(No Model.)

# J. HARVEY.

## ADJUSTABLE SCRAPER FOR ROLLER MILLS.

No. 429,381. Patented June 3, 1890.

Fig. 1.

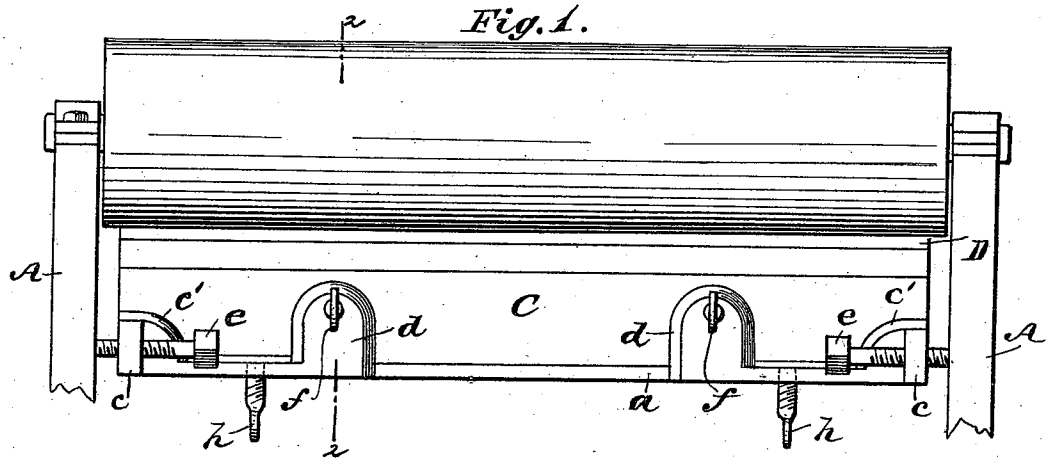



Fig. 2.

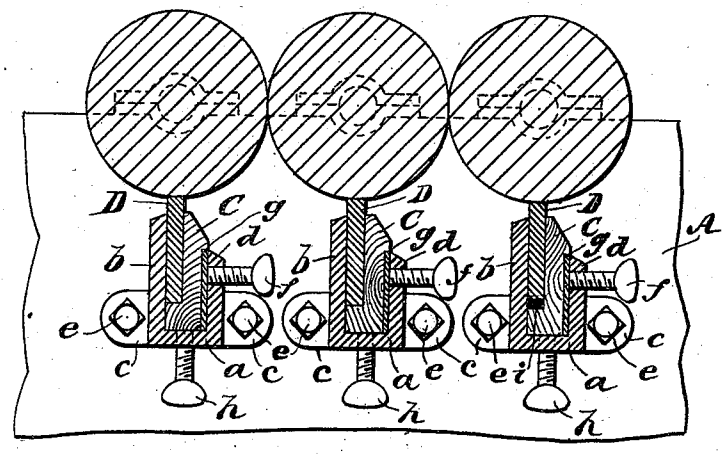
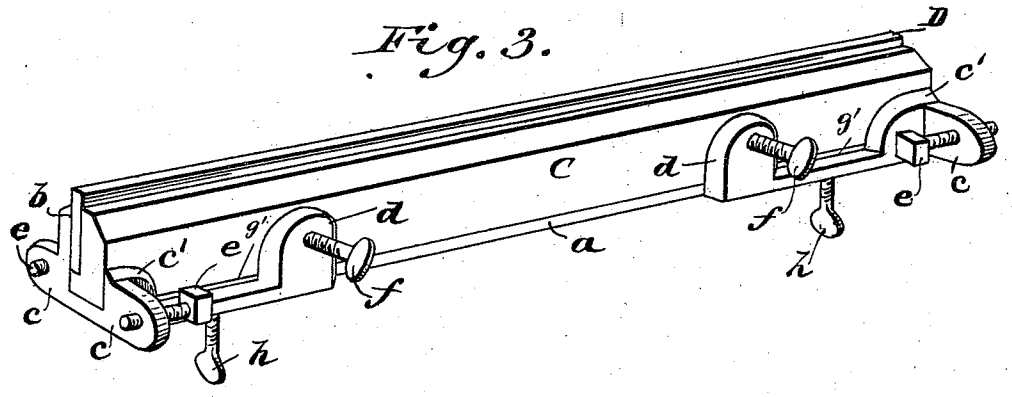



Fig. 3.




WITNESSES:

John W. Greener

C. Sedgwick

INVENTOR:

J. Harvey

BY

Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

JOHN HARVEY, OF BROOKLYN, NEW YORK.

## ADJUSTABLE SCRAPER FOR ROLLER-MILLS.

SPECIFICATION forming part of Letters Patent No. 429,381, dated June 3, 1890.

Application filed March 22, 1890. Serial No. 344,907. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HARVEY, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Adjustable Scraper for Roller-Mills, of which the following is a full, clear, and exact description.

This invention relates to improved means for the removal of crushed grain from the rolls of a roller-process mill used to disintegrate grain and reduce it to flour.

In the manufacture of flour from grain by the roller process it is essential that the crushed material should be continuously removed from the rolls; otherwise the accumulation of the same on the surface of the contiguous rolls will become solidified and embedded in the surface of said rolls, causing injury thereto.

The objects of my invention are to provide a roll-scraping device for roller-mills which is of simple form, adjustable and non-abrasive in contact, thorough in operation, and that avoids all danger of fire from its action on the rolls.

To these ends my invention consists in certain features of construction and combination of parts, which are hereinafter described, and indicated in the claims.

Reference is to be made to the accompanying drawings, forming a portion of this specification, in which similar letters of reference indicate corresponding parts in all of the figures.

Figure 1 is a side elevation of one roll of a roller-mill revolubly mounted on the upper portions of side frames of the crushing-mill, the improved roll-scraper being shown in position below the roll in contact therewith. Fig. 2 is a transverse elevation in section of a series of three rolls in operating position upon the side frame of a roller-mill, the frame being broken away, three roll-scrapers of the improved form of construction being also shown in section taken on the line 2 2 in Fig. 1; and Fig. 3 is an enlarged detached perspective view of the roll-scraper.

The scraper device is of composite form, one element being a supporting-frame which is L-shaped in cross-section, it having a base-plate *a* and an integral vertical flange *b* at a right angle to the base-plate. The length of the scraper-frame is proportioned to the width of the frame of the roller-mill, between the sides A of which said scraper-frame is introduced at right angles, so that its end portions will be close to the inner faces of these sides. At each end of the scraper-frame ears *c* are integrally and oppositely projected, having their outer faces aligned with the ends of the vertical flange *b* and base-plate *a*, these ears being re-enforced on their inner faces by abutting ears *c'*, formed on extensions of the free edge of the base-plate *a*, on which edge projections of the base-plate other ears *d*, nearer the longitudinal center of the scraper-frame, are formed integrally. The ears *c* at the ends of the frame are perforated laterally and are screw-threaded for reception of set-screw bolts *e*, which by their adjustment longitudinally will secure the frame between the sides of the roller-mill. Threaded holes are made in the ears *d* for the introduction of set-screw bolts *f*, the use of which will appear. A wooden clamping-strip C is provided, which is of such relative form as to fit loosely between the vertical flange *b* and the parallel ears *d*, said strip having a rabbeted recess formed on the face that is adjacent to the flange *b*, which recess is of a suitable depth vertically and laterally considered to admit a strip of leather D or other proper material of like nature. The leather piece D is designed to afford a scraper-edge; hence it is made to project a short distance above the clamping-strip C and vertical metal flange *b*, the thickness of the leather piece slightly exceeding the lateral depth of the rabbet-recess in which it is seated, so that it may be firmly clamped between the piece C and flange opposite when the set-screw bolts *f* are properly adjusted. To prevent the embedding of the set-screw bolts *f* into the wooden strip C, washer-plates *g* (shown in Fig. 2) are introduced to receive the end-thrust of the bolts and distribute their impact over a larger surface on the clamping-strip.

The metal rolls E, that are of the usual approved construction, are adapted to revolve in contact, or nearly so, for the crushing of wheat or other grain. These, being made to rotate with proper speed toward each other in pairs, are supplied with grain on top and crush it by their revolution in the usual way. The movement of the rolls is not a feature of

this invention; hence it is not necessary to show the means for effecting the same.

Below each roll, at any preferred point for contact, the scraper-frame is adjusted to locate the upper edge of the scraper-strip D in close contact with the periphery of the cylindrical roll, so that the bearing-edges of all the scrapers will remove the adhering crushed material from the roll-faces and keep them clean.

While it is feasible to employ hard rubber and compressed paper-board from which to manufacture the scraper-strips D, preference is given to good hard rolled leather for the purpose, which, if properly prepared and adjusted, will wear well and afford good results, all danger of fire or abrasion of the rolls being obviated.

When the scraper-strips D are worn on the edges, they can be elevated by an adjustment of the set-screw bolts *h*, which engage threaded holes in the base-plate *a* near the ends and bear upon washer-plates *g'*, set into the strip, and if necessary to raise the leather strips from their seat in the clamping-piece C, this can be done by insertion between them of a liner of any suitable material, as shown at *i* in Fig. 2.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A scraper for a roll of a roller grain-crushing mill, comprised of a metal frame, a non-metallic clamping-strip laterally and vertically adjustable, and a non-metallic scraper-strip clamped between the clamping-strip and an integral metal flange on the frame, the scraper-strip being seated on the clamping-strip and adjustable with it, substantially as set forth.

2. In a scraper for a roll of a grain-crushing roller-mill, the combination, with an elongated metal frame comprised of a base-plate and vertical flange integral with the base-plate, set-screws adapted to hold the frame in position below a roll it is to scrape, and a wooden clamping-strip rabbeted to form a seat for a non-metallic scraper-strip, of a leather or other non-metallic scraper-strip seated on the clamping-strip, set-screw bolts which bear against the clamping-strip to elevate it, and other set-screw bolts which are adapted to adjust the clamping-strips laterally, substantially as set forth.

JOHN HARVEY.

Witnesses:
WM. P. PATTON,
C. SEDGWICK.