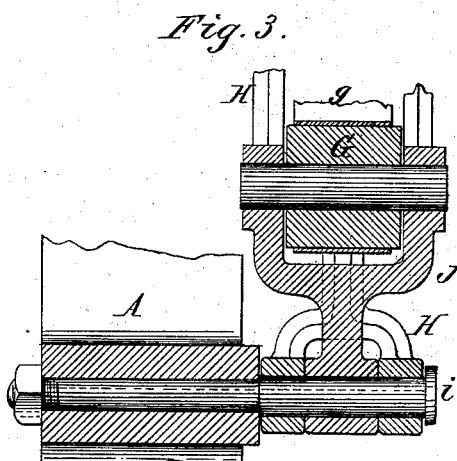
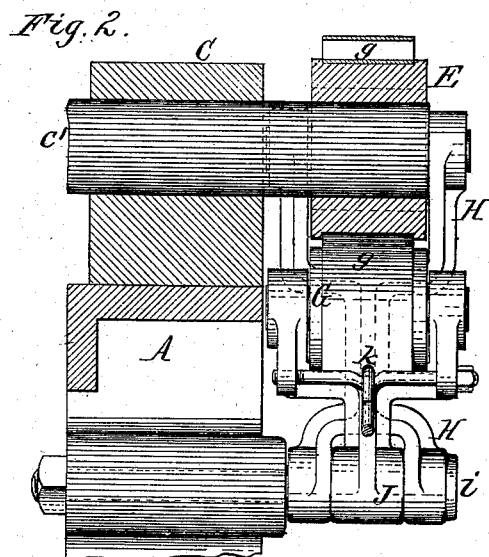
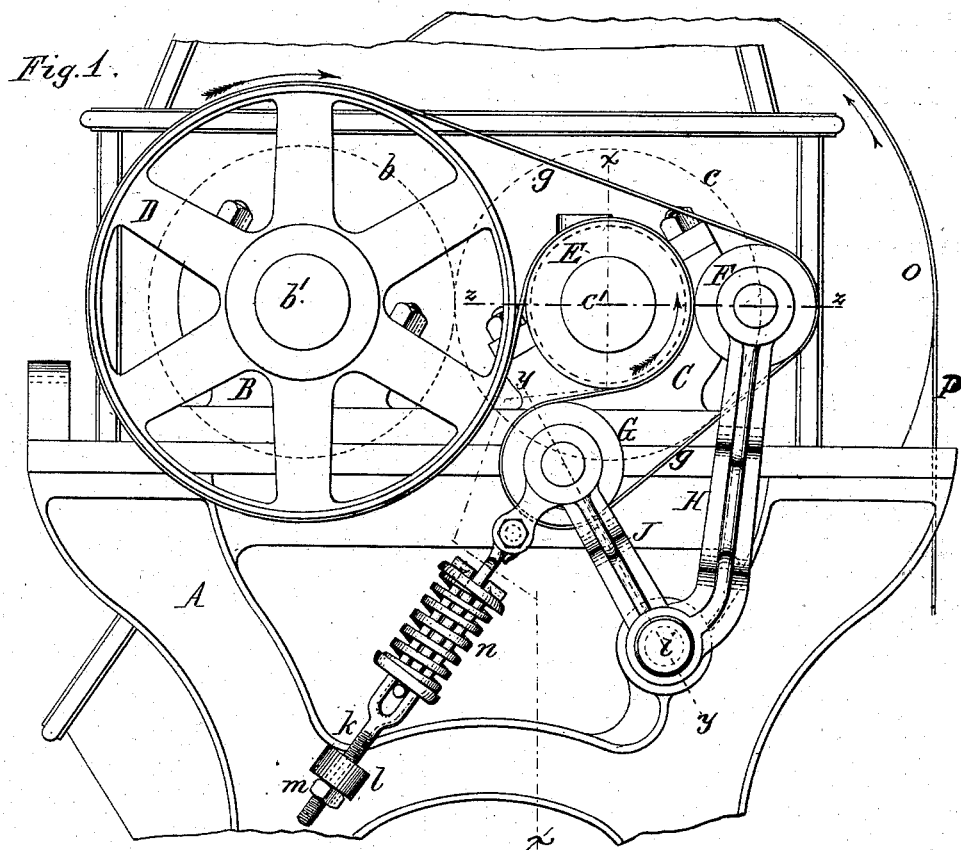


(No Model.)

N. W. HOLT.
ROLLER MILL.

No. 263,906.

Patented Sept. 5, 1882.



Chas. Buchheit
Edw. J. Brady Witnesses.

N. W. Holt Inventor.
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UNITED STATES PATENT OFFICE.

NOAH W. HOLT, OF BUFFALO, NEW YORK.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 263,906, dated September 5, 1882.

Application filed June 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, NOAH W. HOLT, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Roller-Mills, of which the following is a specification.

This invention relates more particularly to that class of roller-mills which are employed for the reduction of grain and similar substances, and has reference to the means for driving the rollers by an endless belt.

The objects of my invention are to avoid the slipping of the endless belt whereby the rollers are driven, to prevent the slow roller from increasing its speed by direct or indirect contact with the fast roller, to afford large contact-surfaces for the endless driving-belt on the roller-pulleys, and to permit the slack of the belt to be readily taken up so as to keep the belt taut.

My invention consists, to that end, of the peculiar improvements in the driving mechanism which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of my improved driving mechanism. Fig. 2 is a vertical section in line *x x*, Fig. 1. Fig. 3 is a cross-section in line *y y*, Fig. 1.

Like letters of reference refer to like parts in the several figures.

A represents one of the stationary side frames of the machine; *b*, the slow roller; *b'*, the shaft thereof; *c*, the fast roller, and *c'* the shaft thereof; and B C, the journal boxes or bearings in which these shafts are supported on the side frame, A.

D represents the belt-pulley secured to the shaft *b'* of the slow roller, and E represents the belt-pulley which is secured to the shaft *c'* of the fast roller, and which is smaller in diameter than the pulley D to produce the desired differential speed in the rollers.

F represents a guide-pulley arranged about in the same horizontal line with the pulleys D and E.

G represents a tightener-pulley, which is arranged below the pulleys D E.

g represents an endless driving-belt, which runs around the pulleys D, E, F, and G in the direction of the arrow in Fig. 1, the pulleys D,

F, and G being arranged within the driving-belt and the pulley E on the outer side of the driving-belt, in the bight thereof, so that the belt *g* runs from the pulley D to the guide-pulley F, thence to the tightener-pulley G, thence to the roller-pulley E, and thence to the roller-pulley D, as clearly shown in Fig. 1. The pulley F is mounted in the upper bifurcated end of an arm, H, which swings on a horizontal fulcrum pin or bolt, *i*, secured to the side frame, A. The pulley G is mounted in the upper bifurcated end of an arm, J, which is shorter than the arm H, and which swings preferably on the same horizontal pivot or bolt, *i*, to which the arm H is attached. The lower end of the arm H is preferably made bifurcated, and straddles the lower end of the arm J on the bolt *i*, as represented in Fig. 3. The upper or free end of the arm J is connected with the side frame, A, by a screw-bolt, *k*, which passes through a lug, *l*, cast with or secured to the side frame, A. The screw-bolt *k* is provided with a screw-nut, *m*, whereby it can be adjusted. *n* is a spiral or other suitable spring, which is interposed between that portion of the screw-bolt which is attached to the arm J and the portion which passes through the lug *l*, so as to form a yielding or elastic connection of the arm J with the side frame.

By properly adjusting the screw-bolt *k* the upper end of the arm J, in which the tightener-pulley G is mounted, is drawn downward, whereby the belt is properly tightened.

The pressure of the belt against the outer portion of the pulley F holds the inner side of the pulley F against the pulley E, thereby compelling both pulleys, E and F, to rotate with the same peripheral speed, whereby the belt is prevented from slipping and the desired differential speed of the rollers easily maintained.

Power is applied to the shaft *c'* of the fast roller by means of a pulley, O, attached thereto, and a driving-belt, P, passing around said pulley, or by any other suitable means.

I claim as my invention—

1. The combination, with a pair of rollers, *b c*, provided respectively with pulleys D and E, of a guide-pulley, F, a tightener-pulley, G, and an endless belt, *g*, running from the pulley D to the guide-pulley F, thence to the tightener-pulley G, thence to the pulley E, and

thence to the pulley D, substantially as set forth.

2. The combination, with a pair of rollers, *b c*, of the pulleys D and E, mounted on the shafts of said rollers, a guide-pulley, F, mounted on a pivoted arm, H, a tightener-pulley, G, mounted in a pivoted arm, J, and an endless belt, *g*, running around said pulleys, substantially as set forth.

10 3. The combination, with a pair of rollers,

b c, of the pulleys D and E, mounted on the shafts of said rollers, a guide-pulley, F, a tightener-pulley, G, an endless belt, *g*, and a screw-bolt, *k*, and spring *n*, whereby the tightener-pulley can be adjusted, substantially as set forth.

NOAH W. HOLT.

Witnesses:

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