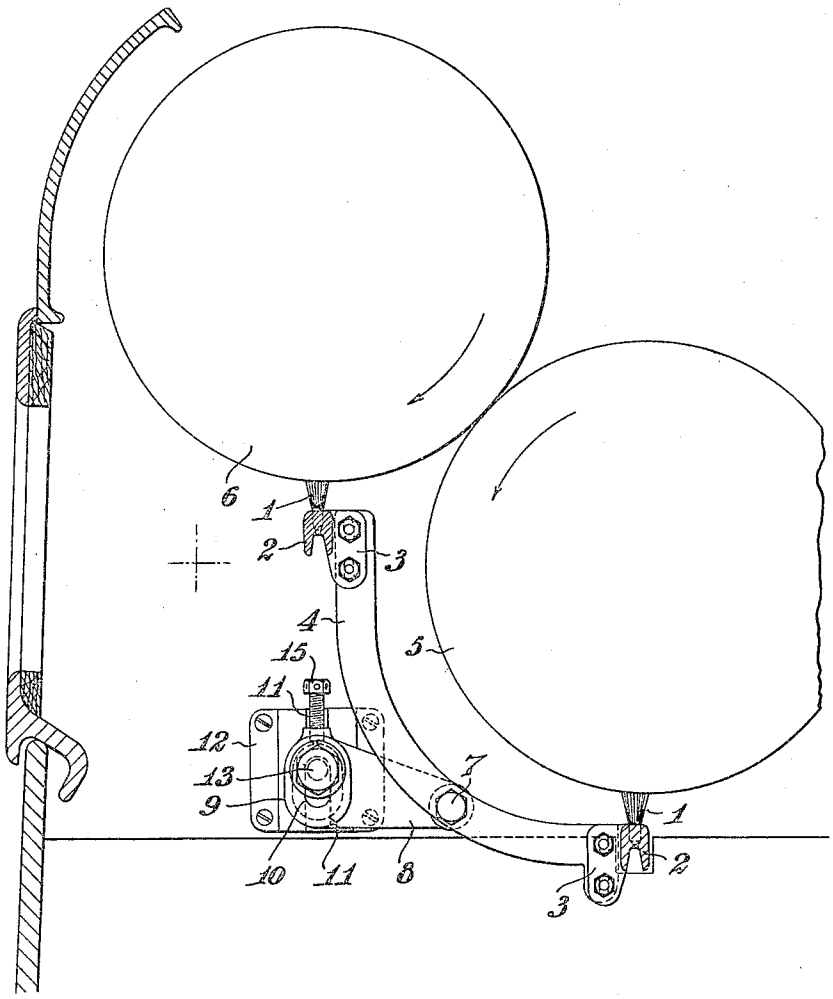
May 2, 1933. J. GWILLIM 1,906,792

DEVICE FOR CLEANING THE ROLLS OF ROLLER MILLS

Filed June 12, 1928 2 Sheets-Sheet 1

Fig. 1.



INVENTOR

John Gwillim,

BY

D. P. Walker Atty.

May 2, 1933. J. GWILLIM 1,906,792

DEVICE FOR CLEANING THE ROLLS OF ROLLER MILLS

Filed June 12, 1928 2 Sheets-Sheet 2

Fig. 2.

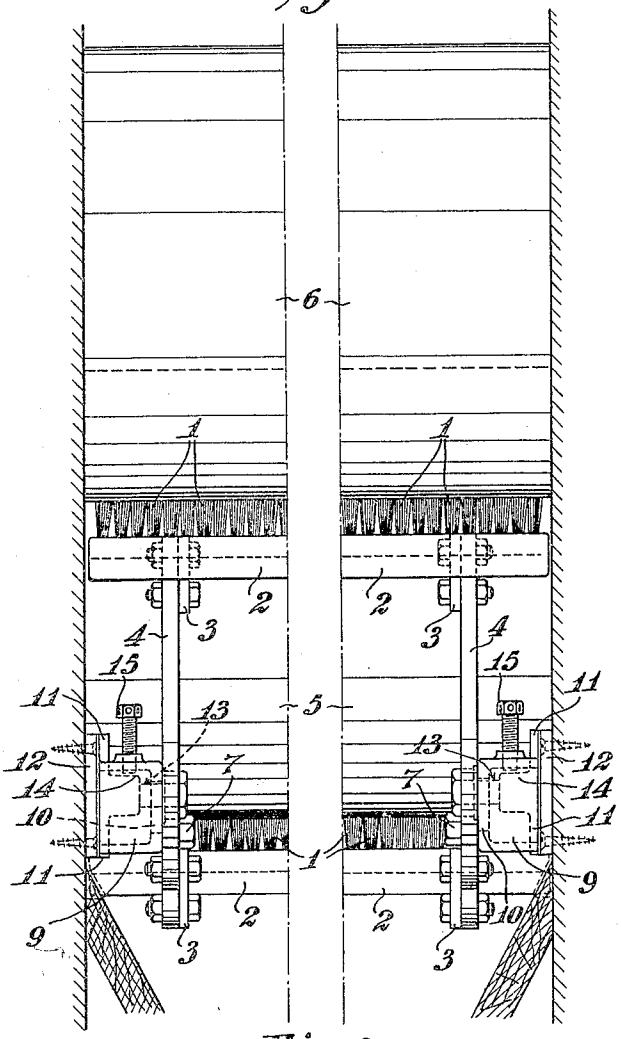
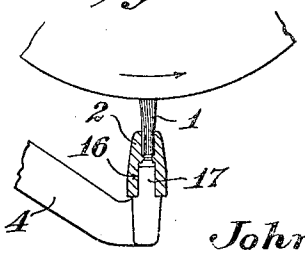


Fig. 3.



INVENTOR

John Gwillim,

BY

D. P. Wolhaupter
Atty

Patented May 2, 1933 1,906,792

UNITED STATES PATENT OFFICE

JOHN GWILLIM, OF PETWORTH, ENGLAND

DEVICE FOR CLEANING THE ROLLS OF ROLLER MILLS

Application filed June 12, 1928, Serial No. 284,833, and in Great Britain June 17, 1927.

This invention, which relates to roller mills for rolling grain and the like, or other substances or materials, has reference to an improved means or device for cleaning the rolls whilst the same are in use.

The invention has reference to the kind of means or device wherein the pairs of scrapers for each pair of co-acting rolls are rigidly joined together, and capable of simultaneous adjustment, and the framework carrying the scrapers acts as a rigid bracing element to keep the scrapers set square substantially parallel to the axes of the rolls, whilst this framework is tiltably mounted on adjustment mechanism to afford a compensating movement.

In the above connection it has been proposed to provide the framework with opposite and centrally disposed journals and to rockably mount the framework by said journals in vertically disposed guideways on the roller frame to support said journals in their guideways upon springs adapted to be adjusted by set screws so that the scrapers or brushes are held with sufficient pressure against the rolls to clean their surfaces.

It has also been proposed to secure the brushes in the opposite ends of a lever, pivotally mounted centrally in its length upon one arm of a bell-crank lever pivoted upon a support on the mill frame, and to provide the other arm with an adjusting screw by means of which the brush-supporting lever could be raised or lowered in an arcuate manner to move the brushes nearer to or further away from the rolls.

The object of the present invention is to provide for the more efficient cleaning of the rolls by so setting the scrapers that they very slightly touch or nearly touch the surface of the rolls in order that some of the meal or material scraped off forms a film or cushion which adheres to the working face of the scrapers and serves to keep the rolls clean and with a negligible amount of wear of the scrapers.

With the above object in view, the scrapers after setting to a requisite degree of fineness against the rolls, are left with the pivots of their respective frames solidly fixed with respect to the mill structure.

The invention consists in pivotally connecting the common framework of the scrapers to a solid non-yielding support adjustably mounted on the mill structure in a slidable manner to render the said scrapers adjustable to and from the rolls to a very fine degree in a plane perpendicular to the longitudinal axes of the said rolls.

The scrapers are preferably constituted by one row of tufts of bristles, but it is to be understood that the term "scrapers" is used herein in its broad sense, and embraces any other brush arrangement, or metallic blade, or other suitable scraping appliance.

The said invention is specially applicable to diagonal mills wherein the rolls are disposed with their centres at about 45 degrees to one another from the vertical, but with appropriate structural alterations, it may be applied to horizontal or vertical mills.

In a diagonal mill, the scrapers will be arranged as upper and lower scrapers, and said upper and lower scrapers are together simultaneously adjusted towards or away from the rolls aforesaid according to requirements.

A practical embodiment of the invention as applied to a diagonal mill will now be described and illustrated by the accompanying sheets of drawings, wherein:—

Figure 1 is a transverse vertical sectional view of a cleaner;

Figure 2 is an end view thereof; and

Figure 3 illustrates a detail hereinafter referred to.

Like numerals of reference indicate corresponding parts in said figures.

In carrying out the invention, and referring to the drawings, the cleaners, that is to say, the scrapers are constituted by brushes 1, which in themselves provide for the only yielding movement whilst cleaning, and which are preferably, but not necessarily, mounted on inverted trough-like aluminium stocks 2 which are horizontally disposed and provided in their length with plates 3 adapted to be bolted to the upper

and lower ends of two oppositely disposed arcuate carrier arms 4.

These carrier arms 4, which are positioned back of the lower roll 5 and below the upper roll 6, are each rockably mounted on a stud 7 in the outer end of an arm 8. The latter forms an extension of a hollow boss 9, the front face of which is provided with a vertically disposed elongated slot 10, and whose rear face is vertically grooved and engages vertically disposed guides 11 forming part of a plate 12 adapted to be affixed to the roller frame.

Each elongated slot 10 takes over a stud 13 screwed into the boss 14 of the plate 12 aforesaid, and with said boss 14, which extends into the hollow boss 9, there engages the lower end of an adjusting screw 15. The screw 15 is vertically disposed and is carried by the hollow boss 9 aforesaid, so that by turning the screws 15 the bosses 9, arms 8, and with them the carrier arms 4 and their scrapers 1, are raised or lowered.

Any other method of adjusting the scraper unit formed by the arms 4, stocks 2 and brushes 1, may be employed. For instance, instead of adjusting the position of the scraper carrier arms by screw mechanism, said carrier arms can be so mounted as to be adjustable up and down, by eccentrics or other mechanical means solidly fixing the same without departing from the invention.

In Figure 3 is shown an alternative way of securing the brushes to the member 4. Here the brushes are mounted on aluminium stocks 2, in the underside of which (at or near the ends) are carefully machined slots 16 to fit lugs 17, also machined, formed at appropriate angles on the respective ends of the side members 4.

I claim:—

1. A cleaning device for the rolls of roller mills comprising, in combination, a pair of horizontal cooperating rolls disposed with their axes in a plane inclined to the horizontal, a frame supporting said rolls, a plate mounted on said frame, a boss formed on said plate, a bracket mounted on said plate for vertical sliding movement, said bracket having a slot, a bolt extending through said slot into said boss whereby the bracket is adapted to be adjusted and to be secured in an adjusted position relative to said plate, a screw extending through the bracket into engagement with said boss for adjusting the bracket, an arm pivoted intermediately to said bracket, and a brush at each end of said arm one for cooperation with one of the rolls and the other for cooperation with the other of the rolls, said brushes being slightly spaced from said rolls whereby roll cleaning films of material are adapted to form on the bristles of the brushes between the brushes and the rolls.

2. A cleaning device for the rolls of roller mills comprising, in combination, a pair of horizontal cooperating rolls disposed with their axes in a plane inclined to the horizontal, a fixedly mounted plate, a bracket mounted on said plate for vertical sliding adjustment, means for vertically adjusting said bracket relative to said plate, means for securing said bracket in different vertically adjusted positions relative to said plate, an arm pivoted intermediately to said bracket, and a brush at each end of said arm one for cooperation with one of the rolls and the other for cooperation with the other of the rolls, said brushes being slightly spaced from said rolls whereby roll cleaning films of material are adapted to form on the bristles of the brushes between the brushes and the rolls.

In testimony whereof I have affixed my signature hereto this 30th day of May 1928.

JOHN GWILLIM.