Science and Art.

Why do Teeth Decay.

All the theories that again and again have been advanced in answer to this inquiry, have long since vanished before the true doctrine of the action of external corrosive agents. The great and all powerful destroyer of the human teeth is acid, vegetable or mineral; and it matters not whether that acid is formed in the mouth by the decomposition of particles of food left between and around the teeth, or whether it is applied directly to the organs themselves, the result is the same, the enamel is dissolved, corroded, and the tooth destroyed. Much, very much of the decay in teeth may be attributed to the corrosive effects of acetate acid, which is not only in common use as a condiment in the form of vinegar, but it is generated by the decay and decomposition of any and every variety of vegetable matter. When we consider how very few persons comparatively take especial pains to remove every particle of food from between and around their teeth immediately after eating, can we wonder that diseased teeth are so common, and that their early loss is so frequently deplored?—[Exchange.

[The above does not afford good reasons why the teeth of our people are so subject to early decay, in comparison with the teeth of the people of some other countries. It is generally allowed that there is work for five times the number of dentists in the United States that there is in Britain; and that, while bad teeth is the exception there, it is the rule here. We believe that our people take more pains with their teeth by washing than the natives of Ireland, and yet the Irish have far better teeth. Acetic acid cannot be the cause of this early decay of teeth among us; indeed, we know it is not. There is no subject of more importance than this; for if the early decay of teeth among our people is not the result of ill health, we all know that bad teeth are injurious to health. The health of a people is a question of the very first importance; it is of more consequence than any other. It is our opinion that if more coarse *hard* biscuit were eaten in early life, to exercise the teeth, they would be less liable to early decay. The very form of some of our teeth are adapted to grinding, and if not properly exercised, they must become tender and delicate.

Water-Proof Blacking.

18 ounces of india rubber are to be dissolved in about 9 pounds of hot rape oil.—To this solution 60 pounds of fine ivory black, and 45 pounds of molasses, are to be added, along with 1 pound of finely ground gum arabic, previously dissolved in 20 gallons of vinegar, of full strength. These mixed ingredients are to be finely triturated in a paint mill till the mixture becomes perfectly smooth. To this varnish 12 pounds of sulphuric acid are to be now added in small successive quantities, with powerful stirring for half an hour. The blacking thus compounded is allowed to stand for 14 days, it being stirred half an hour daily; at the end of which time 3 pounds of finely-ground gum arabic are added; after which the stirring is repeated half an hour every day for 14 days longer, when the liquid blacking is ready for use.

In making another paste blacking, take the above quantity of India rubber, oil, ivory black, molasses, and gum arabic, the latter being dissolved in only 12 pounds of vinegar. These ingredients are to be well mixed, and then ground together in a mill till they form a perfectly smooth paste. To this paste 12 pounds of sulphuric acid are to be added in small quantities at a time, with powerful stirring, which is to be continued for half an hour after the last portion of the acid has been introduced. This paste will be found fit for use in about 7 days.

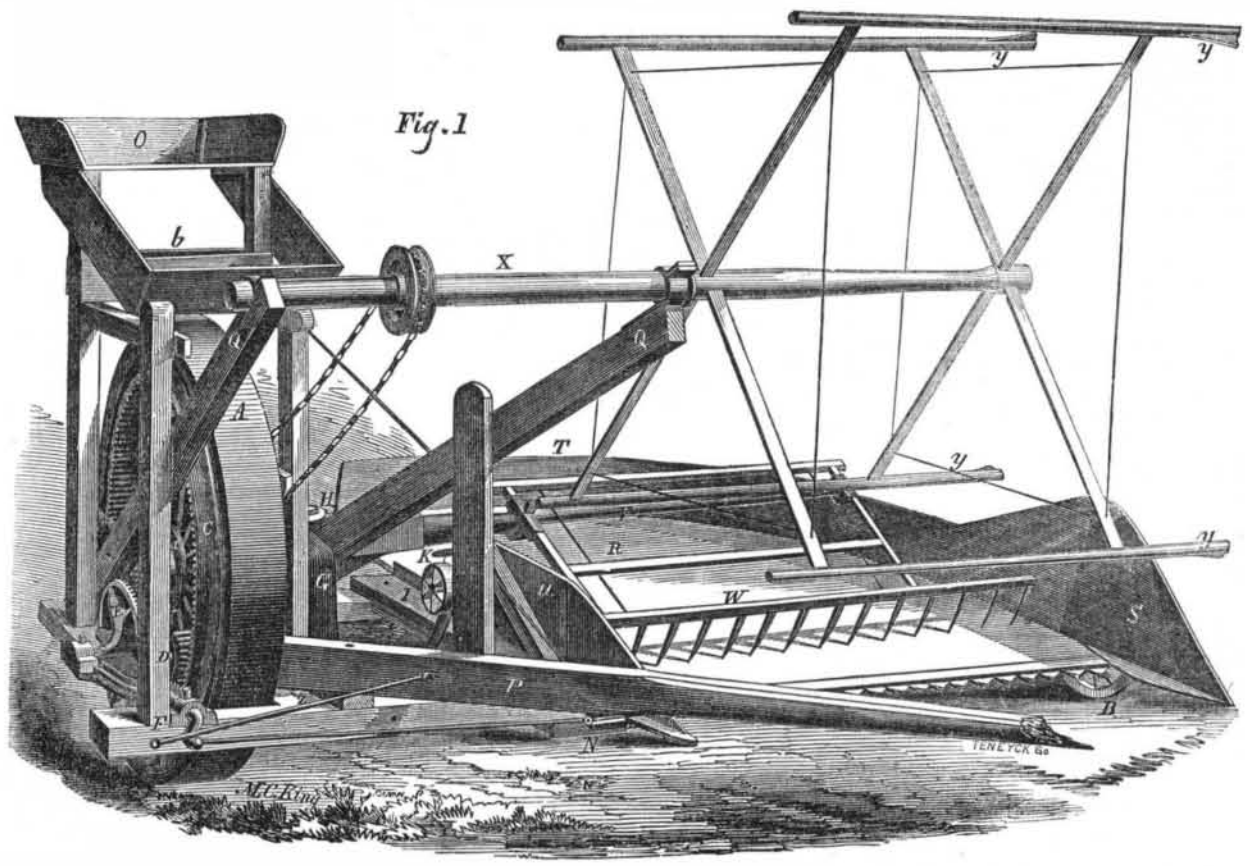
The morus multicaulus grows luxuriantly in Florida. Cocoons of the silk-worm are said to be sometimes found upon it in the wild state.

History of Reaping Machines.—No. 27.

On the 9th of January, 1855, we find that a patent was granted to John E. Newcomb, of Whitehall, N. Y., for a mode of keeping the scythe plate to the shear edges by a pressure bar and set screws, (see claim page 150, Vol. 10, Sci. Am.) On January 16th following, a patent was obtained by O. B. Judd, of Little Falls, N. Y., for a combination of rotary and stationary cutters, embracing three claims, (see page 158, Vol. 10, Sci. Am.) On the 30th January following, a patent was granted to Aaron Palmer, of Brockport, N. Y., for an improvement in the frames of harvesters, (see claim on page 174, Vol. 10, Sci. Am.)

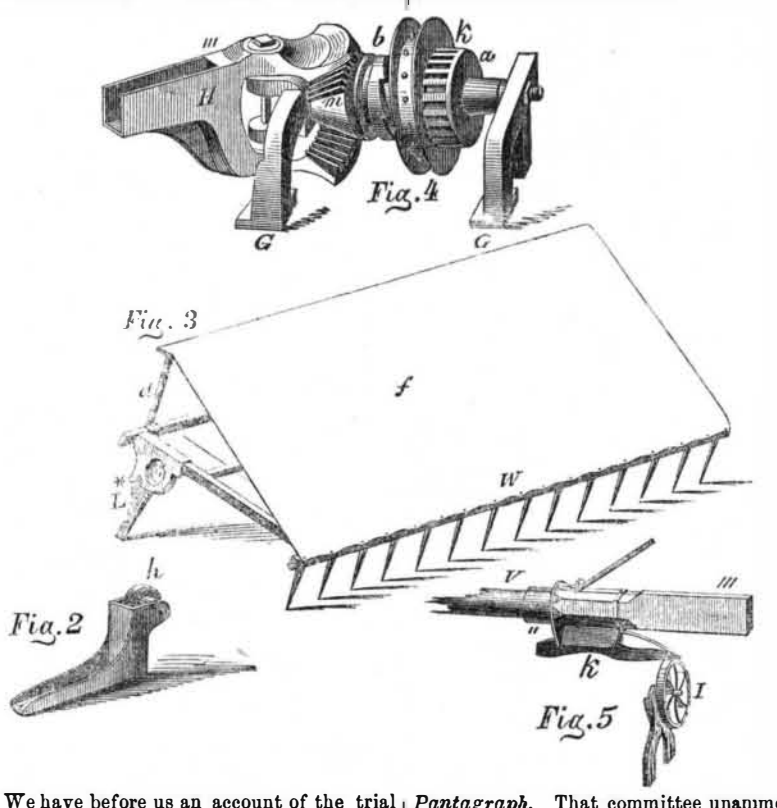
The annexed figs (51, 52, 53, 54, and 55, of the series of cuts) are perspective views, fig. 1, of the complete harvester, and figs. 2, 3, 4, and 5, detached views of parts of the improved machine of Palmer & Williams, embracing three patents, the first dated July 1st, 1851, the second Jan. 24th, 1854, and the third the patent of Sylvanus Miller, re-issued to the assignees Nov. 21, 1854; it relates solely to the cover or roof, a very essential thing to the proper working of a self-raker, and shown in fig. 3. The patent granted on the 30th of January, mentioned above, is for improvements in a mower. The same letters in the

Fig. 1



annexed figures refer to like parts. A is the master or driving wheel; B the guide and support wheel. The large wheel has cogs on its inner surface, which give motion to the gearing, E D, and operate the crank, F, which gives a reciprocating motion to the cutters through the rod, N. Z is a stay rod, *y y* are the blades of the reel, X is its shaft, which is supported on the bearers, Q Q, and receives motion by a chain belt from a spoke wheel on the driving wheel shaft. O is the driver's seat; P is the pole. S is the divider guard. R is the grain platform, T is its back board, and *u* its side one.

W is the rake head, as shown in fig. 3. L is the rake trip; * is the latch mortice; *d* is a steel brace, and *f* the light thin roof, embraced in S. Miller's claim, for the purpose of separating the gavel from the falling grain. The rake lifter, fig. 2, has a roller, *h*, with a flange; against this the rake lifter, L, strikes as the rake sweeps around, and raises up the rake head, W. In fig. 4 *a* is a cast iron hub, K the chain wheel and *b* a ratchet. G G are arch supports. H a curved rack, and *m* a pinion. In fig. 5, I is a wheel to unlatch the rake. V is the rake lever, and *k* is the rake latch. The reapers are manufactured at Brockport, N. Y., where A. Palmer resides. S. G. Williams, the other partner, resides in Janesville, Wisconsin. The machines are manufactured at Brockport.



We have before us an account of the trial of self-raking harvesters, which took place at Bloomington, Ill., during the harvest last year, under the direction of a committee appointed by the Illinois State Agricultural Society.—The trial lasted five days, and an account of it was published in the Bloomington *Daily Pantagraph*. That committee unanimously awarded the highest premium to this reaper. The distance around the field where the trial commenced was nearly two miles, and perhaps this was the most thorough trial of reaping machines ever held in our country, as the report says the grain laid in every condition.