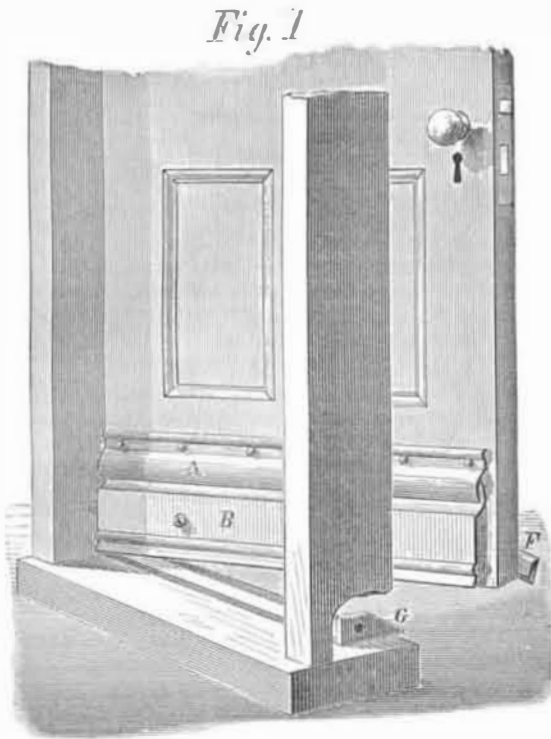
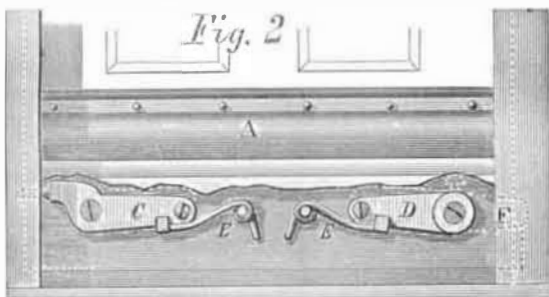


AVERILL'S METALLIC WEATHER STRIP.

Those weather strips generally in use which depend for the closing of the joints between doors and windows and their frames on the elasticity of some substance, as rubber interposed, sometimes become unreliable by wear, and require renewal or repairing. The one which the engravings illustrate



is of metal, and its operation is absolute. It consists of a beaded or corrugated strip, A, nailed or screwed to the door by its upper edge, and slightly projecting from the door at its lower edge to receive the upper edge of a plate, B, also of corrugated sheet metal. This plate is held in place by two screws or rivets which pass also through the long arms of the levers, C and D, Fig. 2. The springs, E, same figure, are coiled around pins in the door, and serve to throw the long ends of the levers up when once depressed. It will be seen that, if these levers are either depressed or raised, the slide, B, must move with them. This movement is produced on the lever, C, at the hinge edge of the door by a screw in the jamb of the



door, the head of which meets the backward projection of the lever, C depressing the other end, and with it that portion of the slide. As the door nearly reaches the closing point, a latch, F (dotted lines in Fig. 2), is made to move by sliding up the incline of the catch, G, thus lowering and firmly closing the slide on the sill. The contrivance may be adapted also to windows by a slight modification.

The patent, obtained through the Scientific American Patent Agency, is dated July 7, 1868. State and County rights, or the strips themselves, may be obtained by addressing the patentee, B. F. Averill, Dunkirk, N. Y.

FRUIT CAR—EASTERN MARKET FOR WESTERN PRODUCTIONS.

On Wednesday, Sept. 9th, we made an examination of a railroad car built specially for the transportation of fruits, fresh meats, game, etc., over long distances. It is known as the Davis' Fruit Car, built for the purpose of conveying perishable articles of food and preserving them from decay. The sides, ends, and roof of the car, are about seven inches thick, composed of the outer shell of plank, an air space, and a space packed with wool, felt, or other non-conductor. On the sides, inside the inner shell, are cases of zinc, reaching from the floor to the roof, and filled with broken ice, sprinkled with salt. The interior of the car showed, by the thermometer, a temperature of 40° Fah., and the cargo—peaches picked near Cincinnati, Ohio—after a voyage of six hundred miles, and a confinement of ten days, proved, on experiment, to be perfectly fresh and sound. This fact is, of itself, sufficient to show the value of the invention. It will, if properly managed, give a new impetus to the agricultural industry of the West and South, provide the craving East with fresh fruits and meats at a cheap rate, and be a new bond of interest connecting distant sections of our common country.

We hope, soon, to publish an illustration and full description of this improvement.

The Velocipede Fifty Years Ago.

The "velocipede," which is now attracting attention, is simply a new name for the same kind of invention which was in quite general use some fifty years back. It was then called a "dandy horse," in England, probably from their use being mostly confined to the dandies of the period. At that time the fashionable men might have been seen on any of the pop-

ular drives, propelling along, with their coat tails at an angle of forty-five degrees to the infinite satisfaction of themselves and the envy of the non-possessors of the coveted establishment. The vehicle of that period was constructed like those lately introduced, excepting that it lacked the pin on the front wheel by which it could be kept going when once fairly started. It was propelled by the feet upon the ground, and after a good speed had been attained, the feet were temporarily rested upon a small projection at each end of the front axle until the horse required further propulsion. The dandy horse, however, died out of use about the year 1820, in some measure owing to several serious accidents through their use, chiefly ruptures, which the springless nature of the rider's seat was very apt to produce. But they were in high feather once, and Fox, Sheridan, Pitt, and other notables of the period patronized them extensively in St. James' Park, taking their "constitutional" on the dandy horse after a hard night spent in the House of Commons, or around the gaming table.

WHAT SCIENCE OWES TO MISSIONARIES.

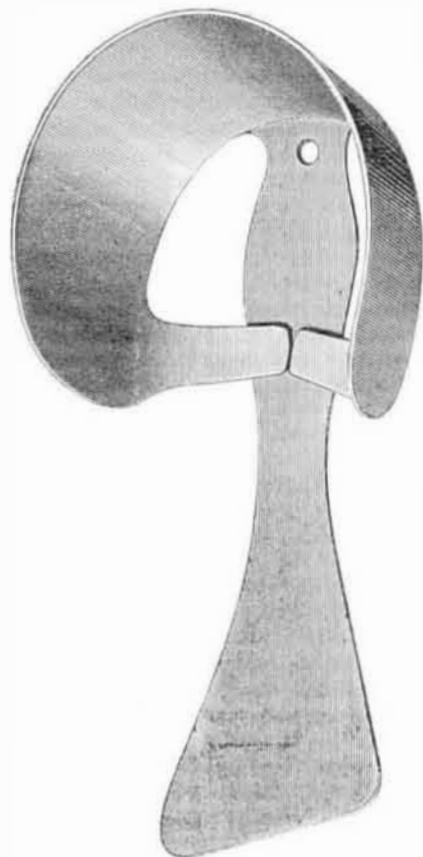
Far away upon the extreme verge of civilization, or isolated from it entirely, are a corps of humble workers. Bearing the tidings of mercy to the lands that sit in darkness, they gather up scattered pearls of knowledge and send them back to enrich the stores of those, who, laboring in another field, are co-workers with them in the elevation of the race. Scarcely any of the sciences can claim that they have not been indebted to missionaries for valuable facts. The sciences of philology, ethnology, archeology, geography, and zoology, have however received more aid from them than many others. An exchange makes the following remarks in reference to this subject:

"To Dr. Livingstone, the distinguished missionary explorer, is the world indebted for the most of its knowledge of the interior of Africa; and it now appears that the first discoveries of the sources of the Nile were made by missionaries. Some missionaries of the Church Missionary Society in East Africa, in order to acquaint themselves with the native tribes, made exploring tours to the interior, in one of which they discovered a snow mountain, and after a time another. The statements which they sent to England were at first received with incredulity and ridicule. After some time they reported that the natives declared that there was a great inland sea; when the Royal Geographical Society sent out an expedition, which resulted in the famous discoveries by Captains Speke and Grant and Sir Samuel Baker of the great lakes, called by them the Victoria Nyanza and the Albert Nyanza, the sources of the great river of Egypt."

Dr. Kane received valuable aid and counsel from the Moravian Missionaries, on the coast of Greenland, in his celebrated Arctic explorations. The Catholic priests who penetrated the wilds of America, intent upon the conversion of the savages, contributed largely to the early knowledge of the geography of the American continent, and the information given by missionaries in China and Japan has been the origin of the negotiations which have resulted in the opening of the ports of those countries to commerce and civilization.

SAVOY'S PATENT METALLIC BOOT AND SHOE SHANK.

Some boots and shoes do not "live out half their days" simply for want of proper heel staying. The mixture of



leather skivings and paste, often if not generally used for heel stiffenings, is all that is required so long as kept dry; but when softened by the perspiration of the feet or exposure to rain it breaks down, and for use and comfort the boot or shoe is valueless.

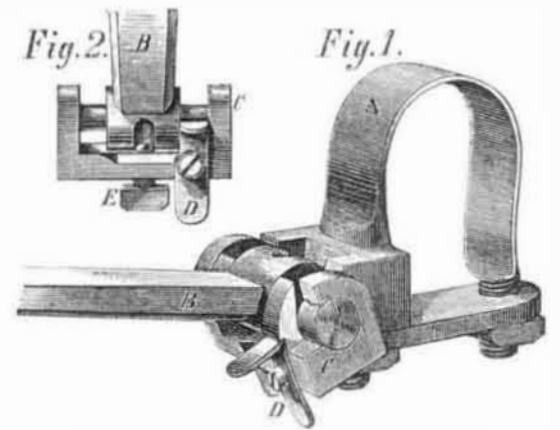
The accompanying engraving presents a view of a metallic shank intended to be a permanent support to the heel. It is cut out of sheet metal in one piece and then "struck up" or formed by dies. The strip or shank that passes under the foot

lengthways may be made to act as a spring, if the material used is of sufficient density and hardness, as rolled sheet brass or sheet steel. Its application to the shoe is easily seen. The metal being entirely covered no portion of it comes in contact with the foot of the wearer. It may, if necessary, be secured by one or more rivets, screws, or nails.

Patented through the Scientific American Patent Agency, Sept. 1, 1868, by Michael E. Savoy, Luzerne, Warren Co., N. Y., who desires to dispose of rights upon reasonable terms.

M'CREARY'S PATENT CARRIAGE CLIP.

The design of this improvement is to prevent the vexatious rattling of the shafts of a carriage and to permit them to be instantly removed or replaced. Usually the pivot is secured to the clip, but in this case it is at the end of the shaft. The ears of the clip, A, are not bored, but slotted, forming hooks which receive the ends of the pins or pivot. This pivot passes through the shank, B, and is secured in the ears of a strap, C, which thus forms a part of the carriage shaft and when the shaft is in place its ears are outside those



of the clip. A light spring, D, on this strap engages with a notch on one of the ears of the clip and prevents the strap from turning and the end of the shaft from becoming disengaged by jolting. A set screw, E, through the bottom of the strap, C, is seated in a partially circumferential slot on the shank head, and prevents all rattling by lateral motion while it allows sufficient vertical movement to the outer end of the shaft. By a slight pressure on the spring, D, the strap, C, is allowed to turn so the shaft may be lifted out of the hooked ears. Carriage makers will easily understand the construction and operation of the device. Fig. 1 is the clip and the attachment complete, ready for use, and Fig. 2 the shaft shank and strap without the clip.

Patented July 28, 1868, by Thomas McCreary, assignor to himself, George B. Sullivan, and John McCreary, all of Mat-teawan, N. Y.

HALF A DAY AT COLLINSVILLE.

A correspondent thus graphically describes what he saw in a recent visit to the works of the Collins Company, at Collinsville, Conn.:

Collinsville, town of Canton, Hartford county, is a brisk place. The village is only an overflow of The Collins Company, but the effervescence of industry has driven the foam of new houses up and down the green banks of the Farmington river, and here and there the white bubbles have been caught and held aloft upon the steep hillsides. From a single old mill, which David C. Collins and Samuel W. Collins began with forty years ago, has sprung a great multitude of houses, three churches, two hotels, a bank, schools, libraries, and all the auxiliaries of a population of three thousand.

In that old mill Collins & Co. began as ax-makers, with an ambition to make the very best tool that could be produced, regardless of the cost, believing that such a tool would inevitably win its way. They were right. It would seem as if the artisans of the blunt, rude axes previously made must have been men of sentiment, forging the tool to execute the purpose of the song, "Woodman, spare that tree!" Collins & Co. held that the ax ought to respond to the needs of the woodman, as much at least, as to the romance of the trespassing protector of the "shade;" so they made an ax keen as to the edge, ground and polished as to the sloping check, solid as to the eye—such an ax as had not before been seen. The success was immediate and immense. From Maine and Canada, from the South, and from the farthest Western frontier, from Spanish America, and from the Islands of the Sea, came a call for the new axes. The fortune of Collins & Co. was made.

In 1834 the Collins Company was organized under a legislative charter. They multiplied their mills until now they stand thick set, twenty-three in number, and so spacious that if they were stretched out on a single floor, they would measure twenty-five feet wide and a mile and a quarter long! They multiplied their wares, turning out, in addition to axes, also hatchets, adzes, mining tools, crowbars, sledge hammers, the long Spanish knives called machetes, and many agricultural tools. They increased their capital to \$800,000, and have regularly declared satisfactory dividends.

A large item of their trade for years has been the Spanish tools—knives, axes and machetes. The semi-Spanish nations of Central and South America were formerly furnished with their weapons and implements from Europe, but they now receive them almost wholly from the United States, and very largely from the Collins Company. They probably found these articles of superior quality, both in stock and finish, to justify the partiality.

The Spanish tools are of peculiar pattern, and would not