

Innocent Wasp Stings.

W. L. Wilder imparts to the readers of *Science* the following, which he states to be a fact not generally known, which we can readily believe, *i. e.*, that, if one holds his breath, wasps, bees, and hornets can be han-

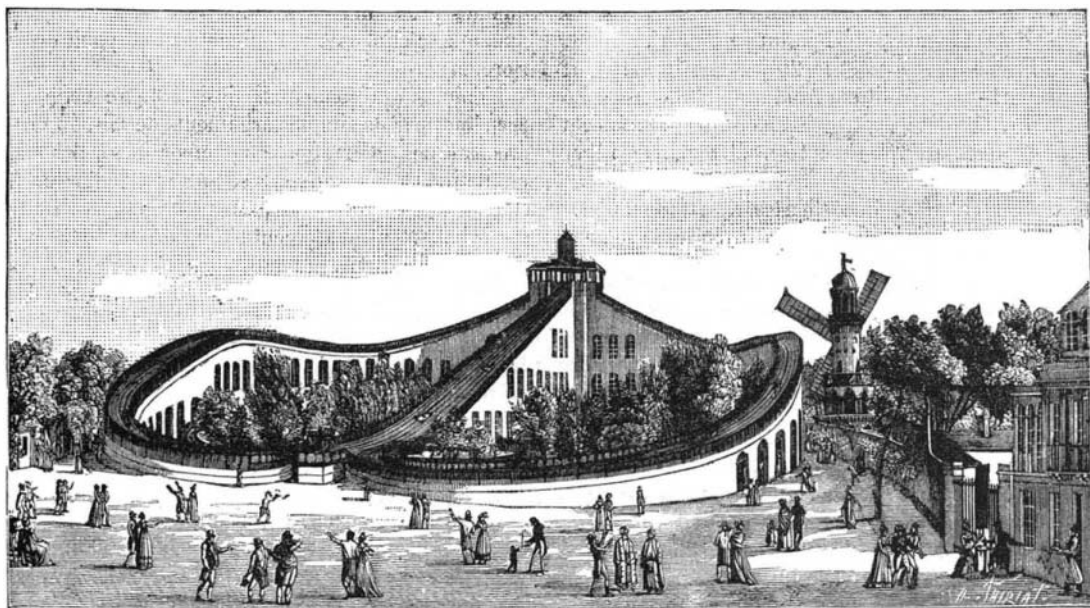


Fig. 1.—RUSSIAN MOUNTAINS OF THE BEAUJON GARDEN (1821).

dled with impunity. The skin becomes sting proof, and holding the insect by the feet, and giving her full liberty of action, you can see her drive her weapon against the impenetrable surface with a force that lifts her body with every stroke; but let the smallest quantity of air escape from the lungs, and the sting will penetrate at once. I have never seen an exception to this in twenty-five years' observation. I have taught young ladies with very delicate hands to astonish their friends by the performance of this feat, and I saw one so severely stung as to require the services of a physician, through laughing at a witty remark of her sister, forgetting that laughing required breath. For a theory in explanation, I am led to believe that holding the breath partially closes the pores of the skin. My experiments in that direction have not been exact enough to be of any scientific value, but I am satisfied that it very sensibly affects the amount of insensible perspiration. Who will test the correctness of Mr. Wilder's theory and report the result in behalf of science?

A Queer Animal.

In the report of the superintendent of the Zoological Society of Philadelphia, read at the annual meeting of the members on the 26th of April, Mr. Arthur E. Brown stated that perhaps the most extraordinary animal ever shown in the collection was the echidna (*Tachyglossus hystrix*), purchased on the 12th of April. As is well known, the lowest mammalian group, the *monotremes*, to which this animal belongs, possess structural peculiarities strongly indicating relationship to birds and reptiles, and additional evidence of the closeness of this connection has lately been given by the apparent confirmation of the previously suspected fact that both the echidna and its relative, the ornithorhynchus, lay eggs from which the young are hatched outside of the body of the mother, as in birds and many reptiles. The rarity as well as the remarkable nature of this animal caused it to be of great interest to zoologists, and it received as much observation as its subterranean habits would permit. Its native food being altogether of ants, and the structure of its mouth preventing it from taking solid food in any quantity, it was necessary to feed it on milk and eggs, on which it survived only some six weeks.

RUSSIAN MOUNTAINS AT PARIS.

The Russian mountains, which were formerly the delight of our fathers in the Beaujon and Delta Gardens, and in a large number of public places at Paris, disappeared in consequence of some serious accidents

cient affairs, and we reproduce them herewith. Fig. 1 gives a general view of the Russian mountains in the Beaujon Garden. The inclined plane in the center allowed the travelers to ascend to the upper starting pavilion. The vehicles were drawn up this slope by cables. The cables were actuated by a horse whim. On reaching the upper pavilion, the travelers descended undulating slides to the right and left, which were about 1,300 feet in length.

The Russian mountains of this garden had imitators, and there soon appeared the Egyptian mountains of the Delta Garden, and the "Niagara Falls" of the Ruggieri Garden (Fig. 2). In this last installation, the starting kiosks were reached by an easy slope, and the passenger got into a small sled that seated but two persons. This sled slid down a very firm wooden inclined plane, and traveled about 160 feet in six seconds. We may now just as well say a few words regarding the origin of this sport, which has always succeeded in amusing the public.

Russian mountains are very ancient, and, as their name indicates, were first used in Russia. Precise historical documents seem to be rare and little known. In Fig. 3 we reproduce an old colored lithograph, and it is the only picture that we have been able to procure. It was made from an original drawing by Sauerweid. It is accompanied with the following text, which perfectly explains the organization and operation of the Russian mountains on the Neva:

"On the frozen surface of the Neva there are constructed two frames 40 or 50 feet in height, and 800 or 900 feet distant from each other, and inclined toward each other by a rapid slope of 55°, but not exactly opposite, in order that the descending sleds may not meet. Each descent is soon converted into a mountain of ice by the torrents of water that are poured on to it, or by the blocks of ice that are placed one after another over its entire length. The sled descends with fearful rapidity, and, with the same speed, traverses the level space between the two structures. This exercise is the principal amusement of the Russians during winter."

It will be seen that these Russian mountains were

that happened through a defect in the construction of the plant. After long oblivion, these "mountains" made their appearance in America a few years ago, where they are very popular, and where they are called toboggan* slides, and in England, where they figured in 1886, at the Liverpool exhibition. They have likewise been operated in France at public fetes, and we now see them returning to the very heart of Paris, in an establishment which has just been founded on the Boulevard des Capucines, and which is now much frequented.

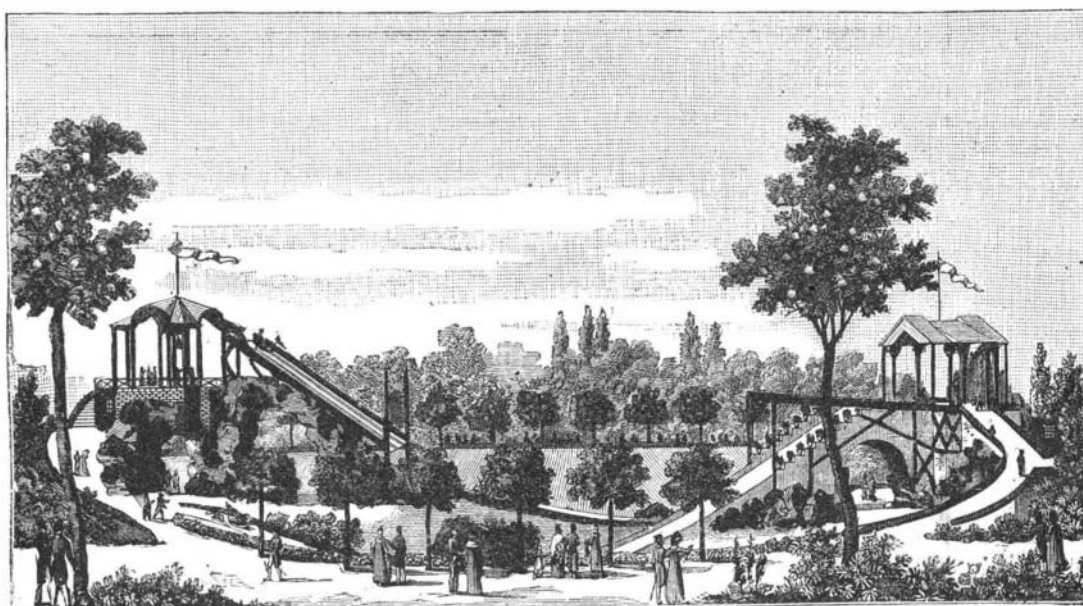


Fig. 2.—THE FALLS OF NIAGARA OF THE RUGGIERI GARDEN (1824).

In a preceding article, we gave a *resume* of the history of Russian mountains at Paris, and described the great installation at the Beaujon Garden, which was wonderfully successful in 1817 and for many years after. Since the publication of that article, we have been enabled to procure some new and interesting engravings of the time, that give a more complete idea of these an-

*The Algonkin Indian name for a sled.

formed of a simple inclined plane covered with ice. Small sleds, seating one person, slid down these, and the speed acquired naturally slackened on the horizontal surface of the frozen river. The Russian mountains of the Beaujon Garden consisted of an undulating slideway in which there were ascents succeeded by rapid descents. The "Niagara Falls" had more resemblance to the genuine Russian mountains, but the vehicles, instead of being sleds, were cars mounted upon wheels that revolved in hollow rails. Such are the characters that distinguish the different systems of Russian mountains formerly constructed. We now come to the new installation of the Boulevard des Capucines, which has permitted us to recall these old souvenirs of the past. The organizer of these Russian mountains has dispensed with the wide spaces used by our fathers in the spacious gardens that existed in the center of Paris, and has had recourse to a court left free between two houses. A roof 275 feet in length protects the plant, which, at night, is very brilliantly illuminated by the electric light. The cars are provided with five benches, each seating two persons. The entire car therefore holds ten passengers. It runs, through wheels, over metallic rails provided with guard rails that render derailment impossible. The car travels with great speed down the undulating declivity, and rises and descends in succession, as shown in Fig. 4. The space passed over is about 260 feet. On reaching the end of the route, the passengers alight, and a gang of men pulls the car on to a turntable and directs it to the return track. Then the passengers resume their places and return to the starting point. The trip from one end to the other does not take more than twelve seconds, as has been ascertained by a

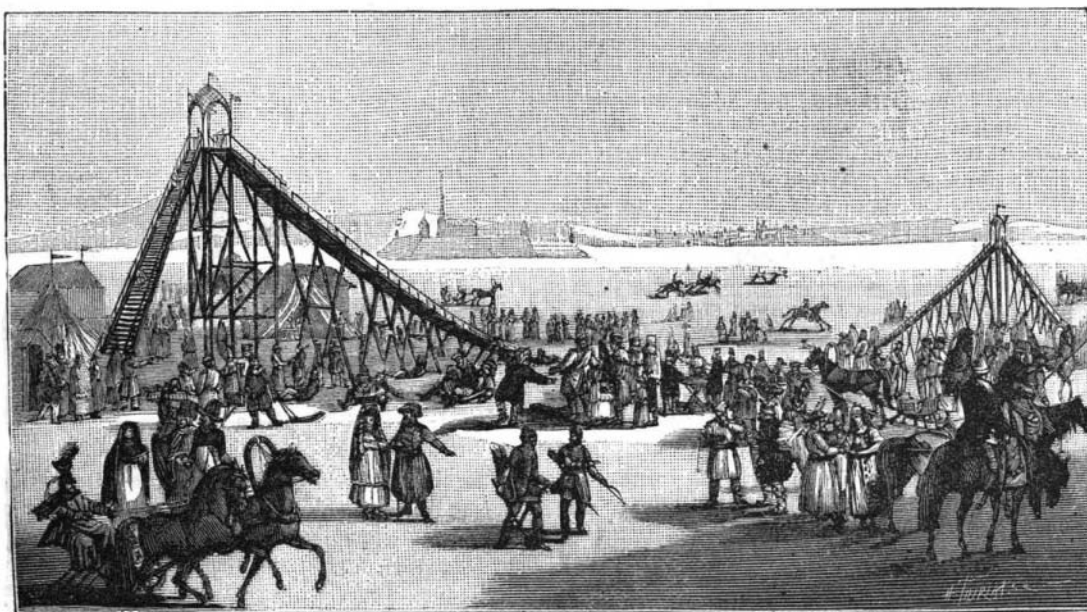


Fig. 3.—RUSSIAN MOUNTAINS IN RUSSIA.

chronometer. This style of Russian mountain differs from those that have hitherto been operated. It is due to an English builder, Mr. Thompson, who has put up numerous specimens in various countries.—*La Nature*.

AN IMPROVED BLOCK SIGNAL.

A block signal system, so arranged that a train entering a section of track will set a signal at the end of the section toward which it is moving to "danger," and set to "safety" a similar signal, by the same movement, on the section it is leaving, has been patented by Mr. George W. Peterson, of Leonardville, Kan., and is illustrated herewith. In connection with posts arranged at suitable distances apart at the side of the track, spring levers are mounted in alignment carrying signal disks, the posts carrying lights, and the tendency of the springs being to throw the signal disks out of line with the lights toward the track. The lower ends of the levers extend downward into cases, near the foot of the post, whence they are connected by double crank bars, links, other levers, and tripping bars, with wires extending through tubes secured to the ties midway between the tracks, the posts and signal disk levers at each end of a block or section being thus connected together. The engine is provided with an overhanging arm on its left side, mounted in such position that it will strike against and depress the tripping bar connected with this signal disk lever moving mechanism, thus closing or setting to safety the signal for the section of track it is passing from, and setting to danger the signal at the farther end of the block the train is just entering, to warn the engineer of a train approach-



Fig. 4.—RUSSIAN MOUNTAINS OF THE BOULEVARD DES CAPUCINES (1888).

secure fastening, is illustrated herewith, and has been patented by Mr. Henry E. Hathaway, of Merrill, Wis. One of the bars has a guiding clasp to embrace the

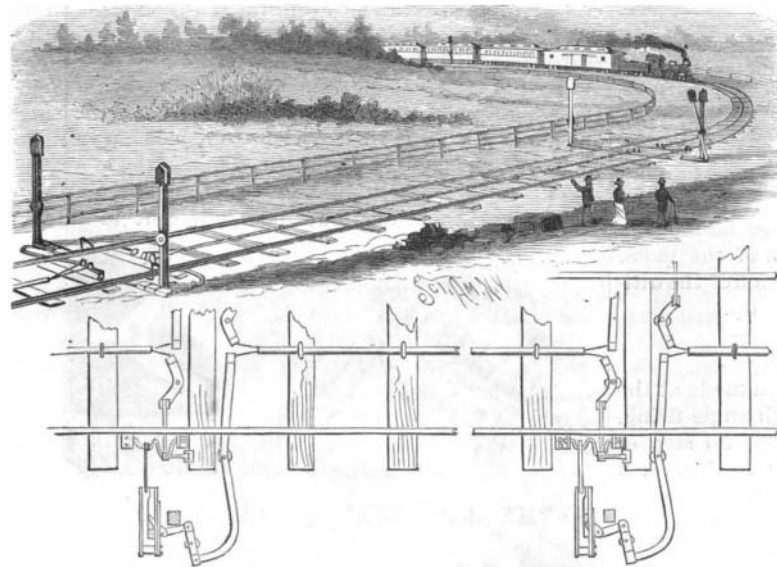
edges of and slide freely on the other bar, which has at its inner end a slotted offset portion with outwardly projecting lug and inclined bearing face. A stud on an independent clasp embracing the other arm of the clamp passes through the slot, and on this stud is pivoted a cam which operates against the inclined bearing face of the lug at the extremity of the first arm. The cam has a handle for convenience in operating it, and the bars slide freely one upon the other when not set in use, the construction being such that when the jaws are adjusted or closed upon the parts to be clamped, the moving of the handle down will slightly draw the jaws of the clamps inwardly and firmly bind the bars one upon the other, preventing any longitudinal movement.

Pumping Machinery.

In the course of a paper on this subject lately read at a meeting of the Association of Birmingham Students of the Institution of Civil Engineers, by Mr. F. W. Hewett, he said that one of the first contrivances for raising water by steam pressure—or, as it was stated at the time, for raising water by fire—was Captain Thomas Savey's patent, exhibited before the Royal Society in 1699, when Sir Isaac Newton was president. The valves were all worked by hand. A most important advance was made by Newcomen, who must have been contemporary with Savey; but little was known of this gentleman except his invention. When James Watt's beam engine was invented, the conception of making the condenser apart from the steam cylinder and keeping the steam cylinder as hot as possible was the basis of its mechanical success. The energy of Bolton, his partner, soon brought this pumping engine into extensive use; and as the demand increased, so the machine developed. The supremacy of the Cornish pumping engine had remained undisputed from the moment Watt perfected it; and it had scarcely been approached for deep drainage and working against a constant head of water. The velocity of the water through the valves of ordinary pumps should not exceed 4 feet in a second at the most, and the pumps should generally work well at 50 feet per minute—bucket speed. The velocity of the water in the delivery pipes should be as consistent as possible.

Curious Wants at Druggists' Counters.

The *National Druggist* gives the following amusing specimens as fair samples of every-day experience: "Send me some of your essence to put people to sleep with when they cut their fingers off. I want something to take tobacco out of my mouth. Send me a baby's top to a nursing bottle. Something for a sore baby's eye. Enough ipecac to throw up a girl four years old. Enough anise seed to take the twist out of a dose of senna. Something for a woman with a bad cough and cannot cough. Something, I forget the name, but it is for a cure for a swelled woman's foot. For a man with a dry spit on him. For a woman whose appetite is loose on her."

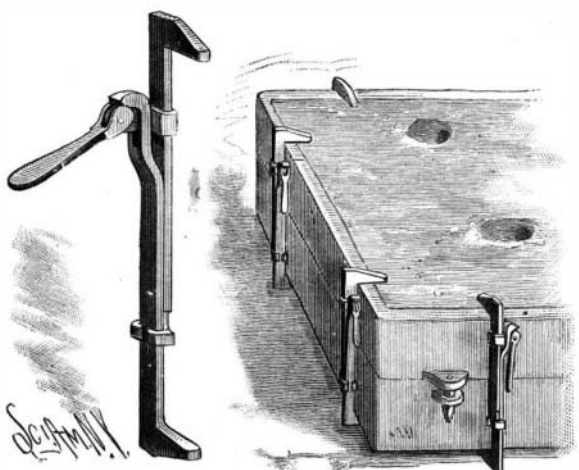


PETERSON'S BLOCK SIGNAL.

ing in the opposite direction. Similar signals are arranged on the opposite side of the track for use by trains moving in the opposite direction, the connecting wires passing through the same tubes centrally between the tracks.

AN IMPROVED CLAMP.

A clamp especially designed for use in foundries, for clamping flasks and moulds, and by carpenters and others, having a quick and easy adjustment, with a

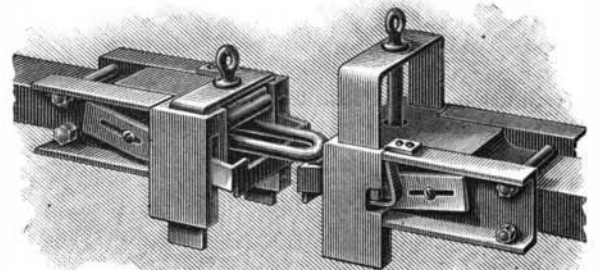


HATHAWAY'S CLAMP.

AN IMPROVED CAR COUPLING.

The invention illustrated herewith provides a coupling in which the link is held up and guided into the drawhead, while the coupling pin is held in position for automatic engagement therewith, and has been patented by Mr. William O. Rutledge, of Galveston, Texas. A side metallic casing is secured to the drawhead, in recessed portions in the forward part of which are guides for the depending arms of a U-shaped frame, having an aperture for the coupling pin in line with the opening in the drawhead, so that when the frame is dropped the pin will extend across the recess receiving the end of a link. The frame is held in elevated position by a spring catch on each casing, having its bent end projecting through a notch in the guide. Through slots in the front of the casing pass the legs of a U-shaped piece, whose crossbar extends over the front of the drawhead, the legs being connected to the casing by pins projecting through slots, and adapted to slide thereon, the forward portion of the legs being beveled so that the crossbar is

lowered as it is pushed back by a similar piece on the opposite drawhead, thereby guiding the link into position for engagement by the coupling pin. Upon the drawheads being brought together, the parts being in position as shown in the illustration, the piece with sliding arms, which guides the link into the right hand drawhead, will be pushed back by the similar piece on the other drawhead, when a lip or projection on the casing releases the spring catch, causing the pin-carry-

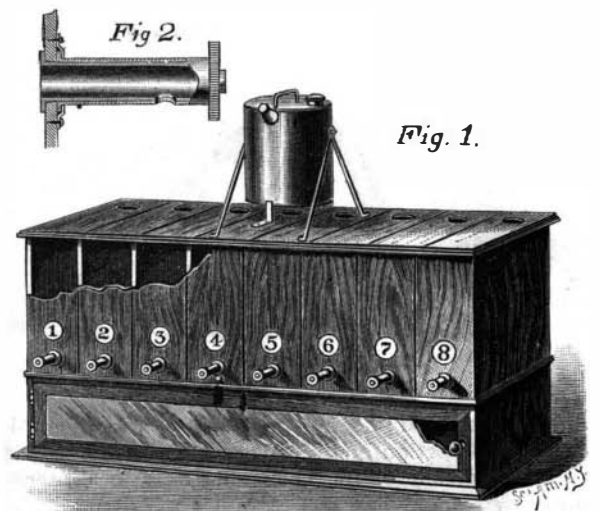


RUTLEDGE'S CAR COUPLING.

ing frame to fall, and engagement with the coupling pin is effected. This inventor has also applied for a patent for an uncoupling device.

AN IMPROVED POWDER AND SHOT CABINET.

An invention providing convenient means for handling powder and shot, in the form of a cabinet, in which a dealer may keep handily and separately the various articles generally called for, is illustrated herewith, and has been patented by Mr. Augustine La Point, of Westington Springs, Dakota Ter. The cabinet has a lower compartment with a glass door, adapted to receive and display cartridges, gun caps, etc., and the upper compartment is divided by vertical partitions into eight or more lockers, one for each size of shot, which may be poured in through a properly capped opening at the top. The different sizes are indicated by numbers on glass sections in the front of each locker, through which also the sizes may be seen. To withdraw the shot a



LA POINT'S POWDER AND SHOT CABINET.