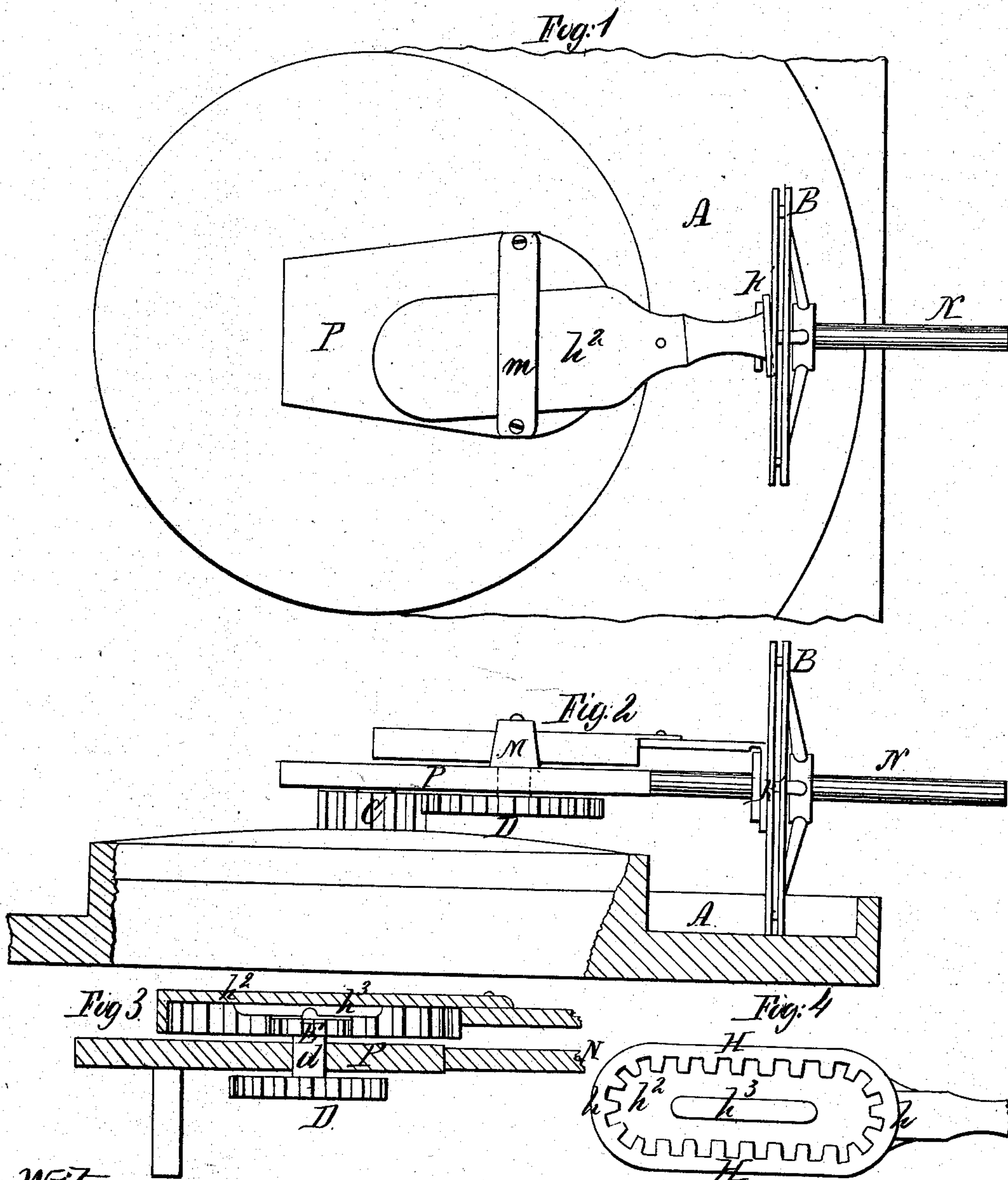


No. 83,361.

PATENTED OCT. 27, 1868.

G. CARNELL, S. WILLIAMS & W. ELLIS.
MILL FOR TEMPERING CLAY.



Witnesses:

Wm. R. Heins.

Chas. McClayton.

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George Carnell

Samuel Williams

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United States Patent Office.

GEORGE CARNELL, SAMUEL WILLIAMS, AND WILLIAM ELLIS, OF
PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 83,361, dated October 27, 1868.

IMPROVED MILL FOR TEMPERING CLAY.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, GEORGE CARNELL, SAMUEL WILLIAMS, and WILLIAM ELLIS, all of the city of Philadelphia, and State of Pennsylvania, have invented certain Improvements in a Mill for Tempering Clay; and we do hereby declare 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.

The nature of our invention consists of the following: In casting the rack with a cap or cover, to keep it clear of dirt; in the saddle, in which the rack works; and also in dishing the wheel which works the clay.

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

Figure 1 is a plan.

Figure 2 is an elevation.

Figure 3 is a section through a part of the machine.

Figure 4 is the rack, inverted.

A represents the circular trough, in which the clay is kneaded by the tempering-wheel B.

The stationary cog-wheel C, gearing into the cog-wheel D, which carries, on the other end of the shaft *d*, the pinion E, are nearly similar to those in common use.

H is the rack, made with two straight sides, connected at each end by the semicircular racks *h* *h*.

These racks are cast upon a cap or cover, *h*², which effectually prevents any clay or stones from clogging up the rack and pinion.

In the centre of the cap *h*² is cast the web *h*³, which reaches nearly to the rack at each end.

The shaft of the pinion E bears against this said web

*h*³ in its travel around the rack, and is thus kept close in gear all the way around.

This rack is connected to the wheel B by a ring, *k*, working in a groove upon the collar of the said wheel.

As the pinion E traverses the length of the rack, the rack is forced outwards and inwards, carrying with it the wheel B, sliding upon the shaft N. The rack is retained in its place by the saddle M, which is secured to plate P.

A thin plate interposes between the plate P and rack H, and on which the rack slides. The upper band *m* is bolted down upon the two uprights, so as just to clear the rack-cover, and it is wide enough to permit the lateral motion given to the rack at each end of the stroke.

The wheel B is dished outwards, that is to say, the centre of the wheel is further out from the rack than the circumference.

By this arrangement, the clay is not thrown out of the trough on the outer edge, as it is when a straight wheel is used.

We do not claim the use of a rack and pinion for giving motion to the clay-wheel B, nor do we claim a dished wheel, except as applied in the manner and for the purpose specified; but

We claim the inverted double rack H, cast with a cover, *h*², and internal web, *h*³, in combination with saddle M and pinion E, for operating the wheel B of a clay-mill, in the manner substantially as shown and described.

Witnesses:

GEORGE CARNELL.
SAMUEL WILLIAMS.
WM. R. HEINS, WM. ELLIS.
CHAS. M. CLAYTON.