

R. & S. PATTERSON.
Grinding-Mills.

No. 143,710.

Patented Oct. 14, 1873.

Fig. 1.

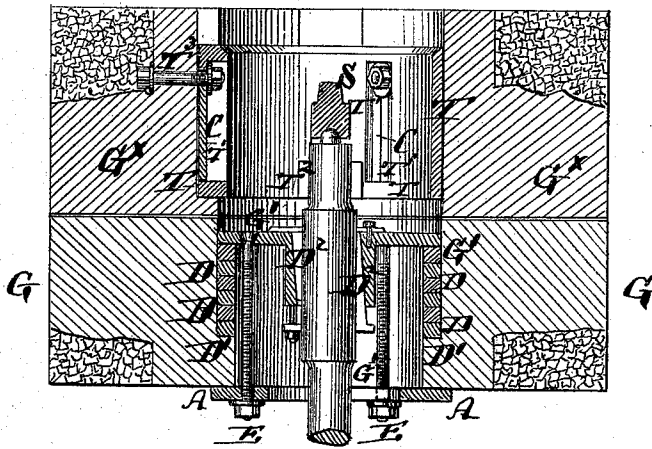


Fig. 2.

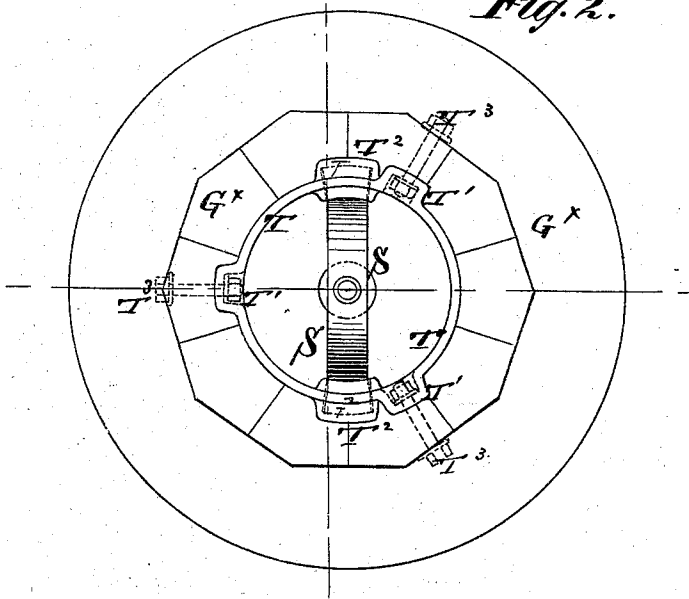
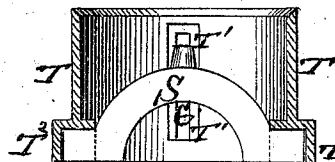


Fig. 3.



Witnesses
John Becker
Fred Sawyer

Robert Patterson
Lutton Patterson
by their Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

ROBERT PATTERSON AND SUTTON PATTERSON, OF NEWCASTLE-UPON-TYNE,
ENGLAND.

IMPROVEMENT IN GRINDING-MILLS.

Specification forming part of Letters Patent No. **113,710**, dated October 14, 1873; application filed
July 14, 1873.

To all whom it may concern:

Be it known that we, ROBERT PATTERSON and SUTTON PATTERSON, both of the borough and county of Newcastle-upon-Tyne, England, millstone-manufacturers, have invented certain Improvements in Adjustable Millstones, of which the following is a specification:

This invention relates to improvements in the formation of millstones and the means of adjusting the grinding-surfaces, being more particularly applicable to millstones for grinding coprolites or cement, where the surfaces of the stones are rapidly worn away and where the labor of adjusting them is necessarily very great. The invention consists in providing the upper stone with an adjustable inner lining, to which the driver is fitted, so that, as the stone wears, it may be set lower down on the driver, to be the proper distance from the lower stone; and,

In order that our invention may be clearly understood and readily carried into practice, we will proceed to describe the drawing hereto attached, in which—

Figure 1 represents a central vertical section through both millstones; Fig. 2, a top view of the upper millstone; and Fig. 3, a detail central section of the casing or lining of the upper millstone.

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

The lower stone G is formed with a circular recess, G', for the insertion of a number of rings, D, which rest upon a set-off, D¹, reducing the orifice G' through the stone. The rings D are for the purpose of adjusting the central bush D², the whole being secured by screw-bolts E, connecting the bush D² and the metal ring A below the orifice G', and bearing against the under surface of the lower stone G. The driver and suspender S of the upper stone G* are likewise rendered adjustable by means of packing-pieces C inserted into slots in the recessed projecting ribs T¹ formed in the circular casing or lining T arranged to move vertically in grooves formed in the eye or orifice of the upper stone G*. The cylindrical lining T is

formed with recessed projections T² to receive the ends of the driver S, the projections T² entering vertical grooves in the eye of the upper stone, so as to give motion thereto. T³ T³ are bolts passing through the slots T¹, by which the lining T is secured within the orifice of the upper stone, each adjustable piece C filling up the space between the bolt and the bottom of the slot T.

When the grinding-surface of the upper stone is worn away, the nuts of the bolts T³ are loosened and the lining T is raised a suitable distance within the eye or orifice of the stone. Shorter filling-pieces C are then inserted in the slots below the bolts T, which are then screwed up tightly again to secure the lining T within the orifice of the upper stone G*.

When the grinding-surfaces of millstones (formed and mounted as previously described) wear away, they can be readily adjusted to any extent by taking out one or more of the rings D in the eye of the lower stone, or one or more of the packing-pieces C let into the slots T¹ cut in the lining T of the upper stone, or by substituting other filling-pieces, C and D, of different lengths and thicknesses.

The screw-threads upon the bolts E are of suitable extent to admit of any reduction in the thickness of the stones, as will be readily understood on examining the drawings.

Having thus described the nature of our invention, and the manner of carrying the same into practice, we would have it understood that we do not confine ourselves to the exact details hereinbefore described and shown in the drawings; but

What we claim is—

The driver S combined with the adjustable lining T of the stone G*, when said lining is slotted and secured substantially as specified.

ROBT. PATTERSON.
SUTTON PATTERSON.

Witnesses:

W. WILSON, *Mason,*
Newcastle-on-Tyne.

THOS. CROSBIE, *Mason,*
Newcastle-on-Tyne.