Scientific American.

NEW-YORK, AUGUST 9, 1856.

Accidents.

Our country has acquired a most unenviable notoriety for what are termed *accidents*,—such as destruction of life and maiming, by explosions and burnings, on steamboats; collisions on railroads and steamers. Now if an accident simply means a calamity, against which human care, knowledge, and foresight could not provide, then very few such occur in our country; and the term in general is wofully misapplied. Year after year, since the introduction of steam navigation and railroads, the press has teemed with accounts of dreadful conflagrations, explosions, and collisions, and the remorseless destruction of human life and property. The press, the pulpit, and the forum have thundered against these calamities, and have characterized them as crimes; but they still go on. The groans of the dying and wounded, and the sighs of widows and orphans have gone up against them from every corner of our land; but they do not cease. Are we a reckless, stupid, and cruel people? We would not like to be so charged by the people of another country, but if we abnegate our pride, we shall soon see that we are justly liable to these charges. What would we think of the man who in his great haste to reach the end of a journey, overlooked all the difficulties in his path, and made no provision to obviate or overcome them, but rushed recklessly onward, in sunshine and darkness, tumbling down precipices and falling into rivers, bruising or perhaps drowning himself? We would look upon him as one both reckless and stupid. And is this not equally true of our methods of traveling by steamboat and railroad? It is; we cannot deny it. We are not a cruel people —very far from it—for no people have deeper sympathies for the distressed and suffering; but then the impunity with which we have allowed persons to escape just punishment who, by misconduct and recklessness, have been the cause of dreadful calamities, leaves our conduct open to one of two charges, viz.— sympathy with crime, or disregard for the injured and suffering.

Two weeks since we published the account of a railroad collision and the burning of a steamer, by which about one hundred persons lost their lives, and more than that number were wounded; and now we have to record an explosion on the steamboat *Empire State*, on the night of the 20th ult., on Long Island Sound, and the burning of the steamboat *John Jay*, on the 29th, on Lake George, by which casualties, no less than twenty persons have lost their lives, and a number of others have received dangerous injuries.

From reading the accounts of these catastrophies, we are convinced they could have been prevented by care and forethought, and so could most all accidents. Last year the number of accidents were comparatively few, but this year, those who have charge of the public means of travel, seem to be actuated by an increase of recklessness and a greater disregard of life. When a great public accident, so called —occurs, a great excitement usually exists for a short period against those who have been the cause of it, but it soon dies away,—the public mind becomes callous, and those who have caused it are suffered to escape punishment, for nobody looks after them. Thus it is that year after year, the same round of tragedies are repeated, and will be repeated until the public awakens to a true sense of its duty. No strange and wonderful apparatus are required to make public travel more safe; the means to do so are well known, but not generally applied.

It is for the people, who are the makers of the law, to apply the remedy. The people of Europe feel a conscious security, when they travel on their railroads and steamboats; our people do not. The means of travel can be rendered as safe in the United States as in England, and it is criminal in us not to render them so. The lives of our citizens are as valuable as those of any other nation.

Paper and Paper Making.

In 1854, when printing paper increased in price two and a half cents per pound, owing to the difficulty of obtaining a sufficient supply of cotton and linen rags for its manufacture, it so affected the publication of newspapers in our country and Europe that a number of them were forced, for a period, to curtail their dimensions. This excited the public mind, and appeals were made to chemists and inventors to institute experiments, and endeavor to discover a cheaper substitute; while the proprietors of the London *Times*, who had lost $100,000 by the rise in its price, offered a reward of $5,000 for a new, cheap, and available material. In a very short period after this, scores of persons were reported as having discovered methods of making white paper from a great variety of materials, such as different grasses, plants, woods, &c., and these achievements were sounded forth as notes of victory—that the great object had been accomplished. These were great mistakes, for the great object to be accomplished was not the production of paper of other materials than cotton or linen rags, but a *cheaper* paper, of equal, if not superior quality—from any material. The price of paper has fallen somewhat since 1854, but the impetus given to the public mind to produce a substitute for rag made paper has not yet ceased to exert its influence, nor have mistakes ceased to be repeated.

By the number of the London *Engineer* of the 4th July, ult., we find the record of two new patents granted for manufacturing paper; one to Joseph Barling, Eng., for making paper from the roots of hop vines, and the other to W. G. Plunket and John Bower, Ireland, for manufacturing it from the leaves, stalks, and roots of beets and burdocks. These patents are not of the least value whatever, as paper cannot be manufactured as cheap from these materials as from pure cotton, even before it is made into rags. These patentees have made the same mistake that scores of others have, who supposed they had accomplished the grand object by merely substituting one material for another. There are many persons who know how to manufacture paper from almost every tree and plant that grows, and the process of doing this is neither complex nor secret. It simply embraces the well-known method of treating those plants or woods first with a caustic alkali to remove the resin in them—as from pine wood shavings —or the silicon from them—as in straw,— and then pursuing the same processes that are commonly employed in making rag paper, viz., washing, bleaching, and reducing to pulp. And it cannot but be somewhat mortifying to many recent inventors of paper, from what they supposed were new materials, to be told that there is nothing new about them.

A neat pamphlet on "Paper and Paper Making," got up *con amore* for presentation only, by Mr. Joel Munsel, Albany, N. Y., throws a vast amount of light on this subject, and presents a very clear and condensed history of paper making. We learn from it that in the sixth century the Chinese made paper from rice straw; in 1751, M. Guettard, of France, produced specimens of paper made of the bark, leaves, and stalks of various plants, shrubs, and trees; in 1756, during a scarcity of rags in Germany, attempts were made to make printing paper from straw. The circumstances of that period were very similar to those among ourselves in 1854. In 1765 Jacques C. Schoeffer, of Rattisbone, published a book upon Paper Making, which was printed upon different kinds of paper made without the use of rags, such as cotton of the poplar tree, hornet's nests, sawdust, moss, beech, willow, aspen, mulberry, and pinewood, and also of hop vines, the very material for which Mr. Barling mentioned above has secured a patent; also from burdock, the very material of Messrs. Plunkett's and Bowers' patent; it also contained paper made from broom corn, thistle stalks, cabbage, and barley and wheat straw. In 1776—at the time of our Declaration of Independence—a volume was printed in France upon white paper made from the bark of bass wood, and at the end of it were twenty specimens of other paper made from as many different vegetables.

From these facts we are inclined to the opinion that very little that is new, if useful, has been discovered in paper making during the recent excitement on the subject. We know that some very good white paper has been made from straw, and that the Philadelphia *Ledger* and Saratoga *Whig* have been printed on paper mostly composed of straw pulp, yet when we find that Matthias Koops made good printing paper of straw alone in 1800, and that he was the first who made printing paper from old, waste, written and printed paper—a great invention—we think that straw paper must undergo some further improvements before it will supersede rag-made paper, which still holds its place in the printing art.

We have presented the foregoing for the benefit of those who may still be directing their attention towards improvements in paper making. Let them ever keep it before their minds that the grand desideratum respecting such improvements is not merely the application of a new material, but mainly the production of good and cheap paper. We do not present such views for the purpose of checking or restraining efforts to improve the art of paper making, but to direct efforts for such improvements to the right point of action. We conceive—and it is demonstrable—that no greater benefit could be conferred upon intelligent nations than some discovery whereby good printing paper could be produced in abundance at one half its present cost. Such a discovery would lead to an astonishing diffusion of cheap information; it would lead to greater intellectual activity, and as a consequence, a further advancement in learning and knowledge. Will such a discovery yet be made? We think it will; and it is worth laboring for by all those interested in paper making and paper using, and who wish well to their fellow-men.

There are 750 paper mills in the United States, producing annually 250,000,000 lbs. of paper, which at 10 cents per pound amounts to $25,000,000. If reduced in cost to 5 cents per pound, the saving would be $12,500,000.— To produce this quantity of paper it requires 405,000,000 lbs. of rags, valued at $16,200,000. Great quantities of these rags are imported from abroad, and oftentimes infectious diseases with them. An improvement in paper making that would at once supersede the necessity of importing rags would be a great blessing to our country.

Drigg's Pianoforte Improvements.

Several weeks since we illustrated and described the above invention in our columns, and chronicled at the same time the fact that English and French patents had been applied for. As soon as the valuable qualities of the invention became known in England, an onslaught was made upon the patent by interested parties, resulting in a vigorous attempt to prevent the grant of the great seal. This opposition was, of course, strongly resisted. Testimony was required and given before the Patent Commissioners, and they have given a decision in Mr. Drigg's favor. He has come off with flying colors. The great seal having been granted, his invention may now be considered as fairly planted on the other side of the Atlantic.

Recent American Patents.

Machine for Planing Iron.—By E. C. Cleveland, of Worcester, Mass.—Consists in the employment of a friction box connected by gearing with the screw which operates the tool stock, the friction block being provided with adjustable dogs. The above parts are so arranged that the tool may be adjusted or fed at varying distances as desired, at each stroke of the bed, according to the nature of the work.

Improved Rig for Sloops and Schooners.—By George W. Gerau, of Brooklyn, N. Y., opposite New York City.—Consists in having the mainsail of triangular form attached to the lower boom as usual, and having a single block or halyard attached to the peak or upper end of the sail, for the purpose of raising it. The lower end of the topsail is attached to the outer end of the lower boom, the upper part being attached, as usual, to the topmast. By this arrangement the mainsail is made rather smaller than usual, and the topsail rather larger. The gaff boom is dispensed with, and also one set of halyards, rendering the sails easy to manage or work, and materially reducing the expense of rigging fore and aft vessels.

Improved Valve Motion.—By William H. Guild and William F. Garrison, of Brooklyn, N. Y., opposite New York City.—This invention consists in certain novel, simple, and effective means whereby the valve is caused, as the stroke of the engine piston terminates in either direction, to have suddenly imparted to it the necessary movement to admit steam to act on the piston, to effect its return. The steam is made to act on a piston which is fitted to work perpendicularly to the valve in a cylinder forming a part of the valve driver or device employed to drive the valve. The piston is supported against the pressure of steam by a rocker, or its equivalent.

Improved Coal Scuttle.—By James Myers Jr., New York City.—The ordinary coal scuttles are made of sheet iron, and the bottoms soon rust off at the joint between the bottom and sides, owing to the accumulation of moisture or water at that point.

This invention consists in having cast-iron bottoms provided with flanches at their edges, to which flanches the lower part is riveted.— The cast-iron bottom is made concave, so as to receive the water which the coal contains. The water is thus prevented from reaching the joint, and the scuttle is rendered far more durable, without any increase of expense in the manufacture.

Improved Carriage Clip.—By Francis J. Flowers, of Brooklyn, N. Y., opposite New York City.—In our engraving the iron or goose-neck attached to the shafts, is indicated by A, and the iron which receives the goose-neck and fastens it to the axle by B. Bolt C is welded to and forms a part of A. B is made in hook shape, and receives A with the fixed bolt, C, in its center. A cap piece, D, is then placed upon B, which secures C, and completes the clip. E is a bolt for holding D. D is further secured by the cap nuts F, which fit over the shoulders formed on B and D, a washer being interposed. The nut screws upon the bolt, C, as shown. Fig. 2 is a sectional view of nut F.

Fig 1

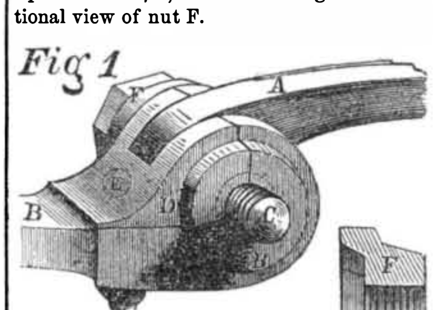


Fig. 2

This improvement prevents all rattling of the clip, which is a very common objection, and it forms a strong, cheap, convenient, safe, and durable fastening. The arrangement is such that there is little or no liability to accidental loosening or separation, although, when desired, it may be quickly taken apart. It is an excellent improvement. The inventor is a practical carriage maker, and a prominent contributor to *Saladee's Coachmakers' Magazine.* Patented July 8, 1856. Address the inventor as above for further information.

Carving Machine.—By Nelson Ruger, of West Farms, N. Y.—This invention relates to a new and improved machine designed chiefly for carving portions of furniture, or ornamental pieces to be attached thereto. A drawing would be required to explain the parts.

Improved Printing Press.—By Thos. Parkes and Alfred Parkes, of Brooklyn, N. Y., opposite New York City.—Consists in the employment of rotating printing cylinders fitted in vibrating bearings, and connected by gearing with a cylinder having flat forms attached to its periphery, whereby impressions may be taken from flat forms on a rotating cylinder in an expeditious and perfect manner. Consists, second, in a peculiar means employed for presenting the sheets to the printing cylinders whereby both sides of the sheet may be printed before they leave the machinery. Third, in a peculiar device for feeding two or more printing cylinders from one feed-board, and causing the sheets to fall, in one pile, from the machine. Fourth, in the employment of an elastic or yielding feed and fly board.

Improvement in Saws.—By T. T. Prosser, of Oconomowock, Waukesha Co., Wis.—Consists in straining the saw by placing it between levers, which work upon pivots, and are adjusted by set screws, and having the lower end of the saw attached directly to the pitman, the upper end of which bears against the under side of the lower frame. The above parts are so constructed and arranged that the saws may be perfectly strained and thrown out from the kerf, which is thus kept free from saw dust.

Pickpocket Detector.—By S. W. Ruggles, of Fitchburgh, Mass.—This contrivance consists externally of a case, resembling that of a watch in size and shape. It has a fob chain or string, and is worn in the pocket like a watch. Within the case is a bell and spring hammer, the latter connected with the fob chain. The supposition is, that the thief will suppose the fob chain to be attached to a *bona fide* watch, and will accordingly pull the chain in order to obtain the prize. But instead of getting the watch, the *watch* gets him. The pull sounds the alarm bell, the owner of the watch grabs the rogue, and the policeman conducts him to limbo.

Improved Smut Machine.—By G. H. Starbuck and L. D. Gillman, of Troy, N. Y.—Consists in a combination of conical plates or funnels, rotating screens, etc., whereby the grain is most thoroughly cleaned, and delivered free of all impurities.

Improved Turning Lathe.—By G. W. Walton and H. Edgarton, of Wilmington, Del.—Consists in the employment of intermittingly rotating feed rollers, and expanding cutters fitted within a hollow rotating cylinder. This invention is intended for turning articles of irregular forms, such as ornamental table legs, balusters, tool handles, &c. It is said to perform the work with great excellence.

Stave Machine.—Charles Hoyt, of West Aurora, Ill.—Relates to a new device for jointing the staves and giving them the proper shape or swell. The invention consists in attaching the cutter heads to vibrating frames, which are operated by means of jaws, inclined planes or wedges, and springs, whereby the cutter heads are expanded and contracted so as to perform the required work in a rapid and excellent manner.

Machine for Making Gutta Percha Pipes and Covering Telegraph Wires.—By James Reynolds, of New York City.—This invention is for the purpose of forming tubing, or coating wires—both operations being substantially alike—by forcing the gutta percha, while rendered plastic by heat, through a die. The necessary pressure for this purpose is applied by a piston working in a cylinder, in which the material is placed and kept heated, or by other suitable forcing apparatus.

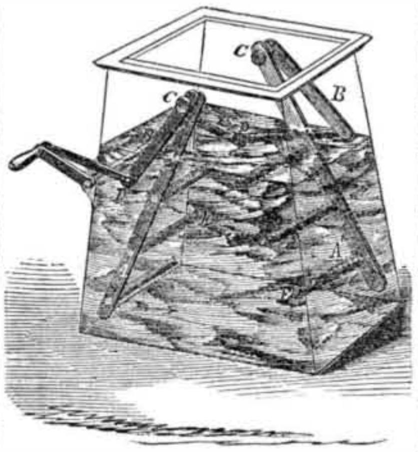
One improvement consists in connecting the cylinder with an air pump, or other suitable exhausting apparatus, whereby any air remaining in the said cylinder after it has been filled as full as possible with gutta percha and closed, may be extracted before applying the pressure. The manufactured article is thus rendered free from blow holes, and is perfectly firm. This is a result of great importance for small tubing and the covering of fine wire.

A second improvement consists in arranging the die and core by which the tube is produced or the covering of the wire performed, in a position transverse to the direction in which the piston works to produce the pressure, to allow a hollow core to be used for the admission of air into the tube as fast as it is formed, and also to prevent it from collapsing by the formation of a vacuum within. The same arrangement also permits the passage of the wire through the die when it is being covered by the percha.

A third improvement consists in providing the stomach in which the die is placed, with an opening, to allow of the constant escape of a certain quantity of material during the operation. By this means the quality of the manufactured article is rendered more uniform. Without such an arrangement it is almost impossible to produce small tubing or cover fine wire with any degree of uniformity of thickness.

A fourth improvement consists in the employment of a continuously revolving trough of water, suitably arranged to receive the tube or covered wire as fast as it leaves the die, and coil it up in the water to cool it, to prevent the coils from sticking together.

Improved Churn.—By John Lamb, of Callicon Depot, Sullivan Co., N. Y.—In this improvement the churn box is made of wood in the usual manner, but in our cut it is shown as if it were composed of glass, in order to exhibit more clearly the arrangement of the interior parts.



The invention consists in the employment of two swinging dashers, A A′, which are suspended from pivots, C, within the churn and work in opposite directions. The beaters, E, of one dasher passing between the beaters of the others, whereby the cream is subjected to the requisite agitation or commotion, so as to produce butter in the shortest possible time, and with but a small expenditure of power.

The dashers, A, are connected together, and also connected with the crank by means of rods, D. When, therefore, the crank is turned, the dashers, A, move simultaneously in contrary directions. This is a very simple arrangement of parts. Patent applied for. Address the inventor, as above, for further information.

Clover Seed Harvester.—By C. B. Wheeler and Austin Bascom, of Steuben, Ohio.—Consists in the employment of a reel and cutters placed within a sliding frame, and an endless apron arranged within the body of the vehicle. By the use of this invention clover seed may be harvested with great rapidity from the standing stalks.

Notes on Patented Inventions.—No. 17.

Soap Manufacturing.—This useful article, so necessary to cleanliness, health, and comfort, has been known and used in some form, for ages. The manufacture of that which is known by the name of soft soap is pretty generally understood. It is simply a compound of a caustic alkali and some greasy or oily substance. They are either boiled or kept together and frequently stirred under a moderate heat until they combine, and form a thickish ropy compound, very different in its nature from either of the two ingredients separately. The common way to make it is to use a potash lye, made by lixivating wood ashes; into this, grease is introduced and boiled until chemical union is formed between the two. A rude way to test the strength of the lye is by placing an egg in it; if it floats, the lye is considered of sufficient strength. Another method of making soft soap is to introduce the lye among the grease in a barrel, and keep stirring it, at intervals, for some days, out doors, during warm weather. The barrel (an iron cauldron is better) must be covered during the intervals of stirring. Fish oil boiled in lye until it assumes the consistency of honey makes good soft soap. This kind of soap is simple and easy of manufacture. It was used in all parts of the world long before hard soap was known. No glycerine is produced in making it, and from the same amount of materials a greater quantity is made than hard soap; hence it is the cheapest, and is, therefore, the most economical for washing coarse wool, dyed cloth, &c.

Most of our farmers make their own soft soap, using refuse fats and greasy matters for the purpose. They also make their own potash lye from their fire-wood ashes. Sometimes they experience trouble in making their soap—the contents of the soap cauldron will not thicken—the materials refuse to form into soap. In making their soap, some talk of good and bad luck, according to their success or want of it. There is no such a thing as luck or chance governing the laws of chemistry, otherwise they could not be laws. When soft soap does not readily form in the kettle by boiling, it is owing to one of two causes, viz., too much carbonic acid in the lye, or too much and too great strength of lye. If the ashes from which the lye is made contain numerous pieces of charcoal, and if they have been freely exposed to the air the lye will generally contain too much carbonic acid.—To remove this acid from the lye, slacked lime is generally put into the bottom of the leaches; but the best way to use lime is to stir about a handful to two gallons (it must be fresh slacked, or it will not answer) in the lye itself, then allow it to settle, and use the clear. The carbonic acid in the lye unites with the lime and forms chalk, which falls to the bottom, and leaves the lime alkaline-caustic. When soft soap is slow of forming, on account of the quantity and strength of the lye, the addition of some common salt has been found to remedy the defect and complete the process. The soft soaps are termed *potassa* soaps, the hard *soda* soaps, because the latter is made from the alkali soda, and the former from the alkali potash. Common salt is the chloride of soda—soda and chlorine—therefore, when salt is added to a very caustic potassium lye in the soap boiler, an exchange of bases takes place, the soda uniting with the fatty acid, and the chlorine with the potassium alkali. A harder or thicker soap is formed with the soda and fatty acid than with potash; many persons are acquainted with the practical results of the use of salt in soap-making who do not know the why and wherefore of its use.

Pure soap may be termed a *salt*, because it is the product of an alkali base and an acid. Numerous are the substances which have been and are still used to increase the quantity of soap. Some of these form curious mixtures. In July, 1837, D. E. Stillwell, of Utica, N. Y., secured a patent for converting hard into soft soap by dissolving 8 lbs. of common bar soap in four quarts of water, and adding to it, while warm, 4 ounces of the subcarbonate of soda. This was an improvement in the wrong direction.

On March 23rd, 1829, Arthur Dunn, of England, obtained an American patent for making soaps in a steam-tight soap kettle, when the liquor was boiled under a pressure of 57 lbs. to the square inch; he also claimed the addition of soluble glass.

To make common yellow soap he employed 700 lbs. of tallow, 300 lbs. of palm oil, 300 lbs. of common rosin, and 150 gallons of a caustic soda and silicate lye of a specific gravity of 1·10. These were introduced into the closed steam kettle, and boiled under a pressure of 57 lbs. for one hour, they were then drawn off into a cooler to cool down and to be cut in bars.

The soluble glass or silicate of soda, was made by taking 112 lbs. of small pieces of black flint, putting them into the steam-tight boiler, among 100 gallons of caustic soda lye, of a specific gravity of 1·10, and boiling them under steam pressure of 57 lbs. for four hours. It was then drawn off and cooled down, and used in the caustic soda lye to make the soap—no definite quantity was claimed. The above is not only information respecting the manufacture of soap, but also respecting a mode of making soluble glass—silicate of soda, and may be useful to many persons. Soluble glass can also be made by boiling sand or flint, in an open vessel, with a strong caustic lye. The use of steam (though not under pressure,) for boiling soap, was first applied in London in 1825. In 1830, two patents were granted to citizens of Baltimore, Md., for manufacturing soap by steam; they were of little importance.

In December, 1844, Mr. Dunn took out another United States patent for purifying and bleaching oils and fatty matters in soap-making. The process consisted simply in causing streams of heated air to pass through the fatty matter when combined with suitable saponifying materials.

In March, 1846, D. F. Albert, of France took out a U. S. patent for making soap by saponifying butchers' offals, by means of a strong caustic alkali. Our Indians, from time immemorial, have made a soap of the entrails and brains of animals and the lye of wood ashes. They use this soap in preparing skins for moccasins, &c. The skins are pounded and also steeped in it, then dried, and afterwards smoked in a pit dug in the ground. Thus prepared they are always soft, pliable and resist the action of water better than common leather. On the same day a patent was granted to John K. Vaughan and Evan H. Everman, of Philadelphia, for a soap made as follows:—Take good yellow soap 900 lbs., water 2100 lbs., borax 75 lbs., common salt, 37 1-2 lbs., good glue 15 lbs., palm oil 10 lbs. The bar soap was first dissolved in the water in a boiler, then the other ingredients were added gradually, and well stirred; when the vessel was brought to a boiling point, the borax and salt were added last, stirred well, and the fire withdrawn. This was a method of increasing the quantity but not improving the quality of soap.

On July 27th, 1852, Wm. McCord, of New York City, obtained a patent for combining ammonia with soap, by the use of kaolin. In December, 1853, Ira F. Payson, of New York, also obtained a patent for the use of ammonia with other ingredients in the soap, to keep it moist.

In June, 1854, T. C. Taylor, of Camden, N. J., obtained two patents for making soap; one was for the use of the bran of cereal grains, dissolved in caustic alkali, and the other for dissolved potatoes—skins and all. They were used as ingredients of the soap. In January, 1855, R. A. Tighlman, of Philadelphia, was granted a patent for making soap under high heat and pressure with the use of carbonated alkalies—the high heat and pressure was patented by Dunn before.

Potato starch, glue, dextrine, ground flint, clay, bone dust, and many other substances, have been used in making soap, but not to improve its quality.

This subject being one in which every person is practically interested will be continued in our next number.

British and French Rifle Shooting.

A rifle shooting match came off a short time ago near Paris between Captain Wellington Guernsey, late of the Turkish Contingent, and Lieut. Arnaud, of the Chasseurs de Vincinnes, for 500 francs a side. The distance was 150 yards, and the mark 25 pigeons for each.—Lieut. Arnaud used one of Minie's latest improved rifles, and Capt. Guernsey used one of the Enfield military rifles now supplied to the British army. Lieut. Arnaud killed eighteen birds, and Capt. Guernsey twenty-four out of the twenty-five in consecutive shots—missing the last only. Quite a number of French officers were present.

Coke for Iron Smelting.

A correspondent writing to us from Athens, Ga., states that he is in the foundry business, and they use coke in smelting their iron for castings, because it is cheaper in that place than coal, but it causes a great deal more *slag*, and the castings are more brittle. He is desirous of finding out a remedy for this evil. We cannot conceive how the coke can generate more slag than the coal from which it is made. We can conceive how it may produce more brittle castings by the absence of volatile matter, thus leaving too much carbon in the metal when drawn off for castings. By keeping the molten metal exposed for a longer period to the blast in the furnaces, a portion of the carbon will be thrown off in the form of carbonic acid, and thus afford a partial remedy. Perhaps some one who has experienced the same difficulties, and who has discovered a remedy, may be willing to communicate the same to the public for the benefit of our correspondent, and many others who may be laboring under the same disadvantages. By the use of wood in the furnace, or some niter, &c., the evil may be remedied, but these will increase the expenses, and this is what is desirable to avoid.