

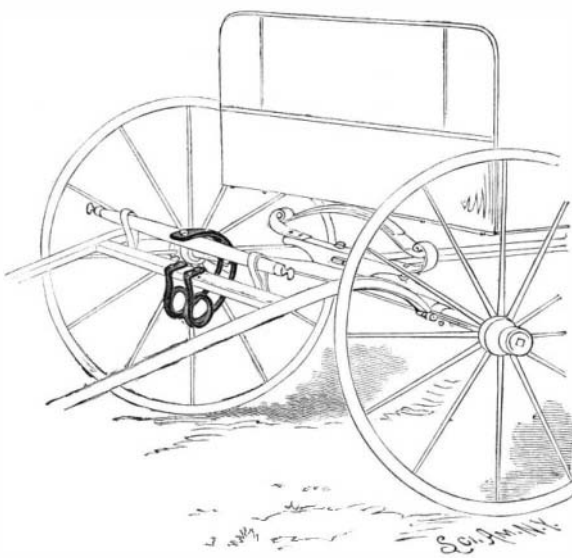
AN IMPROVED CABLE RAILWAY CROSSING.

The illustration shows plan and sectional views of a cable railway crossing so arranged as to bring the crossing cables near each other, while preventing the cables from coming in contact. The main track, A, is crossed at right angles by the track, B, C being the main cable and D the crossing cable. Two pulleys, E E', are arranged in line at right angles with pulleys, F F', to turn in the frame, G, which is held in position by a lever, H, extending in the direction of cable, D. The pulleys, F F', are supported by cable, D, and a counterpoised lever, not shown, but similar to lever, P. Cable, C, passes over the pulleys, E E', which are so arranged with pulleys, F F', to frame, G, that the cables are prevented from coming in contact with each other. When the crossing cable is elevated by a grip car approaching in the direction of arrow, a', the grip carries the cable to the height shown by the dotted lines in Fig. 2. A pulley attached to the grip, but not shown, then engages the under surface of lever, O, which is raised to a horizontal position, its pulley, O', supporting the cable until the grip is swung to the left by a curve in the slot, when the mechanism swings down to allow the grip to pass over cable, C. In the path of the grip over cable, C, is a counterpoised broad lever, P, having mounted on its free end a pulley, P', to engage cable, C, and prevent it from swinging upward as the crossing cable grip is passing over it. The grip next engages lever, Q, in the same manner as lever, O, the mechanism permitting the necessary upward motion of the cables as a car approaches the crossing, and, without bending either cable over the pulleys, preventing them from coming in contact with each other.

Further information relative to this invention may be obtained of the patentee, Dr. James P. Orr, No. 638 Fifth Avenue, Pittsburg, Pa.

A SPRING DEVICE FOR SINGLETREES.

The device shown in the illustration, which has been patented by Mr. Benjamin B. Allen, is designed to lessen the racking of carriage tops from the sudden jerking of the vehicle, and prevent shock to the horse's shoulders in pulling carriages supplied with the attachment over rough or uneven roads. The attachment consists of a double or bifurcated coil spring, the coils being arranged parallel with each other, and having upwardly extending arms firmly riveted to the cross bar connecting the shafts. Bent rearwardly and upwardly curved arms of the spring meet in a common center portion where the bifurcated section terminates, and this free end is centrally pivoted to the singletree, which is free to swivel or vibrate as affected by opposite side pulls. To prevent too much movement of the singletree, and limit the pull on the spring attach-

**ALLEN'S SPRING-ATTACHED WHIFFLETREE.**

ment, the ends of the singletree are loosely held by flexible loops or straps fastened to the cross bar.

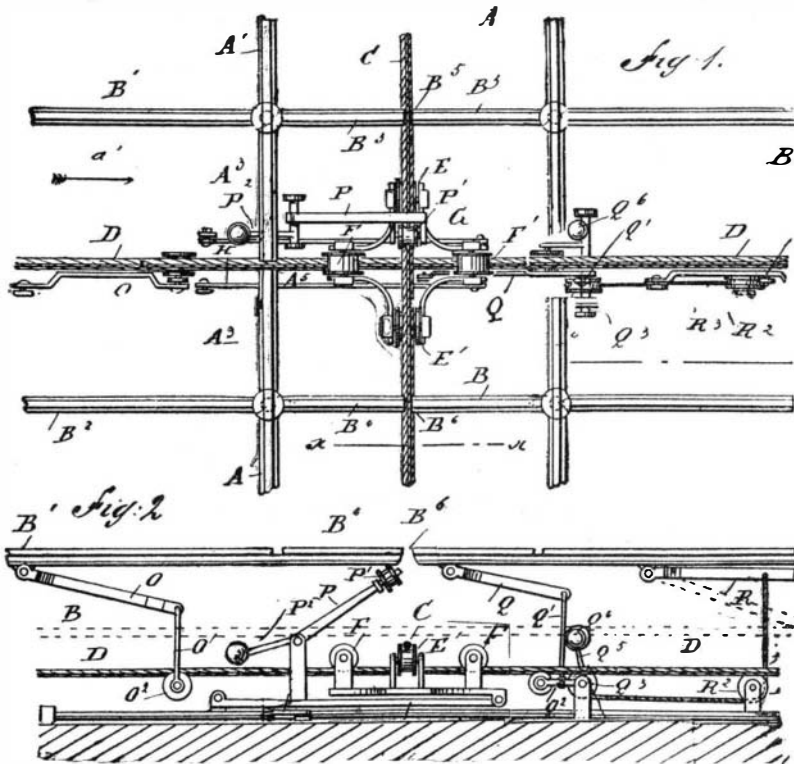
Further information relative to this invention may be obtained of Messrs. Weisbaum & Wilson, P. O. box No. 186, Hanford, Cal.

It is said the largest mass of granite ever quarried was taken out by the Bodwell Granite Company, in Vinalhaven, Me. It exceeds in length any of the Egyptian obelisks, the tallest of which was brought from Heliopolis and subsequently taken to Rome, where it now stands. This monument is 105 feet high. The Vinalhaven shaft will be 115 feet high, 10 feet square at the base and weighs 850 tons. This would, perhaps, form a good monument to the memory of General Sherman.

Discovery of Chaldean Monuments in the City of London.

BY PROFESSOR DOUGLAS.

If the house of Mr. Augustus Franks or of any other well known collector of Oriental porcelain were overwhelmed and destroyed by a sudden catastrophe—which Heaven forbid!—and if, after two or three centuries, the old foundations were dug up, it is more than probable that the workmen would find such specimens of crackled china and blue and white por-

**ORR'S CABLE RAILWAY CROSSING IMPROVEMENT.**

celain as would rejoice the hearts of the frequenters of the Christie & Manson's sale room of the day. An analogous case to this has lately occurred in Knight-bridge Street, in the neighborhood of St. Paul's Church-yard.

In the reign of the Merry Monarch this quarter of the town was the favorite business haunt of Dutch merchants. During the fire of London the then existing tenements were gutted and overthrown, and, though houses have since risen on the site, many of the old foundations have never been stirred to their depths. A few weeks ago, however, the workmen employed in laying the foundations of a new house discovered in the rubbish which they were compelled to remove some old Dutch tiles and three black diorite stones bearing figures and characters which suggested to them that they were of more than ordinary interest.

This surmise was, on investigation, fully borne out, and on the stones being removed to the British Museum it was discovered that two of them bore inscriptions in the Accadian language, the pre-Semitic language of Chaldea, and that on the third were traced the usual grotesque animals and astrological signs commonly found on Chaldean boundary stones of the twelfth or thirteenth century B. C.

That these stones should have been found in the foundations of a Dutch merchant's house is to be accounted for by the facts that in the seventeenth century, and, indeed, before that period, the Dutch flag was well known in the Persian Gulf, and that Dutch merchants had extensive mercantile relations with the traders of Bussorah. What more natural, therefore, than that these stones should have been shipped on board the ship of some Dutch captain and brought to the house of the consignee in London?

Unfortunately the inscriptions are, as is so often the case, purely religious, and do not add materially to our knowledge of the history of the country. In both cases they are dedicatory and contain the dedication of the objects—a door socket and a fragment of a basin for holy water “to the god Nina, the supreme Lord, the Lord of the written tablet.” The only point of historical interest in the inscription on the basin is the mention of E-anna-du, who, according to a tablet in the Berlin Museum, was a son of A-kur-gal, who is mentioned on the well known Vulture stela at the Louvre, and who is recognized as the son of Ur-Nina.

The real importance of the inscriptions, however, consists in the forms of the characters employed. The script on the door socket is in the cuneiform character of the period of Gudea; and the mention of that king's name in connection with the dedications has enabled Mr. Everts, of the British Museum, to fix the date approximately at 4000 B. C. But, far-reaching as this date is, the inscription on the basin is still older. Before the adoption of clay as a writing material, and before, therefore, the introduction of the cuneiform character, the writing of the country was linear, and it is this form which appears on the basin. This characteristic

guides us to a date about 4500 B. C., and we may therefore congratulate the British Museum on having acquired, by a happy chance, one of the oldest Chaldean monuments ever brought to Europe.—*Illustrated London News.*

Copper Sulphate.

An establishment for the manufacture of copper sulphate was set up by M. Defrance (Societe des mines et usines de cuivres de Vignais Annus), at the beginning of the year 1890, to meet the wants of the vine growers, who use a large amount of this product to prevent mildew. In this works the sulphate is prepared from metallic copper, which is heated to redness with sulphur in a series of reverberatory furnaces, the subsulphide thus obtained being then roasted in order to form a basic sulphate. This sulphate is next brought into large vats, in which it is dissolved in dilute sulphuric acid, the liquid being maintained at the proper temperature.

The solution obtained is run into four series of twenty large leaden vessels, where the sulphate crystallizes out as the solution cools, the crystals being deposited on sheets of lead which dip into the liquid, and are supported by cross pieces of wood. When the crystallization is complete, the liquors are run off, and the crystals removed from the walls and the leaden sheets.

After removal from the crystallizing vat, the crystals are placed on an inclined table, and sorted according to size and color by workmen. They afterward are passed down to the lower story to the driers.

These consist of large inclined tables which allow the water to drain away. The crystals are spread on these in thin layers, and moved about from time to time. The temperature of the room is kept sufficiently high to dry them. After drying, the sulphate is packed and sent off.

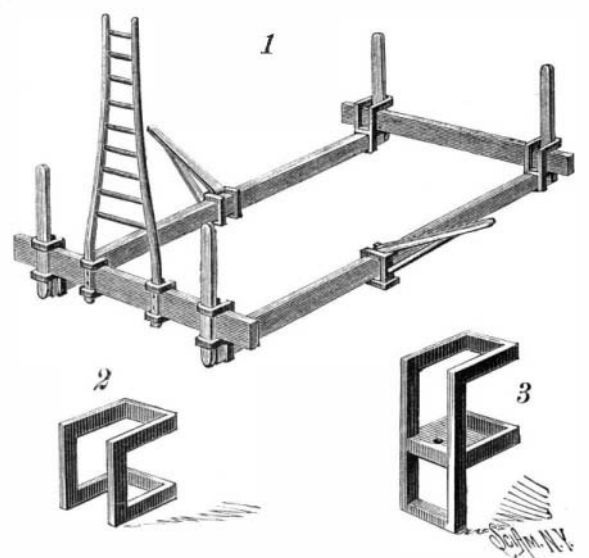
An Interesting Literary Relic.

Mr. G. W. Davenport, the vice-president of the Thomson-Houston International Co., secured recently while in Europe a most interesting relic of which he is very justly proud. It is none other than Michael Faraday's own copy of Franklin's well known and rare collection of letters and papers on philosophical subjects. It has his book plate on the inside of the front cover, and bears signs of use.

As touching on a late memorable controversy, Mr. Davenport points out that on page 325 Franklin remarks that “death by electricity would be the easiest of all deaths.”

A CLASP FOR CONNECTING TIMBERS.

The device shown in the illustration, although especially adapted for use in connection with wagon

**SALISBURY'S CLASP FOR WAGON RACKS, ETC.**

racks, is also applicable where two or more timbers running at an angle to other timbers and parallel with each other are to be spliced or connected. It has been patented by Mr. Harold A. Salisbury, of Vinson, Oregon. Fig. 3 shows the device in perspective and Fig. 2 represents a form of clasp to be employed for securing a ladder or side extension to a wagon rack, the application of both forms of the improvement being shown in Fig. 1. By this means the timbers may be quickly and conveniently joined without mortising or otherwise disturbing the wood in a manner to weaken it.

THE national museum of Brazil has come into possession of an enormous aerolite. It weighs 11,800 pounds.