

A. V. HISCOCK & R. S. SUMNER.
FEED-MILL.

No. 173,632.

Patented Feb. 15, 1876.

Fig. 1.

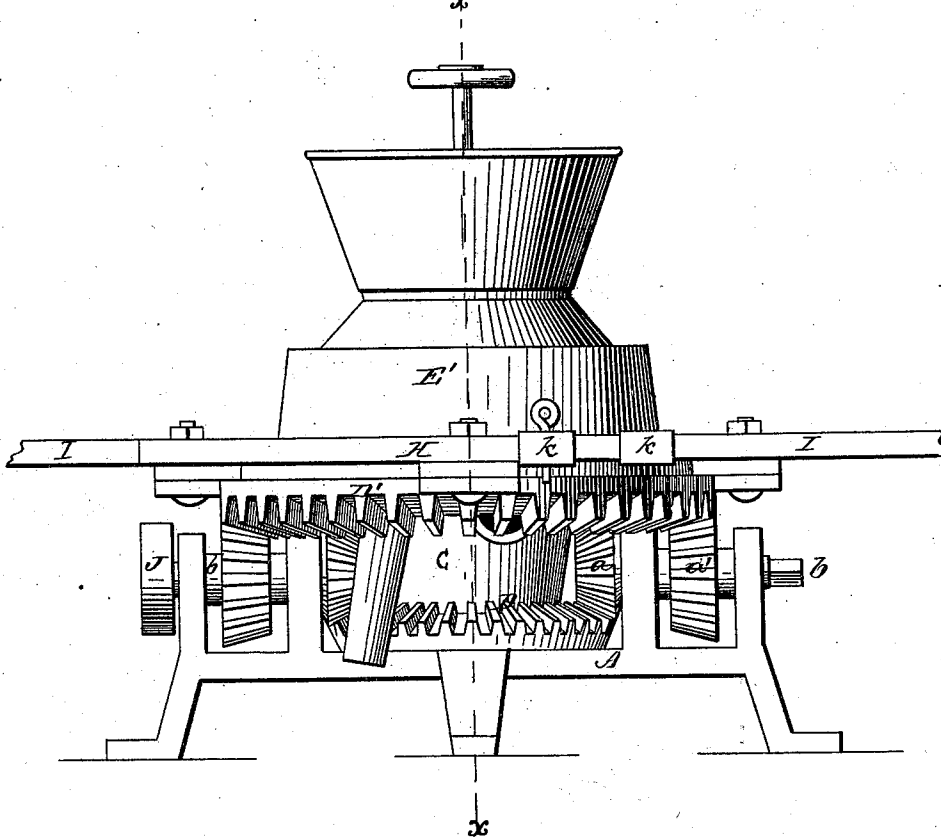
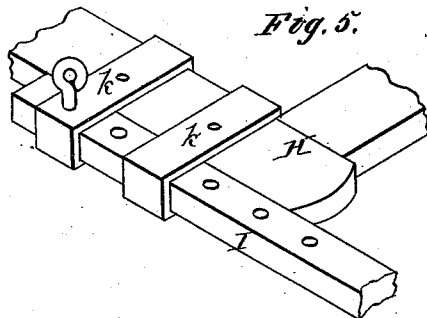


Fig. 5.



WITNESSES

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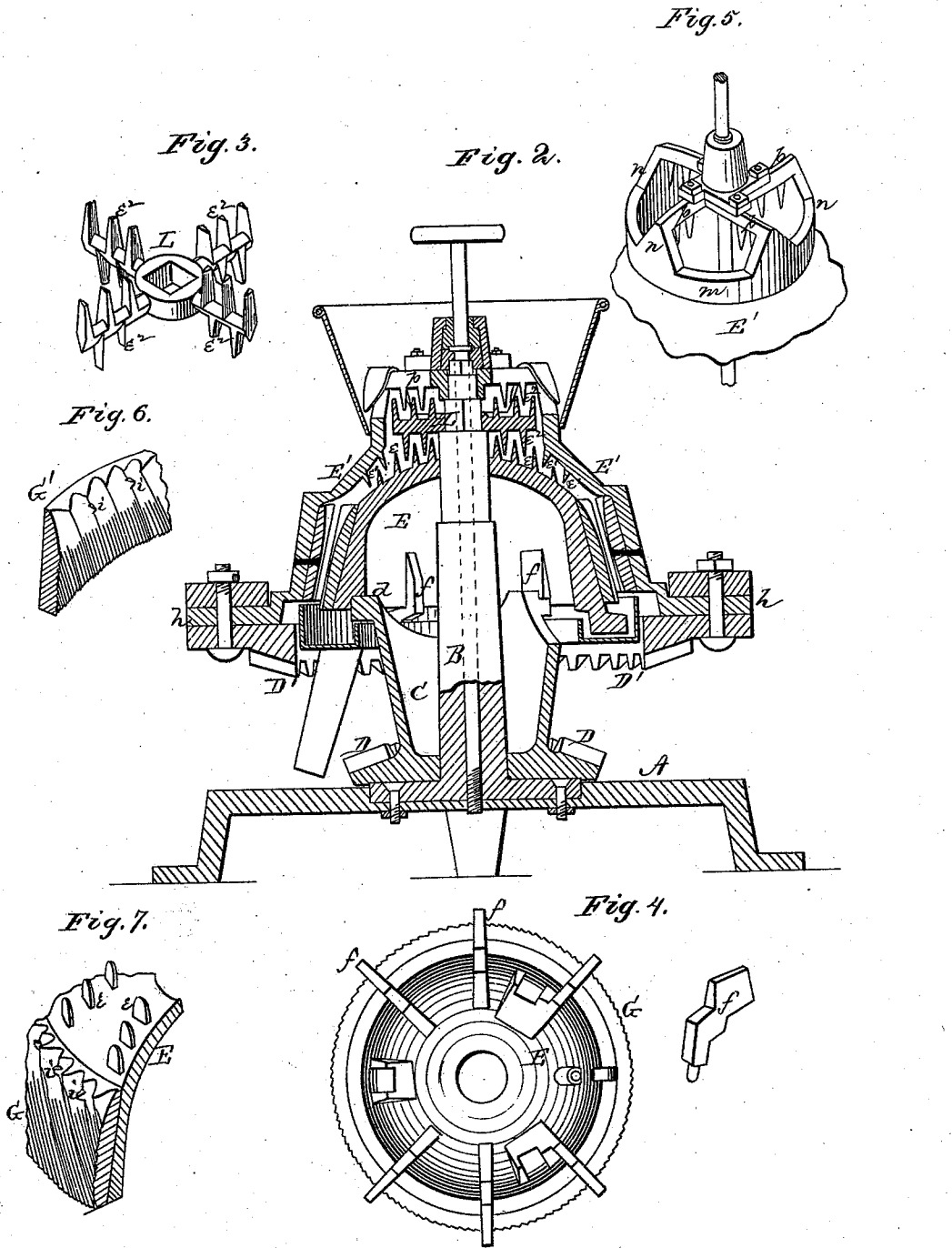
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By

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UNITED STATES PATENT OFFICE.

ALFRED V. HISCOCK, OF CITY POINT, FLORIDA, AND RANSOM S. SUMNER,
OF ATHENS, TENNESSEE.

IMPROVEMENT IN FEED-MILLS.

Specification forming part of Letters Patent No. **173,632**, dated February 15, 1876; application filed
May 31, 1875.

To all whom it may concern:

Be it known that we, ALFRED V. HISCOCK, of City Point, Brevard county, Florida, and RANSOM S. SUMNER, of Athens, in the county of McMinn and State of Tennessee, have invented certain new and useful Improvements in Feed-Mills; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of our invention consists in the construction and arrangement of a feed-mill, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation of our machine. Fig. 2 is a longitudinal vertical section of the same. Figs. 3 to 7 are detached views of parts thereof.

A represents the base of our machine, made in the form of a cross or other suitable shape, and from the center thereof rises a hollow standard, B, which may be either cast with the base, or fastened thereto by bolts or otherwise. Around the lower end of this standard is placed a cup, C, around the base of which is formed a beveled or miter cog-wheel, D. Into this cog-wheel mesh two corresponding pinions, *a a*, secured upon the inner ends of two shafts, *b b*, which are placed in suitable bearings on the base A on opposite sides of the wheel, and on a line with each other. The upper part of the cup C forms three arms, *d d*, for supporting the inner cone E, on the upper part of which are formed the crushing-teeth *e e*. In the lower edge of the cone E are the meal-scrapers *f f*. These are doweled into the inside cone, as shown in Fig. 4, by which method they are made to keep their places while the molder is ramming the sand. On the lower portion of the cone E is placed the grinding-plate G, provided with coarse and fine corrugations. E' is the exterior cone, provided on its inner surface, at the top, with downwardly-projecting crushing-teeth *e' e'*, and be-

low the same, on the interior of the cone, is the corrugated grinding-plate G'. The lever end of the exterior cone E' is formed with a circumferential flange, *h*, to the under side of which is secured a beveled or miter cog-wheel, D', the teeth of which mesh into corresponding pinions *a' a'*, secured on the shafts *b b*. On the flange *h* is secured a frame, H, on which are attached sliding sweeps I I, moving and adjustable in loops or guides *k k* thereon.

By means of the adjustable sweeps a slow and a fast horse can be made to work even; and speed is often wanted when grinding soft or new corn and power is wanted when grinding old or hard dry corn. By adjusting the sweeps out and in these results are obtained; and they also serve another good purpose, by one balancing the other.

The power is transmitted from the wheel D' through the pinions *a'* and *a* to the wheel D, so as to revolve the two cones in opposite directions. This gearing, being beveled, does not bind and cut as the spur-gearing does, when running on rough or uneven ground; neither does the tilting of the sweep up or down cause it to bind. The two line-shafts *b b*, introduced between the cog-wheels D D', cause the power to be equally transmitted from the drive-wheel to the center wheel. These line-shafts project beyond the outside bearings and admit of a pulley, J, by which the mill can be driven by a belt from any other machine. The outer end X of one of said shafts is made square, so that the coupling of a tumbling-shaft from any horse-power may be attached thereto.

The top part of the outside cone E' is partially closed up by means of a rim, *m*, with projections *n n*, which brings the ears of corn nearer to the center when they first enter. By this means less power is required, as the nearer to the center the work is done the less power is required to do it.

The toothed arms *p p* of the outside cone are harrowed, as shown, and the sides cut down between said arms, or between the projections *n*, which leaves all the space necessary for the corn to drop in. Between the top parts of the two cones E E' is introduced a center crusher, L, made in the form of a cross,

as shown in Fig. 3, with teeth e^3 projecting from both the upper and lower sides, and passing between the teeth e and e^1 of the inner and outer cones, respectively. This center crusher stands stationary on the center standard B, and breaks the ears of corn as they first drop in, and gives them another crushing as they pass the second row of teeth. It also clears the feed spaces or holes between the arms p of the outside cone as each passes by, making the feed regular.

The large crushing-teeth $e e^1 e^2$ are provided with cutting-edges, and mesh closely, thereby cutting the cob sufficiently fine without the use of so many side teeth, which are always interfering and causing friction, and often locking and stopping the machine.

In the coarse corrugations of the grinding-plates G G' are inserted small sharp cutting-teeth $i i$, which cut all the pieces of cob, which are too large to enter the finer corrugations, sufficiently fine to do so.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In combination with the cones E E', the bevel cog-wheels D D', and pinions $a a$ and a' , as and for the purposes herein set forth.

2. The combination of the revolving cup O, with arms d , and the interior cone E, with the meal-scrapers f doweled therein, substantially as herein set forth.

3. A stationary center crusher, introduced between the inner and outer revolving cones, substantially as and for the purposes herein set forth.

4. The combination of the revolving cones E E', having corrugated grinding-plates G G', with crushing-teeth $e e^1$, and cutting-teeth i , and the stationary center crusher L, with teeth e^2 on its upper and lower surfaces, substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 10th day of March, 1875.

A. V. HISCOCK.
R. S. SUMNER.

Witnesses:

ALICE S. HISCOCK,
LOU. BLIZARD.