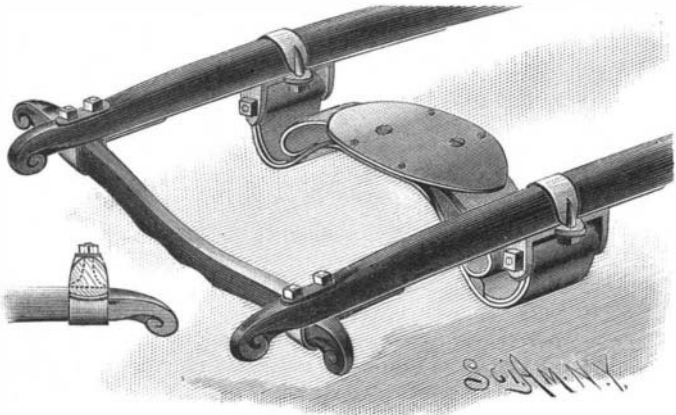


IMPROVED SPRING FOR SIDE BAR VEHICLES.

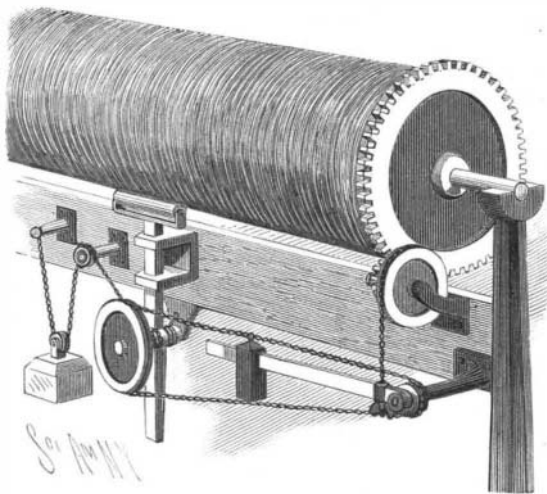
A spring of novel construction, readily attached to the platform of a vehicle and to the side bars, and designed to give to the body a regular, easy, and pleasing movement, is illustrated herewith, and has been patented by Mr. Edward Hutchinson, of No. 239 East Fifty-first Street, New York City. The front, end, and side bars are united by clips of peculiar construction, having a horizontal lip integral with the outer surface of the inner member, to sustain the outer ends of horizontal springs, conforming to the under surface of the side bars, and extending from a bearing upon the lips, in contact with the side bars, to a point near the center thereof. These springs are made of thin steel, and in connection therewith, at each side of the center of the two side bars, ears are secured having lugs supporting springs with overlapping curved leaves, there being about centrally of the two leaves apertured oval binding plates, so arranged that when weight is brought to

**HUTCHINSON'S SPRING FOR SIDE BAR VEHICLES.**

bear upon the springs the leaves work in opposite directions, the spring action taking place near the ends only, the central portion being bound by the elliptical plates. The body of the vehicle is connected with the spring through a block, which has its under face concaved to correspond with the convexity of the upper binding plate, such attachment being easily and expeditiously accomplished.

AN IMPROVED TENSION DEVICE FOR LOOMS.

A device whereby, in weaving, as the warp is drawn off from the warp beam, and the diameter of the roll is

**BAILEY'S TENSION DEVICE FOR LOOMS.**

diminished, the tension will remain constant, is illustrated herewith, and has been patented by Mr. Chester Bailey, of Janesville, Wis. A vertically arranged follower, held loosely in guides attached to the cross piece of the loom frame, carries a roller held in constant contact with the roll of warp by a weight acting upon the follower bar through a cord, to which it is connected through a drum, to which the follower bar is also connected. On this drum is a gear or chain wheel, over which, and over a small chain or cog wheel journaled on a shaft near one standard of the loom frame, passes a chain attached to a weight placed loosely upon a pressure or tension lever fulcrumed at the axis of the small chain wheel, and supported by a band passing over a friction drum held on a shaft journaled in brackets attached to the cross piece of the loom frame. On this shaft is also a small gear wheel running in contact with a large gear wheel on the end of the warp beam, so that as the latter is turned by the drawing off of the warp the friction drum is turned, retarded by the band acting thereon as a brake, the band being drawn down by the tension lever and weight. The latter is automatically moved toward the fulcrum of the lever as the diameter of the roll of warp diminishes, so that the friction will gradually diminish, thus maintaining a uniform tension. The movement of the weight upon the tension lever is effected by the gradual lifting of the vertically arranged follower bar as the diameter of the warp upon the beam diminishes, through its action on the connected drum and chain wheel.

Australian Rabbits and Pasteur.

The Australian authorities are not at all enthusiastic over M. Pasteur's bacteriological method for the extermination of rabbits. They have already forbidden, under considerable penalties, the importation of any rabbit affected with any disease, for use in destroying the too numerous Australian rodents. The favor with which M. Pasteur's delegates, charged with exterminating the troublesome guests, will be received, is doubtful. The reasons of the Australians are serious ones. Here, they say, is a microbe which quickly kills two domestic animals of different nature, rabbits and chickens. In propagating it, are we not in danger of making Australia fatal to gallinaceous life? And on the other hand, what assurance have we that this same microbe will not do serious injury to sheep, cattle, horses, etc., and perhaps even to men? On this point, the records are defective. We hope M. Pasteur will succeed in answering categorically as to the innocuousness of chicken cholera microbes as regards domestic animals. There is yet another point. Admitting that the experiment is tried, and that the microbe is disseminated through Australia, and is without effect on cattle or man, can we be certain that in the new conditions the microbe will not acquire the particular properties which will make it injurious to animals hitherto exempt? Evidently not. We can understand the scruples of the authorities who hesitate about releasing upon the whole country a most active microbe over which man will have no efficient and certain control, once the experiment has begun.—*Revue Scientifique.*

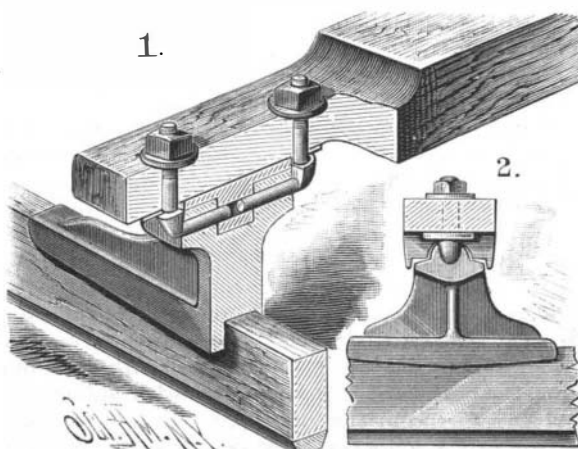
The Testing of Materials for Mortar.

In the eleventh annual report of the executive board of the city of Rochester, N. Y., appears a special report on cement mortars for use in public work. Professor Charles D. Marx and Alfred M. Mossrop, of Cornell University, did much of the experimental work, and their investigations show a decided advance in this line of research.

In addition to the usual tests of strength by breaking briquettes, the sand was tested to determine its "voids." The ground was taken that sand whose grains lie close together, presenting a minimum of voids, is the best for making mortar and cement. The method of testing was to ram dry sand into a graduated cylinder, and then to introduce by siphonage enough water to flood its upper surface. The volume of water gave the amount of voids. Cements were tested in the same way, but in this case, by a suggestion of Prof. Fuentes, coal oil was used as the liquid. The general deduction from the tests was that the larger the amount of fine material, the worse the sand for mortar. Yet a certain amount, not exceeding twenty per cent of fine siliceous matter, may be admissible.

AN IMPROVED SLEIGH KNEE.

A simple and efficient device for connecting the runners to the beams of sleighs, designed to allow a limited vertical and lateral play of the runner, without overstraining it or the beam or reach, has been patented by Mr. James F. Hennessy, of Winona, Minn., and is illustrated herewith, Fig. 1 showing a transverse vertical section and Fig. 2 a side elevation. At its top part the knee has two half-rounded lugs, between which and transversely of the knee is a recess adapted to receive a lug formed at the center of a cap plate. The pivot bolts have a right-angular general form, their lower horizontal parts passing rather loosely through the knee lugs, and into the cap lug from opposite sides of the knee. With this form of construction, but two bolts are required to hold each knee and cap to the runner and beam, and the sleigh can be shipped in knockdown condition, or its parts may be readily dismembered for making repairs, by simply unscrewing the two nuts conveniently accessible at the top of the sleigh beam. For further information relative to this invention, address the Winona Wagon Company, Winona, Minn.

**HENNESSY'S SLEIGH KNEE.****AN IMPROVED DEVICE FOR RENOVATING GARMENTS.**

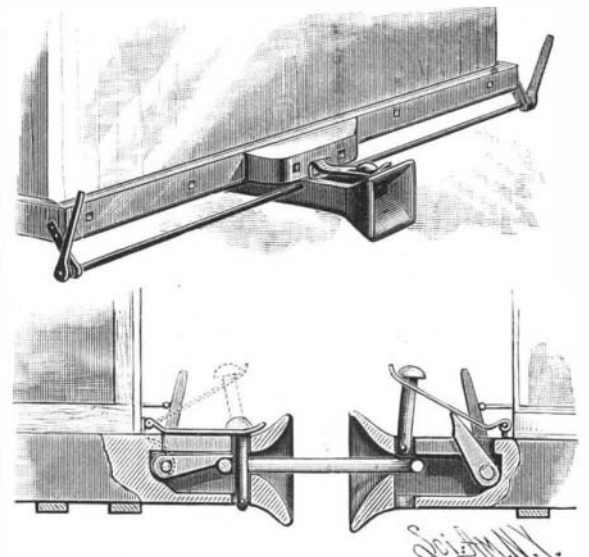
A device whereby the sleeves and shoulders of velvet or other plush garments may be renovated or revived by the application of heat, without ripping or removing the sleeves from the body of the garment, is illustrated herewith, and has been patented by Miss Annie Shanley, of No. 18 East Eleventh Street, New York City. A sleeve-heating shell of metal, preferably covered with asbestos and felt, as shown in the sectional view, is adapted to be attached to a body standard by a ball and socket, and fixed in any desired position in

**SHANLEY'S DEVICE FOR RENOVATING GARMENTS.**

relation thereto by a set screw. The standard has rounded shoulders to fit the shoulders of a garment, and the sleeve heater has an inner core of metal to be removed from the shell and heated, and then replaced, when the sleeve of the garment to be renovated is drawn upon it and properly manipulated to revive the velvet. Instead of such heating core, a perforated tube may be used, supplying gas to be burned in the interior of the sleeve-heating shell.

AN IMPROVED CAR COUPLING.

A coupler by which the link may be held in proper position to couple cars of varying height, and wherein the pin may be held raised, to couple automatically with an entering link, is illustrated herewith, and has been patented by Mr. Frank B. Wineland, of Breckenridge, Col. Within a recess in the drawhead is mounted a tongue formed with an inclined face, and rigidly connected to a transverse shaft journaled in bearings and extending outward beyond the sides of the car, where it is provided with levers. When a car is to be coupled with another having a higher drawhead, the levers are

**WINELAND'S CAR COUPLING.**

turned so that the inclined face of the tongue will bear against the inner end of the coupling link, thus elevating its outer end to the proper position, while by withdrawing such pressure the extending end of the link is correspondingly dropped. To set the pin in a position to couple with the link of an approaching car, the levers are turned back, thus raising the tongue until it strikes against a hinged arm, through the slotted end of which the coupling pin is passed, carrying the pin upward to the position shown in full and dotted lines in the sectional views. As the cars come together, and the link of the approaching car enters the drawhead, the lever is thrown forward and the pin allowed to drop, thus effecting the coupling.

A CENTENARIAN PRINTER.—At Mount Jerome Cemetery, Dublin, lately, was buried Pattison Jolly, aged 104, probably the oldest printer in the world. He served his time at Ballantyne's, in Edinburgh, and pulled the first sheet of the *Edinburgh Journal*, over 70 years ago. For half a century he was in Dublin, and for some years carried on the printing business in the house which belonged to Griersons, late Queen's printers.