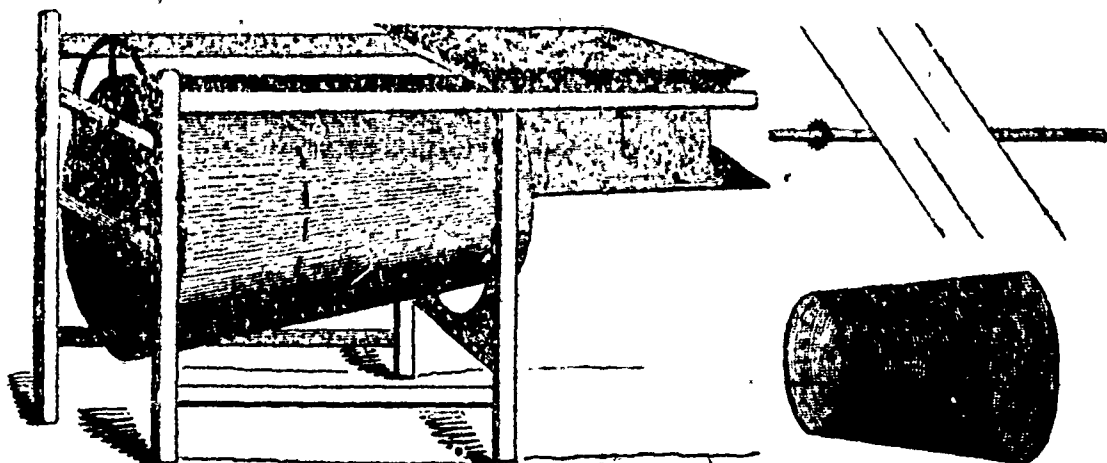


## DESCRIPTION OF A. COOLEY'S REVOLVING IRON FANNING MILL.



The whole is to be constructed of iron, except the frame, which is composed of timber two inches square. The cylinder, which contains the fan, screen, and sieve, is made of sheet iron, in length three feet and in diameter 24 inches at the upper end and 30 inches at the lower end. When the cylinder is suspended in the frame, the bottom will be on an angle of about 15 degrees, while the top of it is level. The upper end of it is supported by two friction rollers, while the lower end rests upon a rim of flange, 8 inches in diameter, which is attached to the back side of the spur wheel. There are two sets of arms or spokes extending from the centre to the inner surface of the cylinder—one set at the lower end, and the other about midway of the cylinder. A turned iron shaft 20 inches long and  $\frac{1}{2}$  of an inch in diameter, to which the wings of the fan are attached, is suspended or running through the centre of these two sets of arms, while the lower end, to which the small cog-wheel, or pinion is attached, rests in a box in the frame. The fan is constructed somewhat like the propellers in steamboats, the wings of which are attached to the shaft between the two sets of arms or spokes, extending from the shaft to within one inch of the inner surface of the cylinder, barely giving room for the wheat to pass under them. While the fan is driven at the rate of 500 revolutions, the cylinder is moving in a contrary direction only at the rate of 20 revolutions per minute. In the upper portion of the cylinder, extending down to the middle set of arms, is a screen, surrounding the inside and supported by hoops at each end, one inch in thickness, which keep the screen one inch from the inner surface of the cylinder, giving room for the chaff, cockle, and other foul stuff to pass through the screen upon the inner surface of the cylinder, and by its revolutions is carried down to the hoop at the lower end of the screen, and discharged through holes cut in the cylinder.

Within and extending the same length of the screen is a cylinder sieve approaching somewhat to the form of a cone, the small end downward; the sieve is constructed in this form for the purpose that the bottom portion where the grain and

chaff may fall, shall incline a little backward, so as to allow the wheat heads and other heavy substances to pass off with the chaff. Both the sieve and screen are attached to the cylinder, and revolve with it. As the grain passes through the sieve into the screen, the revolving motion carries it to the lower end of the cylinder, where it discharges itself. The hopper sets upon the back end of the frame, over the shoe, and is stationary. The shoe is suspended by two wire hooks under the hopper, and a slight motion is given to it by means of an excentric, attached to the end of the shaft of the fan. The fan is propelled by a cog-wheel, 18 inches in diameter, which meshes into a 3 inch pinion. The cylinder, as before described, is carried in a contrary direction as a flange or rim on the back side of the cog-wheel. The sieve is kept to its place by means of springs, so that one quality can be readily taken out and another for a different kind of grain be put in its place. Only one sieve is required for wheat, rye, or barley, and that is the finest quality used in the common fanning mills for wheat. The revolving motion keeps the wheat and the chaff in such motion that the sieve will not choke, as in the common mill.

*Advantages over the Common Mill.*—1. It is built entirely of iron, except the frame, and covered inside and out with Japan Varnish, rendering it impervious to water; consequently it will not swell, shrink, rot, or rust.

2. There is no shaking process, as in the old fashioned mill, but on the contrary it moves with a steady revolving motion; therefore it will not be shaken to pieces, nor is there any danger of its getting out of order with common usage, but will endure for a century.

3. It will clean wheat fit for market by once running through (if it is not very foul,) and clean at the rate of forty bushels per hour.

5. It turns one-half easier than the old wooden mills.

5. It will cost no more.

6. The weight of it is not more than one half of that of the old-fashioned mill—consequently more portable.