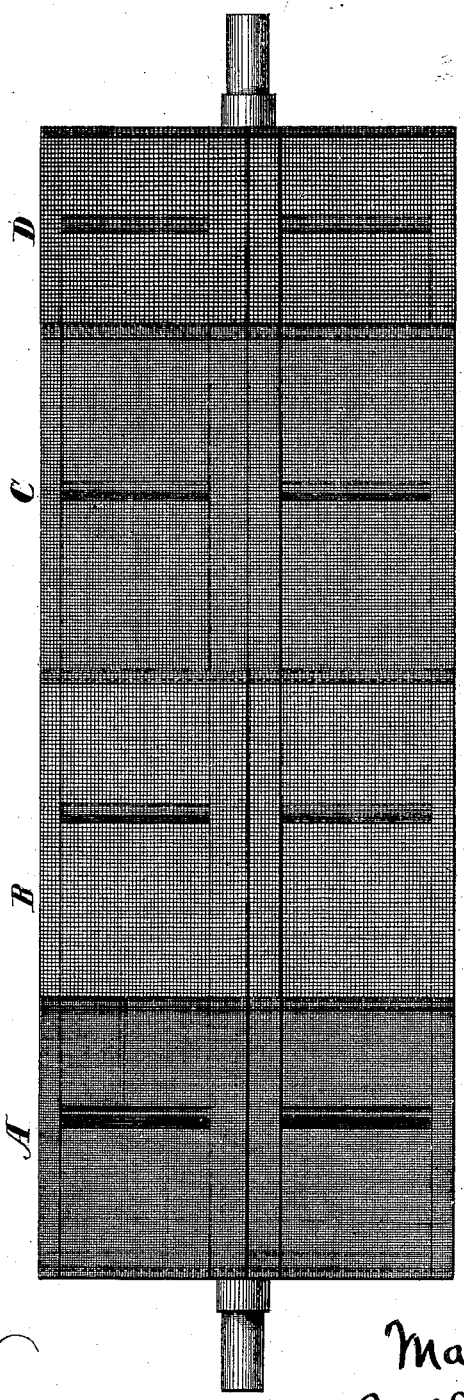
M. INSKEEP.
Middlings-Bolt.

No. 209,050. Patented Oct. 15, 1878.



Witnesses:
E. D. Nottingham
F. O. McCleary

Inventor:
Marion Inskeep.
By H. A. Seymour.
Attorney

UNITED STATES PATENT OFFICE.

MARION INSKEEP, OF BELLEFONTAINE, OHIO.

IMPROVEMENT IN MIDDLINGS-BOLTS.

Specification forming part of Letters Patent No. **209,050**, dated October 15, 1878; application filed August 15, 1878.

To all whom it may concern:

Be it known that I, MARION INSKEEP, of Bellefontaine, in the county of Logan and State of Ohio, have invented certain new and useful Improvements in Rotary Bolts for Middlings-Purifiers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawing, which forms part of this specification.

My invention relates to an improvement in rotary bolts for middlings-purifiers, the object being to separate the middlings from the bran or chop by means of a rotary bolt, and without the aid of an air-blast.

Heretofore rotary bolts have been provided with sections of bolting-cloth, the meshes of which are of different degrees of fineness, and arranged on the reel in such a manner that the meshes will gradually increase in size from the head to the tail end of the reel. It has been found in practice that bolts of this character are defective and inefficient for cleaning and purifying middlings, for the reason that the middlings that pass through the cloth located nearest the flour-cloth and that portion which passes through the cloth nearest the feed-middlings cloth are of different qualities—that is to say, the first portion is comparatively free from any hulls, while the second portion is mixed with coarser particles of grain, that work through the meshes of the cloth, and thus the entire quantity of middlings is reduced in quality.

The principal object of my invention is to obviate the defects above noted, and secure a uniform quality of middlings from that portion of the bolt located between the flour-cloth and the feed-middlings cloth; and to that end my invention consists in a rotary bolt the head of which is provided with fine or flour cloth, and adjacent thereto the reel is clothed with coarse cloth, while between the latter and the feed-middlings cloth at the tail end of the reel the cloth is of coarser mesh than the flour-cloth, and finer than the section of cloth adjacent thereto.

The accompanying figure of the drawing represents a side elevation of a rotary bolt clothed in accordance with my invention.

A represents the flour-cloth, which is attached to the head of the reel. The meshes of cloth A are very fine, being preferably number 15, though a little higher or lower number of mesh may be used for the flour-cloth. B represents the first section of the middlings-cloth, which is attached to the reel adjacent to the flour-cloth A. Cloth B is preferably of the quality of mesh designated by the number 8, or, comparatively speaking, the openings through cloth B are about twice the size of the openings in the flour-cloth. C represents the second section of the middlings-cloth, and is of the degree of fineness designated by the number 9. D is the feed-middlings cloth, and is attached to the tail end of the reel. Cloth D is of a fineness of mesh designated by the number 4.

The operation of the bolt is as follows: The middlings are first passed into the head of the bolt, and by passing the same over the flour-cloth A the flour is separated from the middlings and falls through the fine interstices in the cloth. This flour is then returned and bolted in the first bolt employed in the process of manufacturing flour. The middlings that pass over the flour-cloth then flow upon cloth B, which is the first section of the middlings-cloth, and, as heretofore stated, is of much coarser mesh.

A portion of the middlings are separated and purified during the passage of the latter over cloth B. A considerable quantity of purified middlings still remains unseparated, and the desideratum is to separate the remaining middlings without lowering the grade. If the cloth B should be of double the length and of the same size of mesh throughout, different qualities of middlings would be furnished at the upper and lower end thereof, owing to the fact that coarse particles of the grain and pieces of the hulls will force through the meshes of the cloth at the lower end, and thus reduce the grade of middlings. To overcome this difficulty and raise the grade I form the middlings-cloth of two sections, of different fineness of meshes, the finest being located toward the tail end of the reel, as designated by the letter C. By causing the middlings to flow over a reel-cloth section the meshes of which slightly increase in fineness the grade of the

middlings is raised and made uniform. Hence the middlings passing through sections B and C will be of uniform quality and not reduced in grade. The middlings flow from the lower middlings-section, C, onto the feed-middlings cloth D, the meshes of which allow the feed-middlings to pass through, while the coarser material, termed "ship-stuff," escapes from the tail end of the bolt.

In order to secure the most perfect results, I have found, in practice, that the following proportions are best suited for the purposes named: In a reel ten feet in length the flour-cloth A should be thirty inches in length, the first and second sections, B C, of middlings-cloth, each three feet in length, and the feed-middlings cloth eighteen inches in length. While I do not limit myself to the exact proportions named, yet I have found in practice that the above secure the most practical and valuable results.

I am aware that rotary bolts have been provided with bolting-cloth composed of sections of different degrees of fineness, and hence I make no broad claim to such construction and arrangement of parts, as my invention consists in a rotary bolt curved in a particular manner, as has been heretofore described, and as illustrated in the accompanying drawings.

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

A rotary bolt the head of which is provided with fine flour-cloth A and the tail end with coarse feed-middlings cloth D, while the intervening portion of the bolt is covered with sections of bolting-cloth B C, section B being coarser than section A or C, and placed adjacent to section A, while section C is coarser than section A, but finer than sections B and D, and located between the latter-named sections, the several sections of cloth being joined so as to constitute a continuous bolt-clothing of the order and grade of mesh as set forth, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

MARION INSKEEP.

Witnesses:
W. T. JOHNSON,
F. O. MCCLEARY.