

(No Model.)

U. H. ODELL.

ROLLER MILL.

No. 260,225.

Patented June 27, 1882.

Fig. 1.

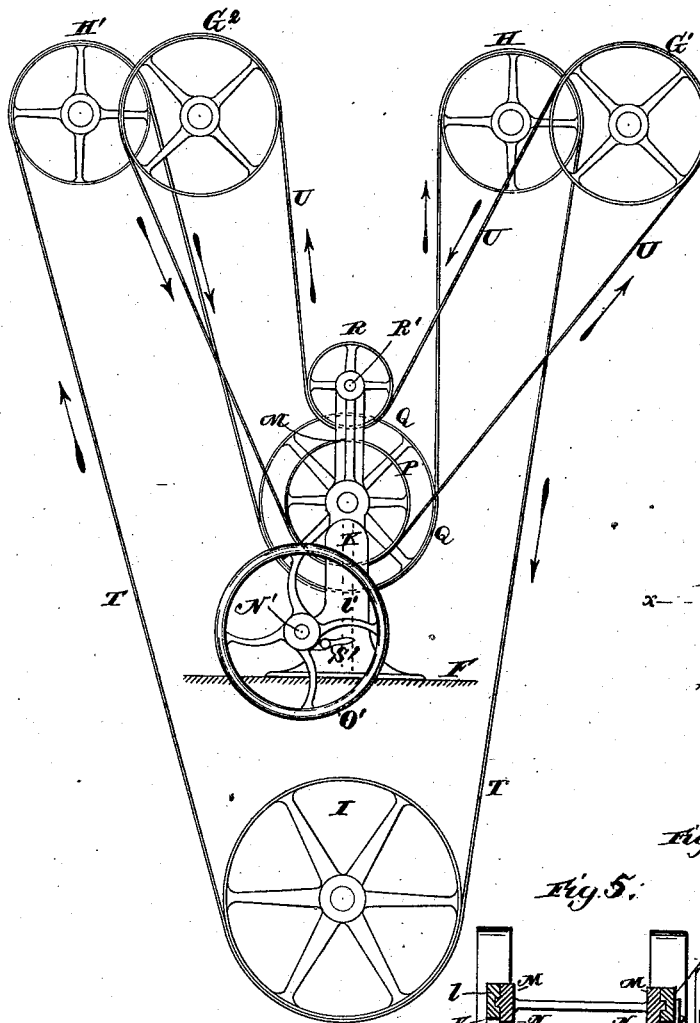


Fig. 4.

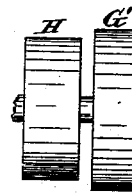


Fig. 2.

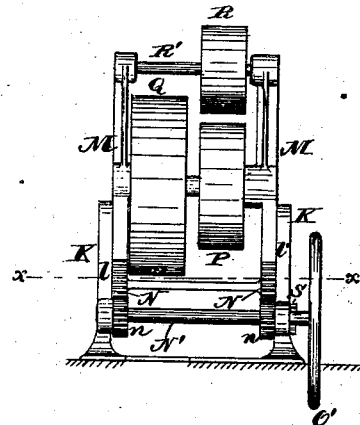


Fig. 3.

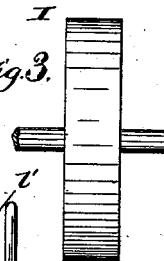
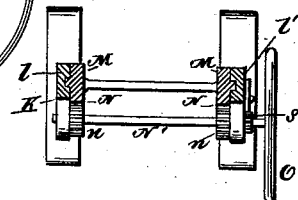


Fig. 5.



Witnesses.

E. E. Wilson
E. E. Wood

Inventor,

U. H. Odell

UNITED STATES PATENT OFFICE.

UDOLPHO H. ODELL, OF DAYTON, OHIO.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 260,225, dated June 27, 1882.

Application filed February 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, UDOLPHO H. ODELL, a citizen of the United States, residing at the city of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Roller-Mills, of which the following is a specification.

This invention relates to improvements in the mechanism employed to drive the rollers in roller grinding-mills; and the objects of the invention are to drive the rollers by means of pulleys mounted on them at one side of the machine only, and to provide simple and efficient means for regulating the strain of the driving-belts, all in such manner that free access can be had to one side of the machine without danger of being caught in the belts, and a series of mills can be set so that the belts may be on the inner sides of the machines with a free space upon their outside and the belts out of the way.

To these ends my invention consists in the combination, with a roller-mill, of driving-belts, driving and roller pulleys, and belt-tightener pulleys, all arranged upon one side of the machine-frame; also, in the combination, in a double roller mill, of driving belts and pulleys and an adjustable frame carrying tightener-pulleys adapted to be raised and lowered for regulating the strain of the belts; and, finally, in the combination, in a double roller mill, of driving belts and pulleys, a supporting-frame, an adjustable frame, and mechanism for adjusting the latter to regulate the strain of the driving-belts. The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 represents the driving belts and pulleys as arranged on one side of the machine; Fig. 2, the belt-tightener pulleys set adjustably on a frame. Fig. 3 is a front elevation of the main driving pulley and shaft. Fig. 4 is a front elevation of the pulleys on one set of rolls. Fig. 5 is a horizontal section on the line $x x$ of Fig. 2.

The driving mechanism is represented as adapted to be used on the machine shown in Letters Patent No. 250,954, granted me December 13, 1881.

Fig. 1 represents the driving belts and pulleys in proper relative positions as used on a

double roller mill. The frame of the machine and the roller-shafts are not shown in the drawings. They may be constructed in any well-known way.

F represents the floor on which the frame of the machine usually stands.

G¹ G² represent the pulleys upon the slower-speeded rollers.

H H' represent the pulleys upon the faster-speeded rollers.

I represents the main driving-pulley for transmitting the power to the machine.

K represents the tightener-pulley frame. It is shown in Figs. 1 and 2 as resting upon the floor and abutting against the machine centrally between the two sets of rolls. It may, however, be attached to or made a part of the frame of the machine.

L' represent the sides of the tightener-frame.

M represents a sliding frame, having vertical ribs arranged in grooves in the inner faces of the standards L'. (See Fig. 5.) Upon the lower end of the standard M are cut a series of rack-teeth, N.

N' represents a shaft journaled in the frame K, at one side thereof, so that pinions n , mounted on said shaft, will mesh with the rack-teeth N.

O' represents a hand-wheel for revolving said shaft to raise or lower the adjustable pulley-frame M.

P represents a tightener and power driving-pulley for the slower-speed rollers, mounted upon a shaft journaled on said frame M.

Q represents a tightener-pulley mounted on the same shaft as pulley P, and it is used to tighten the belt on the faster-speeded rollers.

R represents a tightener-pulley of the slower-speeded rollers, mounted on shaft R', which shaft is journaled to the sliding frame M.

If desired, the shaft R' and its tightener-pulley may be attached adjustably on the frame M, so that it can be raised and lowered to regulate the strain of the belt of the slower-speeded rollers independent of the frame M.

S' represents a pawl attached to the frame K, which engages the ratchet-teeth s on shaft N' to lock or hold the frame N to any point of adjustment.

Power is transmitted from the main driving-pulley I as follows: Belt T passes from pulley

I around the pulley II', thence around the tightener-pulley Q, thence around the roller-pulley II, thence back again around the driving-pulley I. The slower-speeded rollers are
5 driven by belt U, and the power is transmitted from the pulley P on the shaft of tightener-pulley Q, belt U passing from pulley P around pulley G', thence around the tightener-pulley R, thence around the roller-pulley G², and back
10 again around power-pulley P.

It will be seen that the machine can be instantly stopped or started by turning the hand-wheel O' and loosening or tightening the belts, as the case may be, and is a very important
15 feature in the operation of roller-mills.

A modification of the arrangement of the tightener-pulleys might be made by having the pulley R mounted on an axis attached to the main frame of the machine, and made verti-
20 cally adjustable as a belt-tightener simply.

What I claim is—

1. In a roller-mill, the belt-driving mechan-

ism consisting in the combination of the belts T and U, the driving and roller pulleys, and tightener-pulleys Q and R, arranged upon one
25 side of the frame of the machine, substantially as described.

2. In a double roller mill, the combination of driving belts and pulleys, the tightener-pulleys Q and R, and an adjustable frame adapted
30 to be raised and lowered for regulating the strain of the belts, substantially as described.

3. The combination, in a double roller mill, of the driving belts and pulleys, frame K, adjustable pulley-frame M, and mechanism for ad-
35 justing the latter, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

UDOLPHO H. ODELL.

Witnesses:

S. G. CAIN,

W. G. WHITEHURST.