2 Sheets--Sheet 1.

C. B. HORTON.

Grain-Scourers.

No. 144,980. Patented Nov. 25, 1873.

FIG. 1.

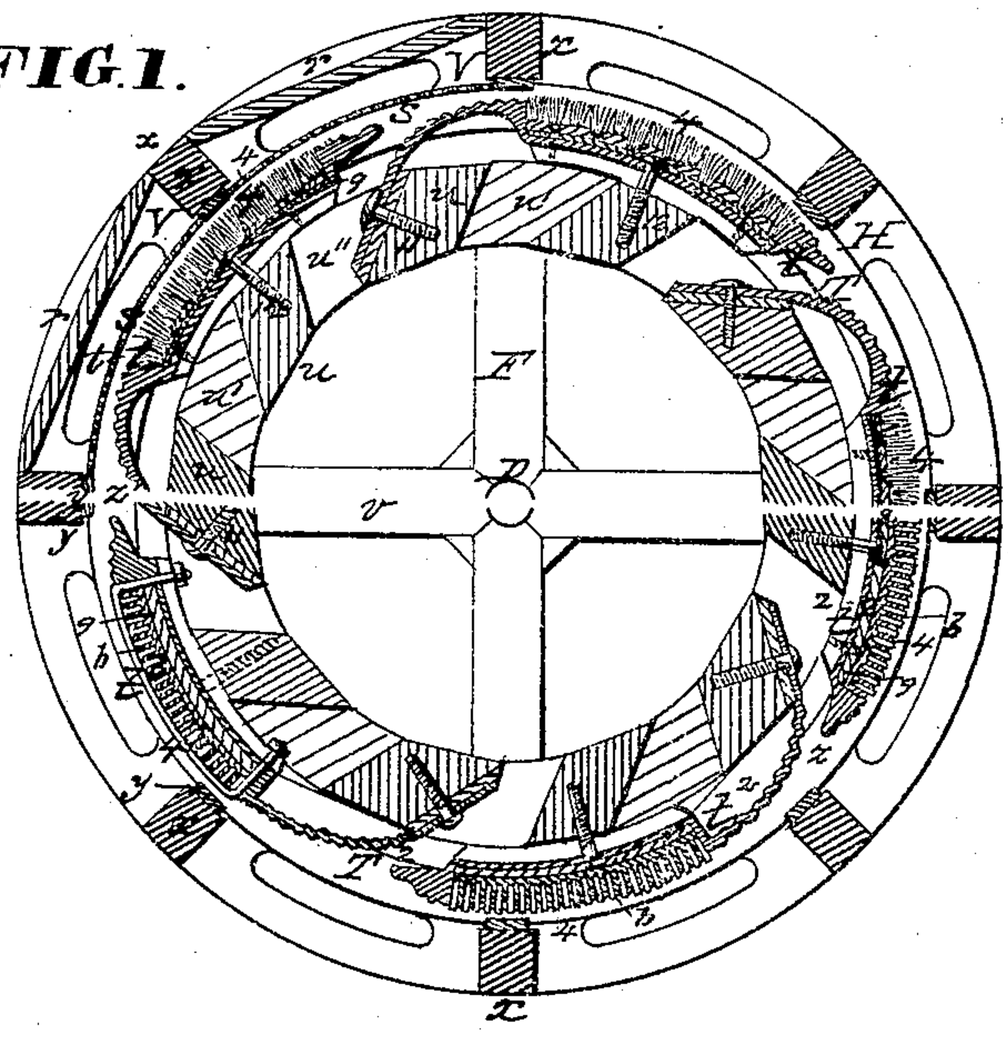
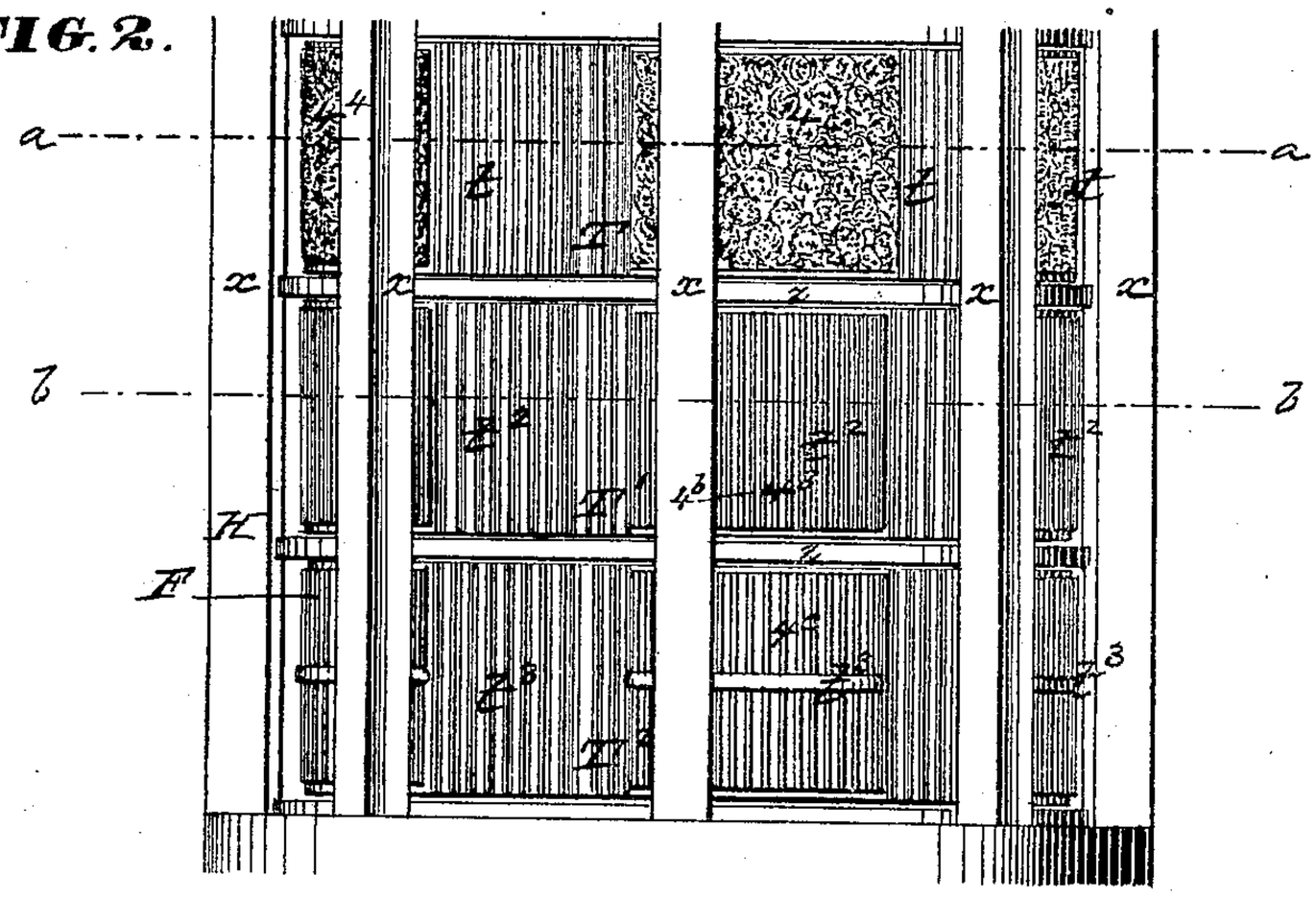


FIG. 2.



WITNESSES:

Jas. L. Ewin

Walter Allen

INVENTOR:

Chase B. Horton

By Knight Bros Attorneys.

2 Sheets--Sheet 2.

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FIG. 3.

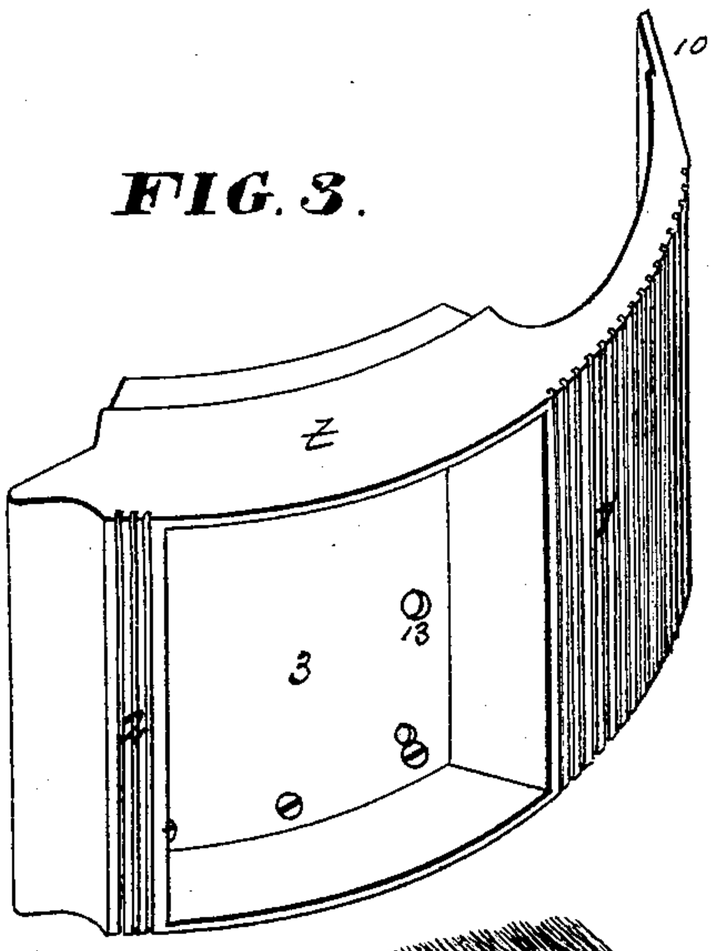


FIG. 4.

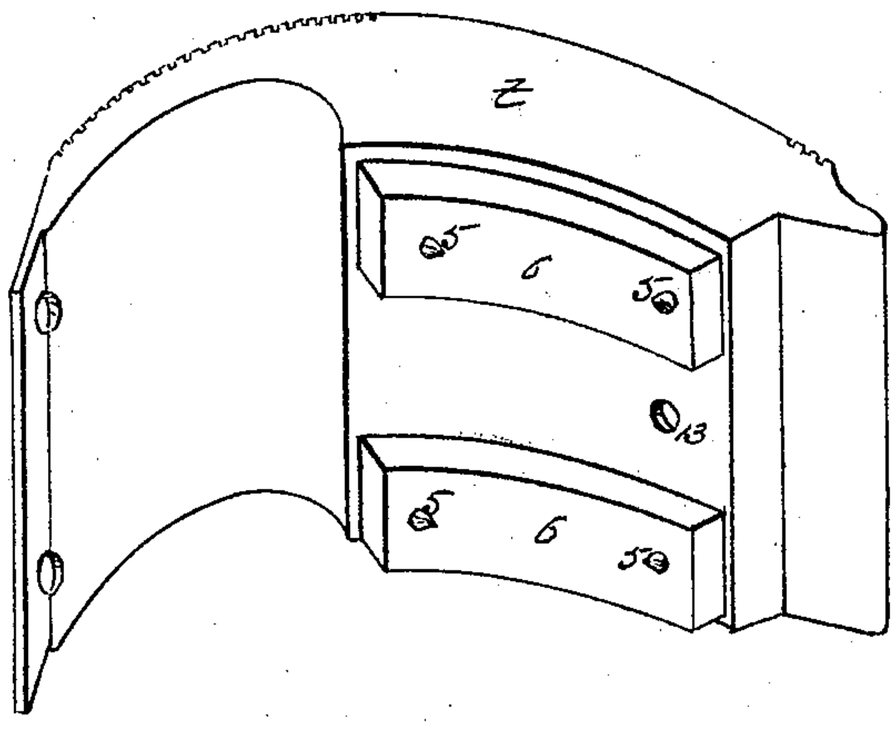


FIG. 5.

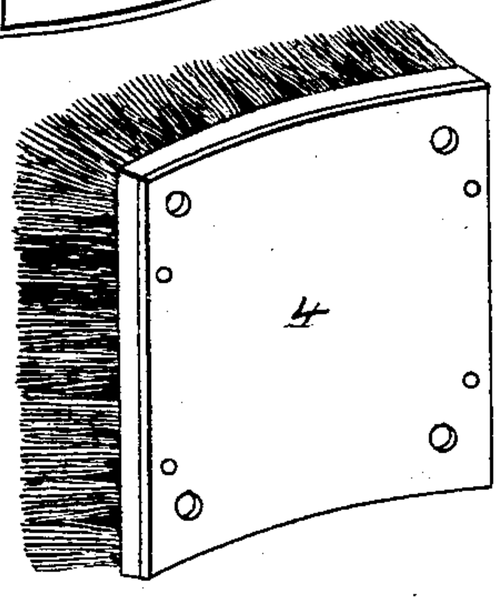


FIG. 6

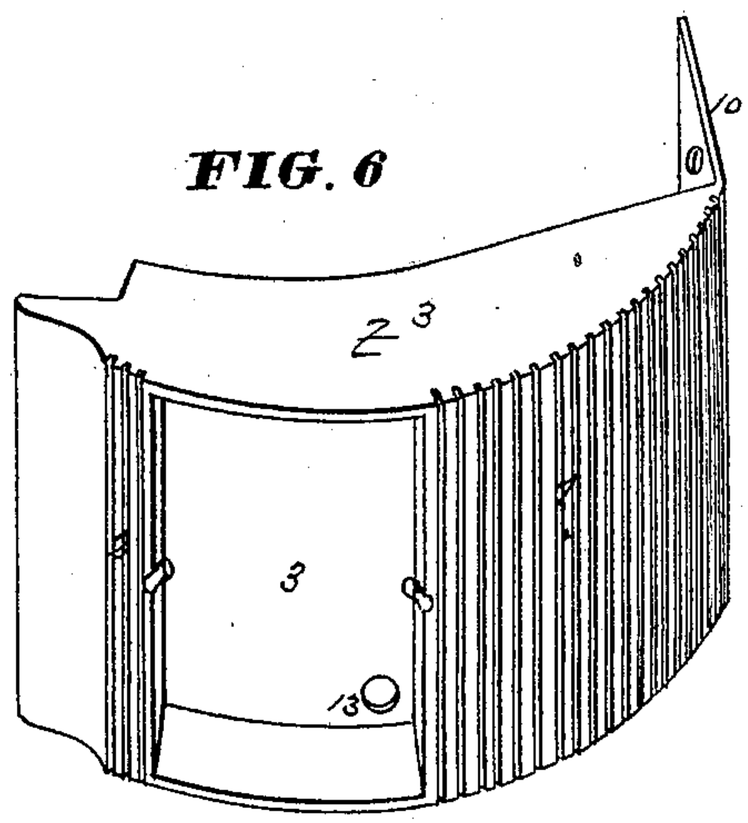
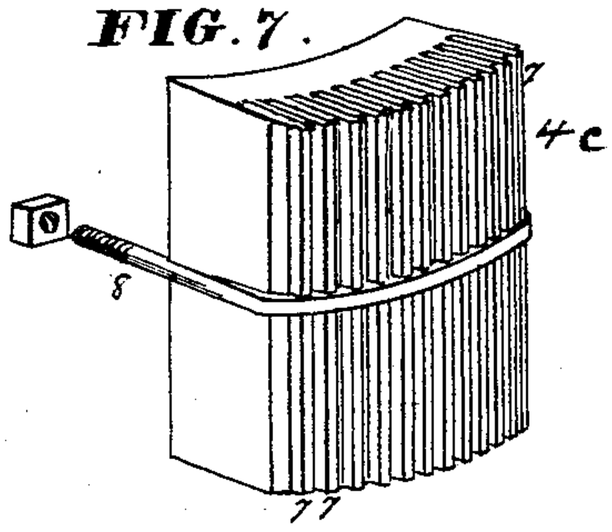


FIG. 7.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHACE B. HORTON, OF WATERLOO, NEW YORK.

IMPROVEMENT IN GRAIN-SCOURERS.

Specification forming part of Letters Patent No. **144,980,** dated November 25, 1873; application filed April 5, 1873.

To all whom it may concern:

Be it known that I, CHACE B. HORTON, of Waterloo, in the county of Seneca and State of New York, have invented certain Improvements in Grain-Scourers, of which the following is a specification:

This invention relates primarily to Horton's turbine grain scourer and separator, the subject-matter of Letters Patent No. 129,346, dated July 16, 1872; and consists in improvements in the construction of the vertical scouring-cylinder, or in improved rubbers therefor, adapted to more perfectly scour the grain by the combined action of metallic rasping-surfaces and brushes, or their equivalents, and to be readily renewed in efficiency, as hereinafter set forth.

The improved scourer has practically a continuous effective surface of iron and brush or rubbing-block, onto which the grain is gradually lifted or deflected by the front end 1 of the scourer. Without this tangential end, or its equivalent, a socket for the brush or rubbing-block would batter the grain around, and the brush or rubbing-block would be inoperative, or comparatively so.

Figure 1 is a two-part horizontal section of a scouring case and cylinder with rubbers, illustrating this invention, parts of the case being omitted. Fig. 2 is a side elevation of the same, showing by lines *a b* the planes of the sections represented in Fig. 1. Fig. 3 is a perspective face view on a larger scale of a brush rubber, with brush removed. Fig. 4 is a perspective back view of the same complete. Fig. 5 is a perspective back view of the brush belonging to the rubber shown in Figs. 3 and 4. Figs. 6 and 7 are perspective face views of the parts of a rubber comprising the several features of the invention.

Referring to Figs. 1 and 2, Sheet 1, F represents the scouring-cylinder; H, the scouring-case, and T T^1 T^2 scouring-chambers, formed in the case H by horizontal rings or annular partitions Z, bolted to the metallic facings *y* of the posts or standards *x* of the same. V V, Fig. 1, represent dust-chambers, formed by the posts *x*, perforated inner panels or face-plates *s*, and outer close panels *r* of the scouring-case. D represents the shaft; *v*, an end disk; *u u*, longitudinal timbers, and *u'*, filling; and *w''*, air-passages between the timbers *u* of the scouring-cylinder.

An apparatus comprising the parts above described is the subject-matter of Letters Patent No. 129,346, before referred to.

t t^2 t^3 represent rubbers constructed according to the present invention. A rubber, *t*, is represented in detail by Figs. 3, 4, and 5; a rubber, t^3, by Figs. 6 and 7.

The improved rubbers proper may be made of iron by chill-casting; or they may be of steel, or steelified or case-hardened iron, if preferred. In shape, as applied to the cylinder, they are curved, of variable length and breadth. At their front ends, where the pitch is greatest, rasping-surfaces 1 are formed in any approved manner, and their rear ends have corresponding surfaces 2; or the latter may be omitted. At or near the rear end of each rubber, a cavity or socket, 3, is formed for the reception of a brush, or its equivalent, 4 4^b 4^c, Fig. 1. The object of the latter is to increase the action of the rubber, as may be required, and to provide for renewing its efficiency. Brushes 4 for this use may be made from tampico or other suitable material, with backs of leather, wood, or any preferred substance, perforated to receive attaching-screws 5, which may engage with wooden battens 6 on the backs of the scourers. Where a harder rubber is required, a block of wood, 4^b, with its face roughened by means of saw-kerfs, may be employed. A very efficient and durable rasping-rubber is formed by employing a similar block, 4^c, with strips 7 of iron or steel in its grooves. The wood wearing more rapidly than the metal leaves the strips always prominent. This form of block may be secured by a staple-bolt, 8, wholly or partially embedded in the block, as shown in Fig. 7. To adjust a brush or scouring-block, it is removed, and packing 9, Fig. 1, is placed in the bottom of the recess of the rubber; or set-screws therein may be adjusted to vary the projection of the brush or block, or to renew its efficiency when worn. The improved rubbers have perforated thin inner or front ends 10, for application to the beveled faces of alternate timbers *u* of the scouring-cylinder, within the air-passages *u''*, and are attached by screws 11 12 passing through these ends, and through central per-

forations 13, into the intermediate timbers, as shown in Fig. 1. Five scourers are preferably thus arranged in each scouring-chamber of the apparatus referred to; but the number may be varied, and the improved scourers may be arranged in any preferred order, or may be all of one or two of the forms described, or may be combined in any proportion with other rubbers; or the invention may be applied to rubbers of other grain scouring or finishing machines.

The recess or socket 3 of the improved rubber, besides constituting a very superior means for attaching and supporting the changeable brush or rubbing-block, serves also to confine the wear to the face of the brush or block, which, consequently, retains its original shape, lasts much longer, and operates more efficiently than it could if the edges of the brush or block were exposed.

The self-sharpening rasping-block 4^c is so called (as in other apparatus) owing to its construction being such that its cutting points or projections are kept prominent by the wear of the soft material between the same. This part of the present invention consists in the peculiar construction of the block, as specified.

I claim—

1. The tangential rubber for grain-scouring cylinders, constructed with a front end, 1, adapted to force the grain into contact with the case, and with a socket, 3, to hold a brush, 4, or its equivalent, and to protect the edges thereof, substantially as herein described.

2. A tangential rubber for grain-scouring cylinders, having metallic rasping-surfaces 1 2 at its respective ends, and an intermediate changeable brushing or rubbing surface, 4, formed and operating substantially as herein set forth.

3. A tangential rubber for grain-scouring cylinders, having a wooden rubbing-block, 4^b 4^c, held in a socket, *c*, and constructed with an effective surface formed by saw-kerfs, substantially as specified.

CHACE B. HORTON.

Witnesses:
B. C. HORTON,
C. R. HORTON.