

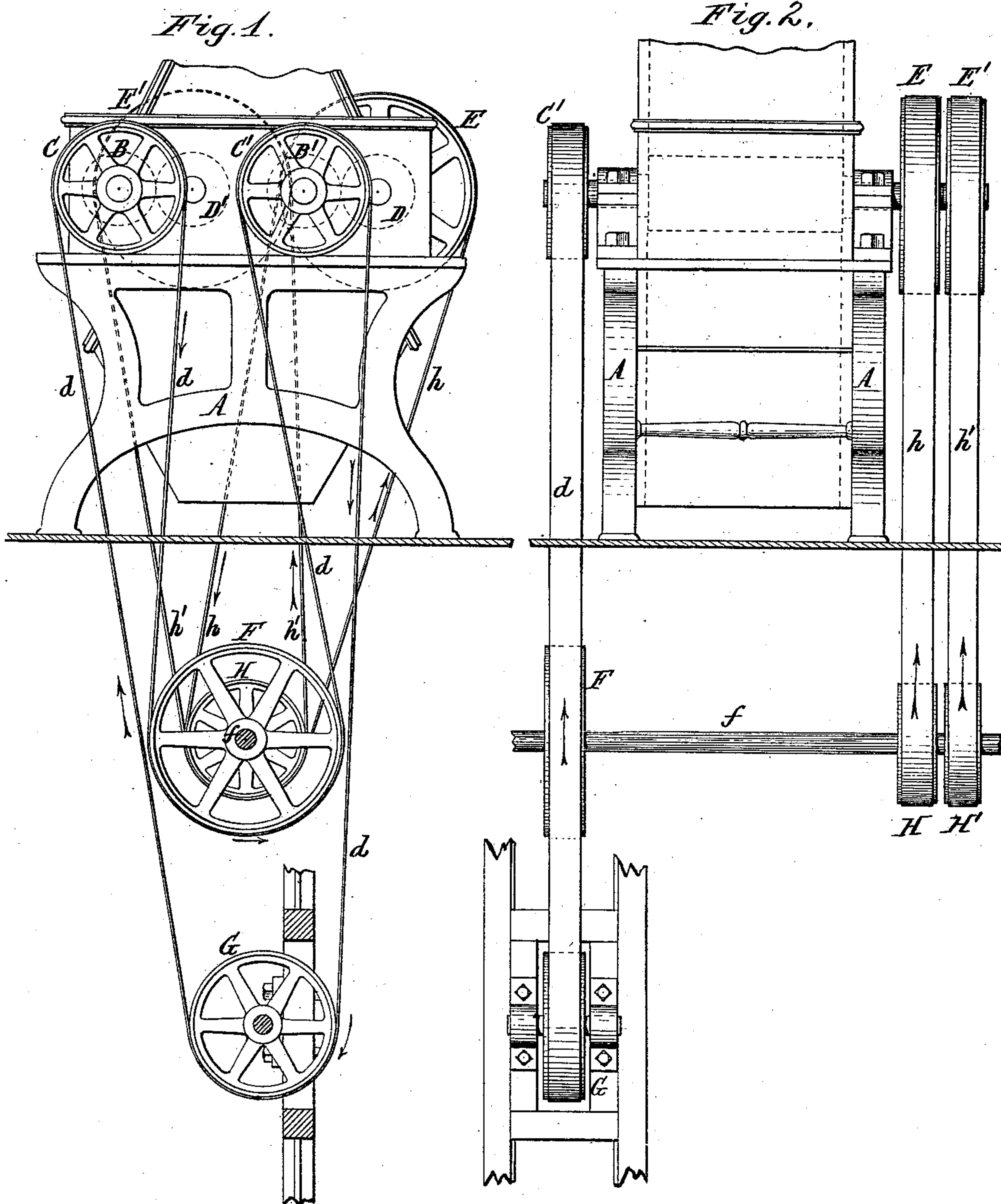
(No Model.)

2 Sheets—Sheet 1.

N. W. HOLT.  
ROLLER MILL.

No. 299,789.

Patented June 3, 1884.



Edw. J. Brady  
Theo. L. Poppe } Witnesses.

N. W. Holt Inventor  
By Wilhelm H. Bonner  
Attorneys.

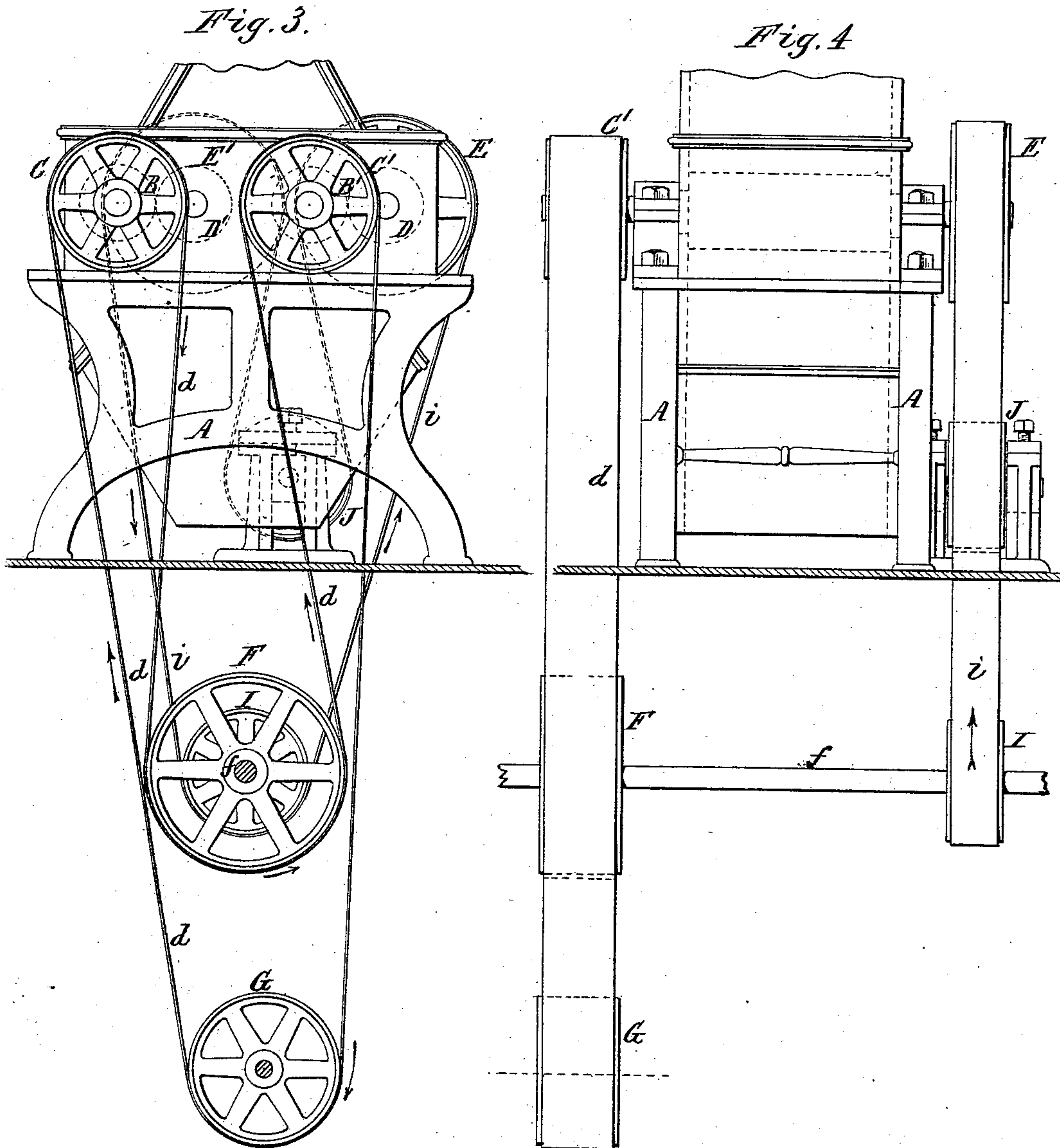
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Attorneys.



# UNITED STATES PATENT OFFICE.

NOAH W. HOLT, OF BUFFALO, NEW YORK.

## ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 299,789, dated June 3, 1884.

Application filed October 21, 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  
5 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 grinding grain and similar material, and  
10 in which two sets or pairs of rollers are employed in the same machine.

The object of my invention is to simplify the mechanism whereby the rollers are rotated; and my invention consists of the peculiar belt-driving mechanism, whereby the  
15 roller-pulleys on both sides of the machine are driven by straight or open belts directly from the driving-shaft without employing intermediate belts and pulleys or a counter-shaft  
20 in the roller-mill, and which will be hereinafter fully described, and pointed out in the claim.

In the accompanying drawings, consisting of two sheets, Figure 1 represents a side elevation of a roller-mill provided with my improvement. Fig. 2 is an elevation at right  
25 angles to Fig. 1. Fig. 3 is a side elevation representing a modified construction of my improved driving mechanism. Fig. 4 is an elevation at right angles to Fig. 3.

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

A A represent the side frames of the roller-mill; B B', the fast rollers; C C', the pulleys, mounted on the shafts thereof; D D', the slow  
35 rollers, and E E' the pulleys mounted on their shafts, all of any well-known and suitable construction.

f represents the horizontal driving-shaft, arranged underneath the roller-mill, and supported in bearings of any suitable and well-known construction.

F is a belt-pulley secured to the driving-shaft f underneath the pulleys C C'; and G is  
45 an adjustable tightener-pulley arranged underneath the pulley F.

d is an endless driving-belt running around the pulleys C, C', F, and G in the direction of the arrows in Fig. 1—that is, from the pulley  
50 C downwardly and around the lower side of

the pulley F, thence upwardly and around the pulley C', thence downwardly and around the tightener-pulley G, thence upwardly and around the pulley C, and thence downwardly back to the pulley F.

As shown in Figs. 1 and 2, H H' represent  
55 two belt-pulleys mounted on the shaft f, respectively, underneath the pulleys E E', secured to the shafts of the slow rollers. The pulleys E E' are not arranged in the same  
60 plane, but in parallel planes, side by side, and the pulley H is arranged underneath the pulley E, and the pulley H' underneath the pulley E'.

h represents an open endless driving-belt  
65 running around the pulleys H and E in the direction of the arrow in Fig. 1. h' represents a similar belt running around the pulleys H' and E'.

The rotation of the shaft f in the direction  
70 of the arrow in Figs. 1 and 2 causes the rollers B B' to rotate in a direction opposite to that in which the rollers D D' are rotated, and at a greater speed than the rollers D D'.

In the modification represented in Figs. 3  
75 and 4, the pulleys H and H' and the belts h h' are replaced by a single pulley, I, and a single endless belt, i, the roller-pulleys E E' being in this case arranged in the same plane. The belt i runs from the pulley I upwardly and  
80 around the upper side of the roller pulley E, thence downwardly and around the lower side of a tightener-pulley, J, thence upwardly and around the upper side of the roller-pulley E', and thence downwardly and back to the pulley I. The rollers are rotated by this mechanism in the same direction and at the same relative speed as by the mechanism first described, and represented in Figs. 1 and 2.

It will be seen that the roller-pulleys on  
90 both sides of the machine are driven directly from the main driving-shaft by straight or open belts, and without the use of intermediate or counter shafts, whereby the employment of cross-belts is avoided, and the loss by  
95 friction and stiffness of belts reduced to a minimum.

I claim as my invention—

In a roller-mill provided with two pairs of rollers, the combination, with one of the roll- 100

ers of each pair provided with corresponding pulleys, C C', of a driving-shaft, *f*, arranged below the roller-mill, a pulley, F, secured to said shaft underneath the pulleys C C', an  
5 idler-pulley, G, arranged below the pulley F, and an open endless belt, *d*, running around said pulleys, and an open-belt-driving mech-

anism, whereby the remaining two rollers are rotated in an opposite direction directly from the shaft *f*, substantially as set forth.

NOAH W. HOLT.

Witnesses:

JNO. J. BONNER,  
CHAS. F. GEYER.