

J. WERNZ.

Improvement in Flour-Bolts.

No. 131,919.

Patented Oct. 1, 1872.

Fig: 2

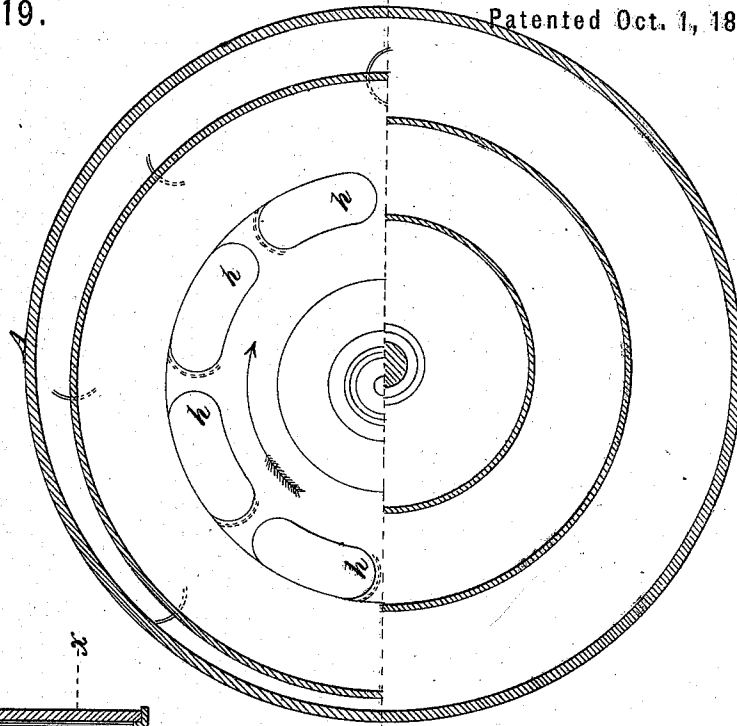
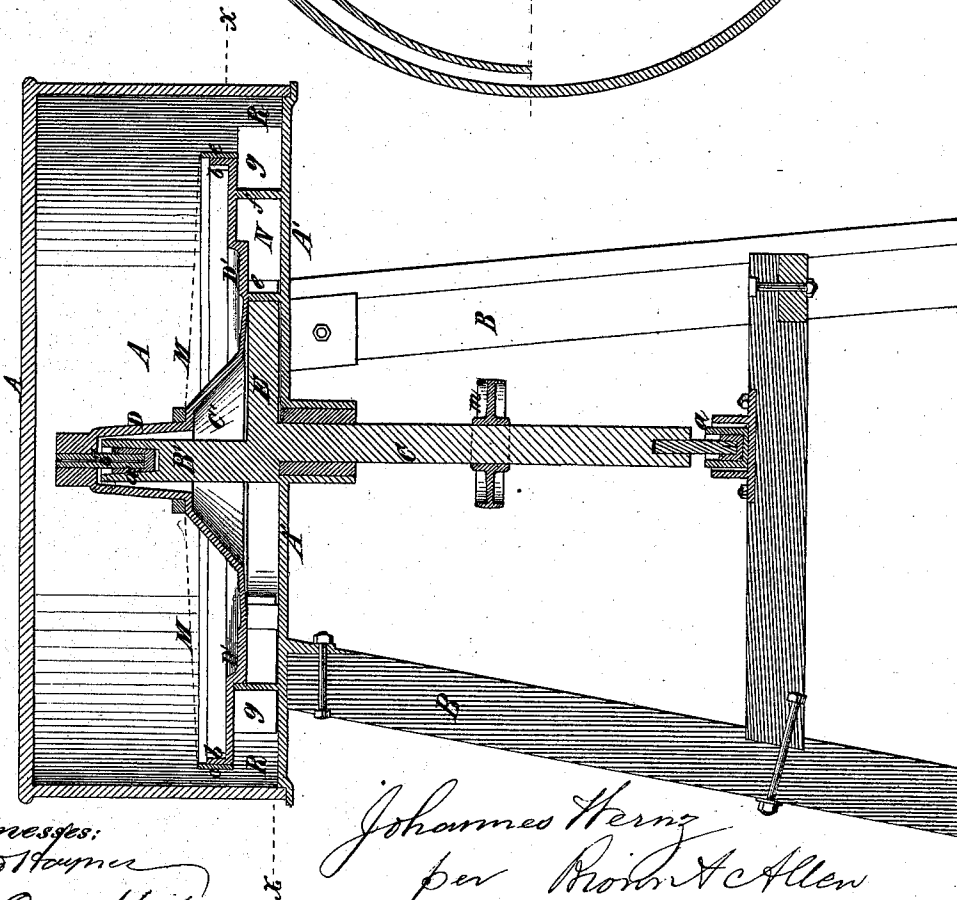


Fig: 1



Witnesses:

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JOHANNES WERNZ, OF EPOLZHEIM, BAVARIA.

IMPROVEMENT IN FLOUR-BOLTS.

Specification forming part of Letters Patent No. 131,919, dated October 1, 1872.

To all whom it may concern:

Be it known that I, JOHANNES WERNZ, of Epolzheim, in the Kingdom of Bavaria, have invented certain Improvements in Sifting Apparatus, of which the following is a specification:

This invention relates to that class of mechanism used for separating flour from bran, and for other analogous purposes. It consists in the combination, with certain other mechanical devices, of a circular screen of gauze or other suitable material, in such manner that the screen shall have a rotatory movement with reference to its own axis, while the latter has a circular motion about that of a suitably-arranged driving-shaft, the compound motion thus produced insuring the passage of the finer particles through the screen, while the coarser are thrown off by centrifugal action from its periphery. The invention also comprises a novel arrangement with reference to the screen, constructed and operating as described, of receivers, respectively, for the finer and coarser portions into which the material is sifted or separated. By these means is provided an apparatus which is compact in form, requires in its construction only a comparatively small quantity of gauze or its equivalent, and affords provision for the facile removal from it of the sifted material, and in which, furthermore, the gauze is subjected to less attrition and consequent wear than the ordinary bolting-cloth, and in which a finer or coarser gauze or screening medium may be readily, as occasion requires, substituted one for the other.

Figure 1 is a vertical transverse section of an apparatus constructed according to my invention. Fig. 2 is a horizontal section of the same taken in the line *xx* of Fig. 1.

The circular case A is sustained upon a suitable base-frame, B, and has passing centrally through its bottom A' the vertical shaft C, the lower end of which may be stepped into a bearing at *a* in the base frame. At the upper end of the shaft C is the vertical cylindrical arm B, the axis of which is eccentric to that of the shaft C, and which has in its upper end a slightly-conical recess, *a'*, which receives a downwardly-projecting stem, *b'*, of the cap D. Formed in one with, or fixed to the

lower end of, the cap D, is a cone, C', from which extends the circular frame D', which latter has at its periphery, and rising above the same, a ring, *b*. Strained from the top of the cone C' to the ring *b* is the gauze or bolting-cloth M', forming the screen, the outer edges somewhat lower than the central parts, and the outermost edge held to the ring *b* by a leathern annulus or band, *c*. The weight thus placed upon the shaft C is balanced by the counterpoise E, applied upon the top of the shaft C, and in suitable relation with the vertical arm B'. Extending upward from the button A' of the case A are annular concentric partitions *e f*, external to the latter of which is the annular bearing *g*, upon which runs or rests the outer or peripheral portion of the frame D'. In this latter are openings *h*, shown in Fig. 2, so arranged that material falling from the screen M will pass through them to the receiver N, constituted by the space between the annular partitions just indicated.

The material to be sifted is fed in through an opening provided in the top of the case A, and falls upon the screen M at or near the center thereof. A rotatory motion being given to the shaft C by a bolt acting on the pulley *m*, the arm B' receives a circular movement about the axial line of the aforesaid shaft, simultaneously with which the frictional contact of the lower peripheral edge of the frame D', being necessarily greater at one point than at the opposite one, causes the movement of the same to be retarded, so that, with reference to the arm B', a rotary movement of the frame and its screen is induced. The compound motion thus given to the screen throws the material radially outward upon the screen, the finer particles falling through the meshes of the same, and through the openings *h* into the receiver N, the cone C' directing that from the central part of the screen so that it shall not fall into the space occupied in the rotation of the counterpoise E, while the coarser particles are finally thrown by centrifugal action from the periphery of the screen and fall into the receiver R between the annular bearing *g* and the circular sides of the case A.

As the heavier particles—for example, the bran in bolting flour—here exert but little at-

trition in their movement upon the gauze or screen, the wear caused thereby is very slight; and furthermore, from the nearly flat and circular form of the screen, the gauze may be readily removed for replacement by other of finer or coarser character, as may be required.

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

1. The combination of the circular screen M, sustained upon a frame, D', the vertical arm B' arranged eccentric to the axis of the

driving-shaft C, and the annular bearing g, all constructed and arranged to operate substantially as herein described, and for the purpose specified.

2. In combination with the above, the annular receivers N R, the whole arranged for operation substantially as and for the purpose specified.

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Witnesses:

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