

# Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL, AND OTHER IMPROVEMENTS

VOLUME XII.

NEW-YORK, MAY 30, 1857.

NUMBER 38.

THE  
**Scientific American,**

PUBLISHED WEEKLY

At 123 Fulton street, N. Y. (Sun Buildings.)

BY MUNN & CO.

O. D. MUNN, S. H. WALES, A. E. BEACH.

Responsible Agents may also be found in all the principal cities and towns in the United States.

Sampson Low, Son & Co., the American Booksellers, 47 Ludgate Hill, London, Eng., are the English Agents to receive subscriptions for the Scientific American.

Single copies of the paper are on sale at the office of publication and at all the periodical stores in this city, Brooklyn, and Jersey City.

TERMS—\$2 a year.—\$1 in advance and the remainder in six months.

See Prospectus on last page. No Traveling Agents employed.

## Parchment Paper.

The last number of the London *Mechanics' Magazine* contains the abstract of a lecture delivered on the above at the Royal Institution by the Vice President, Rev. J. Barlow. We will give the substance of the lecture in as few words as possible, leaving out no essential particular.

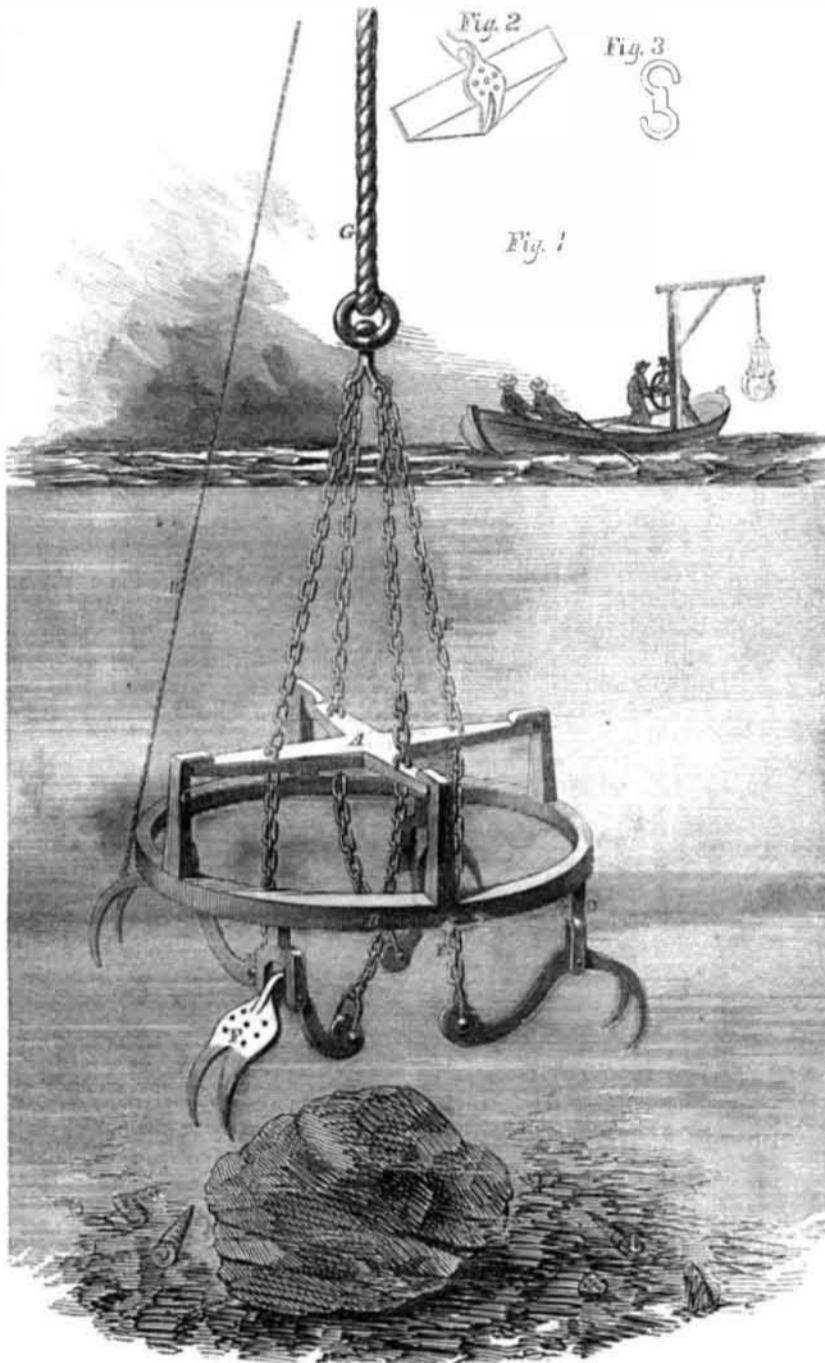
The parchment paper is the invention of W. E. Gaine, C. E., and it is about to be manufactured and brought into public use. This inventor instituted a series of experiments to discover the effects of acids of different degrees of strength upon vegetable fibre; and he succeeded in discovering that when paper is exposed to a mixture of two parts of concentrated sulphuric acid of the specific gravity of 1.854, with one part of water, for a short period—simply drawing it through the liquid—it is immediately converted into a strong, tough, skin-like material. All traces of the sulphuric acid must be instantly removed by careful washing in water. If the strength of the acid much exceeds or falls short of that already stated, the paper is either charred or converted into dextrine, or if it is allowed to remain for many minutes in the sulphuric acid after the change in its texture has been effected. It was stated by Mr. Barlow that in a little more than a second of time, a piece of porous, weak, and unsized paper is converted into parchment paper—a substance so strong that a ring of it, seven-eighths of an inch in width, and weighing no more than 23 grains, sustained a weight of 92 lbs., and a strip of parchment of the same dimensions, supported 56 lbs. Like parchment, it absorbs some water, but it does not percolate through it, and it is even indestructible by water.—Printed paper is capable, by this process, of being converted into parchment paper without obliterating the printing. Beautiful photographic pictures were taken on this paper, and exhibited at the Institution.

The process for making this paper is very cheap and simple, but requires great care. It appears to be a most valuable invention. Great quantities of vellum are now required for bookbinding, and much parchment is used for valuable legal documents. It will probably replace these, and perhaps paper for school and other books exposed to constant wear.

## More American Pearls.

The Pearl Mussel, as it is now called, is found in the Schuylkill, and, indeed, in all the creeks, rivers and streams of this section of the country; but for the production of pearls, it is said to be indispensable that the water should be impregnated with some such mineral substance as iron, copper or lead. If this be so, Pennsylvania ought to yield an inexhaustible supply of pearls, for her soil is incomparably rich in iron, and there are also mines of copper and lead in the interior. It might be worth while for some of our rural folks to investigate the matter. There is no longer any doubt respecting the genuineness or value of the pearls found in the waters of New Jersey.—*U. S. Gazette.*

## STONER'S GRAPPLER AND DREDGER.



The accompanying figures illustrate an ingenious device invented by Augustus Stoner, of Mount Joy, Pa., and secured by Letters Patent granted on March 24th of the present year, the design being to grapple at will by the simple act of lowering upon any object and again hoisting, and also to be capable, by simple means, of releasing its grasp whenever it seizes on an absolutely immovable object. It may also, by changing certain parts, be transformed into a dredger instead of a grappler, and be capable of holding with tolerable tightness a large amount of loose earth.

Four hooks, F, heavier at the shank than toward the point, are jointed as represented to a stout ring, B, so that when B is suspended and the hooks allowed to hang freely, they naturally assume by gravity the positions represented in fig. 1. To the shank of each is attached a chain, E which leads up, and unites above to the stout rope, G, as shown. At an intermediate level on these chains, between F and G, is suspended the iron cross, A, the chains, F, passing through A by the intervention of peculiar links shown separately in fig. 3, so that A is supported without affecting the continuity of the chains. From four points on B, not coinciding with those to which the F hooks are jointed, arise rigid arms, C, bent as represented, so that

when the machine is to be lowered the weight of the ring, B, and its dependencies rests on the cross, A, which is carefully placed under the overhanging extremities of C for the purpose, and as the chain is of sufficient length below A, the hooks readily drop into their expanded position as represented. When B rests on the bottom or on any object, a very slight additional slacking of the rope, G, by lowering A frees it from contact with C, and on being again hoisted A is quite certain to be turned one-eighth of a revolution horizontally, and thus to miss of contact with C, in which case the lift is transferred to the butt ends of the stout hooks, F, compelling them to describe a partial revolution on their jointed points, D, and to firmly grasp or embrace the object within. The boat shown on a smaller scale in the same figure is represented as having lifted an object by this means above the surface.

As any such grappler is liable to seize portions of a large wreck or of a firm ledge which it is impossible to lift, it is of the utmost importance to providemeans for unhooking or releasing its hold when necessary. This is done by the aid of a separate line, H, attached to each hook in such a manner that by slackening the main rope, G, and pulling on A the hooks will be compelled to expand. It must, of course, be understood

that there is either an independent line, H, extending from each hook quite to the surface, or one main line, H, with attachments, extending to each hook, the intent being to lift or release all the hooks, although to avoid confusion in the illustration, only one of the hooks is represented as capable of being thus moved.

Fig. 2 shows a form of scoop to be substituted for the hooks when the invention is to be employed for the purpose of dredging. These are so proportioned that their points are presented downward and readily enter the soft earth or mud when the apparatus is lowered, and close together into an almost water-tight box when the machine is lifted. By thus changing the parts, the same device makes a very efficient dredger as well as a strong, very tenacious and easily releasable grappler, for all the ordinary purposes to which scoops or tongs of any kind are applied under water.

For further information address Messrs. Stauffer, Stoner & Co., Mount Joy, Pa.

## Strychnine and Whiskey.

An Ohio correspondent, who is a distiller, writes to us in reference to the short paragraph on page 286 of this volume, in which it is stated that "the use of strychnine in the manufacture of whiskey is henceforth to be punished as felony in Ohio." It is also stated in the article that by means of tobacco and strychnine "some distillers were making five gallons of whiskey from a bushel of grain, whereas by the old plan they only made two and a half gallons from the same quantity." We gave the article, not on our authority, but in such a manner as to draw out the truth from some of our correspondents. In the *New York Tribune*, and a number of other papers, the above statements were given for facts. Our correspondent denies their correctness. He has never used strychnine, and he denies that it has any effect in producing a greater yield of whiskey. He has the lives of six thousand hogs at stake, in feeding them with distillery refuse, and as all distillers keep hogs in proportion to their business, it would not be to their interest to kill them with strychnine. Certainly not.

## American Nickel.

The Philadelphia *Daily News*, in giving room to the circular of Col. James Ross Snowden, Director of the Mint, appends these editorial remarks on nickel:—

"As appropriate to the issue of the new cent, which, as the reader is aware, is composed partly of nickel, we notice that a new method of concentrating the nickel and cobalt ores has been recently discovered by Theophilus Meny. It is claimed for the new discovery that, whereas it now takes several weeks to concentrate a hundred tons of ore, producing 30 to 35 per cent, by it the same percentage may be realized in the same time from a thousand tons. This is, without doubt, a most important discovery, and if found to be really practicable, will add immensely to the works, as well as the stock, of the Gap Mining Company, from the mines of which the supply of nickel now being used at the Mint is derived. The Gap mines produce both copper and nickel in large quantities, and being located within about fifty to sixty miles of our city, they possess a value far beyond any others known to us."

## Cultivation of the Sugar Millet.

The Washington correspondent of the *Baltimore Sun* says: "Mr. Wray has commenced a plantation of one hundred acres of his new variety of the sugar millet, called by him Imphee, in South Carolina, on the estate of Governor Hammond." He obtained the seed from South Africa, where it is native.