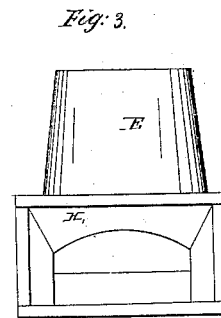
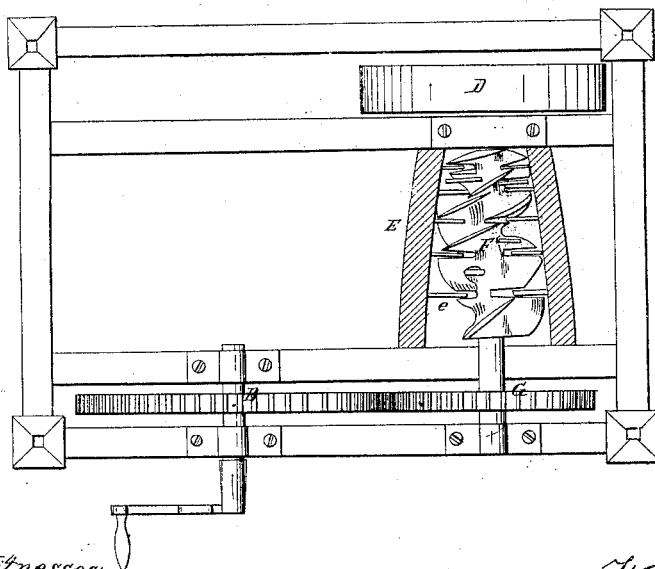
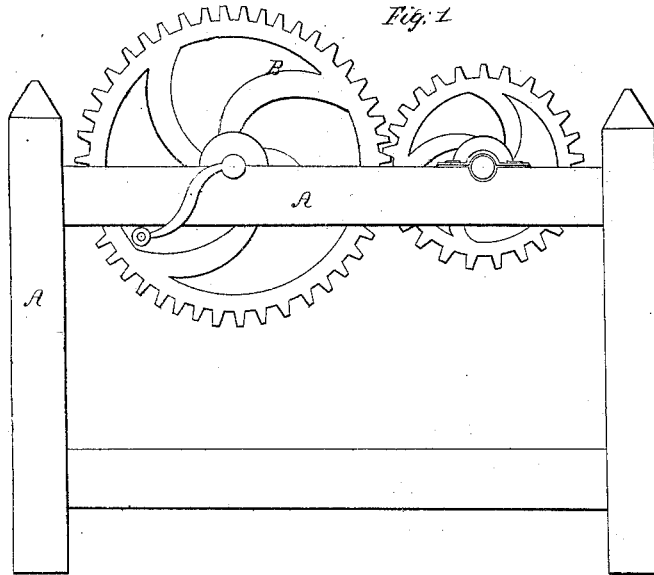


*M<sup>o</sup> Dowell & Baechtel*

*Cider Mill.*

*N<sup>o</sup> 49,041.*

*Patented Aug. 29, 1865.*



*Witnesses,*  
*Robt W. Stewart*  
*W. G. Frank*

*Inventor,*  
*W. M. M. Dowell &*  
*Charles C. Baechtel*  
*per David Reed atty.*

# UNITED STATES PATENT OFFICE.

W. M. McDOWELL AND CHAS. E. BAECHEL, OF HAGERSTOWN, MARYLAND.

## IMPROVEMENT IN CIDER-MILLS.

Specification forming part of Letters Patent No. 49,641, dated August 29, 1865.

*To all whom it may concern:*

Be it known that we, W. M. McDOWELL and CHAS. E. BAECHEL, of Hagerstown, in the county of Washington and State of Maryland, have invented a new and useful Improvement in Cider Mills; and we 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 marked thereon.

In the construction of cider-mills it is important to have the apples fed into the mill with ease and certainty, and to have the mill clear itself; and it is well known that the mill which comminutes the apples by a grating or rasping action will afford a larger amount of cider, and of a better quality, than those mills which coarsely crush or bruise the apples in mass. In view of these facts we have invented a cider-mill working upon new principles—the combined action of a screw and series of comminuting-teeth.

Our invention consists in a peculiar construction of screw-shaped grinder, in combination with comminuting-teeth

In the accompanying drawings, Figure 1 is a side view of our machine. Fig. 2 is a top view of the same, the hopper and part of the shell being removed. Fig. 3 shows the hopper and upper part of the shell detached from the mill.

In the construction of our cider-mill any suitable frame may be made, as seen at A, Figs. 1 and 2. Upon this frame are arranged a driving-wheel, B, and a gear-wheel, C, and also a balance-wheel, D. On the same shaft with the wheels C and D is a screw-shaped cone or grinder, F. This grinder is embraced by a conical box, E, the upper half of which is removed in Fig. 2 and seen in Fig. 3, with the hopper of the mill. This screw-shaped grinder F is armed by a set of teeth or radial spikes, *f*, set spirally along the shaft of the grinder. Two other or more sets or series of spikes are placed along the sides of the box or trough E, Fig. 2, and the threads of the screw-shaped grinder are cut through, so as to revolve past these teeth. The teeth are so arranged as to

catch and cut smaller and smaller the apples or pieces as they pass on through the mill. The action of our screw-cone is to throw the apples toward the center of the shaft, and thus save leverage in crushing the apples.

It will be observed that our screw-shaped cone acts reversely from the screw of an auger, and when in motion drives the apples regularly through the mill from the larger end of the screw-cone to the smaller. In passing the whole length of the grinding-cone the apples must revolve three or four times around the shaft of the grinder, and in doing so must many times pass the series of teeth *e* and *f*, and thus become finely comminuted before leaving the mill.

We do not confine our invention to the precise arrangement of the details or the shape of the grinder, so long as the combined action of the screw and comminuting-teeth is secured.

More than two sets or series of spikes may be employed along the box E, and other variations may be made without departing from our invention.

We are aware that a screw has been used in a box provided with holes through which the juice escapes under the pressure of the screw, but we believe our peculiar arrangement of the screw, with notches in the thread to pass the teeth of the box E, is new and useful. We are also aware that spikes have been used upon the box or shell and upon the cone or revolving center. Therefore we limit our claims to the new arrangement above described.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

The above-described arrangement of screw-cone, provided with notches in the thread of the screw, and with the spikes *f*, in combination with the box E and teeth *e*, substantially in the manner and for the purposes set forth.

W. M. McDOWELL,  
CHAS. E. BAECHEL.

Witnesses:

J. McDOWELL,  
ANDREW EARHEART.