

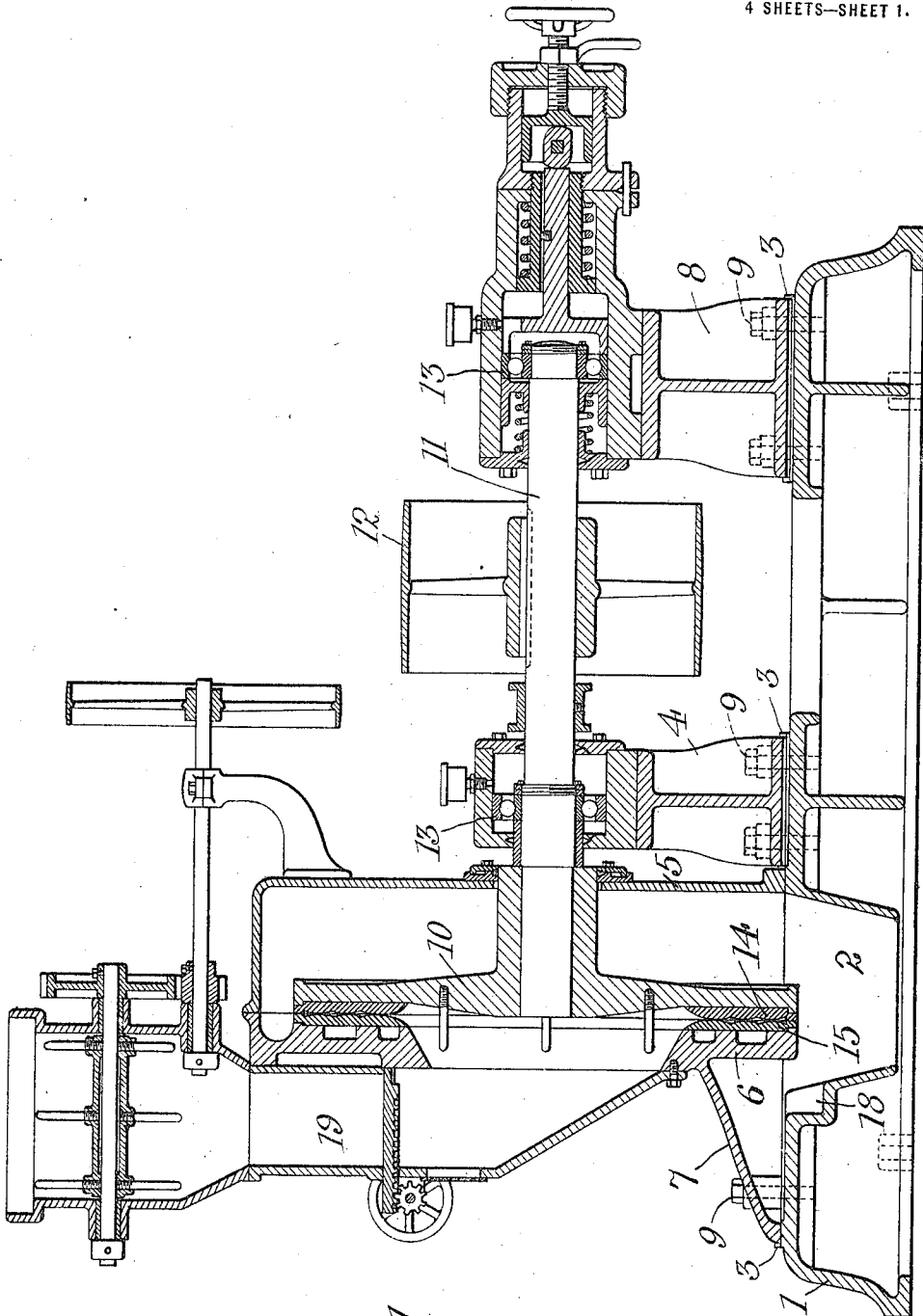
J. S. SORENSEN.
SINGLE HEAD ATTRITION MILL.

APPLICATION FILED JUNE 10, 1912. RENEWED MAR. 10, 1915.

1,146,033.

Patented July 13, 1915.

4 SHEETS—SHEET 1.



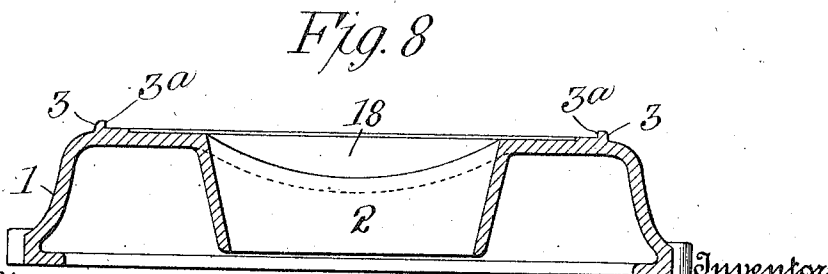
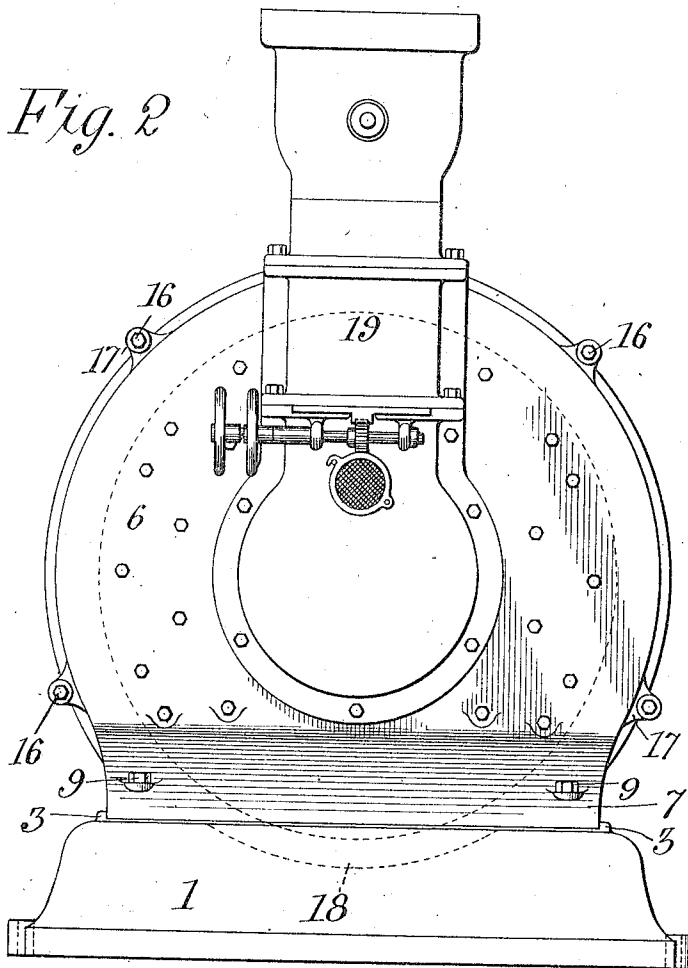
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Fig. 1

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Fig. 3

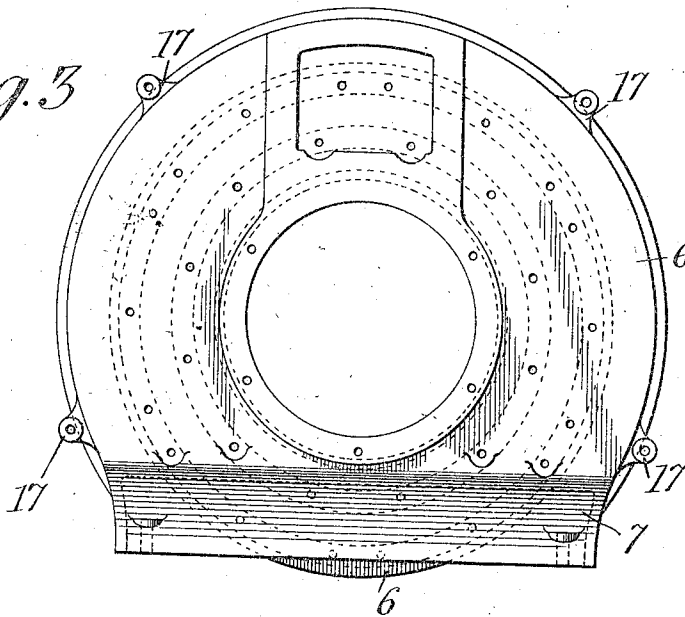
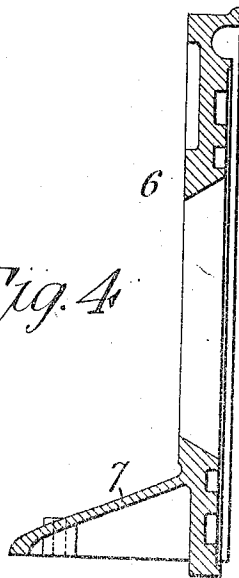


Fig. 4



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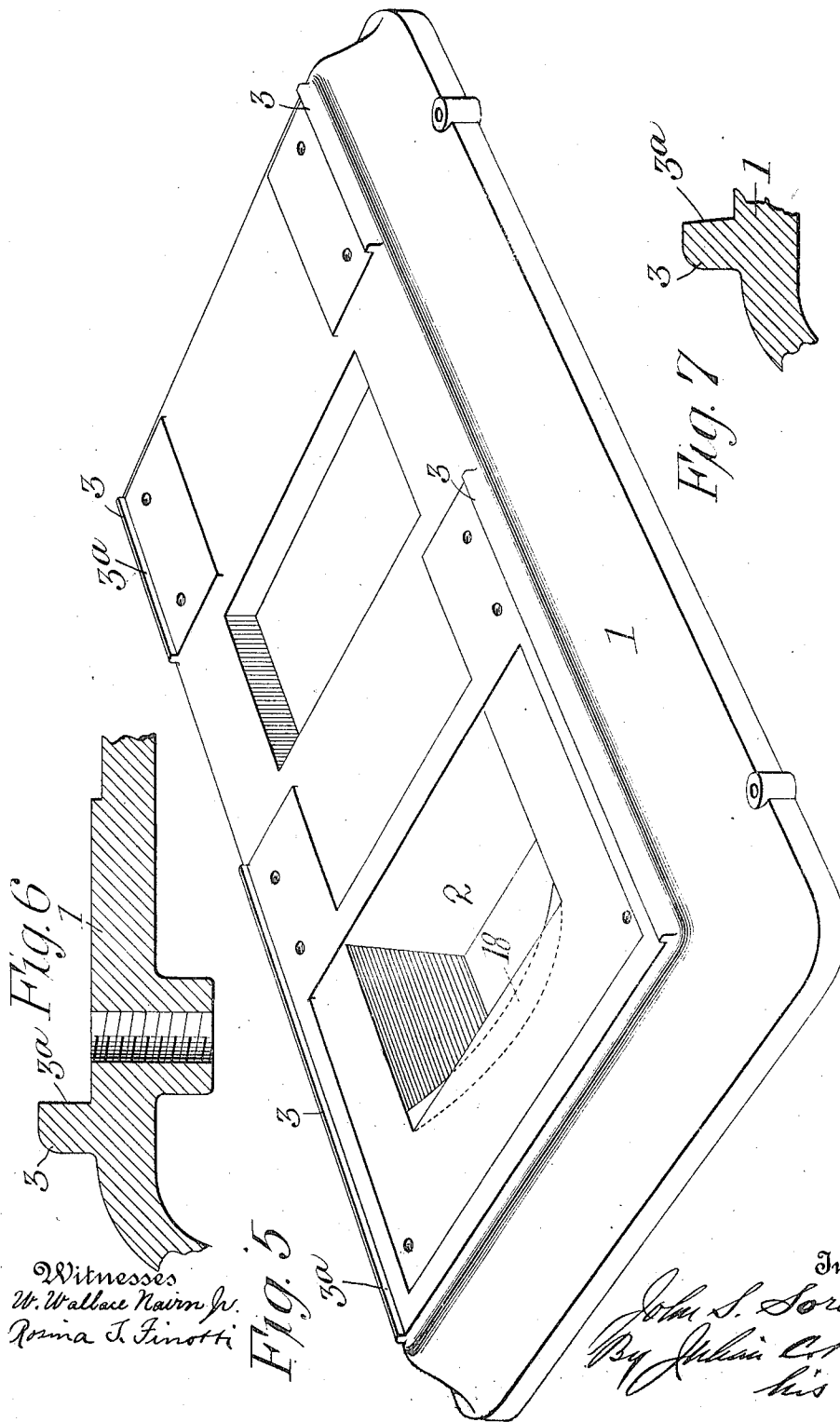
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

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SINGLE-HEAD ATTRITION-MILL.

1,146,033.

Specification of Letters Patent.

Patented July 13, 1915.

Application filed June 10, 1912, Serial No. 702,739. Renewed March 10, 1915. Serial No. 13,500.

To all whom it may concern:

Be it known that I, JOHN S. SORENSEN, a citizen of the United States, residing at Muncy, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Single-Head Attrition-Mills, of which the following is a specification.

My invention relates to attrition mills of the type having a single runner or rotary grinding element adapted to coact with a stationary or fixed grinding element. This style of mill is especially adapted for hulling cotton.

An important object of this invention is to obviate the necessity of tramming, by which much time is lost in the operation of the mill and undue wear is caused on parts thereof.

Another object is to provide convenient access to the grinding elements for repairing or renewing the same.

To these ends, the runner casing of the mill is made with a detachable portion carrying the stationary grinding element. The base of the mill is provided with an extension on which the detachable portion of the casing is supported in erect position by a brace at the bottom of the said detachable portion when the same is disconnected from the casing. The grinding elements may extend partially into the delivery spout which is formed in the base, and said spout in this construction may be formed with an offset to provide clearance for the part of the stationary grinding element which extends into the same when said detachable portion is moved away from the casing in order to obtain access to said grinding elements. Tramming is obviated by providing opposite axially arranged abutments on the base between which the casing, bearings for the runner, detachable portion of the casing and brace for the latter may all be fitted and thereby maintained in proper alinement. Said detachable portion and brace are also adapted to slide between said abutments when disconnected from the casing and base, whereby the proper fit of these movable parts to the stationary parts of the mill may be readily and accurately secured.

The invention will be first hereinafter more particularly described with reference to the accompanying drawings, which are to be taken as a part of this specification,

and then pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a central vertical longitudinal section of an attrition mill constructed in accordance with this invention; Fig. 2 is an elevation of the end of the mill carrying the stationary grinding element; Fig. 3 is a detail elevation of the detachable portion of the casing; Fig. 4 is a central vertical section thereof; Fig. 5 is a detail perspective view of the base of the mill; Fig. 6 is an enlarged fragmentary section of a portion of the base including one of the abutments; Fig. 7 is a similar view showing a modified form of abutment, and Fig. 8 is a vertical cross-section of the base taken through the delivery spout and looking toward the off-set therein.

The base 1 may be of any suitable shape for supporting the superstructure of the mill, but as shown is generally rectangular in form and is provided with the delivery spout 2 opening through the same, and abutments 3 arranged on the upper surface thereof. One pair of said abutments may be made continuous to extend along one of the bearing supports 4 for the runner shaft, the casing 5, the detachable portion 6 of the latter, and the brace 7 for said detachable portion. Another pair of abutments may be provided for the second or outer bearing support 8 for the runner shaft. The inner face 3^a of each of the abutments may be arranged at right angles to the upper surface of the base, as shown in Figs. 1, 2, 6 and 8, or it may be inclined outwardly to some extent, as illustrated in Fig. 7. In either form, the abutments will effectually hold the operating parts of the mill in proper alinement when the latter are fitted between said abutments and fastened down to the base by bolts 9, or other suitable means, and as a result tramming will be unnecessary.

The runner 10 is suitably mounted on the end of the runner shaft 11 which may be driven by the band pulley 12. As the details of construction of the bearings 13 carried by the supports 4 and 8, respectively, and in which the runner shaft is journaled, constitute no part of the present invention, they need not be specifically described herein. Said runner is housed in the casing 5 and carries the rotary grinding member 14.

The stationary grinding member 15 is

carried by the detachable end portion 6 of the casing and is disposed so as to present its working face to the corresponding part of the rotary grinding element. Said detachable portion may be secured to the casing by bolts 16 passed through ears 17 arranged at intervals around the periphery of said parts, and the detachable portion may be further secured by the bolts 9 which fasten the brace 7 to the base 1. When these securing means are removed, the detachable portion may be moved or slid along the base between the abutments and away from the casing a sufficient distance to permit access to the grinding elements for repairing or renewing the same. It will be noted that when the detachable portion is disconnected and moved away from the casing, the brace 7 serves to support the former in an erect position independently of the latter. By reason of the fact that said detachable portion and brace are fitted between the abutments, the reassembling of said detachable portion with the casing requires no adjustments or tramping to bring the stationary grinding element into proper alinement with the rotary grinding element.

As illustrated, the runner and detachable portion of the casing may extend partially into the delivery spout 2. When the mill is so constructed, it is preferably to form an offset or step 18 in the side of said spout toward which said detachable portion approaches as it is moved away from the casing. The provision of this offset allows clearance for the part of the detachable portion of the casing which projects into the spout so that said detachable portion may be moved the required distance from the casing without making it necessary to unduly enlarge said spout. It will be understood that the feed chute 19, which is connected to the detachable portion of the casing, may be carried with the latter when it is moved away from the casing or reassembled therewith. The specific construction of said feed chute need not be described in detail because, like the bearings for the runner shaft it does not constitute any part of the present invention.

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

1. In a machine of the character described, the combination with a base having opposite axially arranged abutments, of a runner casing supported on said base and having a detachable portion also supported on said base and fitted snugly between said abutments, said detachable portion being adapted to slide along the base between the abutments when disconnected from the casing, whereby tramping is unnecessary, a runner in said casing, and a grinding element carried by said detachable portion.

2. In a machine of the character described, the combination with a base having opposite axially arranged abutments, of a runner, a casing housing said runner and having a detachable portion fitted on the base between said abutments and adapted to slide between the latter when disconnected from the casing, a brace arranged at the base of said detachable portion of the casing and also fitted and adapted to slide between said abutments, and a grinding element carried by said detachable portion.

3. In a machine of the character described, the combination with a base having a discharge chute, of a runner casing mounted on said base in communication with said chute and having a detachable portion supported and adapted to slide upon the base when disconnected from said casing, said detachable portion extending partially into the chute, the latter having an offset therein providing clearance for that part of the detachable portion which projects into said chute when said detachable portion is moved away from said casing, and a grinding element carried by said detachable portion.

4. In a machine of the character described, the combination with a base having a discharge chute, of a runner casing mounted on said base in communication with said chute and having a detachable portion supported and adapted to slide upon the base when disconnected from said casing, said detachable portion extending partially into the chute, the latter having an arcuate offset therein conforming to and providing clearance for that part of the detachable portion which projects into said chute when said detachable portion is moved away from said casing, and a grinding element carried by said detachable portion.

5. In a machine of the character described, the combination with a base, of a runner casing secured thereon and having a detachable portion, a runner in said casing, a bearing for said runner, a grinding element carried by said detachable portion, and parallel axially extending abutments on the base, said bearing and detachable portion of the casing being fitted between said abutments.

6. In a machine of the character described, the combination with a base, of a runner casing secured thereon and having a detachable portion, a runner in said casing, a bearing for said runner, a grinding element carried by said detachable portion, and parallel axially extending abutments on the base, said bearing and detachable portion of the casing being fitted between said abutments and said detachable portion adapted to slide between them when disconnected from the casing.

7. In a machine of the character described, the combination with a base having opposite axially arranged abutments, of a runner

casing supported on said base and having a detachable portion also supported on said base and fitting snugly between said abutments, said detachable portion carrying a grinder and supported for a considerable longitudinal distance between said abutments so as to maintain the disks parallel under all conditions and adapted to slide along the base between the abutments when

disconnected from the casing, whereby tramming is unnecessary.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN S. SORENSEN.

Witnesses:

PAUL W. FISHER,
MARY BURNS.