

(For the Scientific American.)
Attraction—Motions of Bodies.

On page 112 there is an article headed "attraction," which, lest the "uninitiated" into physical science should be misled, should be noticed. The writer, after mentioning the different kinds of attraction, and their incomprehensibility, remarks; "could we but suspend and resume the power of gravitation at will, we could travel round the earth in 24 hours, we could then rise a little above the earth's surface, and remain like a gossamer in the air; the world would continue to revolve as it now does, upon its axis, at the rate of a thousand miles an hour," &c.

This is rather a strange idea to be entertained by one who attempts to enlighten others; suppose he should divest himself of gravity, what would become of the motion that he now has of near a thousand miles per hour, with the surface of the earth as it rotates, and the over one hundred thousand miles per hour orbital motion of the earth. By the principle of inertia, if his gravity were suspended, he would leave the earth at a tangent to his rotation, and move in a direct line, with a velocity of nearly a thousand miles per hour, which motion combined with the orbital motion of the earth, would cause him to move at the rate of over one hundred thousand miles per hour, through space, for ever, unless dashed on some heavenly body in his course. But perhaps he intends to divest himself of inertia as well as gravity, perhaps he is one of those who suppose that a body moves by its weight, after being put in motion, that a body divested of gravity will cease to move, when the impulse ceases, as it has no weight to carry it forward. Yet he would not succeed in traveling around the earth in twenty-four hours, for if his motion should cease, he would find it difficult to alight on the earth at the end of twenty-four hours, which had left him alone in space some three millions of miles from it.

But the idea of subverting the force of gravity is manifestly absurd. It is the same in all matter at all times; it is that which keeps the work of nature in regular order. The least change in the action of gravity would throw the whole system into confusion. The regulation of the worlds is not based on so precarious a foundation. He correctly supposes that the cause of attraction is past our comprehension. "What attraction is, in the abstract," says Grant, "human sagacity has not yet, and probably never will unravel. The chain of cause and effect here break off, or rather for the present, may be said to terminate in the Deity. Philosophers may, however, discover a proximate cause, and even trace the golden links through a thousand beautiful windings, but in a Divine Creator they must verge at last."

It was well, after speaking of the subversion of nature's law, to say, "remember Mount Olivet." For the same Omnipotent Power that enacted the laws, can alone suspend or repeal them. J. B. CONGER.
Jackson, Tenn.

(For the Scientific American.)
Pretended Artists.

I wish to lay before you a plain statement of facts regarding a former advertiser in the SCIENTIFIC AMERICAN.

About two years ago I saw an advertisement in the SCIENTIFIC AMERICAN, of a man wishing employment at enamelling cast-iron hollow ware. I wrote to him, asking what he could do, at the same time telling him that if he could make ware equal to Clark, of England, he could find a chance here to embark in the business. He wrote me in answer that his process was unsurpassed, his enamel for whiteness and brilliancy not to be beaten, and that he had sold his process to the Prussian government for two thousand dollars, and employ for fifteen years. He came to this place at the suggestion of a firm here and commenced experiments, and after ten months, with every facility that money afforded for material and apparatus, for experimenting and after hundreds of trials, he never brought about a passible result. Sinking the firm thousands of dollars, and finally lurching

his landlord for board, together with small debts too numerous to mention.

He also induced another firm to undertake the manufacture of artificial ultramarine under his directions, assuring them that he had made it, and that there was no difficulty in doing it, sinking them about five hundred dollars. I write this to caution the readers of the SCIENTIFIC AMERICAN from being imposed upon. I positively know that the man referred to can neither enamel hollow-ware, or make artificial ultramarine.

By publishing what portion you may think proper of the above facts to prevent further imposition, you will oblige, Yours, &c.,
B. F. N.

West Poultney, Vt., Jan. 17th, 1855.

[It is a wonder to us that any person suffered himself to be imposed upon as our correspondent describes. Three days would be enough for any one to find out the capabilities of the person he describes. Why did he not give him a certain number of vessels to enamel, ask him what he could do them for, and give him the price agreed upon, when the work was done. It is a wonder to us how so many of our people allow themselves to be imposed upon so easily by pretending scientific Troubadours. Personally we do not know anything about this pretended ensembler, and we do not wish to give the names of the parties on either side, for while the one acted grossly in wrong doing, the other, our correspondent, has been very imprudent and unwise.]

(For the Scientific American.)

The Minie and the American Expanding Bullets.

In No. 1 of your paper I notice an article copied from the *New England Farmer*, in relation to the Minie rifle ball, and its adoption in a modified form—together with an arm adapted for its use—by the U. S. Government for the use of its army, and appended thereto were the following editorial remarks:—

"How can 'our army use the Minie ball without the cup?' In that case it will not be the Minie ball. If it is meant by the above that part of the charge is to be placed in a hole in the butt of the ball, as a substitute for the Minie iron capsule to spread the lead in the barrel, then, it will be found a very inferior plan."

The idea of expanding an elongated bullet, by the expansive force of the gas generated by the ignition of the powder acting upon an iron capsule inserted in an opening in the base of the bullet, originated with Capt. Minie, of the French Artillery, some four or five years ago, and has since been partially introduced into the French and English services, with results much superior to those obtained with the ordinary musket and its ammunition. To Capt. Minie, therefore, is due the credit of originating this method of expanding such projectiles, and hence the names now becoming so familiar—the Minie rifle, and the Minie ball, and here it may be remarked that the chief distinguishing peculiarity of the so-called Minie rifle lies in the bullet and not in the rifle. The bullets may be fired successfully from any well made rifle of the proper caliber. The term Minie rifle may therefore be regarded as incorrect when thus applied. You make the inquiry, "how can our army use the Minie ball without the cup? In that case it will not be the Minie ball." I agree with you that it will not be the Minie ball proper, but the main principle of expansion remains the same with or without the cup, viz., the expansive force of the gas. As to the dispensing with the iron cup being a "very inferior plan," as you remark, I would state that recent experiments made both in this country and in England, have proved otherwise. Towards the close of the year 1852 a series of experiments with rifles and elongated projectiles were commenced at the National Armory at Harper's Ferry, by authority of the Ordnance Department—the immediate superintendence of which was intrusted to your correspondent, then connected with that establishment—and among others the Minie principle proper was thoroughly tested, but with comparatively inferior results. This

fact, together with the complex nature of the projectile, and the difficulty of its fabrication, caused efforts to be made to devise an expanding bullet more simple of construction, and capable of affording better results in practice. After various trials and experiments with bullets of different forms and principles of expansion, a bullet was devised by the writer, in which the iron cup or any substitute therefor, was entirely dispensed with, and results were obtained superior to those attending any previous trials with other projectiles, the Minie proper not excepted, and so far satisfactory to the Colonel of Ordnance that an immediate trial of them upon our frontier was recommended by that officer, for use with the ordinary regulation rifle, with which experiments had been made. At the distance of 450 yards—or a little over a fourth of a mile—the figure of a man traced upon the target would almost invariably be hit. The caliber of this arm is much smaller than that of the so-called Minie rifle—in use in the Crimea—the former being .54 of an inch, the latter .70 of an inch diameter, and hence the ammunition is much lighter—a very desirable feature.

About the same time, similar experiments were being made by order of the English Government, which resulted in the adoption by that government of a bullet in which the iron cup is dispensed with entirely, and a large amount of machinery is now being constructed in this country, by the Ames Manufacturing Co., at Chicopee, and other parties, for the English Government Establishment, at which the newly adopted model rifle-musket, &c., is to be manufactured.

It is not intended that any part of the charge of powder shall be "placed in a hole in the butt of the ball," but the powder is first poured in the barrel from the cartridge, and the bullet inserted—hollow downwards—and pushed down the barrel until it rests upon the powder. The great advantage gained by the use of all similar projectiles consists in the facility they offer for expeditious loading; the bullet goes down the barrel quite easily, yet issues from it a slugged bullet, that is, fitting closely into all the spiral grooves in the barrel. JAS. H. BURTON.

Springfield, Ill.

[The object of the Minie bullet is simply to allow of more rapid loading by soldiers, as clearly stated by Mr. Burton, but we never could divine how a rifle could be made to carry further or more accurately, as stated in so many papers, with a Minie than with a common rifle, having a Clark muzzle. In reference to the opinion we expressed as referred to by our correspondent, we only referred to a hollow ball charged inside, for the question was presented to us in this light, not as has been done in this communication, and we reasoned that the charge expanding on all sides of the bullet would force it into the grooves, and no doubt slug it, but in doing so, would offer such a resisting side force to its passage out, as would nullify, in a great measure, its useful effect.]

See engravings of various bullets, page 173, Vol. 7, SCIENTIFIC AMERICAN.

Window Blinds.

In our list of claims on another page there is one for an improvement in window blinds granted to Henry Blakely, of this city. The nature of this invention consists in having brass or other suitable metallic tenons cast on the ends of the slats which are made of thin iron plate, and inserted in holes in the stiles, and riveted or headed on the outside, but free to turn in their sockets, and operated otherwise in the usual way. By this plan of constructing blinds, they are made very durable, and their cost does not much exceed those made of wood.

Grafting the Lilac on the Ash.

The *Maine Farmer*, in answer to our queries respecting grafting the lilac on the ash, Mr. M. Stanley, of Winthrop, informs us that he tried the experiment by engrafting scions of the lilac bush upon a young ash in the usual way. They took well, and grew luxuriantly, but were unfortunately broke out by a high wind—[Baltimore Sun.]

Recent Foreign Inventions.

STANNATES OF SODA, POTASH, AND AMMONIA. Edward Haefely, Radcliffe, Lancashire, England, patentee—To form stannate of soda, the inventor introduces into a metal pan litharge or red lead (other metallic oxys, hereafter named, will produce the same action, but an oxyd of lead is preferred,) and a solution of caustic soda of commerce, containing about twenty-two per cent. of alkali, and reduced by the addition of water, or the washings hereafter named, if required; but this dilution is not necessary to the operation, excepting to keep the stannate of soda in solution, and above the precipitate. A plomate or plombite of the alkali is thus formed—heat being applied for the purpose of hastening the operation. Feathered metallic tin is then suspended in a bag, or thrown into the mixture, when immediately the oxygen from the alkaline solution of the oxyd of lead passes to the metallic tin, forming stannic acid, which unites with the alkali, whilst metallic lead, in a spongy state, is precipitated. The proportions used are 16 lbs. of tin, 45 lbs. caustic soda, at 70° Twaddle, from 70 to 80 litharge (or 54 red lead).

When the tin has entirely disappeared, which will be after several hours' boiling, say from four to five, depending, however, upon the granulated state of the tin, the fire is withdrawn, and the precipitate allowed to settle. The clear solution of stannate of soda is then decanted, and the precipitate washed with one or two waters (the waters being used for reducing the alkali in future operations, as above stated). The precipitate is thrown on a hot plate of iron or other metal, and the temperature raised to near redness; when it is speedily re-oxydized by the atmospheric air; litharge or red lead being thus formed at pleasure, according to the heat and time occupied in the oxydation. The litharge or red lead may again be used for another operation of producing stannate of soda. The patentee also proposes to substitute for the oxyd of lead other metallic or organic oxys possessing the property of transmitting their oxygen, or part of it, to a more oxydizable metal, like hydrate of peroxyd of iron, hydrate of peroxyd of manganese, manganate of soda, indigo, and others. The precipitates in these cases will be protoxyds of the bases, which may be converted, by any known means, into peroxyds, to be again used. The advantages of this process are cheapness, rapidity, and regularity of results; and the stannate so formed is of an improved purity, giving superior results to that formed by the known processes, for the purpose of printing or dyeing textile fabrics. Although stannate of soda only has been mentioned in the above description, the same instructions will hold good for the other alkali, by substituting potash or ammonia.

A New Stock Company.

A recent number of the *London Court Journal* has the following hit on American schemes, which we think pretty good:—

"The American papers state that an individual in Michigan proposes to build a spiral staircase down the Maelstrom, in order to recover the valuables that have been sucked into that immense receiver during the last two hundred years. He proposes to make a joint stock concern, under the name of 'The International Spiral Staircase Treasure-seeking Association.'"

Photographic Bills.

Many of our cotemporaries have been describing the dangers likely to arise from improvements in photography applied by a Cincinnati artist to the copying of bank bills. If bills are printed of various colors they cannot be copied.

Machine for making Match Boxes.

Our readers would notice that the claims of the patent granted on the 16th ult. to R. L. Hawes, for improvements in machinery for making match boxes, were the longest that had yet appeared in our columns. Wm. Gates, of Frankfort, N. Y., has one of these machines in operation, and is making boxes on a very extensive scale by it.