No. 652,919. Patented July 3, 1900.

J. B. McHUGH.

PEANUT HULLER.

(Application filed May 7, 1898.)

(No Model.)

Fig. 1.

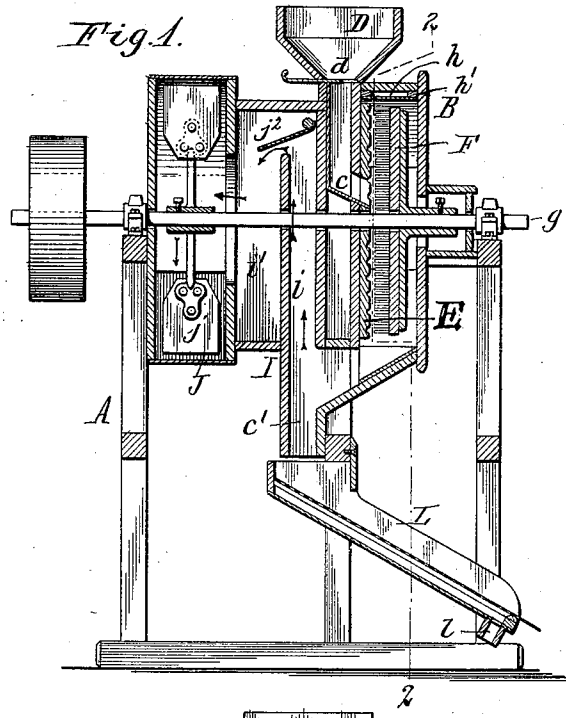


Fig. 2.

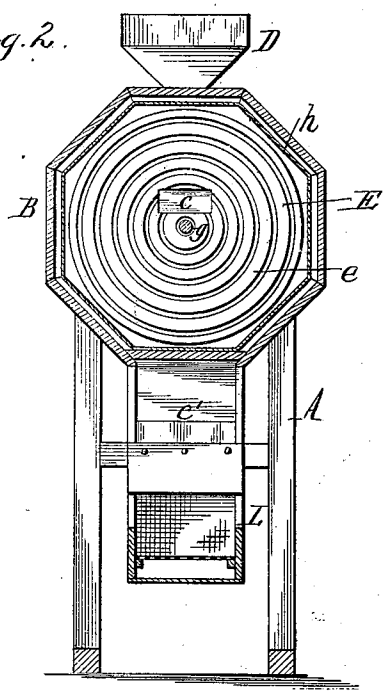


Fig. 3.

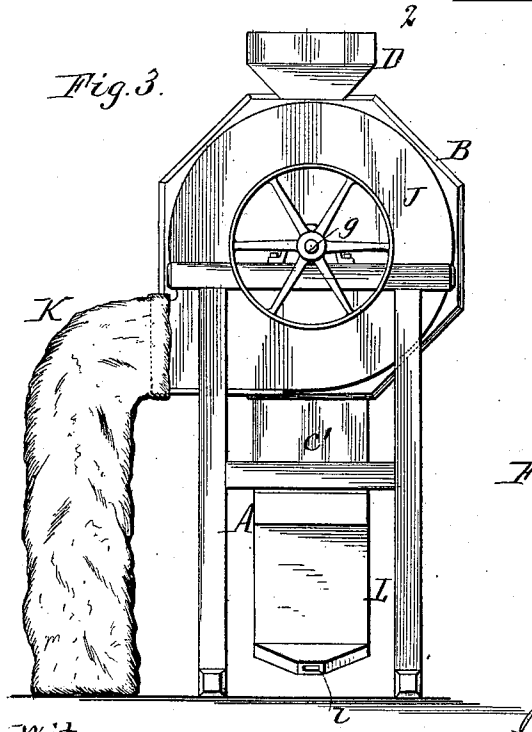


Fig. 4.

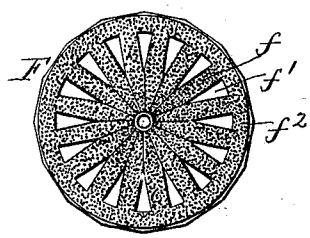


Fig. 6.

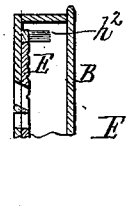
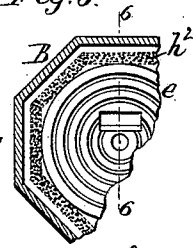


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES B. McHUGH, OF LOCKPORT, NEW YORK, ASSIGNOR TO JOHN McLEAN, OF SAME PLACE.

PEANUT-HULLER.

SPECIFICATION forming part of Letters Patent No. 652,919, dated July 3, 1900.

Application filed May 7, 1898. Serial No. 679,981. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. McHUGH, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented new and useful Improvements in Peanut-Hullers, of which the following is a specification.

This invention relates to a hulling or cleaning machine which is especially desirable for removing the hulls from peanuts, but which may also be employed for cleaning coffee and wheat, oats, and other cereals.

The object of my invention is the production of an efficient machine of this kind which thoroughly removes the hulls and other adhering impurities from the nuts or kernels without breaking the same.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of my improved hulling-machine. Fig. 2 is a transverse section thereof in line 2 2, Fig. 1. Fig. 3 is a view of the rear end of the machine. Fig. 4 is a detached face view of the brush. Fig. 5 is a reduced fragmentary longitudinal section of the hulling-case, showing a modified construction of its cushioned or yielding inner surface. Fig. 6 is a fragmentary cross-section in line 6 6, Fig. 5.

Like letters of reference refer to like parts in the several figures.

A is the stationary frame of the machine, composed of uprights and horizontal connecting-pieces, as shown.

B is an upright stationary hulling-case supported on the front portion of the frame and made of circular or polygonal form. This case is provided in its rear side with a central inlet-opening *c* and an inclined bottom terminating in a discharge-spout *c'*.

D is a feed-hopper arranged at the top of the machine and having its spout arranged on the rear side of the hulling-case and connected with the inlet-opening *c* thereof, as shown in Fig. 1. The hopper is provided with a gate or slide *d* for regulating the supply of material to the hulling-case.

E is a fixed hulling disk or surface secured to or formed by the rear wall of the case and provided in its face with comparatively-blunt corrugations or raised ribs *e*, which in the drawings are represented as being circular and concentric, but which may be arranged radially or in any other suitable manner. The inlet-opening *c* extends through this hulling-disk.

F is an upright rotary brush which is arranged in the hulling-case adjacent to the hulling-disk and between which and said disk the peanuts or other material to be treated are delivered for hulling or cleaning the same. This brush faces the stationary hulling-disk and is mounted on a horizontal shaft *g*, which extends axially through the hulling-case and turns in bearings secured to the upper front and rear portions of the frame. The shaft is provided either with a pulley, as shown, when the same is to be driven by power or with a crank when the same is to be operated by hand. The brush is substantially circular in form, and its bristles preferably do not extend over the entire surface of its stock, but are arranged in the form of radial arms or bars *f*, which are separated by intervening spaces or recesses *f'* and merge at their outer ends into a ring f^2 of bristles, which encircles said arms and forms the margin of the brush, as shown in Fig. 4. By this construction the brush is divided into comparatively-narrow groups or sections of bristles in which the nuts or kernels are not liable to embed themselves as they are in a brush consisting of a solid or unbroken mass of bristles. The recesses *f'* of the brush permit the bristles to yield laterally, allowing the bristles to clear themselves of any nuts or kernels lodging between the same. The marginal ring of bristles f^2 closes the outer ends of the recesses *f'* and retards the outward movement of the nuts or kernels.

The brush is made adjustable toward and from the hulling-disk, so that the space between these hulling-surfaces can be varied to suit the size of the particular material to be treated. In the construction shown in the drawings the brush is adjustably secured to its shaft by a set-screw.

The portion of the hulling-case opposite the periphery of the rotary brush is provided on its inner side with a yielding lining or cush-

ion h, which extends around the same and receives the impact of the nuts or kernals which are thrown outwardly by the centrifugal force produced by the rapidly-rotating brush, thereby preventing breakage of the nuts or kernals which occurs when the same are thrown against a hard surface. This yielding lining or cushion may be of any suitable construction. The preferred construction (shown in Figs. 1 and 2) consists of a band or strip of leather arranged at a short distance from the inner surface of the case and fastened at its edges to narrow strips h', secured to the case in the angles between its wall and its front and rear heads, thus leaving the intermediate portion of the band unsupported and rendering it sufficiently pliable or elastic to act as a cushion.

In the construction shown in Figs. 1 and 2 the portion of the cushioning-strip which covers the bottom of the case is not separated from the case, but is in contact therewith; but, if desired, this portion of the strip may also be separated from the case.

In the modified construction of the cushion shown in Figs. 5 and 6 a bed or surface of bristles h^2 is substituted for the leather band of the first-described construction, the bristles being arranged around the edge of the hulling-disk E and projecting forwardly beyond the face thereof, so that the nuts or kernals are thrown against the sides of the bristles.

I is a separating-leg, which is arranged in rear of the hulling-case and connected therewith and whereby the detached hulls and other impurities are withdrawn from the case. This leg has an ascending passage i, which communicates at its lower end with the discharge-spout c' of the case, and a descending passage i', which is connected with the eye of a fan-case J, containing a suction-fan j. This fan is mounted on the driving-shaft g. The passages of the separating-leg communicate at their upper ends, as shown in Fig. 1, and a valve j^2, of any ordinary construction, is arranged in the upper portion of the leg for regulating the strength of the air-current.

K is a closed bag or tube of loose-woven material, such as cotton or cheese cloth, which is applied to the discharge-spout of the fan-case, as shown in Fig. 3, and which receives and intercepts the detached hulls and other impurities, while allowing the air to filter through the same, thus preventing scattering of the dust and hulls.

L is a separating-screen which may be employed when the machine is used for hulling peanuts and which separates the bitter germs from the nuts. This screen is arranged under the discharge-spout of the hulling-case, so as to receive the hulled peanuts and the detached germs therefrom, and the meshes of its sieve are of such size that the germs pass through the same, while the nuts are tailed off into a suitable receptacle. The separated germs are discharged through a spout l at the lower end of the screen.

The operation of the machine is as follows: The peanuts or other material placed in the feed-hopper enter the hulling-case through the inlet-opening c and are delivered between the hulling-disk E and the rotary brush F near the axis thereof. The nuts or kernels are carried around by the brush and rubbed against the roughened surface of the hulling-disk, whereby the hulls are removed from the nuts or kernels and the latter are at the same time polished. The action of the comparatively-soft bristles, although effective, is so gentle as not to break or grind up the nuts. The nuts and detached germs and hulls are moved toward the periphery of the brush and thrown against the cushioned inner surface of the hulling-case, and the nuts and germs are finally discharged through the delivery-spout c' upon the separating-screen L, while the detached hulls and light impurities are intercepted by the ascending air-current in the separating-leg I and drawn through the leg into and through the fan-case J, whence they are delivered into the filtering-bag K, the air passing through the meshes of the bag, as hereinbefore described.

In order to permit the brush to be readily placed into the hulling-case and removed therefrom, the front head of the case may be made removable or the case may be divided horizontally and its upper section made removable.

I claim as my invention—

1. A brush for a hulling or cleaning machine consisting of a stock or disk having bristles projecting from one of its flat sides and arranged in the form of radial arms or sections which are separated by intervening spaces or recesses and a marginal ring of bristles encircling the outer ends of said arms, substantially as set forth.

2. The combination with a rotary hulling-disk, a stationary hulling-disk, and the inclosing casing, of a soft, yielding protector arranged within said casing opposite the periphery of the rotary disk to receive the impact of the material thrown outward by the disk, thereby preventing breakage of the grains or kernels, substantially as set forth.

3. The combination with a rotary hulling-disk, a stationary hulling-disk, and the inclosing casing, of a soft, protecting lining secured to said casing and separated therefrom by an intervening space, said lining being arranged opposite the periphery of the rotary disk, substantially as set forth.

Witness my hand this 28th day of April, 1898.

JAMES B. McHUGH.

Witnesses:
M. J. YOVELL,
T. F. TRACEY.