G. S. CRANSON.
Middlings-Bolts.

No. 210,102. Patented Nov. 19, 1878.

Fig. 1

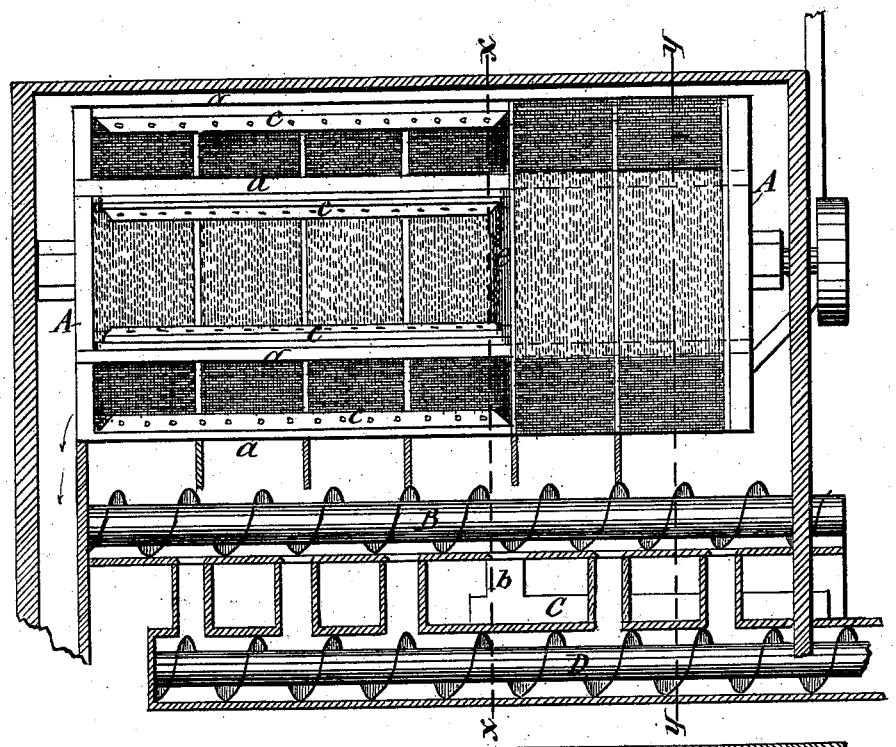


Fig. 2

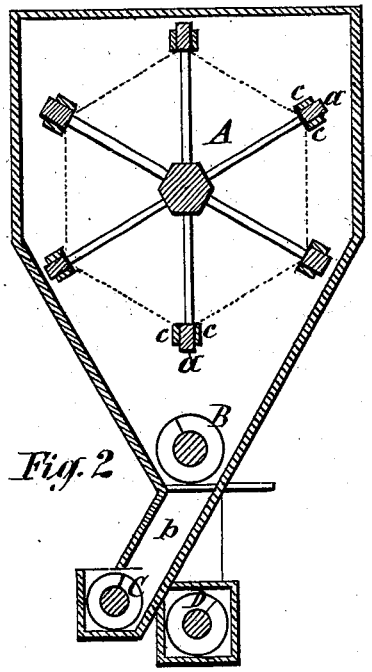
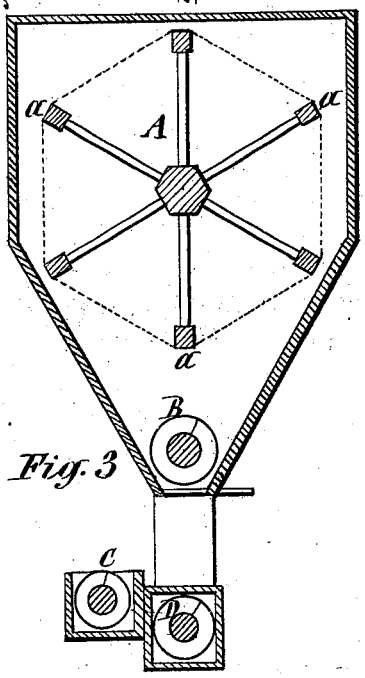


Fig. 3



WITNESSES:

C. R. Holmes, Jr.
C. Bendixen.

INVENTOR:

Giles S. Cranson
per E. Lauss Atty.

UNITED STATES PATENT OFFICE.

GILES S. CRANSON, OF CLINTON, NEW YORK.

IMPROVEMENT IN MIDDLINGS-BOLTS.

Specification forming part of Letters Patent No. **210,102**, dated November 19, 1878; application filed September 20, 1878.

To all whom it may concern:

Be it known that I, GILES S. CRANSON, of Clinton, in the county of Oneida, in the State of New York, have invented new and useful Improvements in Middlings-Purifiers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in a novel construction of a graded bolt-reel, whereby an apparatus is obtained which is simple in construction, easily repaired, and capable of purifying both flour and middlings at one operation, and without the aid of suction or blast of air.

The invention is clearly illustrated in the accompanying drawings, wherein Figure 1 is a front view of my improved middlings-purifier, with the front of the inclosing-chest removed to more fully show the construction and arrangement of the purifying bolt-reel, and the arrangement for separating the various grades of ground substances. Fig. 2 is a transverse vertical section on line *x x* in Fig. 1, and Fig. 3 a transverse vertical section on line *y y* in Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents a reel constructed, in the ordinary manner, of a shaft with radial arms or spokes, carrying on their ends longitudinal bars *a a*, to which the bolting-cloth is applied. That portion of the reel nearest the receiving end I cover with fine graded bolting-cloth, commencing with about No. 9 at the end of the reel, and ending with about No. 14. This cloth I apply to the exterior of the bars *a*, or outer periphery of the reel, as is customary with ordinary flour-bolts, so that by the inward-projecting bars *a* the ground substance may be caused to dash upon the bolting-cloth, and thus expel the flour through the meshes of the cloth. From the end of the aforesaid set of bolting-cloths to the discharge end of the reel I employ coarser-graded bolting-cloth, ranging from about No. 8 to 0, which I attach to the sides of the bars *a* by cleats *c*, so as to bring the cloth flush with the inner face of the bar *a*, and thus form an unbroken bolting-surface. The contraction *e* of the inner periphery of the bolt-reel at the junction of the two described sets of bolting-cloths forms a barrier to retard the passage of the ground substance from the fine to the coarse set of bolting-cloths, and allows the flour to become completely expelled in the former. The residue, consisting of middlings of various grades and offal, passes onto the coarser set of bolting-cloths, where, by the unbroken interior surface of the reel, it receives a rolling motion, which brings the bran, fluff, and other light impurities to the top of the rolling mass, and allows the middlings to freely escape through the meshes of the variously-graded cloths. The bran and light impurities, being thus kept at the top, finally pass out of the end of the reel. Beneath the reel is a spiral conveyer, B, constructed to convey from the middlings-purifying end to the flour-bolting end of the reel, and in one direction throughout its length, and leading to the receptacle for the finished flour. At the junction of the two bolts the trough of the conveyer B is provided with a spout, *b*, leading to another conveyer, C, which conveys its contents to the burrs, there to be reground. Directly under each of the other various grades of cloth the trough of the conveyer B is provided with a slide, by which it can be made to communicate with another conveyer, D, which leads to the reception end of the reel A. Under ordinary circumstances all the slides, except that at the junction of the middlings-bolt with the flour-bolt, are closed. The first conveyer, B, then discharges all the middlings into the conveyer C, and conveys the flour to the delivery-spout or its usual receptacle.

Should the flour near the junction of the two bolts prove too specky to be mixed with the finished and merchantable flour, the slide at that point in the conveyer B is opened to allow the imperfect flour to fall into the conveyer D, by which it is carried to the reception end of the reel A, for the purpose of rebolting it. To prevent it from adhering to and clogging the bolting-cloth, one or more of the slides under the middlings-bolt are opened to allow a portion of the middlings to fall into the conveyer D, and thus intermix with the flour to be rebolted.

By attaching the bolting-cloth to the sides of the supporting-bars *a* by means of the cleats *c*, in the manner shown and described, the cloth can be put on in sections extending from bar to bar, thus obviating the necessity of remov-

ing from the reel more cloth than actually requires to be renewed or repaired, and also greatly facilitating the attachment and detachment of the cloth. The first section of the middlings-bolting cloth I join to the edge of the adjacent section of the flour-bolting cloth, and thus form the contraction *e* of the inner periphery of the bolt thereat.

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

The combined flour and middlings bolt herein described, consisting of the reel A, having near its reception end graded flour-bolting cloth applied to the exterior of the bars *a*, and the remainder clothed with graded middlings-bolting cloth, applied flush with the inside of bars *a*, and joined to the flour-bolting cloth, substantially as described.

In testimony whereof I have hereunto set my hand this 7th day of September, 1878.

GILES S. CRANSON.

Witnesses:
C. R. HOLMES, Jr.,
C. BENDIXEN.