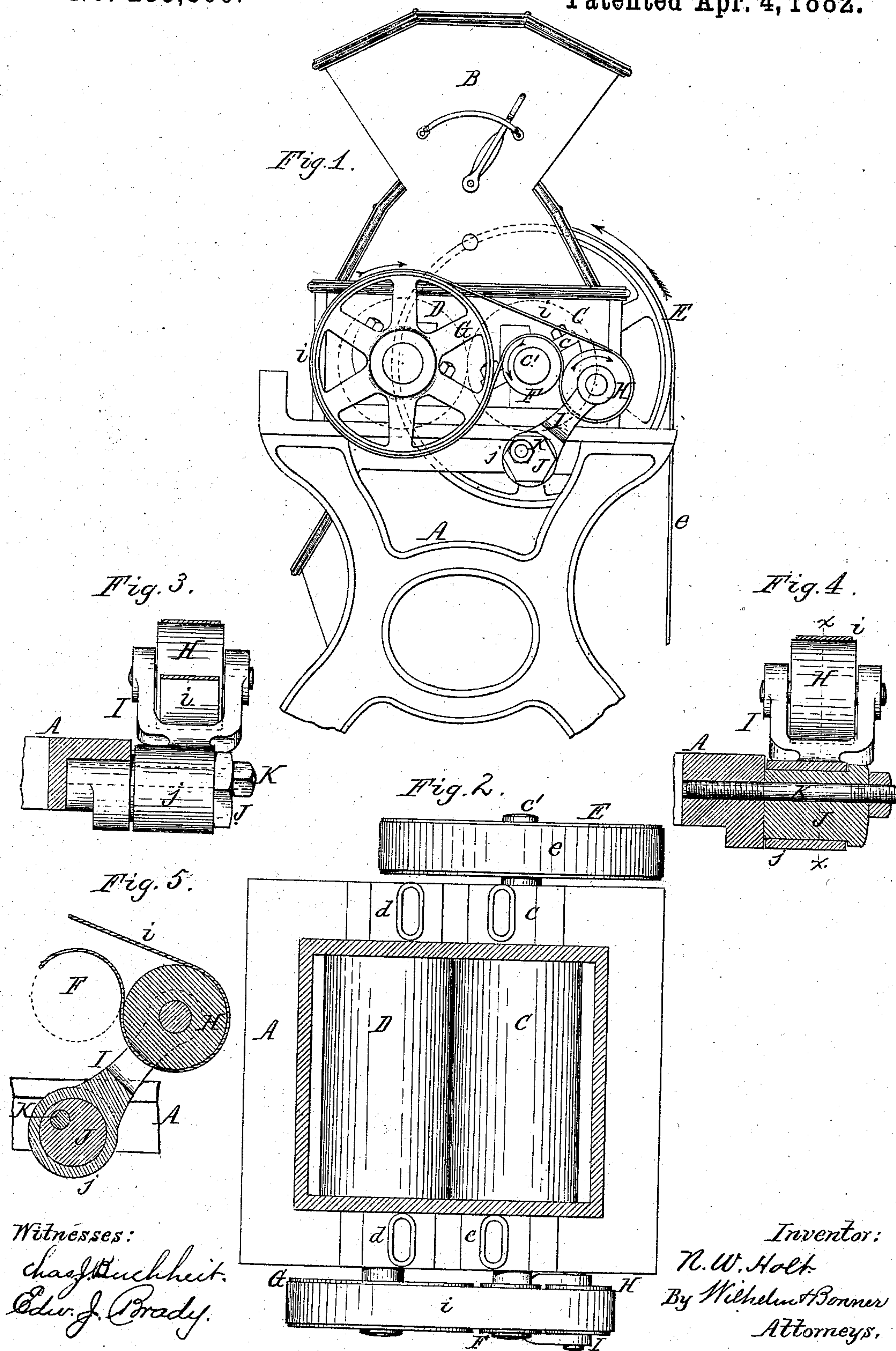


(No Model.)

N. W. HOLT.
ROLLER MILL.

No. 255,860.

Patented Apr. 4, 1882.



Witnesses:
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UNITED STATES PATENT OFFICE.

NOAH W. HOLT, OF BUFFALO, NEW YORK.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 255,860, dated April 4, 1882.

Application filed February 11, 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 new and useful
5 Improvements 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 sub-
10 stances, and has reference to the means for driving the rollers by an endless belt.

The object of this invention is to avoid the slipping of the endless belt whereby the rollers are driven, and to prevent the slow roller
15 from gathering speed by direct or indirect contact with the fast roller; and my invention consists, to that end, of the peculiar driving mechanism which will be hereinafter fully described.

20 In the accompanying drawings, Figure 1 represents a side elevation of a roller-mill provided with my improvement. Fig. 2 is a top plan view thereof. Fig. 3 is an end view of the adjustable bearing of the friction-pulley,
25 on an enlarged scale. Fig. 4 is a vertical longitudinal section thereof. Fig. 5 is a vertical cross-section in line *x x*, Fig. 4.

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

30 A represents the stationary side frames, and B the feed-hopper, of a roller-mill.

C represents the fast roller, and D the slow roller, both mounted in suitable bearings, *c d*, attached to the side frames, A.

35 E represents a pulley mounted on one end of the shaft *c'* of the fast roller C, and receiving motion from an endless belt, *e*, which runs over a pulley on a line-shaft below. (Not shown in the drawings.)

40 F represents a pulley secured to the opposite side of the shaft *c'* of the fast roller, and G is a pulley secured to the shaft *d* of the slow roller in the same plane with the pulley F.

45 H is a friction-pulley arranged in the same vertical plane with the pulleys F and G, and mounted in a bifurcated bearing, I, which is adjustably attached to one of the side frames, A.

i is an endless belt, which passes around the pulley G, and from the lower side of the latter upward and over the pulley F, thence
50 downward and around the pulley H, and thence upward to the upper side of the pulley G. The latter is made so much larger in diameter than the pulley F that the desired differential speed
55 is given to the rollers C and D.

As shown in the drawings, the bifurcated bearing I is provided with a hub, *j*, which turns on a sleeve or cylinder, J. The latter is secured to a side frame, A, by a horizontal bolt, K, which passes through the cylinder J, and
60 which is arranged eccentric with reference to the axis of the cylinder. The outer end of the latter is made hexagonal, or is otherwise formed, so that a wrench can be applied to the cylinder and the latter be turned on the
65 bolt K, thereby raising or lowering the bifurcated bearing I. The motion of the belt *i*, which travels in the direction indicated by the arrows, draws the friction-pulley H against the pulley F, thereby clamping the belt *i* be-
70 tween these pulleys and preventing the belt from slipping. If desired, a spring or weight may be applied to the bearing I in such a manner as to assist in holding the pulley H in contact with the pulley F. By lowering the bear-
75 ing I the pulley H is drawn downward, thereby tightening the belt *i* on the pulleys F, G, and H, and at the same time pressing the pulley H more firmly against the pulley F. When the belt *i* is properly tightened the pulleys F
80 and G are compelled to follow the motion of the belt *i*, and the rollers are prevented from acquiring a motion which differs from that which is imparted to them by the belt and pulleys. By this means the desired differential
85 speed of the rollers is maintained by a mechanism which is noiseless in its operation and very simple in construction.

I claim as my invention—

1. The combination, with a pair of rollers, 90 C D, of the pulleys F and G, mounted on the shafts of said rollers, a friction-pulley, H, and an endless driving-belt, *i*, which passes around the pulleys F G H, and which is clamped between the friction-pulley and the adjacent roll-
95 er-pulley.

2. The combination, with an endless driving-belt, *i*, of a pulley, G, arranged within the driving-belt, a pulley, F, arranged outside of the driving-belt, a friction-pulley, H, arranged
100 within the driving-belt, and means whereby the driving-belt is clamped between the pulleys F and H, substantially as set forth.

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