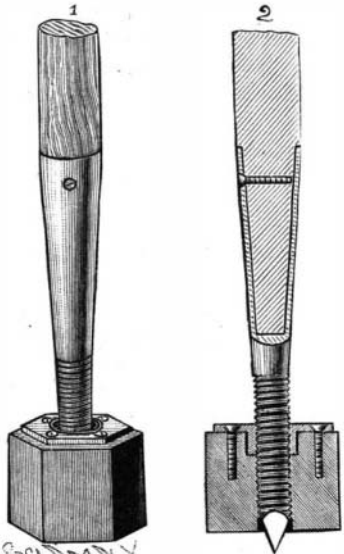


AN IMPROVED CAR BRAKE AND COUPLER.

An improvement in car brakes, whereby the brake will be automatically applied in case of a collision, and an improvement in couplings, whereby two opposing cars may be united without the operator passing between the cars, and wherein the cars will couple whether the approaching link passes beneath or over the opposing link, are illustrated herewith, and form the subject of two patents granted to Mr. James Mutton, of Frisco, Utah Ter. A transverse beam projects vertically downward at the rear of the drawbar and in front of the axle, short bars being secured to the floor beams at the rear of this beam, while from the short bars a rectangular strap yoke is loosely suspended, having secured to its under side a brake shoe, these shoes being normally held in contact with the wheels by means of an elliptical spring. When the cars are coupled and drawn ahead, the brake shoes are raised, but with the stoppage of draught on the drawbar the springs act to apply the brakes. In backing, the brake is reversed by means of a suitable brake shaft. In the car coupler, two sets of opposing blocks are secured to the sills on the under surface of the car, there being downwardly extending arms from the forward blocks. A friction roller is journaled in these arms, a link reciprocating between the forward blocks, bearing upon the roller, and having an arrow-like head, while a transverse guide plate is attached to the inner end of the link, reciprocating in the space between the forward and rear blocks. A spring is secured to the upper surface of the link having a bearing against the under surface of the car.

AN IMPROVED CRUTCH ATTACHMENT.

A crutch having an elastic foot and a spur, either of which may be adjusted for use alone, as required, is illustrated herewith, and has been patented by Dr. William J. Donald, of Tunnel City, Wis. The socket piece fitting the lower end of the crutch is made with

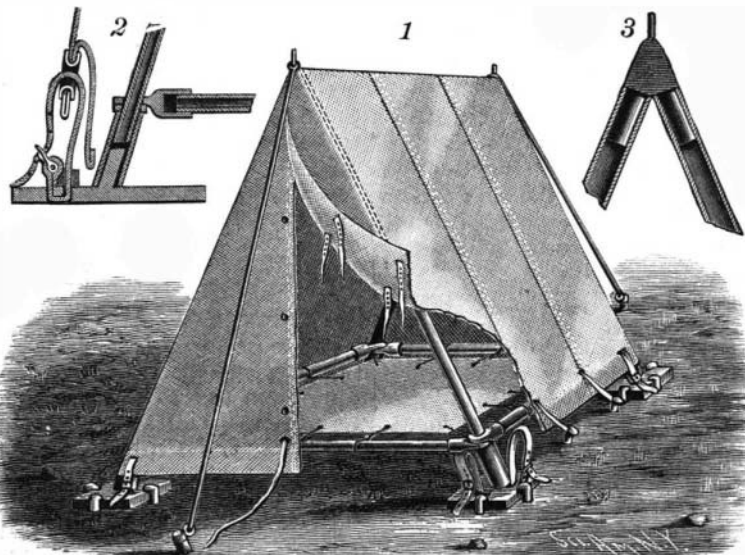


DONALD'S CRUTCH ATTACHMENT.

be handled in interchanging it for use with the spur, this being done by simply rolling the foot end upon the ground or floor to screw or unscrew the buffer on the projection, thereby projecting or withdrawing the spur.

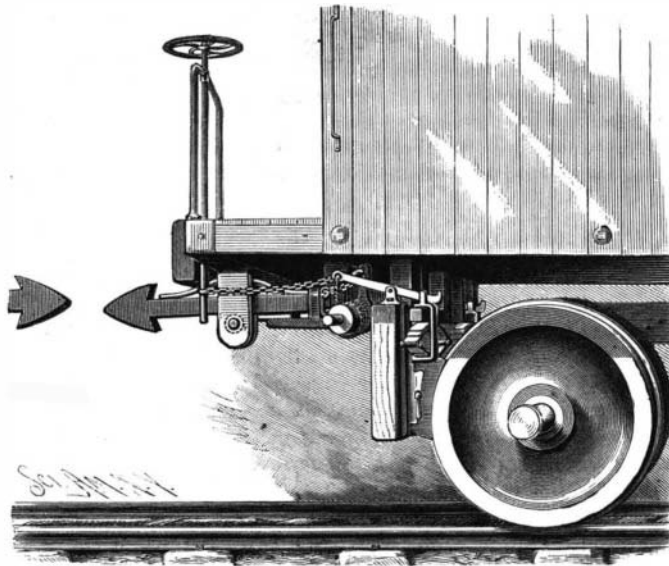
AN IMPROVED TENT.

The accompanying illustration represents a tent for the use of soldiers or civilians, which can be easily and quickly pitched or struck. It has been patented by Mr. Herman Gentzen, of Fort Ringgold, Texas. The main frame of the tent consists of a pair of downwardly and laterally diverging poles at each end of the tent, anchored in foot plates or blocks at the corners, and a



GENTZEN'S TENT.

horizontal frame of four bars supported on the poles, and giving support to a stretched bed bottom fabric. The pairs of poles are connected by a peak block at each end of the tent, as shown in Fig. 3, and a ridge pole may also be used if desired, stakes or pins, and



MUTTON'S CAR BRAKE AND COUPLER.

stay cords, being also used at the sides and ends of the tent. Fig. 2 is a vertical sectional view of the frame, canvas, and anchor straps at one corner of the tent. By this construction the occupants of the tent, resting on the bed bottom fabric, help to keep the tent well anchored, while they are supported clear above the ground, and not subject to the inconveniences consequent upon sleeping on the earth.

Sifting the Sands for Valuables.

A midsummer tide of humanity flowed against the hotel bulwarks at Atlantic City. The ruin-strewn beach was full of sightseers. There was a curious coincidence connected with the trip of one of the yachts. The party was carried by Captain Will Gale in his yacht Alert. They spoke a trim-looking schooner off shore, and the captain inquired after the people in Atlantic City. In the conversation that followed it was found that the schooner was no other than the Robert Morgan, which was blown high and dry on shore during the terrific storm of 1884, and upon which balls and parties were held all of the following season.

A small army of sand sifters were at work on the beach. Their outfit consisted of a sieve, a shovel, and a tin box. They dug the sand from around the posts on which the board walk had been laid. After reaching a depth of about two feet, the sifters ran the sand through their sieve. Frequently their efforts were rewarded by finds of precious stones and jewelry.

To a curious visitor one of the sifters exhibited his treasure. It comprised diamond pins, a plain gold ring, a dollar gold piece, and a number of smaller coins. He had made a lucky hit in the morning, and was about \$150 better off. He said there were cases where \$500 had been recovered from the sand in a day, but that many days were often spent without recovering a dollar's worth. The action of the sea washes all particles around the posts along the beach, and the hundreds of dollars' worth of jewelry and money lost by the summer crowds are gathered in by these patient toilers during the cold months.—*Philadelphia Record.*

Vocal Music as a Preventive of Phthisis.

A suggestive paper by Dr. C. E. Busey, of Lynchburg, was lately read before the Medical Society of Virginia. He stated as a well known fact that those nations which were given to the cultivation of vocal music were strong, vigorous races, with broad, expansive chests. If an hour was daily devoted in our public schools to the development of vocal music, there would not be the sad spectacle of the drooping, withered, hollow-chested, round-shouldered children. There was too great a tendency to sacrifice physical health upon the altar of learning. Vocal music was a gymnastic exercise of the lungs by development of the lung tissue itself. The lungs in improved breeds of cattle, which naturally took little exercise and were domiciled much of the time, were considerably reduced in size when compared with those of animals running at liberty; and so it was with the human race, which led inactive lives from civilization.

Phthisis generally began at the apices of the lungs, because these parts were more inactive, and because the bronchial tubes were so arranged that they carried the inspired air with greater facility to the bases than to the apices. During inactivity a person

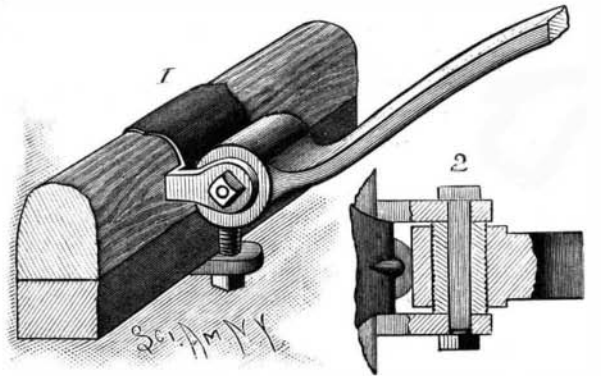
would ordinarily breathe about 480 cubic inches of air in a minute. If he walked at the rate of six miles an hour, he would breathe 3,260 cubic inches. In singing, this increased more than in walking, as to sing well required all the capacity of the lungs. The instructor of vocal music, in addition to his musical education, should understand the anatomy and physiology of the respiratory organs.—*N. Y. Med. Jour.*

A Large Wood Pulp Mill.

John A. Greenleaf, of Lewiston, Me., has closed a contract with the Shawmut Fiber Company for the erection of the largest pulp mill in the United States, if not in the world. It is to be built at Somerset Mills, Me., and Ex-Gov. A. H. Rice, of Mass., is one of the projectors of the enterprise. The buildings will be nine in number, as follows: A woodworking room, 41 by 50 feet; a digester house, 50 by 64 feet; two tank houses, each 62 by 16 feet; two machine houses, 54 by 52 feet and 50 by 50 feet respectively; an acid house, 50 by 50 feet; a sulphur-burning house, 52 by 28 feet; a sulphur storehouse, 27 by 27 feet. These buildings will take over 300,000 feet of lumber, over 200,000 shingles, 12,000 clapboards, and about 350 ship's knees.

AN IMPROVED THILL COUPLING.

A readily adjustable thill coupling, constructed for durability and to avoid rattling, is illustrated herewith, and has been patented by Mr. Miner N. Loehr, of Warsaw, Ind. The thill iron is connected to the axle clip by means of a screw-threaded bushing screwed into the socket end of the thill iron, the ends of the bushing projecting from the socket and bearing against the ears of the clip, as shown in the plan view, Fig. 2. The bushing has a square hole, as have also the ears, through which projects a correspondingly shaped bolt having a screw-threaded end and retaining nut, whereby the bushing is held from turning, while the socket end of the thill iron turns on the bushing. By tightening the nut the ears are drawn against the ends of the bushing, thereby preventing rattling, and as the ends of the bushing are worn, the ears may be drawn up. The wear upon the screw-threaded parts of the

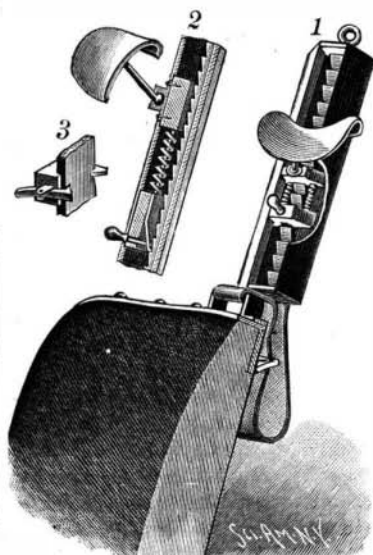


LOEHR'S THILL COUPLING.

bushing and socket will be small, making the coupling durable and one with which rattling can be easily avoided.

AN IMPROVED HEAD-REST FOR CAR SEATS.

The accompanying illustration represents a convenient head-rest for application to the seats of cars, which may easily be placed in the position of use and readily removed when not required. It has been patented by Mr. Clement W. Hooven, of Winchester, Ind. The head-rest slides in a casing having a ratchet bar with which the head-rest is joined by a yielding connection, a ball and socket joint, with a friction spring, allowing the head-rest to adjust itself automatically. To the back of the casing, near its lower end, is a looped spring which engages an offset strap secured to the back of the seat, the seat having a recessed bar to receive the spring, and the bar having projecting ears with spring-acting catches, as shown in Fig. 3, to engage the spring and hold it in the position of use. The upper end of the casing is provided with an eye by which the head-rest may be suspended when not in use, and the whole device is very simple, being adapted for attachment to any coach seat, to make a perfect head-rest.



HOOVEN'S HEAD-REST.