# Science and Art.

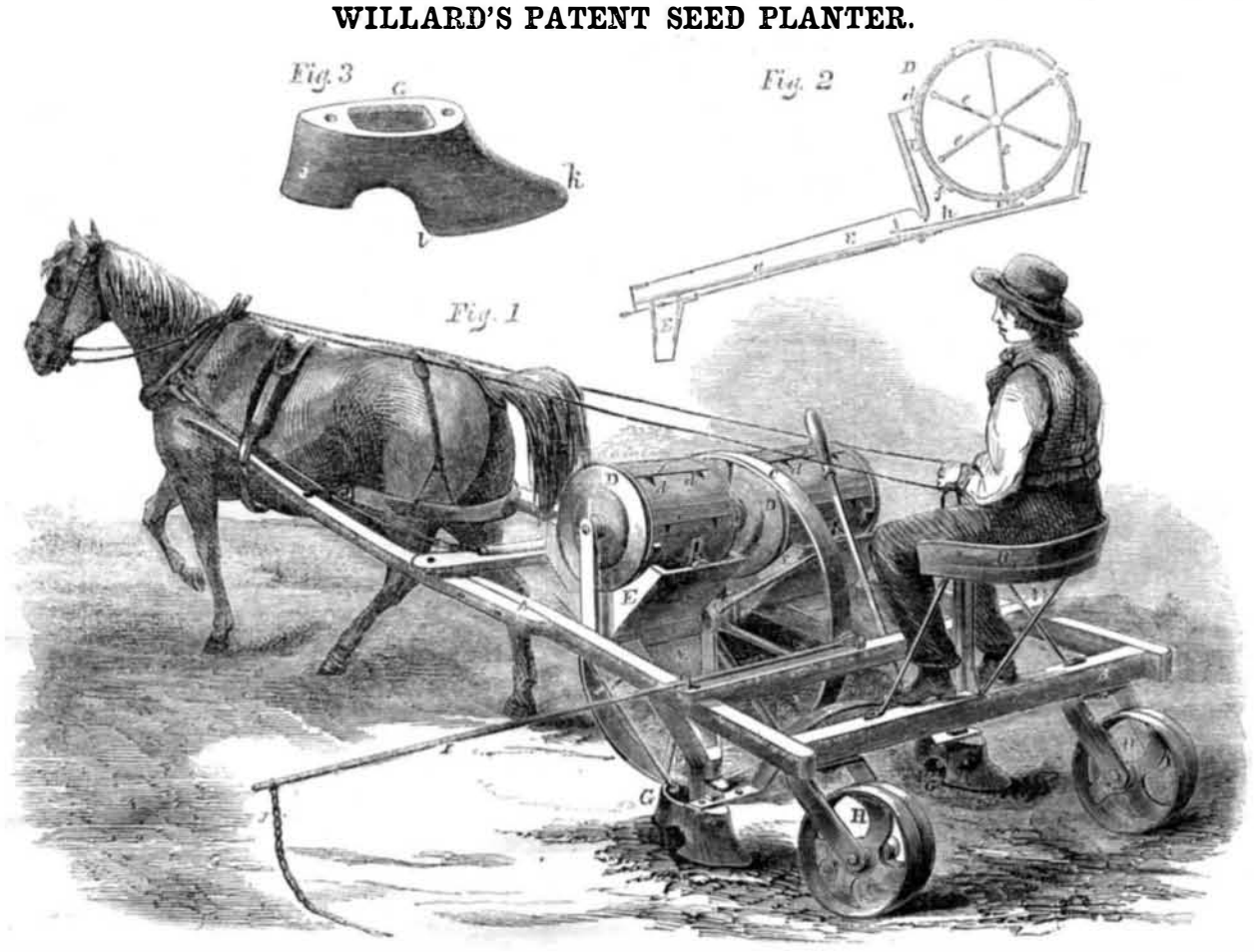
### Artificial Whalebone.

It would almost seem that science, in its rapid march, would finally procure for the great whales of the deep a respite from the tormenting and deadly assaults of the harpoon. Artificially made oils and fluids are steadily displacing animal products for purposes of illumination, and now by a somewhat recent discovery the bone of the whale is no longer needed to supply our umbrella and skirt-makers with skeleton frames. In 1855, Joseph Kleemann, of Meissen, Germany, obtained a patent for a mode of preparing a substitute for whalebone. The process has been put into practice in this city by Vellman, Solomon & Co., who are turning out about twenty thousand umbrella frames every week! It consists in taking sticks of the common ratan and soaking them in a liquid extract for about four days, after which they are immersed in a solution of any of the iron salts, which gives the ratan a deep black dye. Subsequently the sticks are exposed in a close vessel, for the space of about one hour, to the action of steam of about three or four atmospheres' pressure, and then thoroughly dried in a furnace or drying room at a temperature of about 180° Fah., when they become ready for the impregnating process.

The sticks are then placed into an iron cylinder (capable of standing the pressure of at least ten atmospheres), connected by a pipe with an open vessel, containing a varnish made by dissolving 120 parts of shellac and 200 parts of burgundy pitch in 90 parts of absolute alcohol. The air having been exhausted from the cylinder, the cock connecting it with the vessel containing the varnish is opened, when the atmospheric pressure will force the varnish into the cylinder and into the pores of the ratan.

The impregnation of the ratan is rendered more perfect by the use of a pump for forcing the solution into the cylinder. The ratan has now changed its character and become hardly distinguishable from the best quality of whalebone, except that it is somewhat more elastic and less liable to splinter and break. It has gained one hundred per cent in weight by impregnation. After being removed from the cylinders, or impregnators, but little remains to be done in the way of drying, polishing, and fitting the ends, &c., to prepare it for use for umbrellas, parsols, canes, &c., and various other purposes.

## WILLARD'S PATENT SEED PLANTER.




The advantage of this seed planter over the numbers that are in operation is shown and will be understood from the following description and engravings, of which Fig. 1 is a perspective view of the whole, Fig. 2 a section of the seed-planting device, and Fig. 3 an enlarged view of the furrower and presser.

A represents the main frame, on which the whole device is mounted; B the driver's seat; C the large front wheel that supports the frame, and gives motion to the seed boxes, either by a strap or gearing. D are the seed boxes, provided with slits, *d*, and divided into compartments, as seen at Fig. 2, *e*, which compartments tend to force the seed to the periphery of the box, and send it through the holes, *d*. There are also slides, *f*, on the outside of the periphery of the boxes, by whose means the size of the apertures is increased or diminished, thus allowing a greater or less quantity to pass through. The seed passes from that into a trough, E, which is also provided with a spout, F, through which the passage of the seed is again regulated, by means of a reciprocating arrangement also shown in Fig. 2, which consists in a rod, *g*, acted upon by a lever, *h*, which is depressed, and allowed to raise itself by the weight of *g*, and the projections on the seed boxes, *i*. By these means a double regulator is effected, and the certainty of an equal distribution insured. There is also to each seed box and trough a setter and coverer of novel construction, as they are both cast in one piece, G, and seen enlarged at Fig. 3, the fore part of which, *j*, acts a plow; and the shape of the hind part, *k*, is such, that by means of the outspreading flanges, *l*, it gathers up the soil and presses it over the seed, which is further aided by the rollers, H, that support the back part of the frame. A marker, J, is attached to the rod, I, so that the driver may be able to plant the seed in perfectly parallel lines. This is one of the most complete machines for the purpose intended, and one of them is on exhibition at the Crystal Palace during the Fair.

Letters Patent for this seed planter were granted this week, as will be seen on reference to our list of Patent Claims.

For further particulars and information apply to Hosea Willard, Vergennes, Vt.

### Description of the Gulf Stream.

The general description of the Gulf Stream is that of a vast and rapid ocean current, issuing from the basin of the Mexican Gulf and Caribbean Sea, doubling the southern cape of Florida, pressing forward to the northeast, in a line almost parallel to the American coast; touching on the southern borders of the Banks of Newfoundland, and at some seasons partially passing over them; thence, with increasing width and diffuusion, traversing the whole breadth of the Atlantic, with a central direction towards the British Isles; and finally losing itself by still wider diffusion in the Bay of Biscay, on our own shores, and on the long line of the Norwegian coast. Its identity in physical characters is preserved throughout the many thousand miles of its continuous flow; the only change undergone is that of degree. As its waters gradually commingle with those of the surrounding sea, their deep blue tint declines, their high temperature diminishes, and the speed with which they press forward abates. But, taking the stream in its total course, it well warrants the name of a "river in the ocean." This epithet is, in truth, singularly appropriate to this vast current, so constant and continuous in its course, and so strangely detached from the great mass of ocean waters, which, while seemingly cleft asunder to give path to its first impulse, are yet ever pressing upon it, gradually impairing its force and destroying its individuality.

The maximum of velocity where the stream quits the narrow channel of Bemini—which compresses its egress from the Gulf—is about four miles an hour; off Cape Hatteras, in North Carolina, where it has gained a breadth of seventy-five miles, its velocity is reduced to threemiles. On the parallelof the Newfoundland Banks, it is further reduced to one and a half miles an hour, and this gradual abatement of force is continued across the Atlantic. The temperature of the current undergoes a similar change. The highest observed is about 85° Fah. Between Cape Hatteras and Newfoundland, though lessened in amount, the warmth of the stream in winter is still 25° or 30° above that of the ocean through which it flows.—*Edinburgh Review.*

### The Tamarind

Is the fruit of a tree (*Tamarindus Indicus*) growing in the East and West Indies to the height of 30 or 40 feet. When the fruit is ripe the shell or epicarp is removed, and the fruit placed in layers in a cask, boiling water being then poured over it. Another plan is to put alternate layers of tamarinds and powdered sugar in a stone jar. Tamarinds are imported both raw and preserved. Tamarind pods are from 3 to 6 inches long, and more or less curved: they consist of a dry, brittle, brown external shell, within which is the acidulous, sweet, reddish-brown pulp (which is the useful part) penetrated by strong fibres. Within this is a thin membraneous coat enclosing the oval brown seeds. The pulp allays thirst, is nutritive and refrigerant, and in full dosesis a laxative. "An infusion of tamarinds," says Pereira, "forms a very pleasant cooling drink, as does also tamarind whey." Infusion of senna with tamarinds is a useful laxative.

Ship Canal.—The Legislature of New York has incorporated a company to build a ship canal round Niagara Falls, capable of receiving ships of war, and vessels of the largest size. Congress is to be solicited to aid this great national work. Wheat can thus be sent direct from the lakes to Liverpool.