



### The Rifle Question.

MESSRS. EDITORS:—There is no question of the day in which I feel a greater interest than that of the rifle. I have been much pleased in reading the few articles which have appeared in the SCIENTIFIC AMERICAN from time to time on the subject, and hope to see them not only continued, but greatly enlarged, and more specific.

The rifle is preeminently the American arm. To the skill and efficiency of our forefathers in its use more than to any other means are we indebted for our success in the Revolution. Who that has not read of the marvelous skill of Marion's men—it being asserted that one of them, a mere lad of 14, could invariably snuff a candle at 100 yards off-hand. Such skill in the use of the rifle was not an exception, but the rule then. The skill of western and southern men in its use has long been proverbial. Target shooting is one of the pastimes of those regions, as I can testify from a long residence there; and that together with its constant use in hunting, is what has given them their skill and proficiency in the use of the rifle. All that however has been done with the old-fashioned muzzle-loading rifles, of small bore and a range far inferior to the improved rifle of the present day. In the older portions of our country, where game has become scarce, rifle shooting has become sadly deficient, the only practice of that kind now prevailing being mostly confined to what are termed "sporting men," who shoot at a target with sporting rifles, often with telescope sights, and almost always at a rest. By these means they are enabled to make some very fine shooting; but for practical purposes such shooting is of very little account. Not one time in ten does a man in hunting or in fighting get a chance to shoot at a rest, and hence it is that these fancy shots almost invariably fail in bagging as much game as the rough western hunter, when the two hunt together. To render rifle shooting practically useful a man must be ready to fire at a moment's warning, any where, and at any time. Of course, this necessitates his shooting off-hand, which is the only true way to shoot, for all practical purposes. You doubtless recollect the statement which went the rounds of the press some time since, about Queen Victoria hitting the bull's eye, and how amused we all were on being told afterwards that she did it by having the rifle screwed fast in a vise, then standing at a distance and pulling a string attached to the trigger! Now, all shooting at rest, partakes more or less of that character. I cannot see in it any great exhibition of skill. Of course, if the range of the rifle is sufficient and the sighting accurate, and the gun held or laid solid on the rest, the ball will hit the mark—provided it is not varied by the wind from its course; but what skill is there in that? A child may pull the trigger in such a case, and prove itself as good a shot as the best of them. But to hold the rifle without any rest,—by the aid of the hands and shoulder alone—and plant the ball exactly where it is desired, is a very different affair. In that there is skill, a skill so applied as to produce a practical and beneficial result, which cannot be obtained in any other way, or by any other means. To do this is not as difficult as most persons imagine. All that is required is constant practice and care. The more a man shoots at a rest, the more unskillful does he become in off-hand shooting; that is, unless he also keeps up the practice of the latter. To become a good rifle shot, a man should be constantly practicing. He should not only shoot at marks set up for the purpose, but he should take aim, and also fire at objects of various kinds all around him, and at different distances. To be a good marksman, he must also be a good judge of distances, so as to know whether to aim high or low, and also to take into account the force and direction of the wind and its effect upon the ball. Above all he must know his gun. He should have practiced with it so constantly as to know exactly how and where it carries, its range and peculiarities, if it has any. In short, the one great rule in rifle shooting more than in almost any other art, is that "practice makes perfect." It was

this which gave to our fathers, and which now gives to our frontiersmen, their skill and proficiency in the use of the rifle. They seldom go from home without it. It accompanies them in their travels and in their rambles, whether for pleasure or business, through forest and field, over mountain and prairie. It is their constant companion, and on its operation they place implicit reliance. No man can use the rifle successfully, either in hunting or fighting, without that reliance on it, and that can only be acquired by practice. An experienced shot can almost always tell at the instant of firing, whether or not he has been successful; at least there is nearly always an impression on the mind which is generally correct.

In the older settled portions of our country, this constant practice with the rifle has greatly fallen off, and the result is plainly visible among the regiments now here. In many of the regiments from the cities and towns of the eastern and middle States, there is a terrible deficiency in the use of the rifle. Many of the men probably never fired one a dozen times in their lives before; and the consequence is that almost any western youth can beat nine out of ten of them in off-hand rifle practice. How can such men have confidence in themselves? and if not, how can they be relied upon in battle? As well might we send women to battle, as men who don't know how to use the arms placed in their hands—who, in all probability shut their eyes when they shoot, and are as likely to send their balls flying over the heads of the foes or into the ground not twenty rods off, as into the ranks of the enemy. These remarks are not intended as reflecting at all upon the men; but only to show how important it is that we keep up our practice in all parts of the country. The men are naturally as competent and brave as any; but they lack the practice necessary to make them efficient. When it is borne in mind that it is now an established fact that a given weight of projectiles fired by competent men from the improved long range rifles, is more destructive to an enemy than the same weight fired from artillery, a person will see at a glance, that rifle shooting is a very important art, even in a national sense. Why it is that there is not more target practice among our troops here I am at a loss to understand, unless it is that they expect or desire to see the war carried on, and "nobody hurt" on the rebel side. The cost of the ammunition used is the only excuse I have heard given; but it strikes me that the lives of our soldiers, to say nothing of the success of our army, is of quite as much value as the ammunition that would be used in practicing.

It strikes me as a very important matter, that the practice of rifle shooting should be revived throughout the country, and especially so at the present time. I was much pleased with your remarks about a national rifle association. We ought to have not only a national, but county, town and neighborhood associations of the kind. Frequent trials should be had and prizes offered, to stimulate the people everywhere to participate. A system of prizes, similar to that adopted in the English army, might be adopted in ours with much usefulness.

What is the best rifle, is a question far more difficult to determine; but of that I will, with your permission, speak hereafter.

RIFLEMAN.

Washington, Nov. 18, 1861.

### A Cheap Prism and a Cheap Newspaper File.

MESSRS. EDITORS:—I see in the last number of your paper an interesting account of the spectroscope, which set my wits to work to construct one for my own amusement; not having the chandelier ornaments or any solid pieces of glass to construct the prisms or I took a very clear thin pane of window glass, cut out two pieces to suit my taste, cut a tin back and bottom for the third side, fastened with tin strips and set the glass with putty, making a very pretty prism with open top in which to turn some clean water when I wished to use it. The prism would have to sit on its end, instead of lying longitudinally, which I suppose makes no difference in the reflection. I think it has some advantages over the solid prisms. Defects in the material used do not show so plainly, the cost is slight even for a large one, and they might be constructed tight like a spirit level and used in any position. Most people have skill enough and material handy for the construction.

Please inform me through your paper if there is

novelty or value enough in it to entitle it to any notice. It seems to me that the rays of light will be better admitted and refracted in pure distilled spirits than in glass.

I believe there are three or four copies of your publication taken in this community. I use it weekly, and consider it of more value and interest than any other paper we take. I have constructed a very cheap, handy file for holding a paper, and, though some may consider it heavy, it answers the purpose without injury to the paper. Take two strips of wood the length of the paper when folded, and a quarter of an inch thick, the other half an inch, both to be an inch wide. Gage them through the center and put in three inch and a quarter screws equidistant. In the thick piece, in the side that is to be the back, put two short screws, to screw in or out as it may be desired to increase or diminish the size of the file. This forms a pair of clamps, into which may be slipped a brown paper, or a leather cover, into which the papers are put and then the clamps are screwed together, either with a screw driver or with thumb screws.

H. G. HOLLISTER.

Mount Lebanon, Mass., Nov. 7, 1861.

[If our correspondent will fill his prism with the bisulphide of carbon he will have the prism used by Bunsen and Kirchoff in their apparatus, which is illustrated on page 20 of our current volume. Water, however, makes a good prism.—Eds.]

### Electro-plating Cast Iron.

MESSRS. EDITORS:—In your number of the 16th inst., you inform L. B. J. that "it is very difficult to cover cast iron with any metal by the electro-plating process." So it is; but more difficult to cover hard steel, or even some kinds of soft steel. I have experimented for years, as an amateur, in this beautiful art, and have concluded that nothing but the combination numbers of the lottery men can represent the phases to be met and understood, in order to be quite successful in this pursuit. If you will permit, I will suggest to him (or you can) a process which has never failed me, and similar to one I have seen in print since I commenced it. It is very simple thus: chloride of silver (nitrate of silver dissolved in rain water and precipitated with pure muriatic acid and washed well), dissolved in a solution of cyanide of potassium; the chloride—being kept in excess—should be used as a bath for plating. The iron, if practicable, should be heated slightly red hot, and cooled in water, then cleaned in dilute sulphuric acid in contact with a piece of zinc, washed thoroughly, and quickly introduced into the silvering bath. If the work does not admit of being heated, clean thoroughly with an alkali, wash, apply the dilute acid a longer time, brush and wash thoroughly, and immerse immediately into the silvering bath as above. Permit me to say that this silvering solution seems to me better for almost all purposes and all metals, than that made of the cyanide solution, for one reason, that nearly all the cyanide of potassium for sale, contains iron, which is not developed in the bath recommended, as in that made of cyanide of silver.

Another good reason for its use is that it is less expensive and troublesome, the nitrate of silver being converted into the chloride almost without cost, whilst if the cyanide is used, it must be at considerable expense of decomposed cyanide of potassium, as you will perceive at a glance.

R. H. A.

### Theory of Consumption.

At a late meeting of the Academy of Medicine, Paris, Dr. Piorry read a paper on the treatment of consumption, in which he laid down the following propositions. First, pulmonary phthisis is a combination of multifarious variable phenomena. Second, there does not and cannot exist a specific medicine against it. Third, neither iodine nor its tincture, neither chlorine nor sea salt, nor tar, are anti-phthisical remedies, as some have pretended. Fourth, while there are no specifics against this disease, there are systems of treatment to be followed in order to conquer the pathological states which constitute the disorder. Fifth, in order to cure consumptive patients, the peculiar affections under which they labor must be studied, known and counteracted by appropriate measures. Sixth, the tubercle in the lungs cannot be cured by the use of any known remedy, but good hygienic precautions may prevent its development.

**A Moss Basket.**

MESSEB. EDITORS:—At your request I send you a statement regarding my patent Moss Baskets, what they are designed for, and the advantages they effect. I will, in a few words, describe them so that your readers may have an idea of them. After several years of continual experiment, I have at last succeeded in growing successfully and perfecting equal to any of the most approved methods practiced, all kinds of fruits and flowers both for use and ornament.

As you are aware, when I procured my patent for this valuable invention through your office, I exhibited, at the Patent Office for examination, a basket containing a black Hamburg grape vine in full bearing, which was pronounced by competent judges equal, if not superior, to those grown in the house in the ordinary way; also a basket containing a peach tree in full fruit, of most excellent flavor, fine form and beautifully colored. These were all tested by connoisseurs, and pronounced by them superior to any ever offered for sale, or grown in the ordinary ways.

An engraving of the basket of grapes recently presented to Mrs. Lincoln, is herewith annexed, so that your readers may judge of its appearance. This method of growing either fruit or flowers is preferable to any other, for its beauty, simplicity, and success, as less care and attention are necessary than for ordinary plants, and they will last for years without renewing or shifting. All kinds of plants, fruits and flowers can be grown in this way, especially pineapples, oranges, figs, grapes, peaches, peas, &c., beside all such small fruits, as currants, gooseberries, strawberries, &c., to say nothing of more beautiful and attractive things, such as the camillas, roses, azaleas, fuchsias, orchids, ferns and variegated leaved plants, which, when once seen and appreciated, no one will be without their "hanging gardens."

What so beautiful for the sick room as a basket of choice fruit or flowers that will not decay or fade, but continue to grow and bloom, and cheer the drooping invalid? Or for the parlor window or dinner table, what more elegant than these baskets all covered with the choicest specimens of fruit or the finest of blooms?

Thousands of persons have visited, during the past season, the residence of the Hon. W. B. Lawrence, at Newport, R. I., to see these wonders and novelties in gardening, and all were surprised and delighted with the beauty of these baskets. They have not been exhibited in public except at the last meeting of the Brooklyn Horticultural Society, when a basket containing a pineapple in full maturity was shown, and pronounced by several distinguished horticulturists superior to any they had ever seen grown either in England or the West Indies; also a basket of strawberries in full fruit, ripe, partly ripe, and in flower, now in the middle of November; also a grape vine, peach tree and two baskets of miscellaneous plants in full flower. All persons desirous to see these, or to obtain any information regarding them, can do so by calling upon or writing to my agent, Mr. Miller, No. 29 Broadway, New York.

ALFRED CHAMBERLAIN.

Newport, R. I., November, 1861.

[Mr. Chamberlain has recently shown at our office some very beautiful specimens of his hanging fruit garden, which was to us a very pleasing exhibition, and enables us to speak of his skill from actual knowledge.—Eds.]

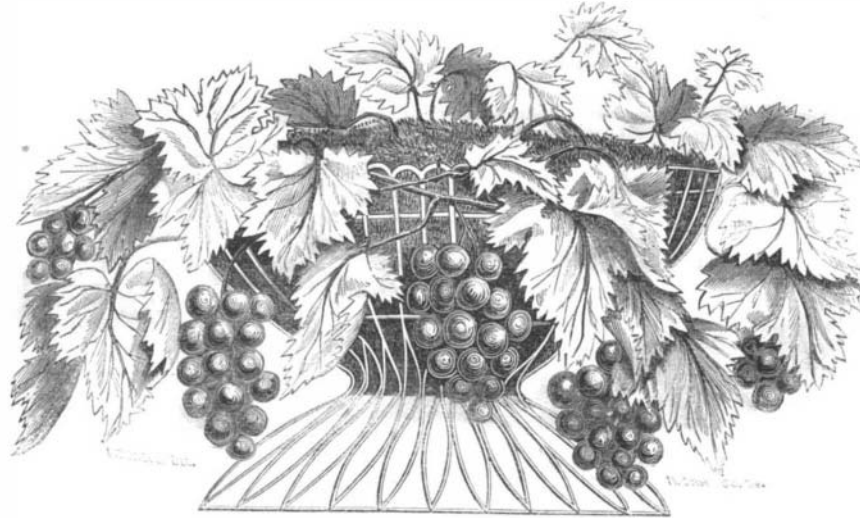
**Bessemer-Kelly Iron Patent.**

MESSEB. EDITORS:—In your number of Nov. 16 you ask if the patent for my air-boiling process can be bought? In reply, I would say, that the New England States and New York would be sold at a fair rate. Should any parties wish to negotiate for the purchase I would be pleased to hear from them on the subject. I removed from Kentucky about three years ago, and now reside at New Salisbury, on the Cleveland and Pittsburgh Railroad, three miles from Hammondsville (my Post Office) and sixty miles from Pittsburgh. Accept my thanks for your kind efforts in endeavor-

ing to draw the attention of the community to the advantages of my process. WILLIAM KELLY. Hammondsville, Ohio, Nov. 16, 1861.

**Vermont Wool Clips.**

The Vermont Register states that a lot of yearling sheep, belonging to E. S. Howell, of Cornwall, Vt., yielded an average clip of 10½ lbs per fleece, and a lot of two-year olds yielded 12 lbs 14 oz. per fleece. A flock of two-year olds belonging to E. Sanford, of the same place, averaged 16 lbs 6 oz. per fleece; the flock of A. H. Sperry, of the same place, averaged 10 lbs 4 oz. as the growth of 11½ months. Several flocks of F. D. Douglass, of Shoreham, in the same State, have averaged 11 lbs 5 oz. per fleece. In all these cases, the wool was of a superior quality. Such sheep must be profitable, as the wool of American full blooded merinos now brings from 44 to 48 cents per pound, that of three-fourths merino from 40 to 46



CHAMBERLAIN'S PATENT FRUIT-GROWING BASKET.

cents, and one-fourth merino from 38 to 40 cents. A flock of 100 such sheep averaging 10 lbs to the fleece at 40 cents per pound, yield the handsome return of \$400. Sheep can be fed on rough lands where cows would starve. In winter the sheep takes about the same quantity of hay as that required for one cow.

**Exostosis of a Tooth.**

The ingenuity of man has been most fertile in hunting up hard names. The dictionary is full of them, and simple, honest minded people are often amazed to know what it all means. We have a fair sample in the above heading. Reader, don't be afraid to peruse the following statement—the *Exostosis* will be made perfectly plain before you get through.

The following case, reported in the proceedings of the Buffalo Medical Association, affords a striking example of the serious disturbance which may be produced in the animal economy by an apparently trifling abnormality and the beneficial effects of simple but appropriate treatment. Professor Hamilton presented for Dr. C. W. Harvey a specimen of *exostosis of a tooth*. The patient, a gentleman, had suffered for many years from what had been supposed to be neuralgia, which finally produced insanity. Under these circumstances, he was brought to Dr. Harvey to have a tooth extracted. With great difficulty, and only after applying extraordinary force, he removed this tooth, which was found to be sound, but there is seen attached to it, growing from its roots, near the crown, a round, smooth, solid tumor of bone about the size of a filbert. The neuralgia immediately ceased, and the patient was soon restored to sanity.

**Is Clay a Mineral?**

"All minerals are reserved by land owners in the sale of their lands to railway companies. Where land is bought by a company which requires to be leveled to a considerable depth, to whom does the clay dug out belong—to the company or to the land owner? If to the land owner, the company cannot, after their line is formed, make any alteration in it. For if the clay belongs to the land owner by virtue of his reservation, they have only the privilege of placing or using their line on the clay of the land owner; and if they require any alteration, they must ask permission of the land owner, or, in other words, make a

new bargain with him.—F. Mewburn, Darlington, England." To this inquiry, *Notes and Queries* appends the following answer:—"The term clay is applied to hydrous silicates of alumina, derived, for the most part, from the decomposition of felspathic rock, and which are generally rendered impure by the admixture of other substances, such as lime, magnesia, oxide of iron, &c. Other coloring oxides are occasionally present in small quantities in natural clays. Strictly speaking, therefore, clay is not a mineral."

**Chain Making and Wages in England.**

The London *Ironmonger* says that in completing a link of a ½-inch chain, a first-rate workman will have to strike about 70 blows with a hammer 2½ lbs weight. The links to be welded are 210, and blows to be given 14,700, in completing one cwt. of chain for the sum of 2s. If he repeat this nine times in the week he gets 18s. From this deduct for his assistant 2s. 6d., for fuel 4s. 3d., for carriage, &c., 1s. 3d., total, 8s.; which deducted from the 18s. leaves the workman 10s. The ½-inch chain maker, in completing one yard, will have to strike not less than 2,180 blows, and not get 1½d; he has to repeat this sixteen times to complete one cwt. of chain,—that is, 34,880 blows, and links to be welded 334, for 2s. 6d.. If these figures are multiplied by six, the number of links to be welded is 2,004, and blows; to be given, 209,280, for 15s.; if we deduct for his assistant 2s. 6d., and for fuel and carriage, 3s. 10d., we find that the workman is left only 8s. 8d. In describing what are called the American traces, the writer says that to complete 100 pairs it requires the labor of the father and three

of his family, varying in ages from twelve to seventeen years, one week; they have to weld links, 9,800, the length of which, if joined in one chain, would be 407 yards. There are 200 hooks and 200 swivels to complete this 100 pairs; and when they are delivered at the warehouse the highest figure given is 2½d. per pair; that is, 20s. 10d., from which, if we deduct the expense of fuel, carriage, &c., 6s. 6d., there is left 14s. 4d. Out of this, it is assumed that 4s. 3d. has to be paid for rent, and that the remaining 10s. 3d., is to find food, clothing, &c., for a family of ten or more. The miserable pittance which these men earn is less remunerative than at first sight appears, for it should not be forgotten that to earn this money they have to stand all day before a fierce fire, and to forge and beat hot iron. For 3½d. a day, a child of from eight to ten years of age, of either sex, will stand by such a fire working the bellows from seven in the morning till nine at night. The operative chain and trace makers have just given notice of their intention to demand an advance on the prevailing prices, but it is not thought that their employers will concede the demand.

The invention of a machine to supersede such manual employment, would be a blessing in disguise to these miserably-paid English operatives.

STEAM FIRE ENGINES FOR WASHINGTON.—The Cabinet has determined to order two steam fire engines for the City of Washington, each to be accompanied with several experienced men to operate and take care of it. The fire department in Washington has become disorganized, and this wise action is taken for the protection of the public buildings. Had there been only one steam fire engine on hand, it is stated the Infirmary, which was lately burned down in that city, would have been saved.

SIR WILLIAM CUBITT, an eminent English engineer, died in London on the 20th ult. He superintended the erection of the Crystal Palace in Hyde Park, in 1851. He was a millwright by trade, and was an ingenious mechanic and civil engineer. At his decease he was 77 years of age.

The steamer *Trent*, of the Royal West India Mail, is 1856 tons burthen, with engines of 180-horse power. She is one of the old wooden class.

**An Asiatic Firearm.**

An American gentleman, W. S. Livingston, residing in Shanghai, China, after the capture of the Peiho forts by the English troops went out to visit the battle field, and brought away with him a very curious relic, which is illustrated in the accompanying engraving. It is a Chinese musket, or, as they call it, a jingall. A large number of these had been laid down by the Chinese to form a corduroy road, and Mr. Livingston dug one up, and on a visit to this city brought it with him and exhibited it in our office.

The barrel is 8 feet long and weighs 22½ lbs., the whole weight of the gun being 28 lbs. It is a match-lock, the cock carrying a slow match which is thrown down into the pan of powder on pulling the trigger, the match being lighted before the aim is taken. It is carried by two men and fired by a third, as shown in the engraving. Sometimes, in fixing it, the breech is placed against the shoulder and the trigger is pulled by the finger instead of by a chain, as shown.

The Chinese doubtless used these muskets for hundreds of years, while English and French armies were fighting with bows and arrows, but western civilization in this, as in so many other respects, has passed by that most conservative of all nations, and a Chinese jingall is a primitive and very inefficient weapon when compared with the arms now manufactured and used in the United States and all European countries.

**WHICH IS THE BEST WASHING MACHINE?**

Our female readers and acquaintances often make of us the above inquiry. We wish we were able to answer it unqualifiedly, but with all our experience in this class of inventions it is difficult to determine which, among the legion of different kinds, is the very best for family purposes. Hundreds of patents have been granted for washing machines. We have solicited patents for machines of this class operated in every conceivable manner, and by all kinds of power—from steam down to dog power—and yet it is impossible for us to state which apparatus is the best. The "Union Machine," patented and manufactured by Jossie Johnson, 447 Broadway, has been used in our families for sometime and it gives satisfaction.

A few weeks ago another new washing machine was introduced to the public, which, for family use, promises to become very popular; we allude to the machine of Messrs. Oakley & Keating, illustrated on page 282, current volume of the SCIENTIFIC AMERICAN. This machine operates on the plan of a fulling mill, as will be seen by reference to the engraving. We now have one of these last-invented machines in use, and our Ann and Bridget say, after a trial of it for five successive Mondays, that it is the "best washing machine ever made."

Owing to our lack of practical knowledge on the subject of washing we are unprepared to say as much for the machine as our help have expressed, but we fully endorse the girls' honesty in thinking it the best and pronouncing its merits in such positive language. Certainly we know of no machine which, to our mind, excels the principle on which this one is operated. Messrs. O. & K. also furnish a very superior article of clothes-wringing machines on the elastic-roller principle, which may be attached to their washing machine or that of any other.

As a labor economizer we think the clothes-wringing improvements, which have been made for a few years past, are the most important to the housewife and laundress of any domestic utensil invented.

**Whitworth's View of Breech Loaders.**

Joseph Whitworth, of England, the inventor of one of the best, if not the best, breech loading cannon that has yet been devised, in a recent letter to the London Times, makes this remark:—"In 1830, I ad-

vocated as I still do, the employment of simple muzzle-loaders for field artillery. It was proved then, by the brass guns I rifled for the government, as it may be proved now by publicly trying them, that it is a grave error to overlook the many advantages offered, both for land and sea service, by the muzzle-loading rifled brass guns."

**COBURN'S PATENT SASH FASTENER.**

The accompanying engravings represent a sash fastener recently patented by John H. Coburn, of Lowell, Mass., which presents some peculiar advan-

A cup or case, *a*, (Figs. 1 and 2), is made of iron, bronze, silver, or other suitable metal, with the latch, *b*, pivoted in its center and forced into place by a single screw passing through its center to the upper rail of the lower sash. Upon the front side of the lower rail of the upper sash is secured the catch, *c*, and as either sash is restored to its place, the latch, *b*, is pressed from its position by the beveled edge of the catch till it reaches the notch, which it enters, and thus fastens the two sashes together. In opening the window the latch is forced outward from its hold upon the catch, by pressing the thumb against the end of

the latch that protrudes outward from the case. The projections, *d d*, in the lower edge of the case, enter the wood and hold the case from turning.

The patent for this invention was granted September 10, 1861, and further information in relation to it may be obtained by addressing the inventor at Lowell, Mass.

**SECRET STEEL BREASTPLATE.**

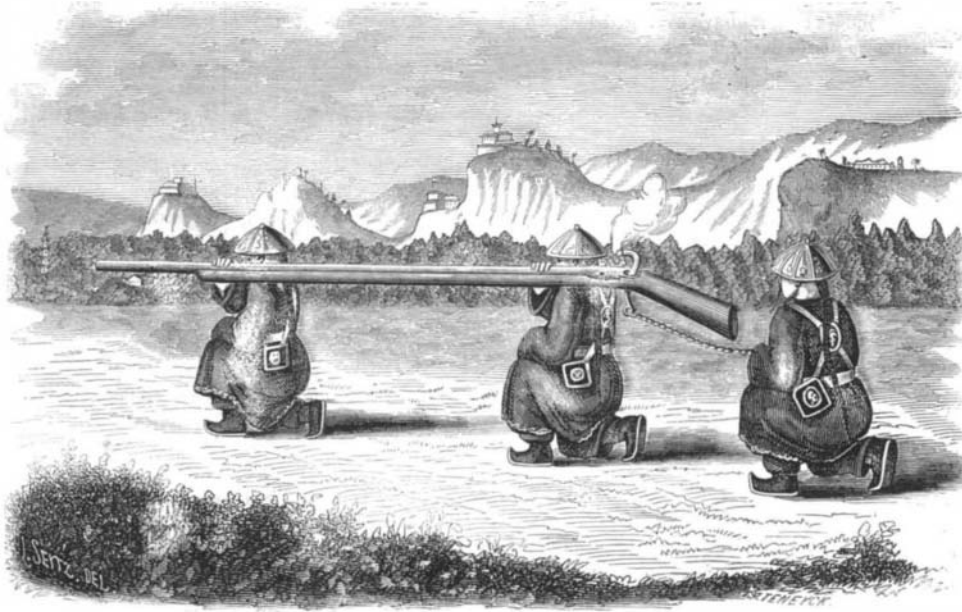
—On page 264, current volume of the SCIENTIFIC AMERICAN, we described the secret breastplate of J. S. Smith, of this city, and since that period a great number of inquiries have been made of us respecting it. We would state that all communications on this subject should be addressed to M. A. Benjamin, New

Haven, Conn., the sole manufacturer of such armor vest, who is prepared to fill orders for single ones, or by the hundred.

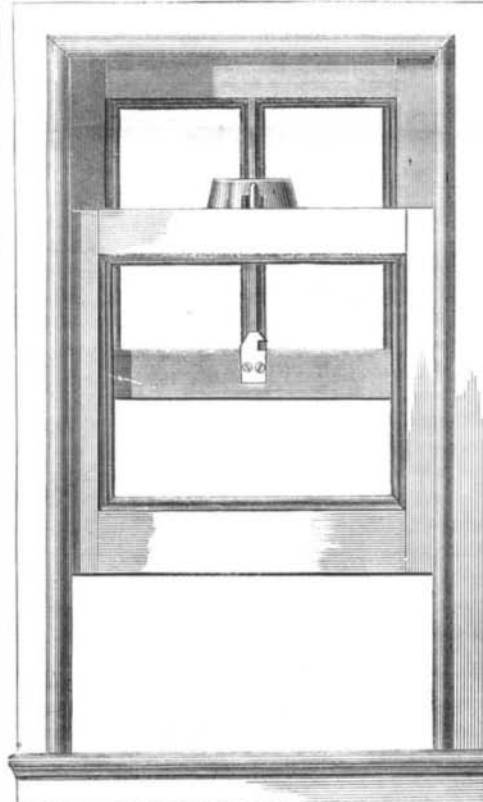
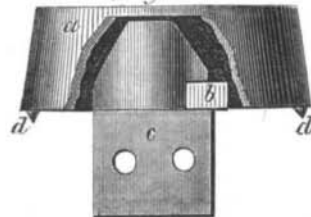
**MUNTZ SHEATHING FOR IRON SHIPS.**

The name "Muntz Metal" is derived from the late Mr. Muntz, M. P. of England, who first applied brass sheathing, also sometimes called "yellow metal" to ships as a substitute for copper. A patent was secured for the application, and it is stated, the inventor realized a large fortune from it. We learn from the London *Mechanics' Magazine*, that Mr. G. F. Muntz of Birmingham has taken out a patent for quite a novel method of sheathing iron ships. It consists in taking a sheet of iron about three-sixteenths of an inch in thickness, scouring its surface until it is bright, then placing upon it a thin sheet of sulphurized india rubber of the same size, and again laying over this a thin sheet of yellow metal pierced with small holes around the edges. These thin sheets are now placed in a suitable press and cramped together so as to cause intimate contact and exclude the air from between them. While thus held together, they are placed in a chamber where they are subjected to the action of steam and the india rubber becomes vulcanized. In this manner the adhesion of the two sheets of metal, is rendered very perfect. Holes are now pierced through the india rubber and the sheet iron, to coincide with those in the sheet of yellow metal, and the combined sheet is fit to be nailed on the bottom and sides of iron ships which have small holes drilled in them, for the purpose of forming an outside sheathing of yellow metal like that on wooden vessels. Many compositions have been applied to the bottom of iron vessels, to prevent them becoming foul from barnacles and sea weed, but although arsenic, lead and various poisonous substances have been used, they have all failed to give satisfaction. This new method of sheathing iron ships we believe, will answer a good purpose, but its first cost will be objectionable.

**RIFLE PRACTICE.**—We call attention to the remarks of a correspondent on another page, under the heading of "The Rifle Question." The writer of this paragraph, as an old deer hunter, expresses his full accordance with the opinions of "Rifeman," and cordially approves of his suggestions. Practicing at rifle shooting with a rest is ridiculous.

**A CHINESE MUSKET OR JINGALL.**

tages. It is self-acting, fastening the sash on closing the window after either the upper or the lower sash

*Fig. 1**Fig. 2*

has been opened; it is simple, cheap and efficient, and forms a neat ornament to the window. As it can be placed opposite the munnion, it is peculiarly desirable, especially for windows of four panes.