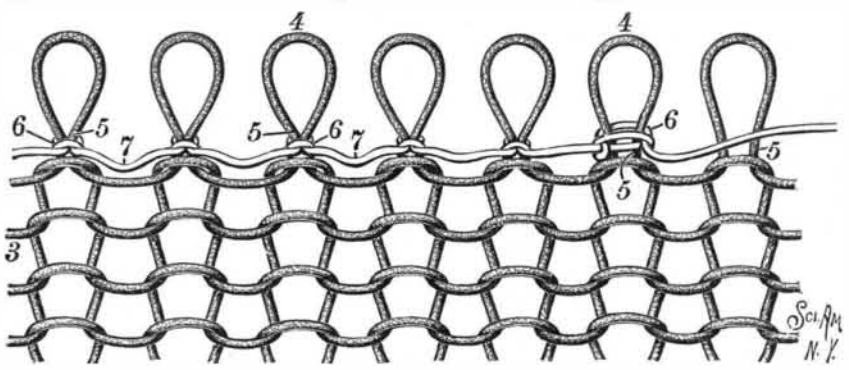
PRESTON'S IMPROVEMENT IN STOCKINGS.

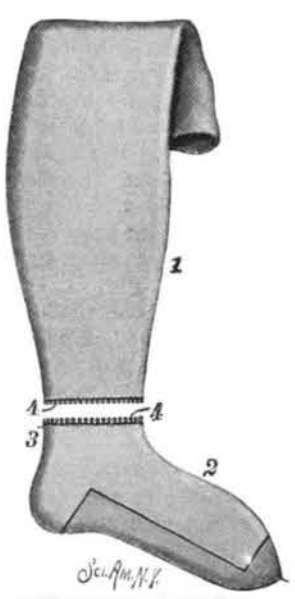
The illustrations show a new method of making stockings in two sections—a leg section and a foot section—to be connected and disconnected, for the purpose of renewing the foot section when worn. Former attempts have been made in this direction by finishing the joining edges with a selvedge, which necessitated patience and care in picking up the loops, in connecting the two sections, and in the union thus made the selvedged or finished edges presented a comparatively inelastic seam at a point where elasticity was most



PRESTON'S STOCKING—ENLARGED VIEW OF THE SECTION JOINING LOOPS.

essential in putting on and taking off the stocking. In the improved method, which has been patented by Mr. Leonidas M. Preston, of Bonham, Texas, the joining edge of the sections is formed with loops, normally protruding lengthwise and having their necks tied and fastened by a thread, as plainly shown in the enlarged view, the thread being tied round each loop transverse to its length.

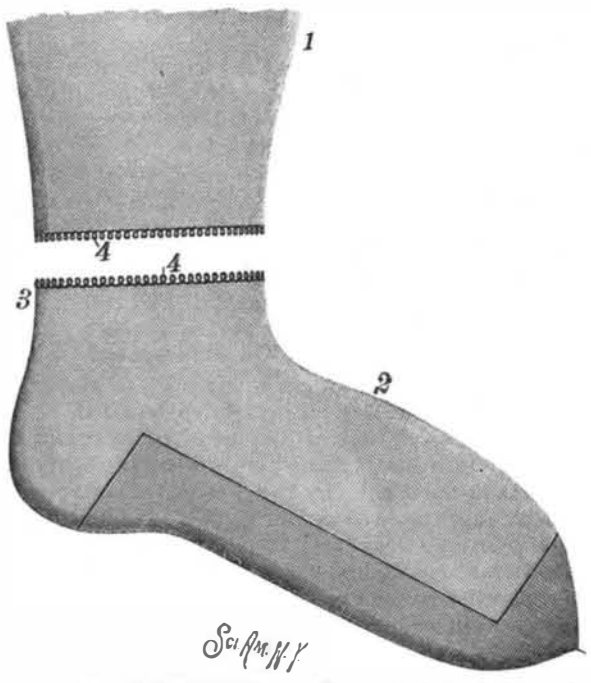
In the figures, 1 indicates the leg and 2 the foot section, 3 a part of the ankle portion of the stocking where the sections are designed to be connected, and 4 the projecting loops, which are held from being drawn back into the knitted body of the stocking by being fastened at the neck, 5, of every loop by slip knots, 6, in the transverse thread, 7, sufficient slack being left in the latter thread at points between the loops to provide an equal elasticity at the joining edges with that of other portions of the stocking.



PRESTON'S STOCKING.

The sections are designed to be connected by means of a needle and thread by the purchaser or user, the protrusion of the loops placing them in convenient position for this purpose, the union being made by the ordinary buttonhole stitch, and colored silk being used where it is desired to thus ornament the completed article. The union thus made is designed to afford a smooth, unbroken, and apparently undivided fabric.

A CANADIAN paper states that great difficulty is found in keeping brakemen at work on the trains which run through the St. Clair Tunnel, the discomfort from the accumulation of coal gas being so great that the men, although paid high wages, generally give up their places in a few days.



PRESTON'S SEPARABLE LEG AND FOOT STOCKING.

Concrete and Twisted Iron, as Used at the Stanford, Jr., University, Palo Alto, Cal.

The distinctive features of the Stanford, Jr., University relate not alone to the course and methods of training, but as well to the character of the buildings which have been erected. The style of architecture is modeled after the low, tile-roofed, adobe structures of the mission period. The buildings first erected were of hewn stone, massive, costly, and enduring. The later edifices are upon the same general plan, but are also unique and peculiar in mode of construction. They are monolithic, being moulded, walls, floors, and roofs, of artificial stone or concrete, with the addition of iron rods as an element of supporting strength for the floors.

The real problem of successful architecture clearly lies not so much in a choice of material as the proper use of materials common to all structures. Essentially the same elements enter into the construction of all important edifices. The great difference is in the way these are handled; whether the articles in question are used in their natural condition, or shaped and fitted by art, modified by preparation or manufacture, to meet the taste and means of the designer.

Buildings of stone are conceded to be the most enduring, and to best resist climatic changes, but they have been the most costly, where the granite or marble has to be transported from the quarry and dressed by hand for use in the walls. The same materials, broken in fragments, and again united by machinery with cement, and utilized in the form of monolithic (single stone) structures of concrete, prove cheaper, and, as use has demonstrated, more enduring, and resist heat better than natural stone.

Such structures are not new, but have heretofore been too massive and imposing. There was needed some device by which floors of stone need not be of excessive weight. In the construction of the new museum building and girls' dormitory at Palo Alto, this final problem seems to have been solved by a method first introduced upon the bay of San Francisco, which in effect utilizes the principle of the suspension bridge in every separate floor beam.

The floors, though formed of single slabs of artificial stone, are light and graceful in design, though capable of supporting great weight. This requisite strength has been secured by means of bars of twisted iron embedded within the mass, whereby the tensile strength of the iron—firmly held in place by the surrounding concrete—supports the floor.

The common iron floor beam can be depended upon to the safe limit only of its lateral or transverse strength. Were it possible to use the same weight of iron as a suspension rod, the safe limit would be the cohesive or tensile strength, which is about three times as great. In other words, a floor can be sustained by a suspension rod one-third the weight of the lateral beam. To break a beam by overloading, it is necessary to separate the particles forming the lower chord of the beam, by tension, or to disintegrate the upper member by compression. Incorporating the twisted bar in the lower portion of the beam, it acts as a suspension rod, and being firmly held at every point, the weight is distributed over the length of the bar. The iron thus embedded is also safe from corrosion and protected against fire, enduring with the concrete, which hardens as the years pass.

There is yet another feature of large interest here. It has been demonstrated that bars of iron, twisted while cold, and left a while before use, have their cohesive strength increased fifty per cent. The one-third weight is thus again reduced, showing that less than one-fourth the weight of iron affords equivalent strength.

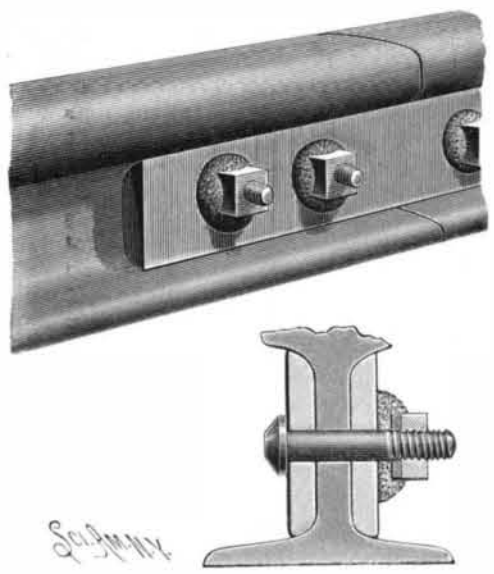
May not this departure at least indicate somewhat the character of the ideal building of the future?—*History of the Bay of San Francisco.*

Camphoid.

William Martindale says: It is known that iodoform is soluble (1 in 10) in Rubini's solution of camphor, composed of equal parts by weight of camphor and dilute alcohol. This requires fixing on the part to which it is applied. I therefore added 1 part of pyroxylin to 40 of the solution, and found it dissolved readily. Applied to the skin this preparation dries in a few minutes and forms an elastic opaque film, which does not wash off. The excess of camphor seems to volatilize, and as it disguises the odor of the iodoform its solution forms a useful vehicle for applying this drug. Pyroxylin dissolves readily in the simple solution of camphor, and this forms a cleanly basis for the application of many medicaments to the skin, such as carbolic acid, salicylic acid, resorcin, iodine, chrysarobin, and ichthyol. I suggest the name "camphoid" for the simple pyroxylin solution.

AN IMPROVED NUT LOCK.

The nut lock shown in the annexed cut is adapted for use on railroads, machinery, wooden structures, and for a wide variety of purposes. It has been patented by Mr. William P. Sweetland, M.D., of 397 Hayes Street, San Francisco, Cal. The lock is formed by means of an elastic non-metallic washer, to be placed upon the threaded end of each bolt. This washer may

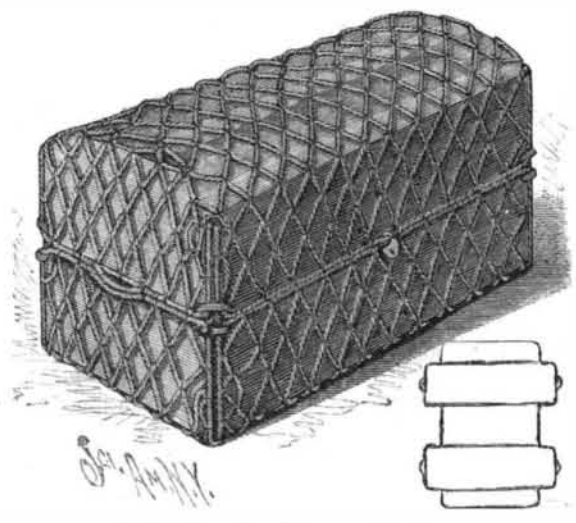


SWEETLAND'S NUT LOCK.

be of rubber or any fibrous material, or felt will answer the purpose, each washer being saturated with a hardening preservative compound, such as white or red lead and oil, or litharge and oil, or for which coal tar may be used, applied at the time of making the washers or just before their application. A metallic washer, preferably circular in shape, is placed upon each bolt to rest upon the non-metallic washer, as shown in the small view, and upon the securing nut being screwed down to place, the central portion of the elastic washer is compressed, so that its uncompressed edges partially embrace the sides and corners of the nuts. As the preservative compound hardens in drying, the nut is locked in place with such rigidness that a wrench is necessary to remove it. The washer, being elastic, also takes up any vibratory motion or jar, such as ordinarily causes the nuts to work loose.

AN IMPROVED TRUNK PROTECTOR.

An improved protective covering or envelope for trunks, portmanteaus, etc., consisting of an open network of cords, ropes, or similar material, is shown in the accompanying illustration, and forms the subject of a patent issued to Mrs. Carrie V. Thompson, of No. 38 Ashland Place, Brooklyn, N. Y. The small outline diagram shows the form in which the envelope is constructed, the ropes being bound together by twine, or sewed, riveted or otherwise fastened together at the intersection of the meshes. Handles, preferably of the same material as the network, are formed upon the ends of each of the projecting flaps by which the ends of the trunk are covered, and the whole is secured to the trunk by means of straps, ties, or clasps of any suitable description. The envelope preferably consists of a



THOMPSON'S TRUNK PROTECTOR.

strong, tightly made hempen cord or rope, although it may be made of leather, rawhide, or similar material, or of small metallic chains or wire ropes.

A RECENT issue of the *Bulletin de Musée Commerciale* gives the following statistics regarding the present production of aluminum:

	Lb. per diem.
The Neuhausen Works	1,000
The Pittsburg Reduction Company	600
The Metal Reduction Syndicate, limited	300
The Cowles Company	600-700 in alloys.