

(No Model.)

2 Sheets—Sheet 1.

J. W. JACKSON.

ROLLER MILL.

No. 291,517.

Patented Jan. 8, 1884.

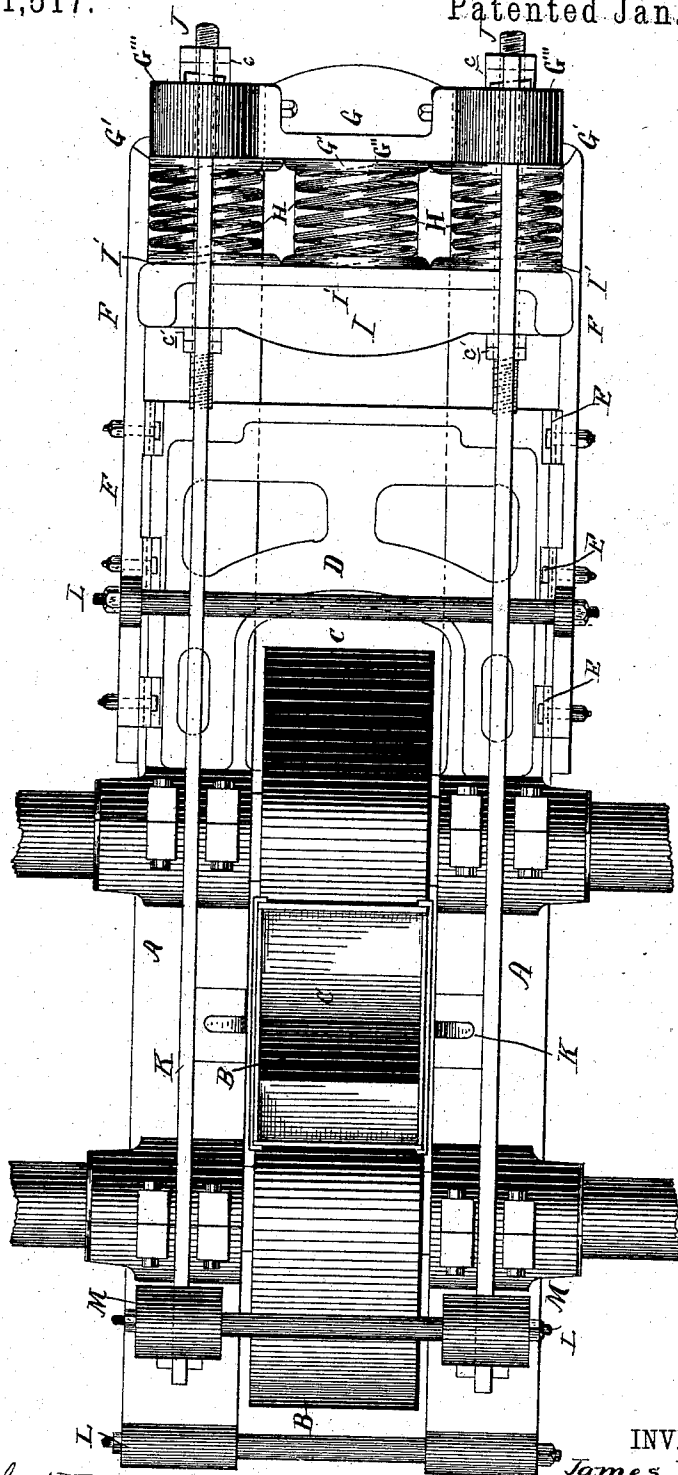


Fig. 1.

WITNESSES:

Wm. P. Robertson,

E. W. Bond

INVENTOR

James W. Jackson

BY

J. W. Robertson

ATTORNEY.

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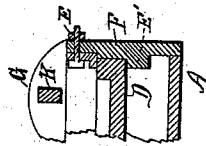


Fig. 1-

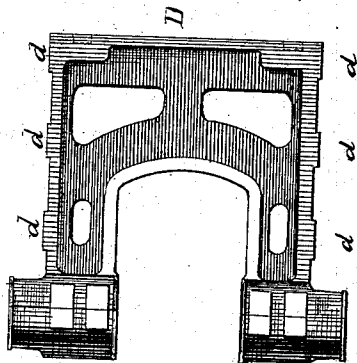


Fig. 3-

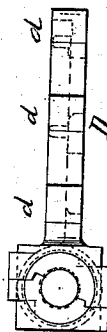


Fig. 4-

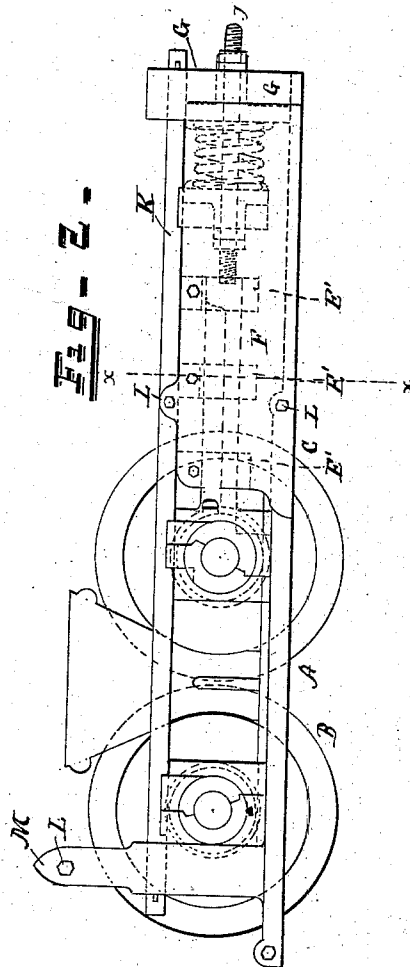


Fig. 2-

WITNESSES:

H. P. Robertson
W. Turner.

INVENTOR

James W. Jackson
 BY *J. W. Robertson*
 ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES W. JACKSON, OF DENVER, COLORADO.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No. 291,517, dated January 8, 1884.

Application filed July 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. JACKSON, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Roller-Mills, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improvement in the supporting-frames for crushing-rolls, and more particularly to what is known as "Cornish rolls," designed for crushing ore, &c.; and it consists in the peculiar construction and arrangement of parts, whereby certain advantages are obtained, as will be hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 represents a plan view of a pair of Cornish rolls supported in a frame constructed according to my improvement, without the gearing. Fig. 2 is a side view of the same. Fig. 3 is a plan of the sliding or movable bearing detached. Fig. 4 is a side view of the same. Fig. 5 is a detail section of one side of the main and movable frames on the line *x x* of Fig. 2.

A A represent the bed-plates of the machine; B, the fixed roll, and C the spring-roll. Both of the rolls may be of the ordinary construction and provided with the usual gearing, which, for the sake of clearness, has been left out of the drawings. The spring-roll is mounted in a sliding or movable frame, D, (see Figs. 3 and 4,) which frame is formed of a strong casting, planed off at three places at each side, as at *d d d*, to correspond with three planed places on the inner side of each of the side pieces, F, so as to form a perfect fit, yet diminish the great amount of friction that would be due to a whole surface-contact. This sliding frame is held in place by the gib-pieces E, secured by bolts to the side pieces, F, and is supported thereon by the extensions E', (shown in dotted lines in Fig. 2, and in section in Fig. 5.) Said side pieces may be either formed with or bolted to the bed-plates A, as found most convenient to the manufacturer.

G is the head of the frame, constructed in sections. The end sections, G'', may be integral with the side pieces, F, or with the main

frame A, or separate therefrom, in which case they will be secured to the frame by bolts. The middle section, G'', will be secured to the end sections by bolts, as shown in Fig. 1 of the drawings. Said head is provided with recesses G', (indicated by dotted lines,) to receive the end of each of the springs H H H, which may be either of metal or rubber, as desired, or of any approved form, and fit into corresponding recesses in the cross-head I, through which, and through the head G, pass threaded rods J, provided with adjusting-nuts on each end, which threaded rods bear on the ends of the sliding frame D, and thus the pressure of the springs is transferred to the ends of the sliding frame and through it to the spring-roll. The nuts *c* serve to keep the rolls at a regulated distance apart, so as to grind to any degree of fineness or coarseness, as required, while the nuts *c'* regulate the pressure of the springs; and thus by the use of these threaded rods, having the nuts on each end, the pressure of the springs is regulated and the opening between the rolls governed. The springs serve to hold the movable roll with a powerful pressure to its regulated position, and yet yield sufficiently to allow of the passage of any material that is too hard to be broken small enough to pass through the opening between the rolls when the movable roll is in its normal position. Said cross-head I is flanged at its upper outer ends, to form a support for the same on the side pieces, F. The bed-plates are braced by cross-rods L and longitudinal bars K. Said bars K extend through the vertical standards M and end sections of the head G, thereby strengthening the same and distributing part of their strain to the standards M.

By my construction of rolls I not only compel the spring-roll to keep at all times parallel with the fixed roll, but my peculiar method of bracing combines great strength with lightness and facility of adjustment. Another advantage is in the arrangement of the springs. It is very difficult to construct one spring of sufficient power, and when more than one spring is used some method of adjusting is necessary. My arrangement of the cross-head, threaded rods, nuts, &c., will be found very efficient for this purpose.

I am aware that it is not new to form the sliding bearing of crushing-rolls so as to constantly advance the movable roll parallel to the fixed one, and do not claim such as my invention.

What I claim as new is—

1. In a roller-mill in which the movable roll is mounted in a sliding frame and constantly advanced parallel to the stationary roll, the combination of the sliding frame D, rolls B C, the head G, provided with recesses G', the cross-head I, having recesses I', springs H, and the threaded rods J, having nuts on each end, arranged as set forth, whereby the tension of the springs H is transmitted through threaded rods J to the sliding frame D, substantially as and for the purpose set forth.
2. The combination of the sliding bearing-frame D, having planed surfaces *d*, with the

side pieces, F, provided with corresponding planed surfaces, supports-E', and removable gibs E, substantially as described.

3. The combination, with the sliding frame D, cross-head I, springs H, threaded bolts J, head G, and side pieces, F, of the bed-plates A, standards M, transverse brace-rods L, and the longitudinal brace-rods K, extending from the standards M to the sectional head G, all constructed and arranged substantially as shown and described.

In testimony whereof I affix my signature, in presence of two witnesses, this 23d day of July, 1883.

JAMES W. JACKSON.

Witnesses:

B. R. GRAYSON,
CHAS. F. ROBBINS.