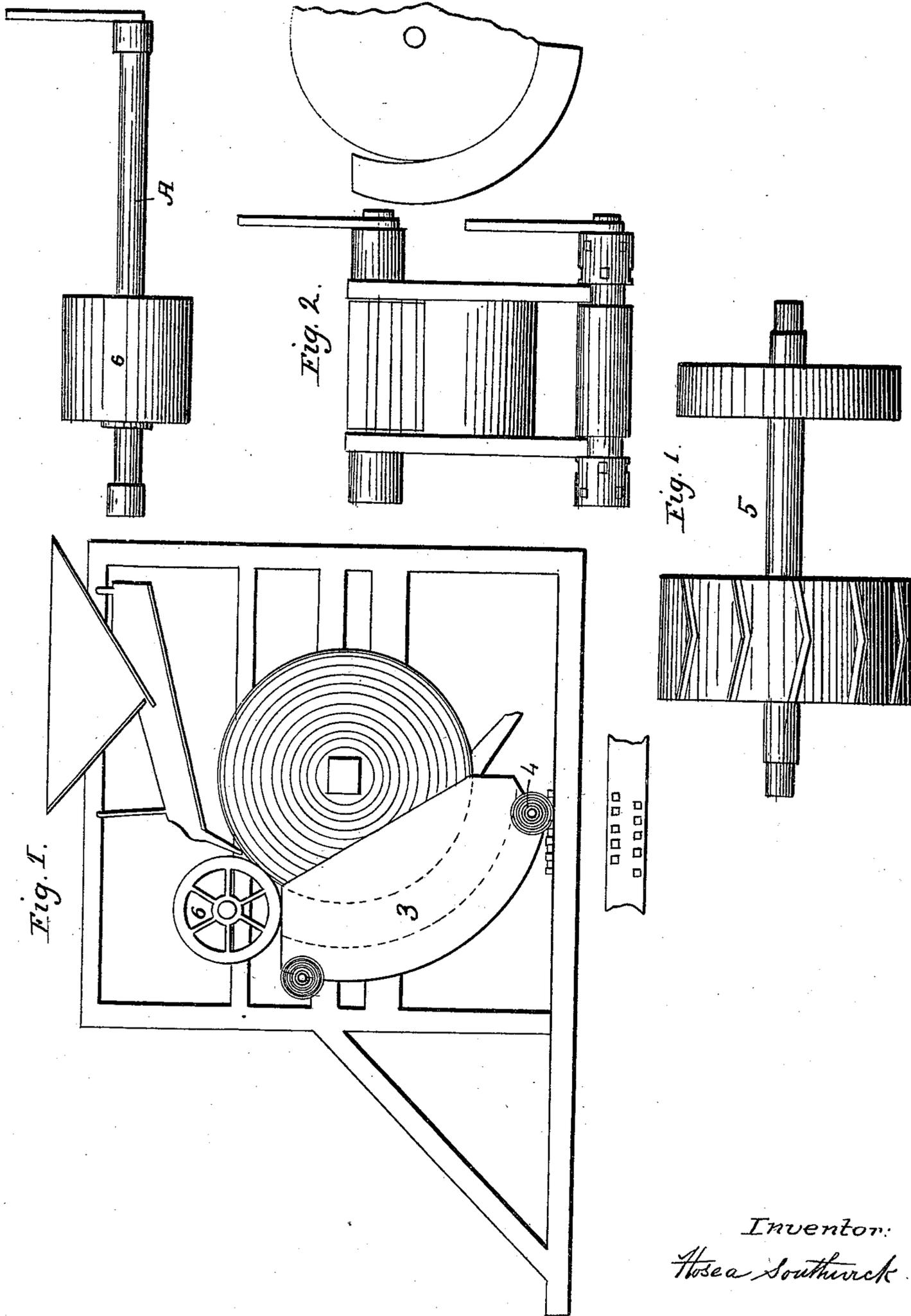


H. SOUTHWICK.  
Grinding Mill.

No. 19,521.

Patented March 2, 1858.



Inventor:  
Hosea Southwick.

# UNITED STATES PATENT OFFICE.

HOSEA SOUTHWICK, OF LITTLE COOLY, PENNSYLVANIA.

## GRINDING-MILL.

Specification of Letters Patent No. 19,521, dated March 2, 1858.

*To all whom it may concern:*

Be it known that I, HOSEA SOUTHWICK, of Little Cooly, in the county of Crawford, in the State of Pennsylvania, have invented a new and Improved Mode of Grinding Flour, Meal, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference thereon.

The nature of my invention consists in grinding with a stone running perpendicular fitting in a stone concave thereby grinding faster and with less power.

To enable others to make and use my invention I will proceed to describe its construction and operation.

Figure 1 represents the runner and may be two feet more or less in diameter and from eight to twelve inches in thickness and made perfectly round and balanced. The grinding face is on the out edge on which there are shallow furrows one inch wide and from three to five inches apart and may be made in the shape of a V or circular U the ends standing forward.

Fig. 2 is a stone concave made to span one third of the runner one inch wider than the runner is thick and from 5 to 8 inches through the lower end reaching to the bottom center of the stone. The upper end is cut out  $1\frac{1}{2}$  inches narrower than the runner (see section of Fig. 2) running out about 6 in. from upper end. There may be from 3 to 5 narrow furrows near to the upper end as shown in Fig. 2.

Fig. 3 is a strong plank one to be on each side of the concave fastened together by bolts.

Fig. 4 is a roller on which the concave stands. The ends of the roller are mortised and work on cogs by means of a lever connected by a set screw in the forward part of the mill. On the roller where the sides of the concave rest the bearings are turned  $\frac{1}{2}$  inch from the center so that when the roller is moved by the lever the concave will be raised and brought forward at the same time. The upper end of the concave rests

against a roller similar to the lower one excepting the cogs in place of which it has journals. It is moved with a lever and screw as the other, and is dropped in so as to be easily taken out if required so that the concave may be laid back when needed.

Fig. 5 is the main shaft 4 ft. long of wrought or cast iron running on 12 inch friction rollers. The stone is secured to this shaft 6 in. from the end. The pulley by which the power is applied is near the other end. This pulley should be about 5 in. thick and two inches less than the stone in diameter.

Fig. 6 is a cast iron roller the same width of the stone running loose on the shaft A kept to its place by collars on the shaft. It is placed as near as possible to the concave. The ends of this shaft to be squared and fitted into 3 inch round zinc boxes  $\frac{1}{2}$  inch from center of said boxes one end to pass through to receive a lever which is moved by a set screw to regulate the distance of the roller from the runner. This need not be used for only coarse grain. The runner may be inclosed by a curb or fastened to the sides of the concave. The grain to be fed in by a spout made nearly as wide as the runner. The stone may be of the same quality as stones used in other mills. The speed should be about 500 revolutions per minute. I do not claim the friction rollers on which the main shaft runs.

What I do claim as my invention and desire to secure by Letters Patent is—

The mode of grinding all kinds of grain into flour and meal with a perpendicular stone fitting into a stone concave and a counter stone or crusher on the top of the runner near the upper end of the concave; said counter stone or crusher is to crush the grain before it drops between the runner and the concave thereby grinding faster and with much less power than common mills.

HOSEA SOUTHWICK.

Witnesses:

G. S. STEWART,  
C. M. BRAWLEY.