No. 740,627. PATENTED OCT. 6, 1903.

W. A. BUSH.

SHREDDER CYLINDER.

APPLICATION FILED MAR. 5, 1903.

NO MODEL.

FIG. 1.

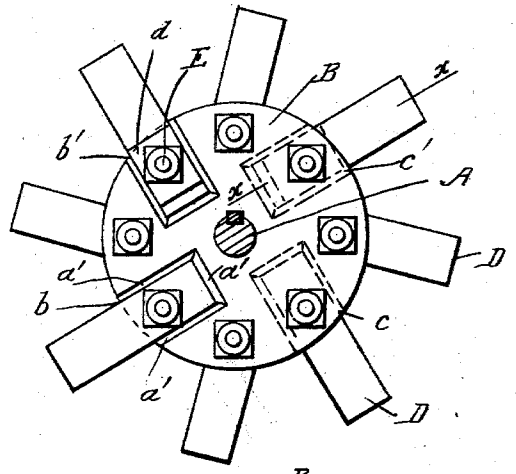


FIG. 2.

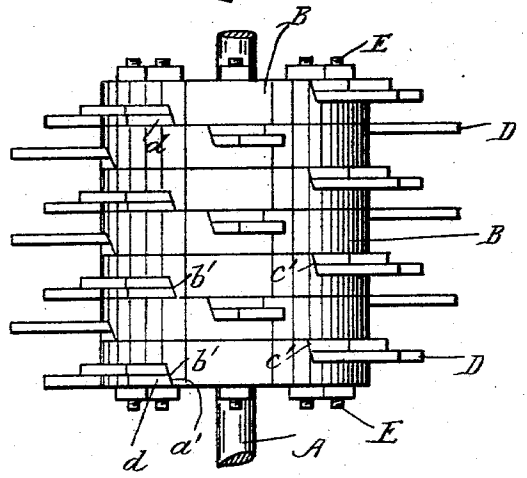


FIG. 3.

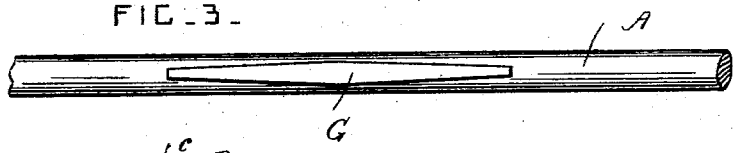


FIG. 4.

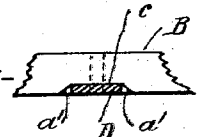
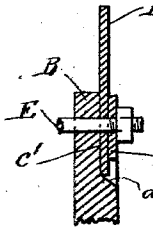


FIG. 5.



WITNESSES:

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No. 740,627. Patented October 6, 1903.

UNITED STATES PATENT OFFICE.

WILLIS A. BUSH, OF SOUTH POTTSTOWN, PENNSYLVANIA.

SHREDDER-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 740,627, dated October 6, 1903.

Application filed March 5, 1903. Serial No. 146,293. (No model.)

To all whom it may concern:

Be it known that I, WILLIS A. BUSH, a citizen of the United States, residing at South Pottstown, in the county of Chester and State of Pennsylvania, have invented certain new and useful Improvements in Shredder-Cylinders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to cylinders for shredding up straw, cornstalks, and other material; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is an end view of the shredding-cylinder. Fig. 2 is a plan view of the same. Fig. 3 is a detail view of the driving-shaft and key. Fig. 4 is a plan view of one of the shallow pockets *c*, showing one of the knives in cross-section. Fig. 5 is a longitudinal section through one of the deep pockets *c'*, taken on the line *x x* in Fig. 1.

A is the driving-shaft of the shredding-cylinder, which is supported and revolved in any approved manner.

The shredding-cylinder is formed of a series of flat disks B, all of which are exactly alike. The disks B have two pockets *b b'* in one side and two pockets *c c'* in the other side. The pockets *b'* are deeper than the pockets *b*, and the pockets *c'* are deeper than the pockets *c*. The four pockets of each disk are arranged at equal distances apart upon the periphery of the disk, and they are inclined with respect to the axis of the shaft. Each pocket is provided with beveled sides and ends *a'*.

D represents the shredding-knives, which are all alike and which are reversible, their front and rear portions being the same. These knives are placed in the pockets, and E represents bolts which pass through all the disks and knives and secure the said parts firmly in position. The sides and ends of the knives are not beveled, and the knives fit closely in the bottoms of the pockets without touching the upper parts of their beveled sides and ends.

Washer-plates or packing-plates *d* are placed above the knives in the deep pockets *b'* and *c'* to prevent the knives in those pockets from moving laterally. The knives are spaced at equal distances apart laterally, and the deep pockets *b'* and *c'* are of twice the depth of the shallow pockets *b* and *c*. The thickness of each disk is substantially four times the thickness of each knife, so that the right side of each knife is in the plane of the left side of the knife next to it in the series.

G is a double-tapered key which is widest in the middle and which is secured to the driving-shaft. The disks are forced onto this key and are held in position by the bolts E. One half of the disks are forced onto one half of the key from one end of it, and the other half of the disks are forced onto the other half of the key from the other end of it.

When the faces of the teeth become worn, the teeth are taken out and are reversed in position, so that the portions which originally were the backs of the teeth become their cutting-faces after the teeth have been reversed.

What I claim is—

1. In a shredding-cylinder, the combination, with a shaft, of a series of flat disks mounted on the said shaft, each of the said disks having a shallow pocket and a deep pocket in each side of it, knives arranged in the said pockets, loose packing-plates arranged over the knives in the said deep pockets, and bolts which secure all the said disks, knives and packing-plates together.

2. In a shredding-cylinder, the combination, with a shaft, of a series of flat disks mounted on the said shaft, each of the said disks having a shallow pocket and a deep pocket in each side of it, and the said pockets all having beveled sides and ends, knives which fit in the bottoms of the said pockets, loose packing-plates arranged over the knives in the said deep pockets, and bolts which secure all the said knives, disks and packing-plates together.

3. In a shredding-cylinder, the combination, with a shaft, and a double-tapered key widest in the middle and projecting from the said shaft; of a series of disks provided with pockets and engaging with the said shaft and key, knives projecting from the said pockets, and longitudinal bolts which secure the said disks together and press them upon the tapering end portions of the said key.

4. In a shredding-cylinder, the combina-

tion, with a shaft, of a series of flat disks mounted on the said shaft, all the said disks being exactly alike, and each said disk having a shallow pocket and a deep pocket in each side of it, reversible knives arranged in the said pockets, loose packing-plates arranged over the knives in the said deep pockets, and bolts which pass through holes in the said disks, knives and packing-plates and secure them together.

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

WILLIS A. BUSH.

Witnesses:
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A. J. BERNHART.