S. HULL.

Plate to Mills.

No. 28,373. Patented May 22, 1860.

Fig: 1.

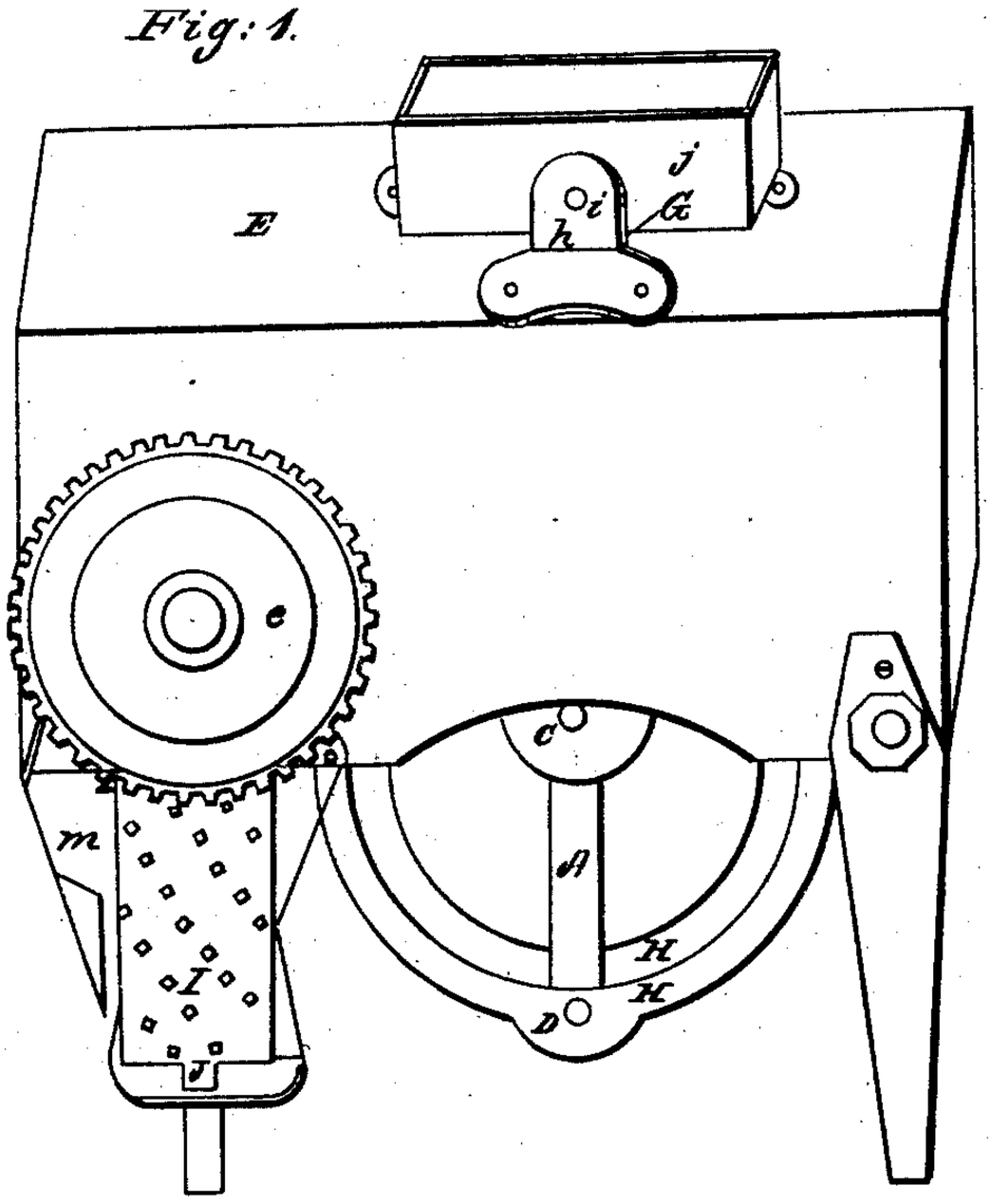


Fig: 2.

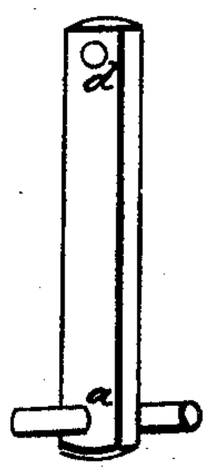
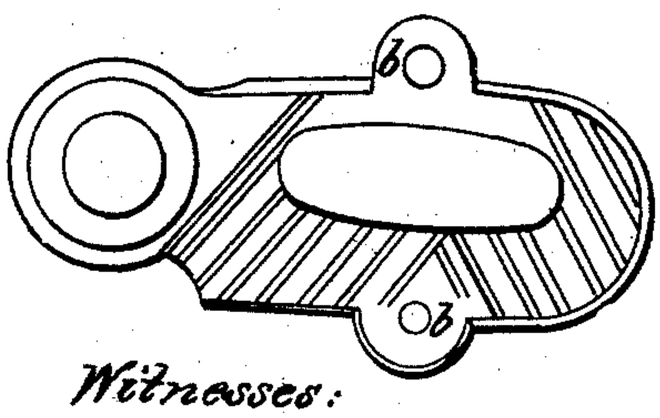


Fig: 3.

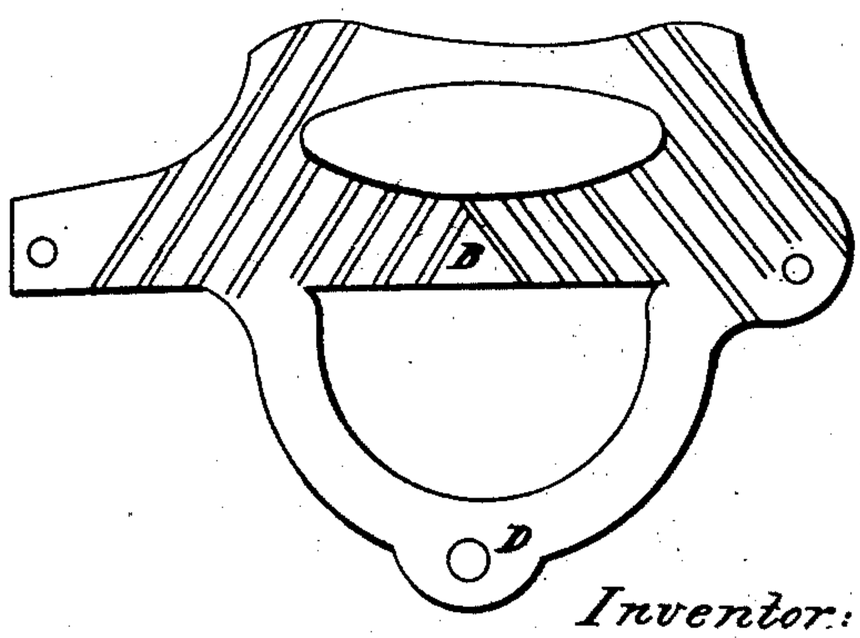


Witnesses:

Thos Hull.

Edgar Allan Clark

Fig: 4.



Inventor:

Stephen Hull.

UNITED STATES PATENT OFFICE.

STEPHEN HULL, OF POUGHKEEPSIE, NEW YORK.

PLATE TO MILLS.

Specification of Letters Patent No. 28,373, dated May 22, 1860.

To all whom it may concern:

Be it known that I, STEPHEN HULL, of the city of Poughkeepsie, in the county of Dutchess and State of New York, have invented a new and Improved Mode of Supporting the Movable or Reciprocating Grinding-Plates in Reciprocating Grinding-Mills; 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 marked thereon.

The nature of my invention consists in supporting the movable grinding plates in reciprocating grinding mills on rock shafts, for the purpose of lessening the great amount of friction heretofore caused by the rubbing of the movable plates on so many boxes as they are drawn backward and forward on them by means of cranks, and to make the mills more durable and less liable to get out of order, and also in attaching to portable grinding mills an upright revolving cylinder having a rough or grating surface for the purpose of shelling corn from the cobs, and for grating or grinding potatoes and other roots to mix with the meal after it is ground.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I make my rock shaft (A) of metal from about four to eight inches in length and about the thickness of one of the stationary grinding plates Fig. (4) (B) with two bearings as seen on Fig. (2) at (*a*) and at right angles with it. These bearings are made to work in holes or eyes (*b b*) made in the projections on the edges of the movable plates as seen in Fig. (3) at (*b*) at or near the middle of the grinding part of the plates on either the upper or lower edge. At the other end of the rock shaft or at about five inches from the bearing, at (*a*) I make on eye or two other bearings for the rock shaft to rock or work on. These bearings work in holes or eyes (D D) as seen in Fig. (1) in projections made on the lower edges of the stationary plates Fig. (4), but when I make the rock shaft work above the plates through slots made in the top of the frame (E) then I make the rock shafts that support the movable plates, rock or work on a bolt that passes through the eye or hole (*d*) Fig. (2) in the end of the rock shaft and held by jaws (*h*) and hopper box (*j*) on the top of the frame (E) while the bearings at (*a*) in the lower end of the rock shaft support two of the movable plates so that two rock shafts are made to support the four movable plates in a double mill whether they are used above or below the grinding plates. In my model and drawings, I have put one rock shaft above and the other below the grinding plates but they should be both either above or below the grinding plates in the same mill.

I make my cylinder (I) Fig. (1) (which I attach to grinding mills for shelling corn grating or grinding potatoes and other roots while the mill is grinding so that they may be mixed with the meal as it is ground) of thin cast iron plates about sixteen or eighteen inches long and about four or five inches wide, so that small diamond shaped points about one fourth of an inch high may be cast on the outside to make a rough grating surface on the outside of the cylinder. These points should be in spiral rows about two inches apart and about one inch apart in the rows and should wind around the cylinder from the bottom toward the top in the same direction the cylinder is made to run, so that they will draw the ears of corn through. The plates are fastened to round heads about eight inches in diameter, in the center of each of these heads is fastened an axis (J J) on which the cylinder turns in an upright position or nearly so as seen in Fig. (1) on the upper end of the axis is fastened a small bevel pinion that is driven by another bevel wheel (*e*) about twice the size which is fastened on the crank or main shaft of the mill.

I make one or more spring hoppers (*m*) at the side of the cylinder as seen at (*m*) Fig. (1) to press the ears of corn, and potatoes against the cylinder these spring hoppers are fastened to the upper ends of the bars (K K) of the frame that holds the cylinder to the frame (E) of the mill and supports one corner of it instead a leg.

I do not claim to be the inventor of rock shafts as they have long been in use; nor of the movable or stationary grinding plates to grinding mills as they were invented by Gelston Sanford; nor of a cylinder having a rough or grating surface; but

What I claim as my invention is—

1. The arrangement of rock shafts A Fig. (2) to support the movable grinding plates to reciprocating grinding mills when used

above the grinding plates and when one rock shaft is made to support two movable plates, and also the arrangement of rock shafts (A) Fig. 2 to support the movable grinding plates when one rock shaft is made to support two movable grinding plates and used below the grinding plates in combination with the grinding plates of reciprocating grinding mills substantially as and for the purposes herein described and set forth.

2. Attaching a cylinder having a rough or grating surface to the frame of grinding mills with spring hoppers when the cylinder is made to run in an upright position or nearly so in combination with portable grinding mills substantially as and for the purposes herein set forth.

3. The cylinder with the diamond points in spiral rows in combination with spring hoppers when the cylinder is made to run in an upright position or nearly so substantially as herein set forth and for the purposes described.

STEPHEN HULL.

Witnesses:
A. M. BRUSH,
THOMAS HULL.