

## IMPROVED SEEDING MACHINE.

We recently described a corn planter which accomplished the long-sought and valuable *desideratum* of planting the corn in rows both ways; and we now present one which will either do this by the aid of a boy (as in the machine previously described), or it will plant in rows one way by an automatic arrangement without the assistance of a boy, as may be desired.

The body of the machine consists essentially of a cart or flat platform, supported on two wheels (as represented in the engraving), each wheel having its independent axle running between its own pair of longitudinal bars, which pairs of bars may be adjusted to a greater or less distance from each other, according to the width at which it is desired to have the rows of grain apart. To plant the corn in rows both ways, the planting is to be done across furrows previously drawn at right angles; and, in this case, the slide, *a*, for dropping the corn, which passes into both hoppers, is worked by means of the lever, *d*, by a boy sitting in the seat, *B*.

But if it is desired to plant the grain in rows only one way, then there is no occasion for previously furrowing the ground, and the slide, *a*, is worked by a self-operating device. The lever, *e*, which has its fulcrum at *f*, is provided with a head at its lower end which is operated by cams on the sleeve, *g*, which fits loosely upon the axle of the wheel, *H*. A ratchet upon the sleeve, *g*, is operated by a pawl attached to the wheel, *H*, so that when the wheel, *H*, rolls forward, the sleeve, *g*, is turned, operating the lever, *e*, and the slide, *a*, but the pawl slides over the ratchet when the wheel is turned in the opposite direction, thus relieving the planting machinery from action in backing the machine. When the slide is operated by an assistant for planting in rows in both directions, the pawl is lifted from the ratchet by moving the lever, *s*, which is placed in convenient reach of the driver's foot for this purpose; thus relieving the dropping machinery from being operated by the turning of the wheel.

The seat, *B*, is made double, so that by turning it down, the boy can face in the opposite direction, and can thus always see the uncovered furrows, in whichever direction the machine may be going. The seat, *B*, also slides a moderate distance towards either side of the frame, in order to bring the boy in a position convenient to the lever, *d*.

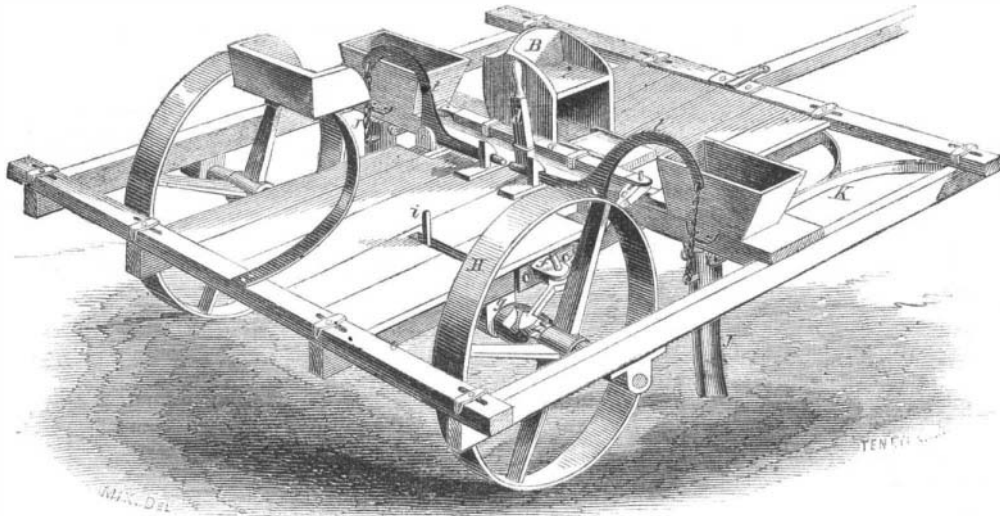
The hollow tubes, *J J*, through which the seed is dropped, are fashioned at their lower ends in proper shape to open the furrows, and are suspended at the ends of forked bars, *K*, so that they may be drawn up clear of the ground by means of the chains and levers, *ll*, when the machine is being transported to or from the field; or, if desired, vertical posts with holes may be provided for adjusting the depth of the hollow tubes in the ground.

The patent for this invention was obtained through the Scientific American Patent Agency, January 3, 1860; and persons desiring further information in relation to it will please address the inventor, Geo. B. Markham, at Mead's Mills, Mich.

## IMPROVED TOOL FOR CUTTING ROUND TENONS.

The annexed engraving represents an improved tool for cutting round tenons (invented by L. A. Dole) which may be either used on a bit stock, as shown, or placed on a spindle and driven by machinery. The improvement consists in devices for adjusting the implement to both the size and the length of the tenons desired.

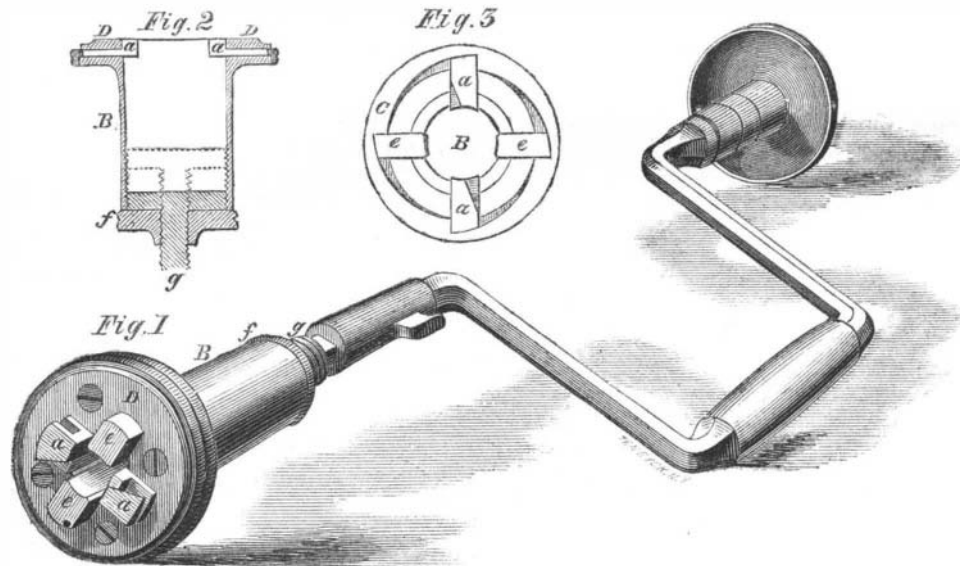
The cutters, *a a*, are formed with shanks, as represented in Fig. 2, which slide inward and outward in grooves formed in the head of the hollow iron cylinder, *B*. For cutting the largest size tenon, the cutters are



## MARKHAM'S IMPROVED SEEDING MACHINE.

placed outward to the extreme end of the groove, and are drawn inward for smaller tenons. This adjustment is effected by means of the ring, *C* (Fig. 3), which is made with curved depressions fitting against the outer ends of the shanks of the cutters, so that, by turning the ring, these are forced inward, the ring operating as a wedge or series of wedges. After the adjustment is made, the cutters are held in place by having the plate, *D* (Figs. 1 and 2), screwed firmly down upon their shanks; the screws being loosened to effect the adjust-

ment.



## DOLE'S IMPROVED TENONING MACHINE.

ment. Two blanks, *c e*, are placed at right angles with the cutters to hold the cylinder, *B*, in its position concentric with the tenon.

For regulating the length of the tenon, the depth of the hollow in the cylinder, *B*, is varied by screwing the shank, *g*, a greater or less distance into it. When this adjustment is effected, the nut, *f*, which has a left hand screw, is turned against the end of the cylinder, holding the parts in place; the left hand screw causing the nut to bind more firmly when the tool is turned in its cutting operation.

The patent for this invention was issued Jan. 10, 1860, and persons desiring further information in relation to it will please address Dole & Silver, Salem, Ohio.

**PETROLEUM OR COAL OIL.**—At our request, Colonel Whittlesey, who has recently visited the excited districts in Pennsylvania, has given us some items in regard to the petroleum or coal oil which is now being procured there. Oil springs, as they are called, have long been known and laid down upon the maps of Venango and Warren counties, and of other localities in Pennsylvania, and of Ohio and Virginia. The material is naphtha, which exudes from the earth in various parts of the world, and, becoming by exposure more dark colored and less fluid, takes various names, such as petroleum, mineral tar, asphaltum, &c. In Pennsylvania it has been frequently found in wells bored for salt water on the Alleghany river, where it was considered as a nuisance, on account of its villainous odor and the tenacity with which it adheres to clothing, wood and leather. He thinks it would not be too high an estimate to place the number of wells now being bored on the waters of Oil creek and the Alleghany, within a distance of forty miles, at one hundred. Many of them as yet have no oil. This mineral, too, is represented by him as being found in a formation known to geologists as the "Chemung Group," which extends from Pennsylvania into and through

Ohio. The oil is most abundant in a stratum of one hundred to one hundred and fifty feet in thickness, composed of laminæ of soft blueish shale or slate. Inflammable gases flow out with it in bubbles, or in powerful discharges, producing a rumbling sound that ends frequently in an explosion, greatly to the terror of the workmen. In some of the wells on Oil creek the liquid bitumen was struck at 70 to 90 feet. It is transported in barrels to New York, to be distilled and purified for coal oil. Its value depends upon the per-centage of refined oil it will yield.—*Cleveland (Ohio) Herald.*

**TERRIBLE STEAMBOAT EXPLOSION.**—On the 6th inst., the *Alfred Thomas*, a neat little steamer, just built at Easton, Pa., to run on the Delaware river, exploded its boiler with terrific violence, just after starting. It had been standing with the steam up for some time prior to starting, and had the engineer kept the feed pump going then, and permitted a slight escape of steam, the accident would not have happened. Ten persons were killed, and fourteen severely wounded. The boiler is stated to have been too small, and that a sufficient quantity of steam could not be generated,

to work upwards against the current of the river; therefore, the boat stopped to raise steam to the pressure of 125 lbs. to the inch, and in doing this, the flues became red-hot as the pressure increased. When the signal was given to start, the engineer commenced pumping in cold water, and the explosion instantly followed. Mr. Schaeff, the builder of the boat, was also its engineer, and was killed. Previous to the explosion, the gage indicated a pressure of 125 lbs. There is no mystery as to the cause of this explosion; the boiler was managed as with an intent to commit suicide.

Those interested in hydraulic engineering should read the article, on page 178, by Jos. W. Sprague, Esq.