No. 852,010. PATENTED APR. 30, 1907.

# C. O. WRIGHT.

## SHIPPING CASE.

APPLICATION FILED SEPT. 12, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

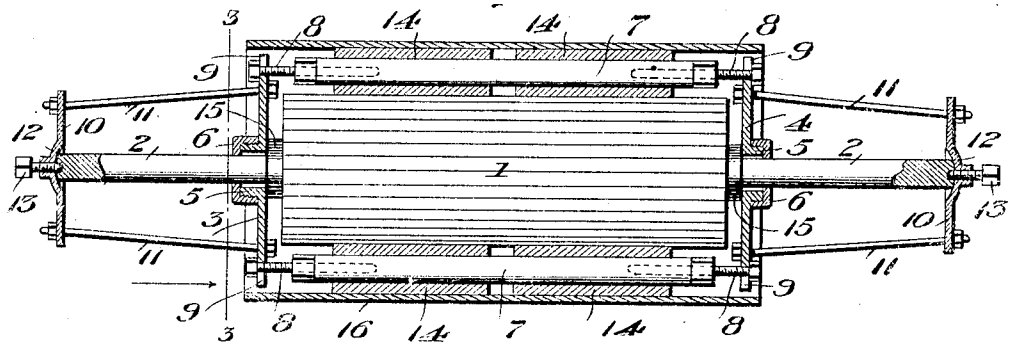



Fig. 2.

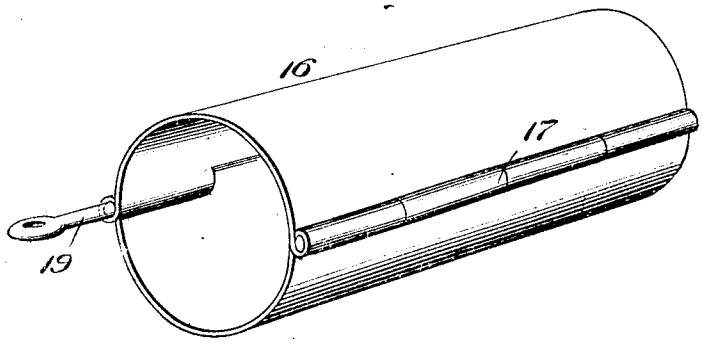
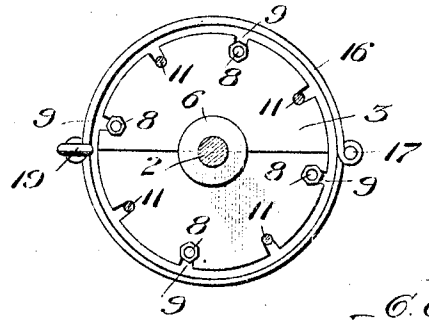



Fig. 3.

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SHIPPING CASE.

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2 SHEETS—SHEET 2.

Fig. 4.

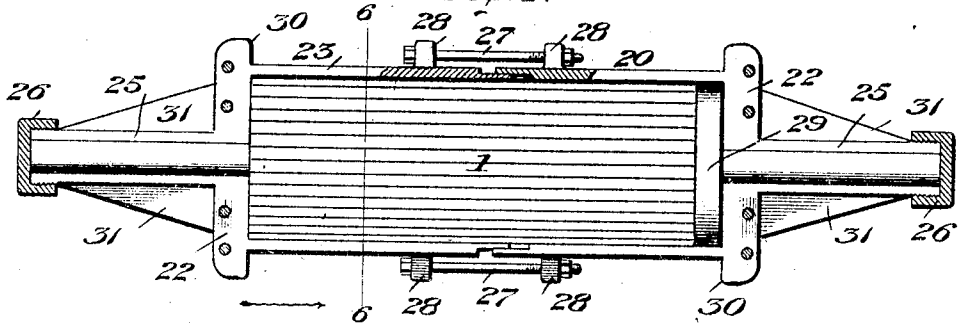



Fig. 5.

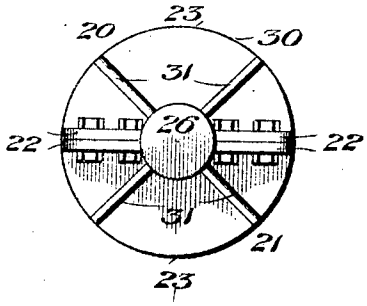



Fig. 6.

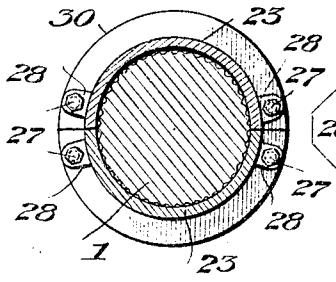
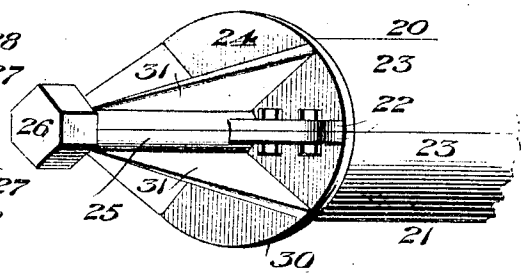



Fig. 7.




Inventor:

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Witnesses:

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# UNITED STATES PATENT OFFICE.

CHARLES ORVILLE WRIGHT, OF BLUEFIELD, WEST VIRGINIA.

## SHIPPING-CASE.

No. 852,010. Specification of Letters Patent. Patented April 30, 1907.

Application filed September 12, 1906. Serial No. 334,249.

*To all whom it may concern:*

Be it known that I, CHARLES ORVILLE WRIGHT, a citizen of the United States, residing at Bluefield, in the county of Mercer and State of West Virginia, have invented a Shipping-Case, of which the following is a specification.

This invention is an improvement in shipping cases, and relates more particularly to a form of case or crate especially adapted for use in the transportation of grinding rolls of that class which are employed in connection with flour mills, and the principal objects of the invention are to provide a light, strong and durable casing or crate of this character which will inclose the roll and thoroughly protect the grinding surface thereof, and so that said roll will not become injured in the transportation of the same from one place to another, as for instance from the manufacturer to the mill.

A further object of the invention is to construct the shipping case in such manner that the same may be readily applied to the grinding roll, and so that the parts of said case or crate may be separated and closely packed for storage or shipment back to the manufacturer.

Other though minor objects of the invention will hereinafter appear in the specifications, and what I claim as my invention and desire to secure by Letters-Patent will be more particularly set forth in the appended claims.

In the accompanying drawings, which form a part of this specification: Figure 1 is a sectional view through a shipping case or crate constructed in accordance with the invention, and showing the application of same to the usual form of grinding roll. Fig. 2 is a detail perspective view of the envelop or outer case. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 is a view showing a modified form of shipping case made in practically two sections, the near section being removed. Fig. 5 is an end view of the modification shown in Fig. 4. Fig. 6 is a sectional view on the line 6—6 of Fig. 4. Fig. 7 is a perspective view of one end of the modified form of shipping case.

Both forms of the shipping case shown in the drawings are adapted to receive the grinding roll 1 and its shaft 2, which are employed in connection with flour mills, and as such rolls, especially the shafts, are of a standard length the shipping case may be made of a standard size, allowing for slight adjustment only.

As shown on Sheet 1 of the drawings I employ primarily two disks 3 and 4, each comprising two parts or halves provided centrally with an opening through which the shaft 2 passes, the said opening having a surrounding annular boss 5 externally threaded to receive a threaded collar 6, by which latter said parts of the disk are connected together, it being understood, of course, that each part of the disk has a half-boss which together form the aforesaid annular boss.

The two parts or halves of each disk are connected to the corresponding or companion parts or halves of the other disk, independently, by means of turn-buckle devices each comprising in the present instance a tube 7 internally threaded at its ends to receive the oppositely threaded bolts 8, the latter engaging the open-ended slots 9 in the edges of the aforesaid disks 3 and 4, and the ends of said tube are preferably squared to receive a wrench for turning the same. It will be seen, therefore, that when the parts of the disks are brought together on the shafts and connected by the threaded collars 6, said disks may be adjusted with respect to the ends of the roll by turning the tubular members of the turn-buckles.

For the purpose of protecting the ends of the shafts 2, and to more securely hold the grinding-roll between the disks 3 and 4 I employ two circular plates 10 10, one for each end of the shaft, and connect said plates to the disks by means of the rods or bolts 11. The plates 10 are bulged centrally to provide a recess 12, and in said recesses are seated the ends of the grinding-roll shaft, the connection being further augmented by screws 13, which pass through the center of the plates into the usual centering-recesses in the ends of the shaft.

In order to provide a packing between the turn-buckles and grinding surface of the roll, and therefore to protect the latter, sleeves 14, of rubber or other soft material, are slipped over the tubes 7 to bear upon said grinding surface, and to protect the ends of the roll from direct contact with the disks packing rings 15 are interposed, said rings being also made of rubber or other soft material. However, these packing devices may be dispensed with, as in use the grinding-roll is very firmly held in place. Over the disks, so as to cover the grinding-roll, is placed a protecting case

or envelop 16, consisting of the two semi-circular sections hinged together at one edge, as at 17, and connected together by the interlocking ears on the other edge in conjunction with a removable rod 19. In applying this form of shipping case to the grinding-roll the two sections, each comprising the companion half-disks and connecting turnbuckles, are placed over the roll and brought together upon the projecting ends of the shaft, the threaded collars 6 passed over the ends of the shaft and screwed on to the bosses 5, to secure said sections upon the roll, the plates 10 and bolts 11 are then secured in place by engaging the bolts with the slots in the edges of the disks and tightening said bolts to bring the plates against the ends of the shaft, and, finally, the protecting case or envelop is applied and secured by the rod 19. In case the rubber rings 15 are employed they are, of course, slipped over the ends of the shaft before the parts of the shipping case are applied.

In the form of shipping case shown on Sheet 2 of the drawings an inclosing case is provided consisting of practically two parts or sections 20 and 21, which are placed on opposite sides of the roll and shaft and bolted together, having the meeting flanges 22 through which the bolts pass. Each section comprises the semi-cylindrical portion 23, embracing the grinding-roll, the semi-circular heads 24, bearing against the ends of said roll, and the semi-tubular portions 25 formed integrally with the heads and embracing the projecting ends of the shaft, said semi-tubular portions being threaded at their outer ends to receive the caps 26. The semi-circular portions 23 are formed in two parts, as shown in Fig. 4, the meeting edges of said parts overlapping and connected by clamping-bolts 27 passed through ears 28 formed on the respective parts. The heads of the inclosing case may be brought directly against the ends of the grinding roll, but it is preferred to employ a filling disk 29 of yielding material which will take up any jar; such filling disks being also employed for the purpose of occupying the space which would be left in case the grinding-roll is shorter than the standard size.

The heads of the cylindrical part of the shipping case are extended to provide a flange 30, the outer edges of which are preferably beyond the plane of the ears 28, so that such shipping case and its contents may be rolled over the ground or floor from one place to another. The connection of the heads 24 and tubular portions 25 is preferably reinforced by the webs 31.

In each instance a simple and very efficient shipping case is provided which can be quickly and conveniently applied and will insure against injury to the grinding-roll in the transportation of same from the manufacturer to the mill, and as the parts of the shipping case are all made of metal the same may be used over and over again.

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

1. In a shipping case for grinding rolls, the combination, of longitudinal sections adapted to inclose the roll and having threaded bosses meeting to form annular bosses, and threaded collars engaging said annular bosses to secure the sections together.

2. In a shipping case for grinding rolls, the combination of separable longitudinal sections adapted to inclose the roll and having segmental bosses which meet when the sections are brought together, and means engaging said bosses to secure the sections together.

3. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having segmental bosses at their ends forming annular bosses threaded externally, and threaded collars engaging said bosses to secure the sections together.

4. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having segmental bosses at their ends forming annular bosses threaded externally, and threaded collars engaging said bosses to secure the sections together, and a removable case or cover inclosing the sections of the shipping case.

5. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having segmental bosses at their ends forming annular bosses threaded externally, threaded collars engaging said bosses, and a removable inclosing case comprising hinged semi-cylindrical sections and means for securing said hinged sections together.

6. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having segmental bosses at their ends forming annular bosses threaded externally, and threaded collars engaging said bosses; together with a removable inclosing case comprising semi-cylindrical sections hinged together at one edge and formed at their other edge with ears which interlock when the sections of said inclosing case are brought together, and a rod engaging the ears.

7. In a shipping case for grinding rolls, the combination, of separable longitudinal sections adapted to inclose the roll and having threaded segmental bosses, threaded collars adapted to engage said bosses, plates adapted to engage the ends of the shaft of the grinding-roll, and rods or bolts connecting said plates to the aforesaid longitudinal sections.

8. In a shipping case for grinding rolls, the combination, of two longitudinal sections

each comprising opposite half-disks, adjustable connections between the same and threaded segmental bosses on said half-disks, collars engaging the threaded bosses to connect the longitudinal sections together, plates adapted to engage the ends of the shaft of the grinding-roll, and bolts connecting said plates to the disks.

9. In a shipping case, the combination, of two longitudinal sections each comprising opposite half-disks, oppositely threaded bolts engaging said half-disks and threaded tubes engaging the bolts to vary the distance between the half-disks, and means for securing the sections together upon the grinding-roll.

10. In a shipping case for grinding-rolls, the combination, of two separable longitudinal sections each comprising opposite half-disks having segmental openings and corresponding bosses surrounding the same, said bosses being threaded, oppositely threaded bolts engaging the outer edges of the half-disks and threaded tubes engaging the bolts; together with threaded collars engaging the bosses to secure the longitudinal sections together on the roll.

11. In a shipping case for grinding rolls, the combination, of two separable longitudinal sections each comprising opposite half-disks having segmental openings and bosses surrounding the same, said bosses being threaded, oppositely threaded bolts engaging the outer edges of the half-disks and threaded tubes engaging the bolts; together with threaded collars engaging the bosses, plates adapted to engage the ends of the shaft of the grinding-roll, and bolts connecting said plates to the disks.

12. In a shipping case for grinding rolls the combination, of two separable longitudinal sections each comprising opposite half-disks having segmental openings and bosses surrounding the same, said bosses being threaded, oppositely threaded bolts engaging the outer edges of the half-disks, threaded tubes engaging the bolts and packing sleeves mounted on said tubes; together with threaded collars engaging the bosses, plates adapted to engage the ends of the shaft of the grinding-roll, bolts connecting the plates to the disks, and an inclosing case, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

C. ORVILLE WRIGHT.

Witnesses:
J. M. ORCUTT,
LILLIAN NEATLE.