THE DOUM PALM.

The doum palm (*Hyphæne thebaica*), an illustration of which appears on this page, is remarkable among palms in having branching stems. The trunk is simple when young, but in old trees is forked three or four times, each branch terminating in a tuft of large fan-shaped leaves. The fruit is of about the size of an orange, irregular in shape, with a polished yellowish brown rind, inclosing a single horny seed. The rind, which is dry, fibrous, and mealy, is said to taste somewhat like gingerbread, and is used as food by the Arabs. Although the tree is quite a large one, the trunk itself is seldom over 30 feet high.

OFFICIAL PREJUDICE

General A. A. Humphreys, Chief of Engineers, U.S.A., has recently addressed to the chairman of the House Committee on Levees and Improvements of the Mississippi, an extraordinary letter. The main object appears to be to discredit the work of Captain Eads and to defeat the efforts of that gentleman now being directed toward the more vigorous prosecution of the already successful undertaking. General Humphreys has always been a strong advocate of the Fort St. Philip canal scheme of opening the Mississippi and a non-believer in the efficacy of Captain Eads' plan. But whatever his views may be, they certainly do not justify him in completely shutting his eyes to absolute fact, as he does when he asserts "*that the opinions expressed to the effect that a new bar would form at the sea end of the jetties, and that it would extend into the sea more rapidly than the old bar, are correct, even during the changes going on under the scouring power of the jetties, aided by dredging between and seaward of them.*"

Instead of there being an advance there is an actual recession of the bar, and the jetties have not even been carried out to their projected length, as they are actually more than 200 feet shorter to-day than they were originally intended to be. The deepening has been so marked at the sea ends of the jetties, where the predicted bar growth was to occur, that Captain Eads has not found it necessary to complete them as far out as they were located and partly built two years ago.

Perhaps more inexplicable than any is the assertion, on the part of General Humphreys, to the effect that the "results actually attained at the South Pass disprove the views of Mr. Eads and confirm those of the Engineer Department." The General certainly cannot have read the report of Generals Barnard and Wright, made last January, which, after announcing the presence of a channel nowhere less than 200 feet wide and 22 feet deep, from South Pass, between the jetties, to the deep water of the Gulf of Mexico, says: "This result is so exclusively due to the jetties and auxiliary works that the auxiliary aid of appliances, if in such we include dredging machines, is utterly insignificant." Or if he prefers to ignore these statements of two distinguished officers of his own corps, he certainly must know, as a matter of common notoriety, that the heaviest draught ships are already using the jetty channel.

Captain Eads has published the letter to the Committee of the House, in which he answers General Humphreys' separate allegations in a way which leaves no two opinions concerning either the statements themselves or the motives which prompted them. It is a matter of regret that an officer of General Humphreys' rank and distinguished abilities should permit his prejudices so seriously to warp his better judgment.

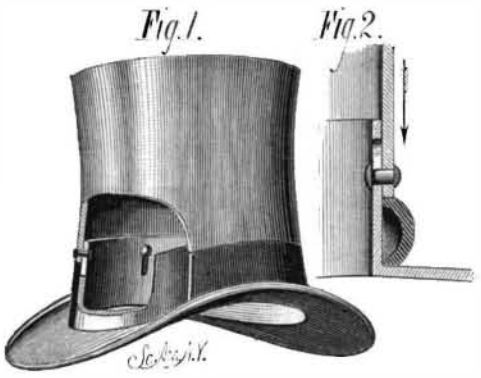
THE CARGO OF THE IDAHO.—The cargo of the lost steamer Idaho furnishes an index of the current contributions of America to the Old World. It comprised 141 packages of agricultural implements; 77,000 pounds of bacon; 98 packages of clocks; 17,311 bushels of corn; 1,904 bales of cotton; 94 bales of hops; 58 horses; 200 tons of fresh meat; 75 tierces of salt meat; 2 cases of machinery; 5 pianos; 12 kegs of printing ink; 25,258 bushels of wheat; 12 packages of manufactured wood.

A NOVEL application of the electric light is proposed by Professor Edison. His plan is to make a diminutive light apparatus, and inclose it in a glass globe of such size as to be easily swallowed. He will connect it with a suitable battery, and he expects to be able to witness the process of digestion, and to see with more or less distinctness the operations of the internal organs.

DON'T SWALLOW CHERRY PITS.—A man died in Vermont the other day, after suffering from dyspepsia for twenty years. Some peculiar circumstances in his case led to a post mortem examination, which revealed thirteen cherry stones imbedded in the lining of the stomach, causing a thickening of the walls of that organ some three fourths of an inch, and ultimately the man's death. It was the opinion of the physicians that the stones had been there many years.

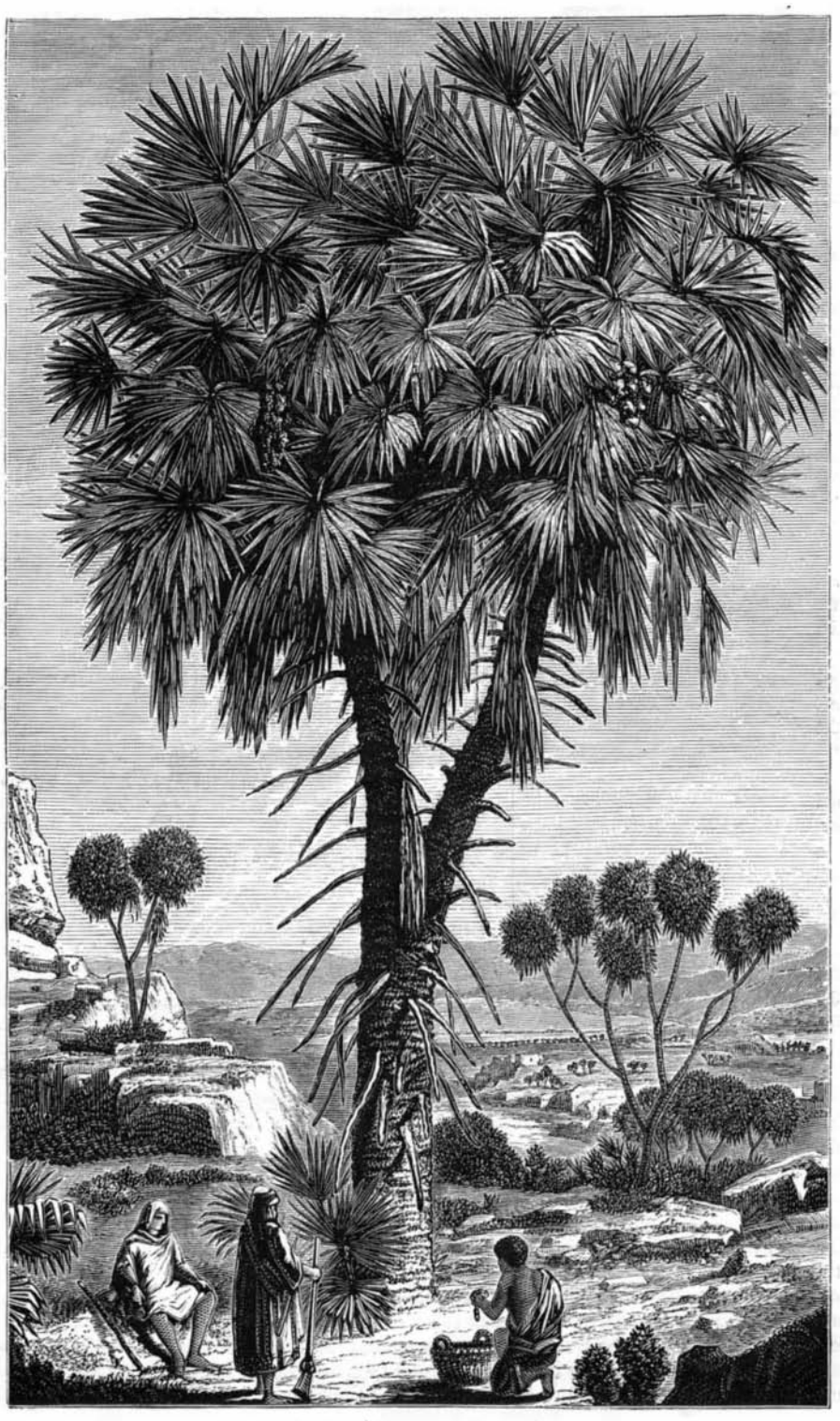
IMPROVED YIELDING HAT.

The annexed engraving represents an improved hat for firemen, policemen, and others, by which the force of falling bodies or of blows may be broken sufficiently to protect the head against injury. The brim is made separate from the hat body, and is provided with a raised portion which is



fitted to the head. The body slides on the rim portion as shown in section, Fig. 2, and is guided by slots and pins, and supported by a cushioning spring. This device was patented through the Scientific American Patent Agency, February 26, 1878, by Mr. José M. de Celis, of New York city.

PROFESSOR EDISON intends to employ his telephone for distinguishing sounds within the thorax and other cavities of the body, in place of the stethoscope. It will be of great advantage in medical schools, as a single telephone will be applied to the subject, and as many receiving instruments as may be required will be placed in communication with it for the use of students.



THE DOUM PALM.

NOTES OF PATENT LAW-DECISIONS OF THE COURTS.

The Atlantic Giant Powder Company brought suits against Goodyear and Townsend for infringement of Nobel's reissued patent, for an explosive compound consisting of a combination of nitro-glycerin with infusorial earth. The question presented on the motion for preliminary injunctions was, whether the pulverulent powder compounded of the usual proportions of nitrate of soda, charcoal, and sulphur, as used in the "Vulcan blasting powder," in combination with nitro-glycerin, was, for the purposes of, and in that combination, the equivalent of "the substance" described in the Nobel patent as possessing "a great absorbent capacity, and which at the same time is free from any quality which will decompose, destroy, or injure the nitro-glycerin, or its explosiveness;" thus, when combined with nitro-glycerin, forming out of the two ingredients "a composition which, without losing the great explosive power of nitro-glycerin, is very much altered as to its explosive and other properties, being far more safe and convenient for transportation, storage, and use than nitro-glycerin."

The preferred form of this substance, as described by Nobel, was the *Rieselgurgh*, or infusorial earth. The substance used by the defendants, in combination with nitro-glycerin, was a mealed powder of nitrate of soda, charcoal, and sulphur, in proportions the same as in some gunpowder in common use in granular form.

It was not contended that the substance itself used by the defendants did not possess, in the combination, every property claimed for the infusorial earth in the dynamite patent, or that the combination of it with nitro-glycerin, as "Vulcan blasting powder," did not possess every attribute and property in a greater or less degree possessed by dynamite.

The contention of the defendants was, that the only object and aim of Nobel's invention, as patented, was to render nitro-glycerin safer in handling and transportation; that there was no intent to augment its explosive force; that, on the contrary, the solid substance exerted no influence and remained as inert matter, while the object of the manufacturer of the Vulcan powder was stated to be "to render the explosion and combustion of gunpowder instantaneous."

It was further argued by the defendants that Nobel in his original letters patent described his absorbent as an "inexplosive" substance, and that if the omission of the term "inexplosive" in the reissue enlarged the scope of the invention, the reissue itself was void; and that if the reissue was to be construed in connection with the original, and for the same invention, it must be limited to the use of absorbents as equivalents which were inexplosive.

The court, however, in disposing of the first objection raised by the defendants, holds that evidently it was not the sole or principal object of the defendants, in manufacturing Vulcan powder, to render the explosion and combustion of gunpowder instantaneous. That if this was the only object of the combination, why begin the process by substituting for the granular gunpowder, so highly explosive, a mealed powder of the same ingredients in a pulverulent state, and of a lower degree of explosiveness than grained powder? The fact was that gunpowder, when used as an absorbent in the Vulcan powder, fulfilled every condition and performed every function of the absorbent in Nobel's patent, besides possessing the additional function, at the time of the explosion, of co-operating, by means of its conversion into gas, with the nitro-glycerin, in rending the rock, instead of remaining, like the infusorial earth, an inert substance. This latter fact, however, rendered it no less an equivalent. The legal reports are full of cases proving that, when a substitute is used for one ingredient in a patented combination which has every property and performs every function of the original in the combination, it does not cease to be an equivalent because, in addition, it does something more and better.

In disposing of the second objection the court holds that the word "inexplosive" was applied in the original patent as a term of description to a substance only preferentially used. The word was used in the original patent to describe substances which, as compared with nitro-glycerin, were inexplosive by concussion, which would not of themselves explode under those conditions which render nitro-glycerin so dangerous and unsafe, and which, inexplosive in themselves under those conditions, when combined with nitro-glycerin, would make the combination a compound which would also be inexplosive except under such conditions as were not inconsistent with substantial safety in its use for blasting and similar purposes. The word was properly omitted in the reissue, not for the purpose of including equivalents which were not