

SUGAR-CANE MILLS.

Among the various devices for crushing sugar-cane which have been presented, from time to time, to the readers of the *SCIENTIFIC AMERICAN*, the mill represented in the accompanying engraving ranks as one of the cheapest, most compact, and simplest arrangements ever devised for this purpose.

Our engraving represents a perspective view of this mill, which consists of a frame, A, of cast-iron, firmly bolted down to a suitable bed or foundation, B. This frame forms the bearings for three rollers, C D E, that are arranged in a horizontal position, and in such a manner that the distance between the rollers, C and D, is somewhat larger than that between the rollers C and E, whereby the cane that enters between and is partly crushed by the first pair of rollers, C and D, is completely freed from juice as it passes through the second pair. The journal-boxes, a, of the roller, C, are adjustable; so, however, that the ratio between the distances of said roller from the other rollers is preserved.

The roller D is smaller than the two other rollers, so as to save weight, the velocity of its surface being the same as that of the two other rollers. Its axle extends beyond the frame, A, and it bears a bevel wheel, F, that gears into a large horizontal wheel, G, which is provided with two loops or eyes, b, to receive a sweep, H, to which a horse may be hitched, so as to give motion to the mill.

The wheel, G, is mounted on a vertical arbor, c, that has its bearings in lugs, d, which are secured or cast with the frame, A, and on that side of the same which is opposite the bevel wheel, F. By this arrangement, the whole mill is brought into a very small compass, not taking more room than is actually covered by the wheel, G.

To prevent the two wheels, F and G, getting out of gear, a forked arm, I, is placed loosely on the end of the axle of the roller, D. This arm carries two friction rollers, e, that bear down on the upper surface of the wheel, G, so that the arm, I, exerts a double strain, keeping the axle of the roller, D, up, and the wheel, G, down.

The juice squeezed from the cane is collected in a trough, J, in the lower part of the frame, A, and from this trough it flows to buckets placed on the side of the bed, B.

The inventor of this mill, E. J. Horn, of Addison, N. Y., has applied for a patent on the same, and he will be happy to give any desired information in regard to it. Mr. H. also manufactures the mill extensively, and can furnish sizes costing from \$15 to \$50.

THE OLD EARTH.

In some places, the chalk cliffs of England are a thousand feet thick, and below this is a bed of rocks of a different kind, another thousand feet in thickness, crowded, as well as the chalk, with the remains of marine animals. Beneath this whole two thousand feet there is another rock full of drift-wood, fresh-water shells, and the remains of venomous lizards, resembling crocodiles, all so deposited as to show that this rock was

formed at the mouth of a great river, like the Nile or Mississippi. No doubt, after this river had long rolled its course over that part of the world which is now the north of Europe, the land slowly settled down beneath the sea, as Greenland is now settling, where it remained through the unmeasured ages required to form the whole two thousand feet of rock which now rests upon

AN EXTENSIVE ORDER.—Along with our last regular issue we published a full and complete account of one branch of the india-rubber manufacture, as carried on by the "New York Belting and Packing Company." As a specimen of illustrated newspaper-work, it will generally be conceded that it has never been excelled in this country. The company whose interests it represented were so much pleased with its appearance, that they promptly ordered *twenty thousand extra copies* to be printed for their own circulation. Without the aid of the electrotyping art, we could not have filled so large an order.

IMPROVED BROADCAST SEEDING MACHINE.

The line in which American genius has most unquestionably and completely outstripped all other nations, is in the invention of agricultural implements. The mind of the nation is teeming with new devices for aiding the labors of the farmer, and thus increasing the productive power of the country. The combined seeding machine and harrow which is represented in our illustration is curious from the amount of ingenuity expended upon it, and we should think it a useful improvement.

A represents an axle, B B, its wheels, and C, a draft-pole which is attached to the axle by means of a bent bar which passes around in front of the machine, and is fastened to the axle near the wheels. The seat, F, is supported from the axle by an elastic plate. To the back end of the draft-pole, by means of a swivel-joint, a revolving harrow, H, is attached, the teeth of which are set

HORN'S IMPROVED SUGAR-CANE CRUSHER.

it, from the remains of marine animals, in the same way that rock is now forming along the telegraphic plateau; after which the whole was slowly heaved up above the sea by the force of the internal fires of the earth, as Sweden, Norway and Chili are being elevated

at an angle to as to cause the harrow to revolve as it is dragged over the ground. On the front portion of the bent bar which connects the draft-pole with the axle, a seed box, I, is placed, of a length equal to the diameter of the harrow. The bottom of this seed box is perforated by a series of rectangular holes, and a slide, somewhat shorter than the box, perforated with similar holes, is placed over the bottom in such a manner that it may be slipped by means of the handle, N, and the size of the openings, and consequently the delivery of the grain, be thus adjusted. The grain falls through the openings in the bottom of the box, I, into the upper apartment of the lower box, J, Fig. 2; here it is stopped by a slide, as shown in the cut, which slide is pressed against the sloping bottom of the box by means of a spring. This slide is firmly fastened to an arm which works on a joint, p. A projection from this arm rests upon the cam, r, in such a way that each projection or tooth of the cam, as it revolves, raises the slide, thus gradually feeding the grain from the upper to the lower apartment of the box, J. The lower part of the box, J, is rounded in a semi-cylindrical form, and in this a toothed wheel, extending

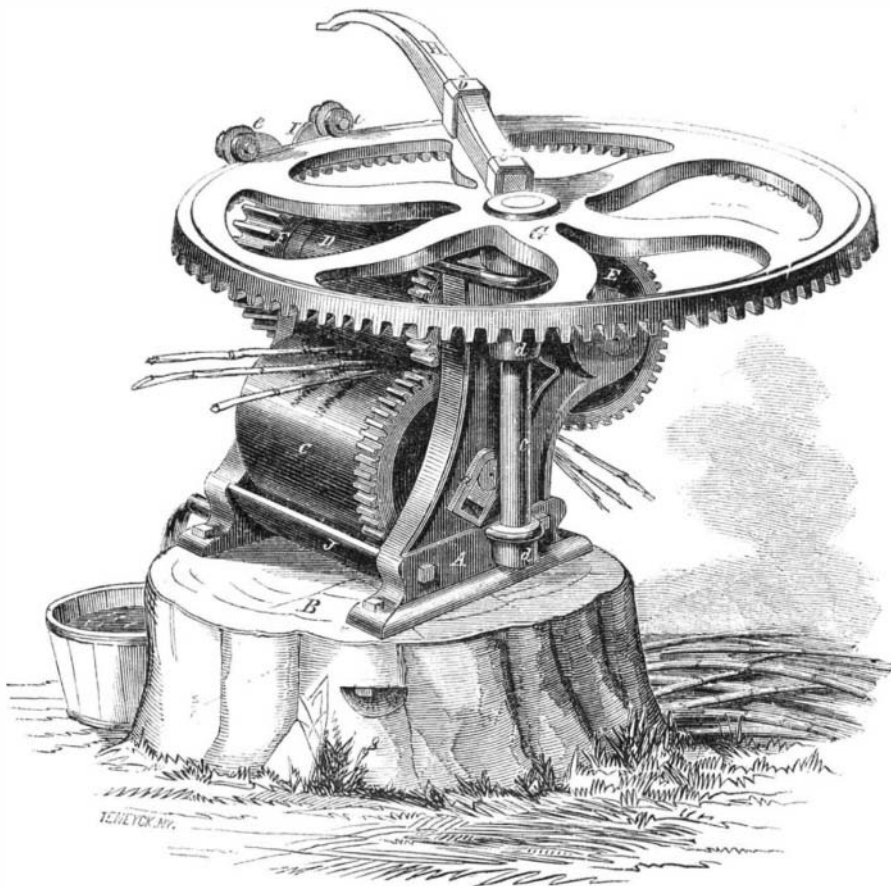
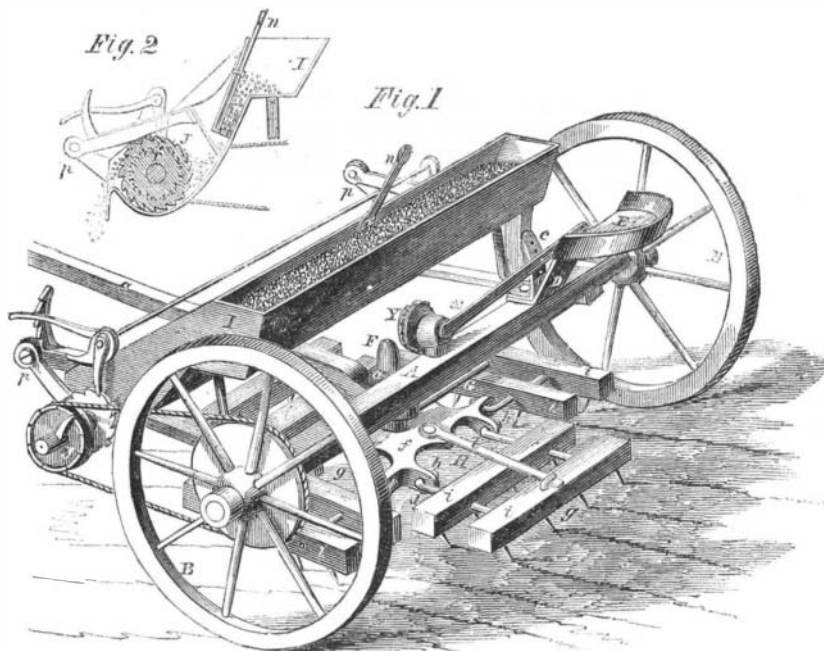


Fig. 2

Fig. 1



HUNTER'S BROADCAST SEEDING MACHINE.

at the present day. The earth, without form and void, was in existence millions of years before man was created as recorded in the Bible.

Messrs. Hoe & Co., of this city, have just shipped one of their six-cylinder printing-presses to Sydney, Australia, and have sent out one of their best men to superintend its erection.

the whole length of the box, revolves, carrying up the grain over the top of the wheel, and dropping it out in front of the machine. The revolving harrows then harrow the grain in, and the whole operation is completed.

For further particulars address the inventor, Stephen R. Hunter, Cortlandt, N. Y. The implement was patented April 26, 1859.