work. Ornaments produced in this way should be clear, well defined, not undercut, and arranged so as to draw readily from the mold, and require little subsequent finish. It is applicable, of course, chiefly for repeated or diaper ornament. In Moorish work, beautiful soft gradations of shade are obtained, not by rounding, or molding the face or edge of the ornament, but by introducing two or three distinct *strata* of ornament, interlacing with each other, each on its own level—a plan in every way adapted for work cast in molds. In combining the cast and hand-worked methods, the simpler and more rigid parts may be cast, leaving the lighter detail to show the workman's hand.

Cotton Gins.

The return of peace, and the consequent increased attention to the culture of the great southern staple, have caused marked activity in the department of cotton gins.

On account of the present efficiency of the McCarthy gin, the subject in England of at least a hundred patents, or on account of the laudable desire of our inventors to produce a machine which will perform more work in the same time, there has not been a single improvement patented on this gin during the past year. This gin, otherwise known as the roller gin, is composed of two cylinders, revolving toward each other, and provided with a fixed blade which bears against the upper cylinder just above the point where the cotton is presented, and a reciprocating blade which, in its downward motion, strikes against and removes the seeds from the cotton fiber, the cotton being drawn in a clean condition through the rollers. This style of gin is employed to gin Sea Island or long fiber cotton exclusively; but while it works well, it moves slowly. The saw gin on the contrary, which is employed for the common or short fiber, is, in its ordinary form, totally unsuited for Sea Island cotton. The rapidity of its operation, however, has attracted the attention of several inventors, and efforts have been made to adapt it to ginning Sea Island cotton. It is obvious that any improvement which would effect this result would be of great importance, as it would materially reduce the price of long fiber cotton, of which only about forty pounds per day can be ginned by the ordinary roller gin, while a saw gin, if effective, could gin five times that quantity.

Of the improvements made in this direction two have reference to the saw and one to the rib. Those of the former character consist, first, in substituting, for every alternate saw, a disk without teeth, thus widening the distance between the saws and preventing the tearing of the fiber, which is, at the same time, supported by the disks; and, secondly, in constructing each saw with blank places at intervals of, say, every six teeth, the area of blank spaces being about equal to that occupied by the teeth. The improvement on the rib consists in constructing the same with a ridge on the nopper side of the ribs, which ridge serves, to hold the fiber while being acted upon by the saws, and to prevent them from taking hold of it at too short intervals, whereby breaking is apt to take place.

Several patents have been taken out on what may be called the saw roller gin, comprising, as it does, many of the features and advantages of both the saw and roller gin. In this machine there is provided a large cylinder, which may have saws, but which is generally covered with a serrated wire arranged spirally. Between every two circles of this serrated wire is placed a packing of some description, generally metal. Above this cylinder, and revolving in the same direction, is placed a small corrugated or fluted stripping roller, which strikes back and removes the seed, etc., its operation being assisted by a horizontally reciprocating bar with a plain or serrated edge.

A patent was granted during the year for an improvement intended to adapt the ordinary saw-gin to cleaning cotton seeds. It is known that the ordinary gin turns out the seed covered with lint to such an extent that a ton of the seeds will sometimes have as much as eighty pounds of cotton adhering to them. Nor is this loss of cotton the most objectionable feature, for seeds thus covered with lint have a tendency to clog in planting, rendering that operation difficult. The improvement referred to, and it is the only patent issued during the year for the purpose, consists of a longitudinally grooved roller placed in the hopper in front of the saws, and which serves to keep the seeds in a state of continual agitation, every side of each being presented to the saws, which completely remove all the adhering lint.

An ingenious English patentee some years ago proposed to remove this lint by passing the seeds over a flame, and employed an endless apron of wire cloth for that purpose, while an American inventor, at a later period, claimed to have discovered an equally efficacious remedy, namely, the application of gunpowder, sprinkled among the seeds in sufficient quantity, and then fired. As the "sufficient quantity" is the all important question in the process, it will be well to make sure of it before experimenting, as an overcharge might remove the seeds as well as the lint.—*Commissioner Capron's Report.*

NEW STEEL PEN.—A new form of steel pen, containing a reservoir of ink, has lately been introduced by a Birmingham (Eng.) firm, who have named it, with a singular oblivion of the meaning of the word, the "*Automatic Wonder Pen.*" The patentees claim that a fortnight's supply of ink can be carried in the pen; and from the description, we find that the ink is in a solid form, as only a little moisture, such as water, milk, or beer, is required. Pens loaded with ink of several colors are made, and are used by being dipped in the fluid, as is usual with the ordinary pen and ink.