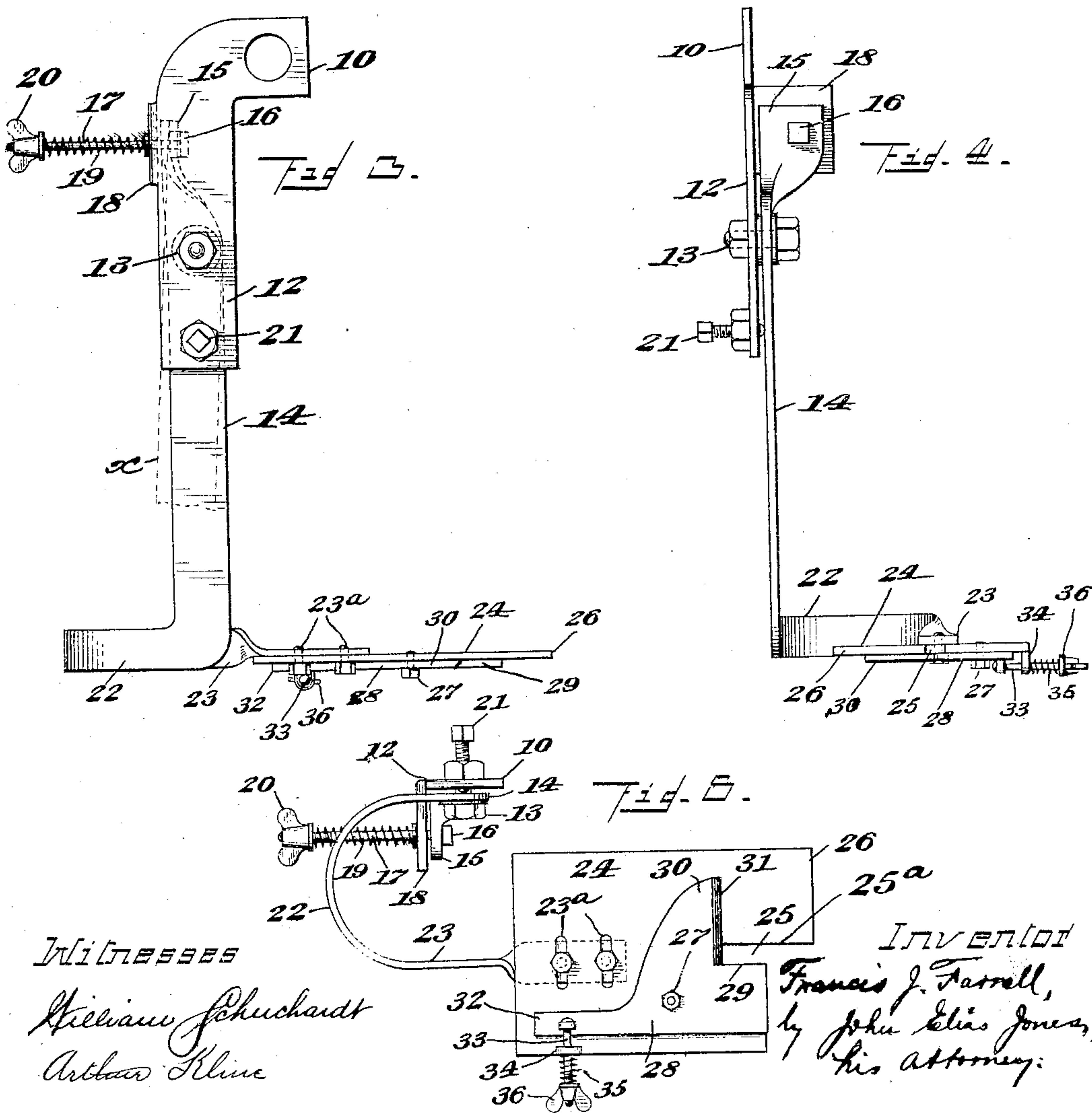
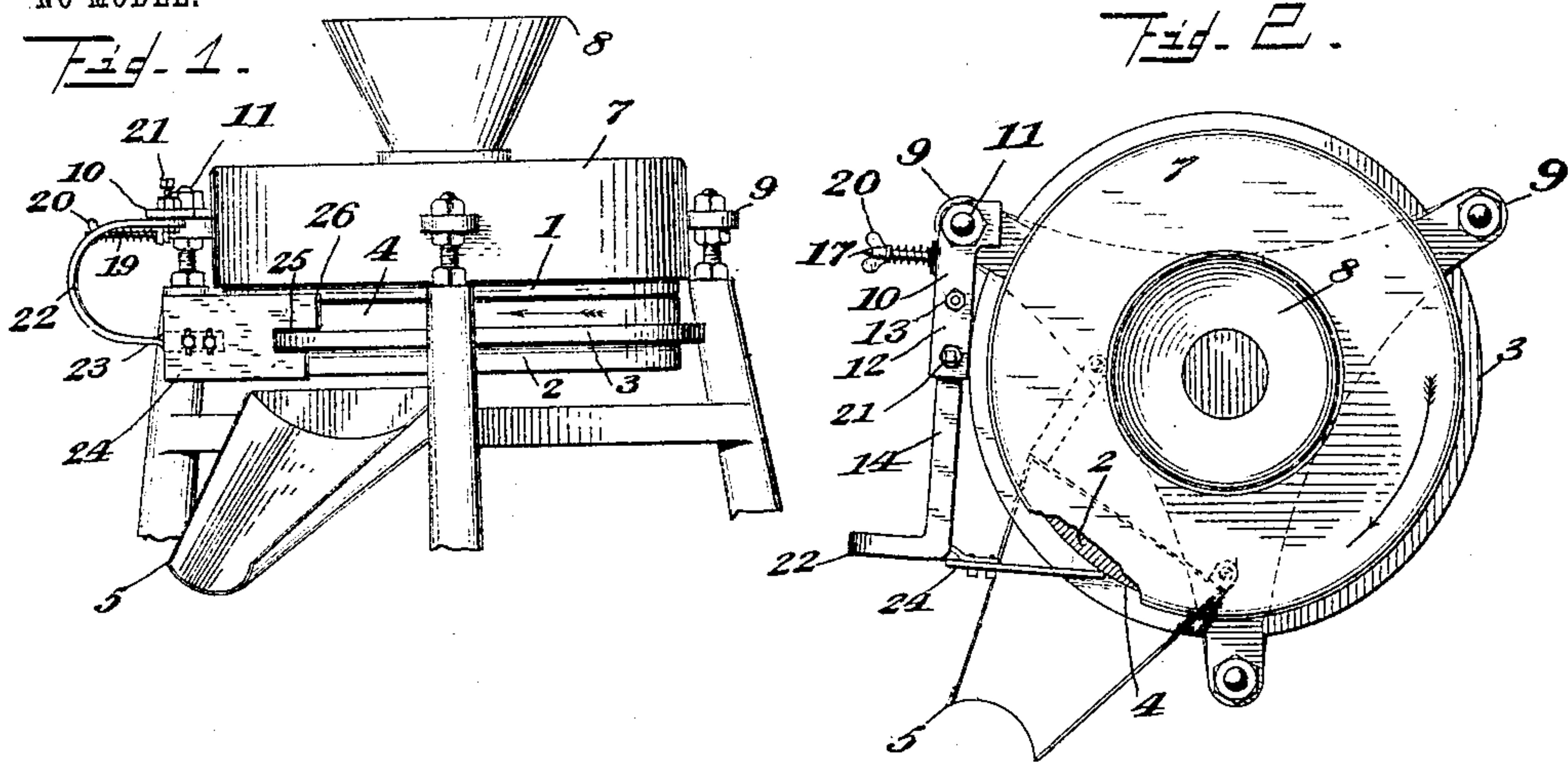


No. 778,020.

PATENTED DEC. 20, 1904.

F. J. FARRELL.  
SCRAPER DEVICE FOR PAINT MILLS.  
APPLICATION FILED JAN. 18, 1904.

NO MODEL.





# UNITED STATES PATENT OFFICE.

FRANCIS J. FARRELL, OF CINCINNATI, OHIO.

## SCRAPER DEVICE FOR PAINT-MILLS.

SPECIFICATION forming part of Letters Patent No. 778,020, dated December 20, 1904.

Application filed January 18, 1904. Serial No. 189,441.

*To all whom it may concern:*

Be it known that I, FRANCIS J. FARRELL, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Scraper Devices for Paint-Mills, of which the following is a specification.

This invention relates to certain improvements in mills such as are ordinarily employed for grinding paint and the like, and has for its object to provide a mill of this general character having improved means of a simple and inexpensive nature and of a compact and durable structure for freeing the edge portions of the stones from the paint or other ground substance, whereby the ground material is prevented from accumulating upon the stones in the operation of the mills, and thereby clogging the devices, so as to interfere with the proper operation thereof.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved stone freeing or clearing mechanism of the mill, whereby certain important advantages are attained and the said mechanism is made simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a front elevation showing a mill provided with the improved stone freeing or clearing mechanism embodying my improvements; and Fig. 2 is a plan view of the same, a portion of the upper stone and hood of the mill being broken away at one side to show the arrangement of the underlying portions of the improved stone freeing or clearing mechanism. Fig. 3 is a plan view drawn to an enlarged scale and showing the improved stone freeing or clearing mechanism detached. Fig. 4 is a side elevation also drawn to an enlarged scale and illustrating the mechanism seen in Fig. 3, and Fig. 5 is an end view showing said mechanism detached and enlarged.

As seen in the views, 1 indicates the upper stone, and 2 the lower or running stone, of the mill, to which my improvements are applied, said lower or running stone 2 being provided, as is usual in mills for grinding paint, with an annular outwardly-directed flange 3, extended around its central portion and at an elevation about midway of the height of said stone, upon which flange the ground material falling over the edges of the grinding-face of said stone is adapted to be received. Above the flange 3 the running-stone 2 is provided with a smooth cylindrical surface 4, and at one side of the mill is arranged a spout 5, designed to receive the ground material to convey the same away. The mill shown on the drawings is provided in the ordinary way with a hood 7, extended over and substantially inclosing the upper stone 1, which hood has a central hopper 8 and is supported by lugs or projections 9 9 at suitable points upon the frame of the mill.

The improved stone freeing or clearing mechanism embodying my invention is located at or adjacent to the discharge-spout 5 of the mill, so as to be adapted to scrape the ground material from the running-stone 2 of the mill and direct the same into said discharge-spout, so as to prevent the accumulation of the ground material within the mill, since such accumulation would tend to interfere with the proper and effective operation of the mill.

The stone freeing or clearing mechanism constructed according to my invention comprises, as clearly shown in the drawings, a bracket 10, held by a bolt or other similar device, as shown at 11, upon one of the lugs 9 of the hood or casing 7, said bracket 10 being provided with an arm 12, extended from it and upon which is pivoted at 13 a swinging support or lever 14, one end of which is extended beyond the arm 12 of the bracket and has connection, as will be hereinafter explained, with the operative portions of the mechanism and the other or rear end of which is arranged to underlie the bracket and has a flattened end portion 15, through which passes a bolt 17, having a head 16, engaged upon the inner surface of said flattened portion 15.



of the support or lever. Opposite to the flattened portion 15 of the supporting-lever 14 the bracket 10 is provided with a downwardly-extended portion 18, through which the bolt 5 17 is also passed, and outside of said portion 18 of the bracket there is coiled on the bolt 17 a spiral spring 19, one end of which has engagement against such part 18 of the bracket, while the other end thereof has en- 10 gagement upon a thumb-nut 20, screwing upon said bolt. By this means it will be seen that the spring 19 exerts an influence upon the rear end of the lever 14 and tends to hold the same pressed over adjacent to the part 18 15 of the bracket 10, while permitting said lever to be moved in an opposite direction, such as indicated by dotted lines at *x* in Fig. 3. Adjustment of the spring tension of said lever may also be effected by turning the thumb-nut 20.

20 The forward end of support or lever 14 has a laterally-directed integral portion 22, which is by preference of an elastic character and is curved or bent downward in semicircular form, so that its lower end underlies its up- 25 per part, as indicated at 23, and said lower end 23 has connection with a scraper plate or blade 24 of flattened form, the connection being preferably of an adjustable character, as seen at 23<sup>a</sup>, and comprising screws upon the 30 end 23 of the support and passed through slots in the plate or blade 24. By loosening the screws the plate or blade may be adjusted vertically and may be held in adjusted position by tightening said screws.

35 The arrangement and proportion of the parts is such that the plate or blade 24 is caused to stand adjacent to the discharge-spout 5 of the mill, and the free end of said plate or blade 24 has at its upper part an edge 40 26, adapted for engagement upon the cylindrical upper surface 4 of the running-stone, while beneath said edge 26 said plate or blade 24 is provided with an opening or recess 25, in which is adapted to be received the perimetral 45 annular flange 3 of said stone, the portion 25<sup>a</sup> of said blade or scraper at the top of said opening or recess 25 being designed to rest flush upon the top surface of the flange 3 and the said plate or blade 24 being so held as to 50 extend at an angle to the sides of the running-stone, so that the material carried upon the flange 3 or adhering to the vertical sides of the stone will be scraped off therefrom and will be guided into the discharge-spout 5 of 55 the mill.

Upon the plate or blade 24 is pivoted, as seen at 27, an auxiliary blade or plate 28, which has a portion 29 adapted to extend underneath and engage the under side of the flange 60 3 of the running-stone and is also provided with a vertical portion 30 for engagement with the perimetral surface of said flange 3, such portion 30 of the auxiliary plate or blade having a beveled edge 31 for engagement with 65 the perimeter of flange 3 in such a way as to

effectively remove the accumulated ground material therefrom without liability of scattering the same about. The auxiliary plate or blade 28 is also provided with a portion 32, 70 extended behind its pivotal point and connected with a screw 33, extended down through a lug 34 on plate or blade 24 and having coiled on it below said lug a spiral spring 35, the upper end of which engages beneath said 75 lug, while its lower end has engagement on a thumb-nut 36, adjustably held on the screw. By this arrangement the free forward end of the auxiliary blade or plate 28 is caused to be 80 elastically upheld with its edge 29 pressed beneath the flange 3, although said end of the auxiliary plate or blade may be depressed to pass over irregularities on the flange.

In the operation of the mill as the lower stone turns it will be apparent that all por- 85 tions of the upper peripheral part 4 thereof will be engaged by the edge 26 of blade 24 and will be thereby freed from accumulated ground material, and at the same time the up- 90 per, lower, and peripheral surfaces of the flange 3 will be likewise freed from the ground material, which will be directed, owing to the angular arrangement of the scraping mechanism, into the discharge-spout 5. It will 95 also be seen that the plate or blade 24 may be adjusted downward and toward the stone to compensate for wear and that the said blade will be elastically pressed toward the stone by means of the springs 19 and 22, while the aux- 100 iliary blade 28 will be independently pressed upon the flange 3 by means of the spring 35.

In order to permit of holding the supporting-lever 14 securely in position when de- 105 sired, I have provided the bracket 10 with a set-screw 21 for engagement with said lever, and it will be seen that by properly adjusting said screw 21 a certain frictional bearing may 110 be provided upon the lever 14 to reinforce the action of the spring 19.

From the above description it will be seen 115 that the device constructed according to my invention is of an extremely simple and inexpensive nature and is especially well adapted for use in connection with paint-mills and the like, since it permits of completely free- 120 ing and clearing the running-stone from the ground material, so as to prevent such accumulation of said material on the stone as would tend to interfere with the proper working of 125 the mill. The device is also well adapted for use by reason of its adjustability to accommodate wear and inequalities upon the running-stone, and it will also be obvious from the above description that the device is capable of some modification without material de- 130 parture from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the several parts of the device as herein set forth in carrying out my invention in practice.



Having thus described my invention, I claim—

1. In a grinding-mill, the combination with a running-stone having a peripheral flange, a supporting-bracket, a pivotally-mounted supporting-lever secured to said bracket having enlarged curved end portions, spring-controlled means carried upon the bracket in engagement with the end of said lever means for limiting the movement of the lever, a main scraper-plate adjustably mounted upon the enlarged portion of the lever, an auxiliary scraper-blade mounted upon the main scraper, and spring-controlled means carried upon the main scraper in engagement with the auxiliary scraper, said scraper being adapted to engage with the running-stone and flange thereof, substantially as described.

2. In a device of the character described, the combination with a running-stone, a supporting-bracket, a pivoted member mounted thereon having an enlarged portion forming an elastic support, spring-controlled means carried by the bracket in engagement with the pivoted member, a main scraper-plate adjustably secured to the enlarged portion of the pivoted member, and a spring-controlled auxiliary scraper-plate carried on the main scraper, substantially as set forth.

3. In combination with the running-stone of a grinding-mill, a supporting-bracket, a pivoted elastic support carried thereby, means

carried upon the bracket for controlling the movement of the pivoted support, a scraper-blade adjustably mounted on the pivoted member adapted to engage the running-stone, and a resiliently-mounted auxiliary scraper carried by the first-named scraper.

4. In combination with a grinding-mill, a running-stone having a peripheral flange thereon, a supporting-bracket, a pivoted supporting member carried thereby, means for controlling the movement of the pivoted member, a main scraper-plate adjustably mounted on the pivoted member, an auxiliary blade pivotally mounted on the main scraper and means for resiliently supporting the same in contact with the running-stone, substantially as described.

5. In combination with the running-stone of a grinding-mill, a supporting-bracket, a lever pivotally mounted thereon, spring means controlling the movement of the lever, a main scraper-blade adjustably secured to the lever, an auxiliary scraper-blade pivoted on the main scraper, and means for resiliently supporting the auxiliary scraper in contact with the stone, substantially as set forth.

Signed at Cincinnati, Ohio, this 29th day of December, 1903.

FRANCIS J. FARRELL.

Witnesses:

JOHN ELIAS JONES,

WILLIAM SCHUCHARDT.