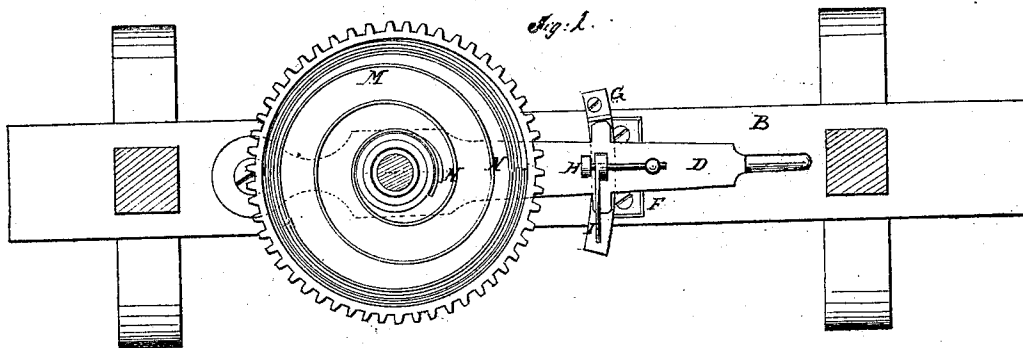
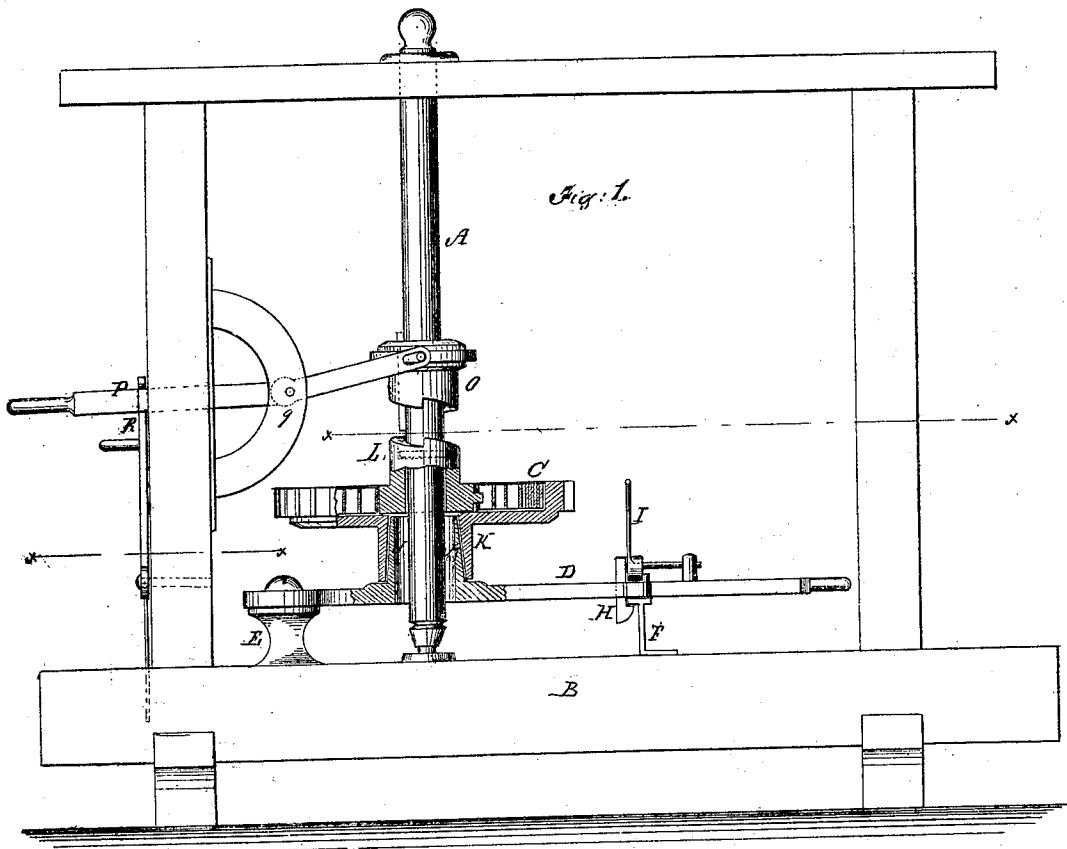


Shoemaker & McClintock,

Mill Gearing.

No. 109053.

Patented Nov. 8. 1870.



Witnesses:

Chas. Vida.
L. J. Apabee,

Inventor:

H. Shoemaker
J. A. McClintock
PER *Wm. H. H.*
Attorneys.

United States Patent Office.

HENRY SHOEMAKER AND JOHN ALEXANDER McCLINTOCK, OF PERRY,
ILLINOIS.

Letters Patent No. 109,063, dated November 8, 1870.

IMPROVEMENT IN MILL-GEARINGS.

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, HENRY SHOEMAKER, and JOHN ALEXANDER McCLINTOCK, of Perry, in the county of Pike and State of Illinois, have invented a new and useful Improvement in Mill-Gearing; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

The object of this invention is to provide convenient and efficient means for starting and stopping the bur-stones of flour-mills without stopping or retarding the motion of the propelling power; and it consists—

First, in a mechanism for throwing the spindle-pinion out of and into gear with the spur driving-wheel and fixing it in position.

Secondly, in the use of a coil-spring in the pinion, by means of which the inertia of the bur is overcome, so that the gearing revolves smoothly and without jerk or concussion; and

Thirdly, in the mode of revolving the pinion without driving the bur or spindle with the several mechanisms connected therewith, as will be herein after more fully described.

In the accompanying drawing—

Figure 1 represents a side elevation of the apparatus, partly in section.

Figure 2 is a horizontal section of fig. 1, on the lines $x x$, looking down.

Similar letters of reference indicate corresponding parts.

A is the pinion-spindle which is connected with the bur-stone by the ordinary driver, and is stepped into the bridge-tree B, in the usual manner.

O is the pinion which is supported by the lever D. This lever has only a horizontal movement with its fulcrum on the stand E.

F is a stand-plate upon which the lever rests and slides back and forth. By a movement of the lever on this plate, the pinion is thrown into or out of gear with the spur-wheel.

G is a stop on the plate F, which limits the movement of the lever, but allows the pinion to be thrown into gear with the spur-wheel.

The lever is held and fastened in any desired position on the plate by means of the hook H and eccentric lever I, arranged and operating as seen in the drawing.

J is a hollow journal on the upper side of the lever to which the hub K of the pinion is fitted, so that the pinion will freely revolve thereon.

The hollow journal J is bored of greater diameter than the spindle which passes through it. This

play allows the pinion to be thrown into or out of gear with the spur-wheel.

The journal J of the lever also allows the pinion to revolve freely, without revolving the spindle.

L is the lower portion of a coupling, which is allowed to revolve on the spindle, but held down in place by a collar on the spindle.

M is a coil-spring placed in a recess in the upper side of the pinion, one end of which is attached to the rim of the pinion, and the other end is connected with the coupling L by means of a hook, N, on the coupling, and a slot hole in the end of the spring. This arrangement allows the coupling to slip or revolve backward under the recoil of the spring at the time of uncoupling.

In coupling, the hook slips automatically into the slot, and coils the spring sufficiently to overcome the inertia of the bur at the time of starting.

The spring forms a connection between the pinion and the coupling, and also prevents back-lashing in the gearing at all times.

O is the other portion of the coupling which slides on a feather on the spindle, and is operated by the forked lever P.

This lever has its fulcrum at q , and is held in position for coupling or uncoupling by a spring-hook, seen at R.

By the use of the above-described device, the miller has complete control of the burs at any and all times, as they may be started or stopped instantly without in any manner interfering with the rest of the machinery of the mill, and without danger of damage from the sudden jerk and collision of gearing.

Having thus described our invention,

We claim as new and desire to secure by Letters Patent—

1. The lever D with the hollow journal J, and the mode of supporting, guiding, and fastening it, substantially as and for the purposes herein shown and described.

2. The spring M in combination with the pinion O and coupling L, and the mode of connecting the spring with the coupling, substantially as and for the purposes described.

3. The pinion and spindle arranged so as to revolve independently of each other, substantially as described.

4. The forked lever P, and the mode of supporting it, and the spring catch R for holding it in place, substantially as described,

HENRY SHOEMAKER.

Witnesses: JOHN ALEX. McCLINTOCK.

JNO. E. MORTON,
T. SHOEMAKER.