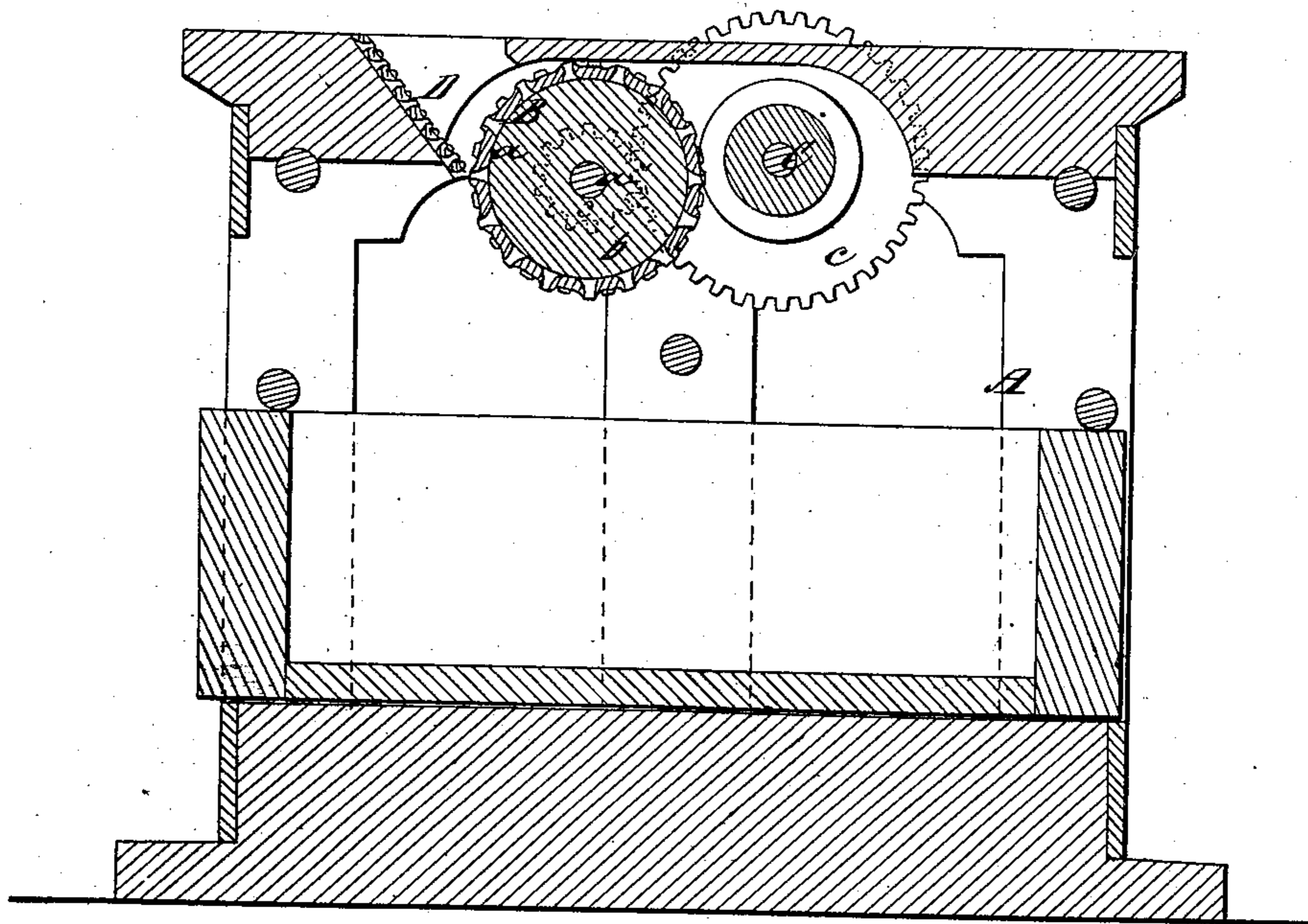


*H. Hurd,*  
*Cider Mill.*

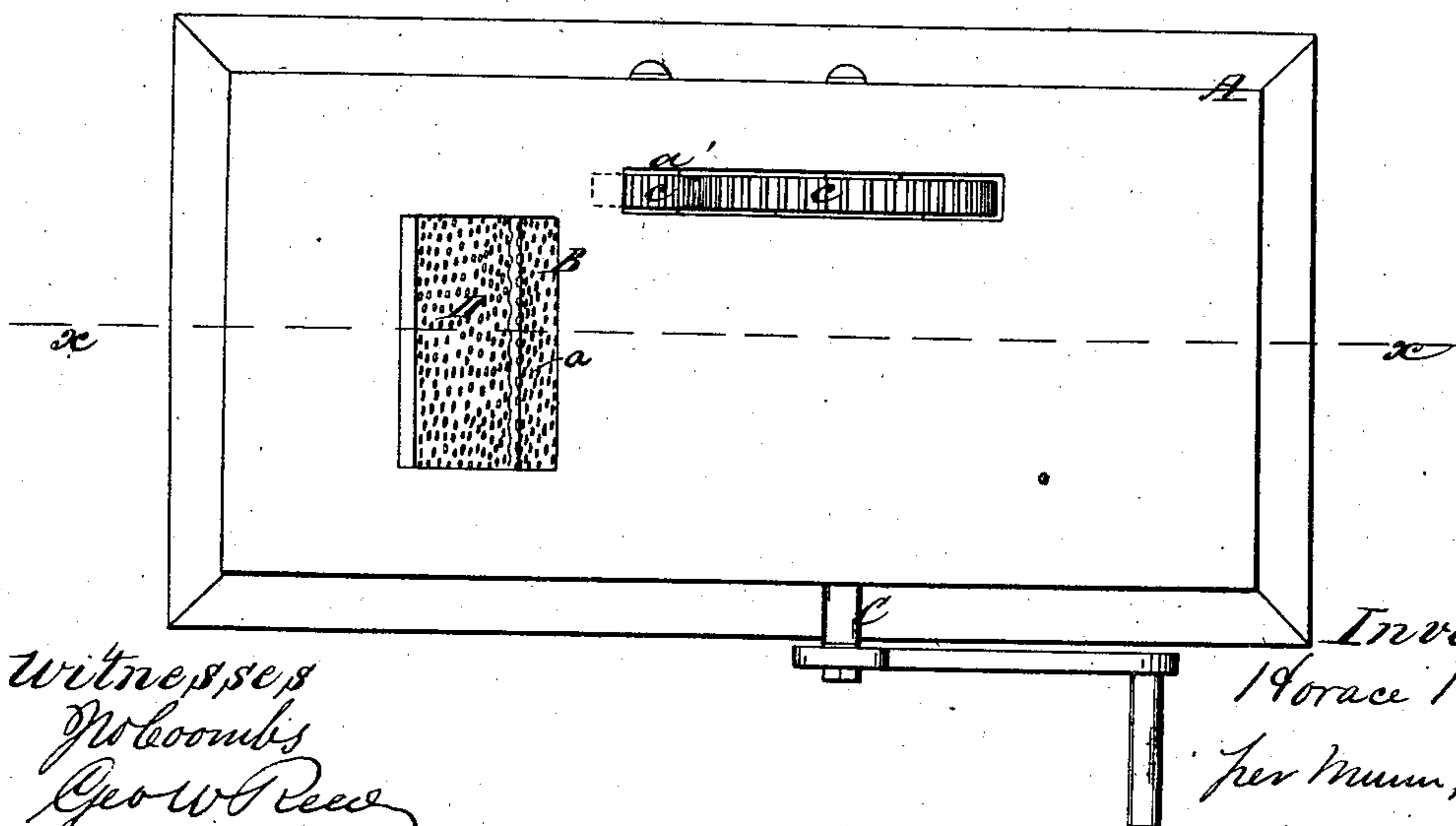
*N<sup>o</sup> 42,912.*

*Patented May 24, 1864.*

*Fig. 1*



*Fig. 2*



*Witnesses*  
*W. Coombs*  
*Geo. W. Rice*

*Inventor*  
*Horace Hurd*  
*per Munroe & Co*  
*Attorneys*

# UNITED STATES PATENT OFFICE.

HORACE HURD, OF SPRING HILL, ILLINOIS, ASSIGNOR TO HIMSELF AND  
J. E. BALDWIN, OF SAME PLACE.

## IMPROVEMENT IN CIDER-MILLS.

Specification forming part of Letters Patent No. 42,912, dated May 24, 1864.

*To all whom it may concern:*

Be it known that I, HORACE HURD, of Spring Hill, in the county of Whiteside and State of Illinois, have invented a new and useful Improvement in Cider-Mills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to an improvement in what is generally known as the "grater-mill" for grinding apples in manufacturing cider.

The object of the invention is to produce a mill of the kind specified, which will perform its work much more rapidly and thoroughly than those hitherto constructed, and one which may be constructed at a much less cost.

The invention consists in constructing the grater-cylinder with a piece of perforated sheet metal, iron, steel, or other metal being used for the purpose, and secured on the periphery of a wooden or metal cylinder, as hereinafter set forth, whereby a very efficient grater-cylinder is obtained, and in using, in connection with the grater-cylinder, constructed as set forth, a perforated sheet-metal feed-plate arranged in relation with the grater-cylinder as hereinafter described, whereby the work of the latter is greatly expedited.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the framing of the mill, which may be constructed in any proper manner to support the working parts, and B is a grater-cylinder placed transversely in the upper part of the framing A and formed by having a perforated piece of sheet metal, *a*, bent in cylindrical form and secured to the periphery of a wooden or metal cylinder, *b*. The sheet metal *a*, which forms the exterior or face of the grater-cylinder B, is punched from its inner side, so as to form bars on its outer side and give a tooth to the face or periphery of the grater-cylinder, as will be seen by referring to Fig. 1. This grater cylinder B may be rotated by gearing *c* from a driving-shaft, C, multiplying-gear being used to give sufficient speed to the cylinder B.

In the upper part of the framing A there is secured an inclined feed-plate, D, the lower edge of which is within a short distance of the periphery of the grater-cylinder B, and in about a horizontal line with the center of its axis *a'*. This feed-plate extends upward and outward from the cylinder B at an angle of about forty-five degrees, as shown in Fig. 1, and it is perforated by being punched from its inner side in the same way as the plate *a* of cylinder B, and consequently it has the same rough or toothed surface.

The perforated sheet metal of the cylinder B and feed-plate D, may be iron, steel, or brass.

The space between the feed-plate D and cylinder B receives the apples to be ground or grated, and the cylinder B, when rotated, performs the work. The perforated feed-plate D retains the apples or prevents them from rolling or shifting about while being acted upon by the cylinder B, and thereby renders the operation of the latter very efficient, causing the work to be performed rapidly and well, the apples being reduced to a very fine pomace.

The sheet-metal plates of the grater-cylinder B and feed-plate D may be perforated or punched at a small cost, and they form an excellent toothed or roughened surface for the purpose specified, and admit of the mill being constructed at a much less cost than those hitherto used.

I do not confine myself to any particular gearing or to any means for driving the cylinder B, and any power—human, steam, wind, or horse—may be employed as a motor.

I am aware that cider-mills have before been made with rasping-surfaces, and also that punched sheet metal is commonly used as a rasping-surface in graters and other articles.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

As an improvement in cider-mills, the grater-cylinder B, having a surface or covering of punched sheet metal, in combination with the punched feed-plate D, all arranged to be operated as herein described.

HORACE HURD.

Witnesses:

FRANKLIN BROOKS,  
JAMES M. LANPHERE,