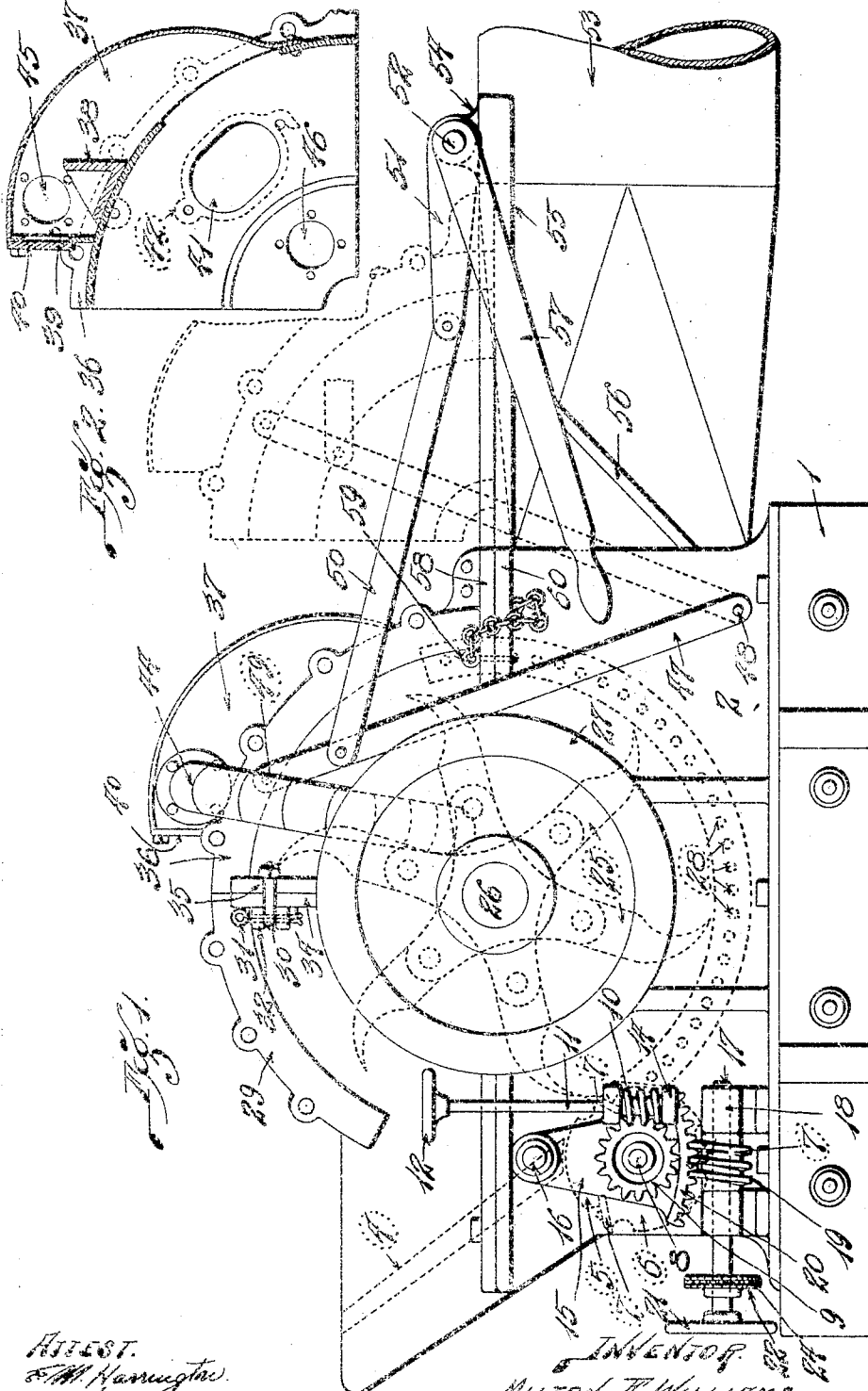


M. F. WILLIAMS.
REDUCING MACHINE CASING.
APPLICATION FILED AUG. 28, 1911.

1,039,624.

Patented Sept. 24, 1912.



WITNESSES.
M. Harrington.
W. O. Smith.

INVENTOR.
MILTON F. WILLIAMS.
BY J. R. Gernsback, ATTORNEY.

UNITED STATES PATENT OFFICE.

MILTON F. WILLIAMS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WILLIAMS PATENT CRUSHER & PULVERIZER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

REDUCING-MACHINE CASING.

1,039,624.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed August 28, 1911. Serial No. 646,529.

To all whom it may concern:

Be it known that I, MILTON F. WILLIAMS, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Reducing-Machine Casings, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevational view showing the removable cover in normal position. Fig. 2 is a detailed sectional elevation of a portion of the cover removed.

This invention relates to crushers and shredders, and more particularly to a casing for a crusher or shredder wherein a portion of the casing is constructed in such manner as to be readily and easily removed to enable easy and quick access to the interior of the machine.

The principal object of this invention is to construct a casing for a pulverizer or shredder, which casing may be securely and fixedly held in normal position, and at the same time so arranged as to be easily and quickly removed.

A further object of this invention is to construct the removable section to a pulverizer or shredder casing which section is adapted to carry conduit pipes and other parts in which there is a slight liability of clogging, thus permitting such parts to be easily and quickly cleared.

A still further object of this invention is to provide a removable casing for a crusher or shredder which removable casing is provided with a trough, or like member, adapted to receive and collect incompressible or foreign matter such as nails, metallic nuts, small stones, etc., that are undesirable in finished crushed or shredded product; for example, where the pulverizer or shredder is being used to shred rags or straw for the purpose of making paper it becomes necessary that all iron nails, metallic nuts or articles of like character be removed.

A still further object of this invention is to provide a cover in which a receptacle is arranged for receiving extraneous substances, such receptacle being so arranged as to be accessible from the exterior of the casing without endangering the hands or

limbs of the operator when removing the extraneous articles.

Other and further objects of this invention will in part be obvious and will in part be pointed out in the specification herewith following by references to the accompanying drawings.

Referring more particularly to Fig. 1, a base frame 1 forms a support for a main frame 2. At the forward portion of the main frame is arranged a hopper carrying a feed table which terminates over a rotary breaker roll 5. The breaker roll 5 comprises a cylindrical member 6 which is adapted to carry a series of breaker knives, or plates, 7. The cylindrical member 6 is mounted upon journal 8 that carries upon its outer end a pinion 9, adapted to cooperate with a worm screw 10, and the worm screw 10 is mounted upon a shaft 11 which is provided with a hand wheel 12. Shaft 11 passes through brackets 14 which are carried by a swinging journal frame 15 that is pivotally mounted upon the main frame 2 by means of trunnion bolts 16 or any other desirable pivotal member. The swinging journal frame 15 carries the journals 8 of the cylindrical member and therefore the relative position of the swinging frame 15 determines the relative position of the cylindrical member. A horizontally arranged shaft 17 is mounted for rotation in journal brackets 18 that are mounted upon the main frame 2 and intermediate the journal brackets 18 the horizontal shaft 17 carries a worm gear 19 which cooperates with segmental gear 20 that is formed upon the lower edge of the swinging frame 13. The horizontal shaft 17 at its front end is provided with a hand wheel 21 and also carries a sprocket wheel 22 which cooperates with the chain 24 which leads to a similar sprocket and adjusting mechanism (not shown) at the other end of the cylindrical roller, thus assuring alinement of the breaker roll 5 for all positions of adjustment. The rotating shredder member 25 is mounted upon a shaft which is journaled in the main frame 2 and which carries a fly wheel 27. Series of shredder bars, or the grinding cage 28, is located in main frame 2 beneath the rotatable shredder member 25 in such manner as to cooperate with the rotating shredder 25.

The upper front casing 29 is fixedly bolted to the lower main frame 2 and carries near

its upper middle portion swinging eye bolts 30 that are mounted upon cotter pins 31 which pass through brackets 32 on a rib 34 of the front casing 29. The swinging eye bolts 30 are adapted to swing through slots cut in the rib 34 and in a rib 35 which is formed integral with a removable rear casing 36, thus permitting the rear casing 36 to be fixedly and yet removably clamped to the front casing 29, the removable rear casing 36 is provided with an upper chamber 37 in which is located a transverse trough 38. The trough 38 is mounted within the chamber 37, just above the inlet opening from the interior of the shredder, to the chamber 37. The front wall of the chamber 37 is provided with a hand opening 39 which is normally closed by a cover plate 40. The side walls of the removable rear casing are provided with sight openings 41 which are likewise normally closed by means of cover plates 42. During the operation of the shredder or pulverizer the rotating shredder member 25 revolves at a very high velocity and therefore sets up an action more or less similar to that of a fan. As it is desirable to prevent clogging of the grinder cage surface and also of the upper chamber 37 side pipes or conduits 44 are provided connecting upper chamber 37 with the central, interior, or eye portion, of the shredder. Both ends of each connecting conduit member 44 terminate over openings 45 and 46 in the side wall of the removable casing 36 to which side conduits, or side pipes, 44 are attached. As the removable casing 36 is particularly arranged for easy access to its interior any tendency of the side pipes 44 to clog is very easily and quickly obviated; however, the more particular reason for the removability of the rear casing 36 is to afford an easy access to the interior of the shredder.

A vertical lever rod 37 is pivotally mounted as at 48 to the main frame 2 and is pivotally attached as at 49 to the removable casing 36. A link rod 50 is connected to the vertical lever rod 47, and also to a crank lever 51 fixedly mounted upon a rotating shaft 52, which shaft is journaled in brackets 54 that are mounted upon slide ways 55 which extend from the main frame by means of brace rods 56. The rotating shaft 52 is provided with an end lever 57.

In order to more thoroughly insure against movement of the upper casing 36, ribs 58 are formed upon the lower edge casing and are provided with openings through which cotter pins 59 are adapted to engage with openings formed in ribs 60 carried by the main frame 2. It will be noted that the vertical lever rod 47, the link rod 50, the crank lever 51, together with rotating shaft 52 and end lever 57, form a toggle link mechanism which enables the upper casing 36 to be quickly slid from normal position over the rotating shredder to the open position indicated in dotted lines in Fig. 1. At the same time, however, when the members are in normal position the casing is very fixedly secured to the main frame.

Having thus described my invention all that I claim is:

1. In a device of the class described in combination a rotary pulverizer member, a casing for said pulverizer member, said casing being formed with a chamber in the upper part thereof, conduit pipes leading from said chamber to the eye portion of said rotary pulverizer, and a receptacle in said chamber for extraneous matter.

2. In a device of the class described in combination, a rotary pulverizer member, a casing for said pulverizer said casing being provided with a chamber having an opening extending into the interior of said casing, a trough member arranged in said chamber above said opening, conduit pipes leading from said chamber in the proximity of said trough to the eye portion of said pulverizer.

3. In a device of the class described in combination a rotary pulverizer member, a casing for said member, said casing having a removable portion formed with a chamber in the upper part thereof, conduit pipes leading from said chamber to the axial portion of said removable portion, and a receptacle for extraneous matter in said chamber.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 24th day of August, 1911.

MILTON F. WILLIAMS.

Witnesses:

M. P. SMITH,
JESSIE CLARK.