

IMPROVED GRINDING MILL, CORN-SHELLER AND STRAW-CUTTER COMBINED.

Farmers, and all persons who live in isolated positions where they have to perform all operations requisite to prepare food for themselves and their cattle, will find, in the subject of our illustration, a mill which, in the one machine, combines all that is necessary to perform such duties.

Fig. 1 is a perspective view of the exterior of the mill, Fig. 2 is a vertical section through the center of the mill and parallel with its shaft, and Fig. 3 is a transverse vertical section of the cob-crusher. A is a rectangular frame and B is a box that is placed in the frame, A, and is formed of cast-metal side plates, *a a'*, end plates, *b*, and top and bottom plates, *c c*. A shaft, C, is placed in proper bearings, *d*, and it runs through the center of the whole machine, being prevented from sliding by means of shoulders, *e e*.

The outer surfaces of the plates, *a a'*, of B, have circular recesses, *g*, made in each, and these recesses have grinding surfaces, *h*, cast with them, and each recess, *g*, has two grinding surfaces, there being concave surfaces, *i i*, encompassing the shaft, C. These concaves are precisely alike and have an eccentric position relatively with their plates, *h*, and their shaft.

On the shaft, C, are placed two circular disks, D D', the inner surfaces of which are corrugated or formed into cutting or grinding surfaces, *k*, similar to those on the side plates, *a a'*. One of these plates, D, is placed eccentrically on the shaft and the other concentrically, and they are both provided at their inner sides with concaves, *l m*, all of which, *i i l m*, being provided with crushing or cracking teeth to form coarse grinding surfaces. On each side-plate, *a a'*, an aperture, *n*, is made in the concaves, *i*, and these apertures communicate with the two inclined passages, *o*, in the upper part of the box, B, that lead from a suitable hopper. The plates, D D', are secured to C by keys, E F, which are formed by

therefore, is allowed a certain degree of longitudinal adjustment over the cylinder, J. At the inner end of the cylinder, J, there is a cylindrical box, *g'*, which encompasses the annular flanch, *c'*, on the outer surface of plate, D, and also encompasses an adjustable cap, *h'*, ears of corn down to the outer toothed surface, *b'*, of the plate, D, and retain opposite the center of said surface and in a slightly inclined position, so that ears may be shelled by the toothed surface, *b*, as the plate, D, rotates, the part, *n'*, of the spout yielding or giving to take in different sized ears. The spout, *k'*, in consequence of being in the position as shown and described, causes the ear to be acted upon in a peculiar manner, to wit, the surface, *b'*, rotating the ear and shelling the corn from it, and at the same time feeding it down out of the tube so as to assist their discharge and prevent the possibility of the spout being choked or clogged. It will be seen that when the plate, D, is adjusted for grinding purposes the spout, *k'*, and cylinder, I, move with it, so that the relative position of said parts are always the same and corn may be shelled at any time. In order to produce the forward movement of the cylinder, I, on shaft, C, the prongs or bars, *q q*, of the key, E, are provided with additional projections, *p*, which are at the outer end of cylinder, I. The feed-box, *a'*, and knife, H, which is at the outer side of plate, D', forms a straw-cutter, and this device may be used at any time, for the adjustment of plate, D', is compensated for by the sliding

To the outer surface of D, a knife, H, is attached, and it has a somewhat tangential position with the hub or collar, *t'*, the outer edge of which has a flanch, *v*, upon it which fits in a recess in the inner part of a sliding feed-box, *a'*, which is placed and fitted between guides on the upper part of the frame, A.

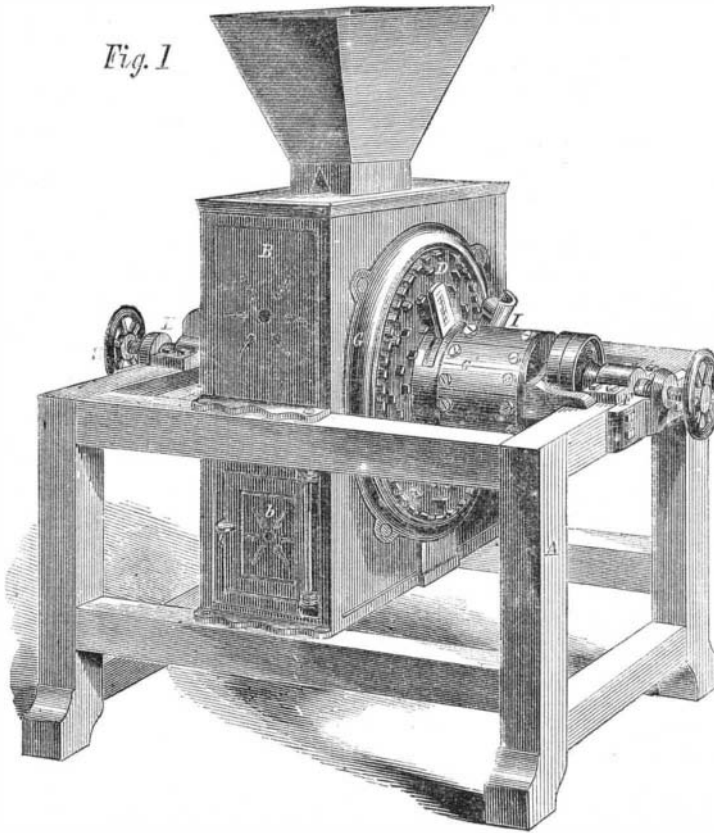
The outer surface of the plate, D is toothed. This toothed surface, *b'*, is concentric with the shaft, C, and the hub, *t'*, of said plate, D, is encompassed by a flanch, *c'*. On the shaft, C, a metal cylinder, I, is placed. This cylinder is formed of sections or staves, *c''*, the ends of which are secured in suitable heads, *d'*, and the inner surfaces of the sections or staves, *c''*, are toothed, as

shown at *e*, see Fig. 3. Within the cylinder, I, and on the shaft, C, a cylinder, J, is secured. This cylinder is also formed in sections or of staves, *c''*, and is provided with teeth, *f*, as shown clearly in Fig. 3. The cylinder, J, however, is not quite so long as the hollow cylinder, I, which encompasses it, and the cylinder, I,

upper side, and a door at its under side, and the cylinder is held in proper position so far as turning is concerned, by means of pins which are fitted in holes in a plate, K, attached to the frame, A.

On the shaft, C, driving and working pulleys, *x*, are placed. The operation will be readily seen. The plates, D D', and outer surfaces, *h*, of the sides, *a a'*, of the box, B, form eccentric grinding mills, the concaves, *i i l m*, by their action, preventing the mill from choking or clogging, and ensuring a proper feed and discharge. The flour, meal, or ground material is discharged at *a''*, and the plates, D D', are actuated so as to grind finer or coarser by turning the screw rods, *t*, the keys, E F, being moved thereby, and the projections, *p*, securing the plates to the shaft, C, and also serving as a means to move said plates back and forth thereon, the projections, *p*, fitting in recesses in the hubs or collars, *t'*. When grain is to be ground it is fed between the grinding surfaces of the plates through the spouts, *o o*. When corn and cob is to be ground the ears are fed into the cylinder, I, and crushed by the action of the teeth, *e f*, and the cap, *h'*, is so adjusted as to allow the openings, *i h'*, to register with each other and permit the crushed ears to pass through said openings between the concaves, *i l*, of the plate, D, and side, *a'*. If the ears are to be crushed without being ground, the cap, *h'*, is turned so as to cut off the communication between the cylinder, I, and the yielding plates mentioned, and the door is opened to allow the crushed ears to pass out. The cylinder, I, in consequence of being longer than the cylinder, J, is allowed to be adjusted or moved with the plate, D, and is graduated to grind coarse or fine without affecting the operation of the crusher. The spout, *k'*, serves to guide

Fig. 1



PERRY'S MILL, CORN-SHELLER AND STRAW-CUTTER.

Fig. 2

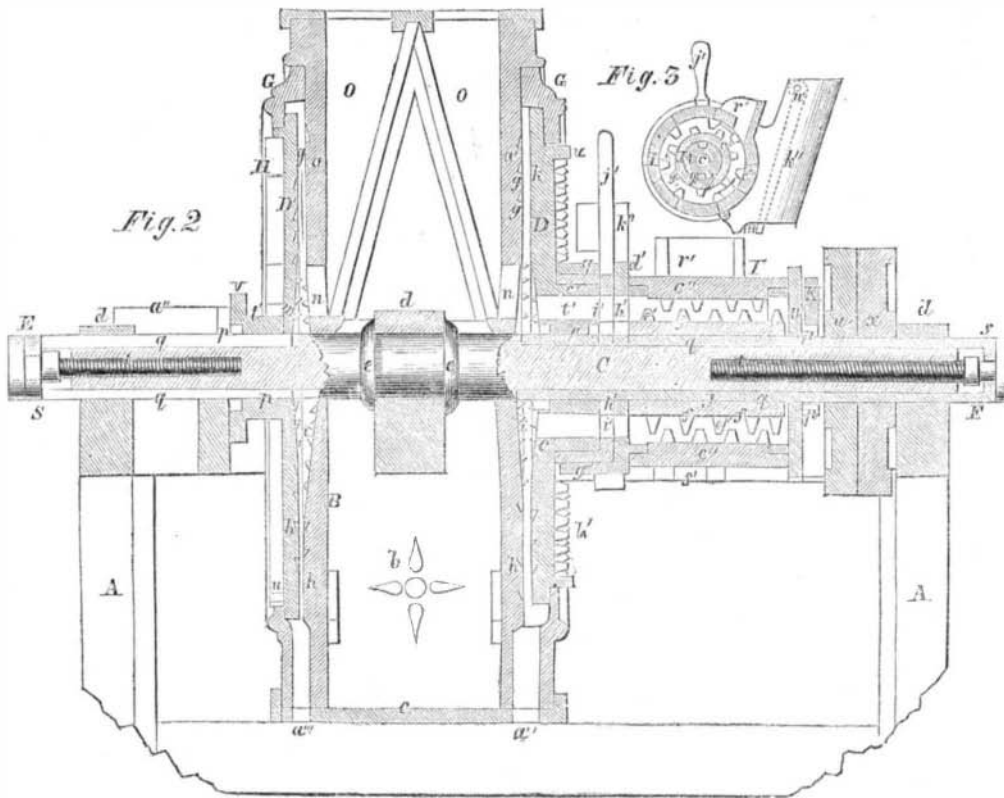


Fig. 3

which is placed within the box, *g'*, and has openings, *i'*, made in it. The partition plate of the box, *g'*, and cylinder, I, is also provided with openings, and the cap, *h'*, has a handle, *j'*, attached to it, which handle projects through a slot in the box, *g'*, and admits of the openings, *i'*, in the cap and partition plate being thrown in and out of register as may be desired.

At the outer side of the box, *g'*, there is a spout, *k'*.

The cylinder, I, is provided with a hopper, *r'*, at its

of box, *a'*, which is effected by the fitting of the flanch, *v*, in the groove, *u*, of the box, *a'*. The lower part of box, B, may serve as a receptacle for tools of various kinds, the box being provided with a door at one end. By having the cylinders, I and J, formed in sections they may be readily repaired, and any portion removed and replaced by new when occasion may require.

The inventor is Philander Perry, of Troy, N. Y., and any information which is not included in the preceding description he will be happy to furnish. The patent is dated April 19, 1859.