

(No Model.)

L. GATHMANN.
Grain Cleaner.

No. 238,885.

Patented March 15, 1881.

Fig. 1.

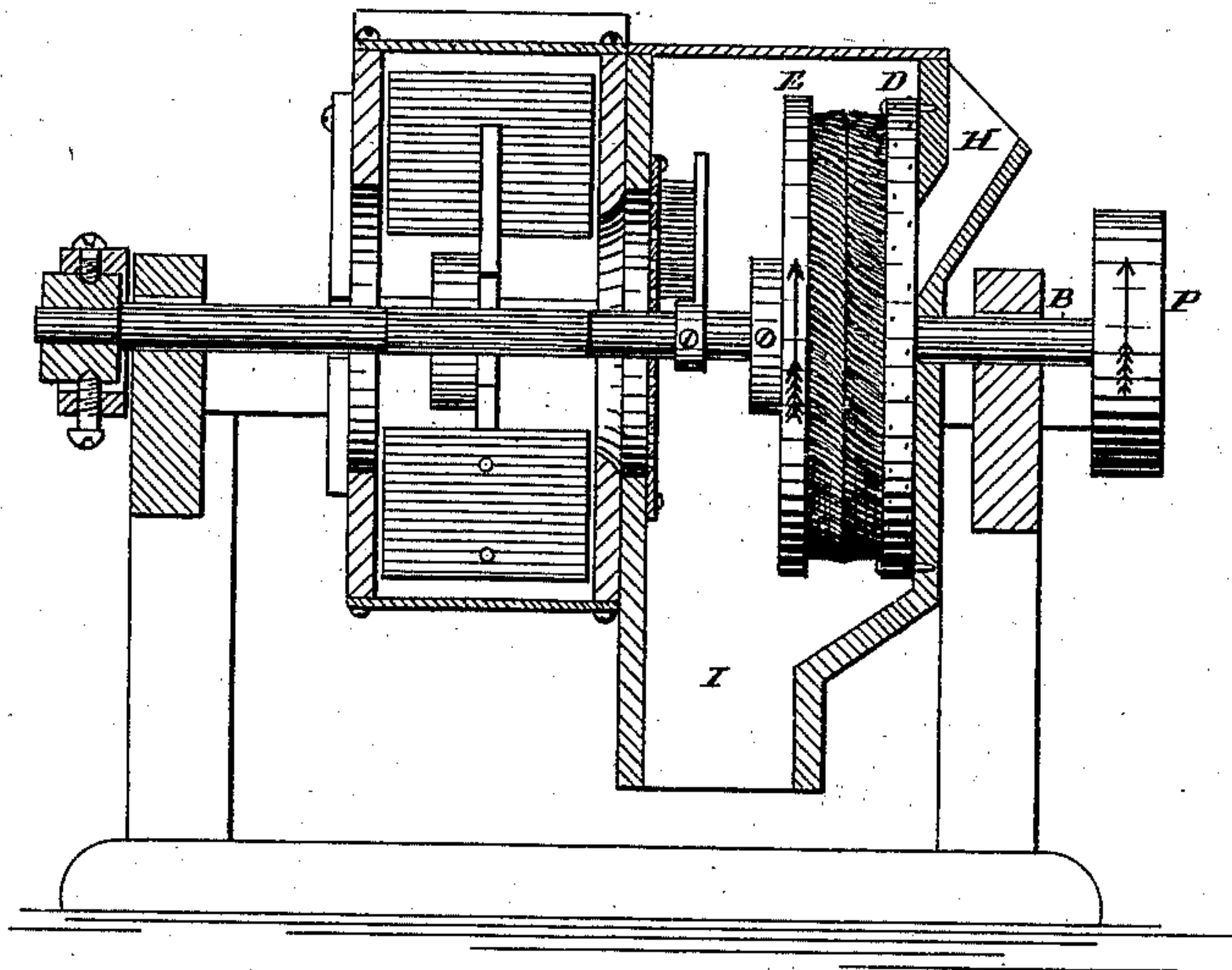


Fig. 2.

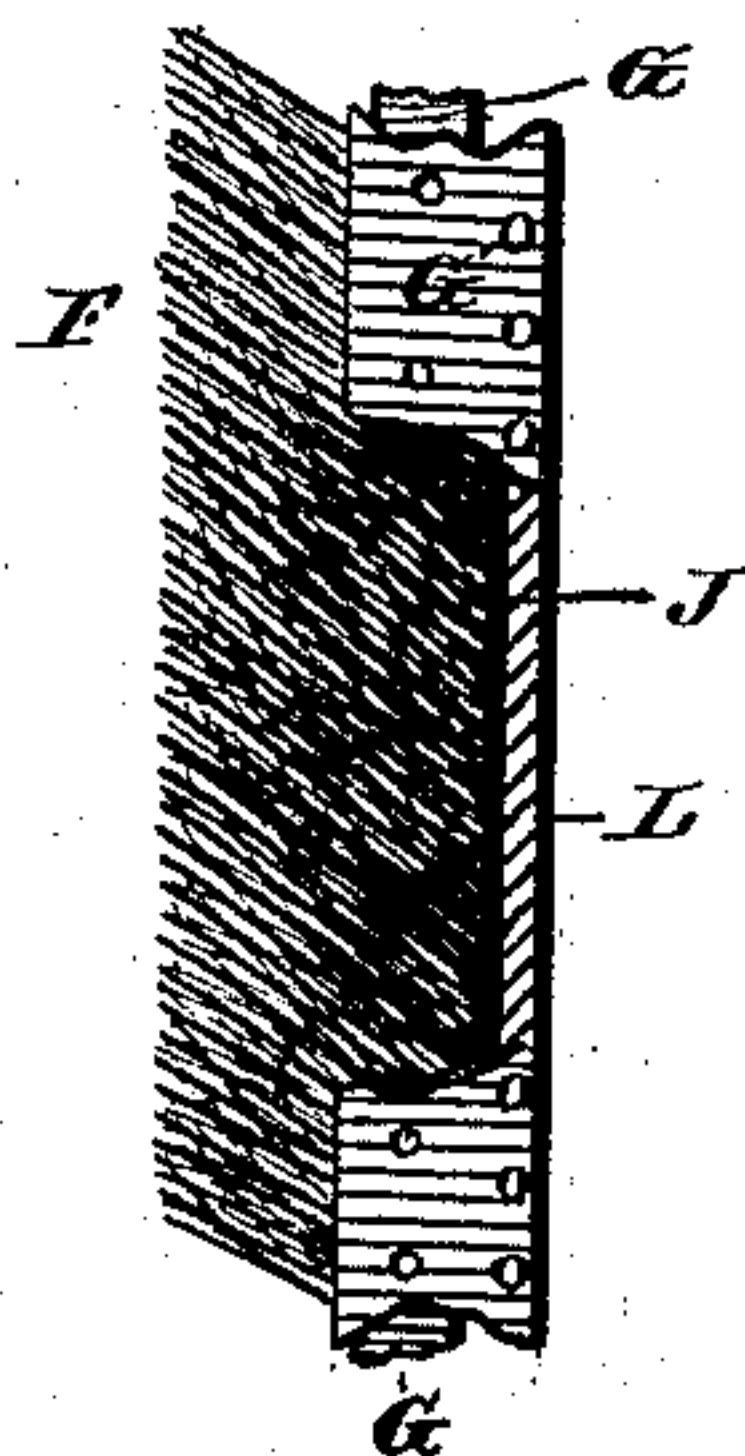
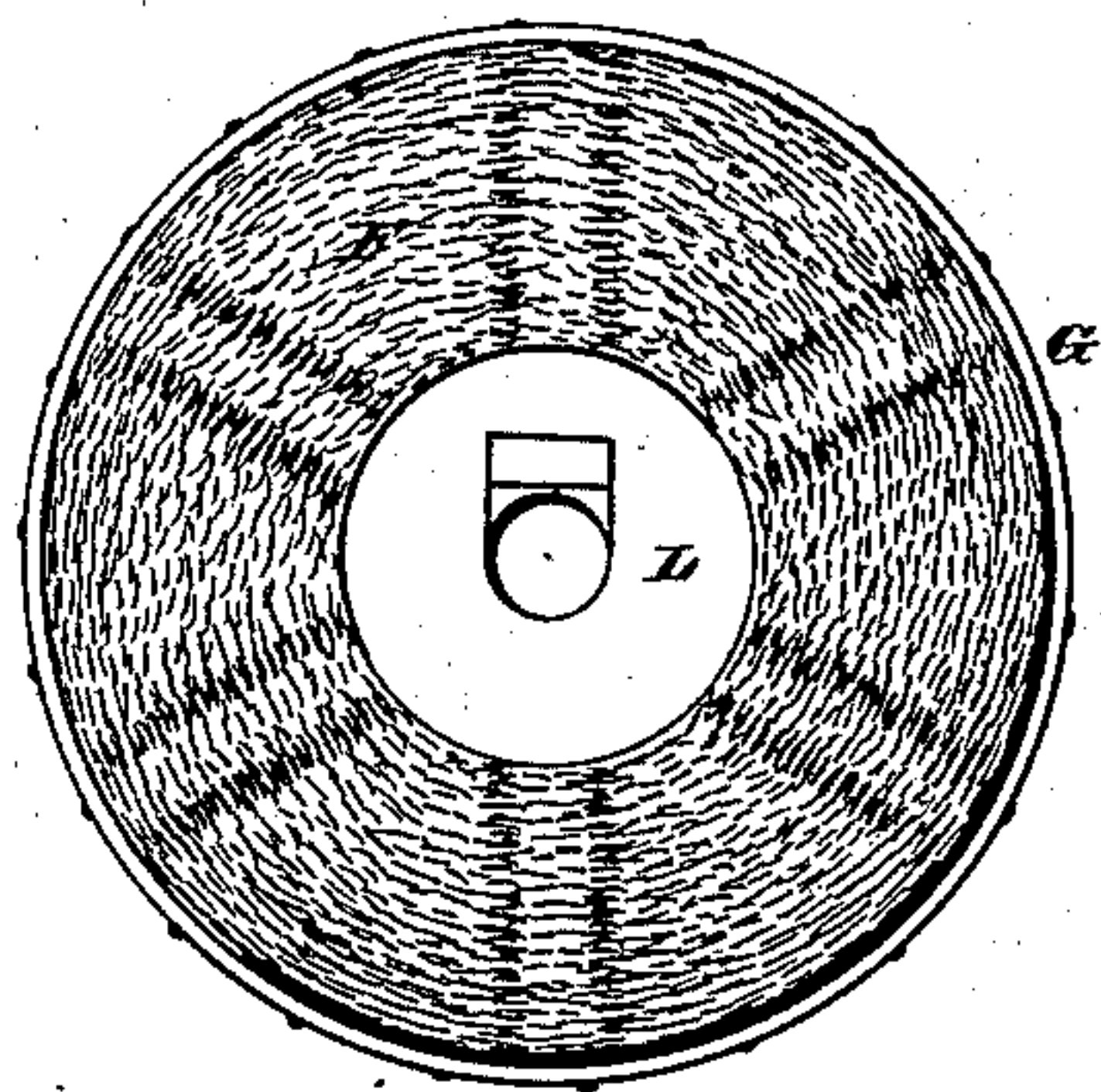


Fig. 3.



WITNESSES—
F. B. Townsend,
W. C. Adams.

INVENTOR—
Louis Gathmann,
per M. E. Dayton,
Attorney.

UNITED STATES PATENT OFFICE.

LOUIS GATHMANN, OF CHICAGO, ILLINOIS.

GRAIN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 238,885, dated March 15, 1881.

Application filed July 6, 1880. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GATHMANN, of Chicago, State of Illinois, have invented certain new and useful Improvements in Grain-Cleaners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to the construction of the brushes in double-brush grain-cleaners; and it consists in setting the bristles or filaments of both brushes in oppositely-inclined positions, the incline being in each brush backward with reference to the direction of relative motion of said brush.

The object of the invention is, mainly, to provide a construction that will permit the brushes to run under a desired pressure upon each other in the operation of scouring grain without forcing the grain into the body of either brush or inducing undue friction.

The invention herein described is a development of the idea suggested in Letters Patent No. 227,891, granted to me May 25, 1880, wherein a single one of two disk-brushes is shown to be constructed with its filaments inclined. Careful experiments made subsequent to the application for said patent have demonstrated that it is necessary to the effect aimed at to make both brushes in the manner described, and that the degree of inclination should be preferably rather greater than shown in said patent.

In the accompanying drawings, Figure 1 is a central vertical longitudinal section of the case and frame of a grain-cleaner having my improvements. Fig. 2 is a fragment of a disk-brush in side elevation having a portion of the outer band broken away to reveal a preferred mode of constructing the brush. Fig. 3 is a face view of one of the disk-brushes having my improvement.

The invention is here shown in connection with a disk-brush grain-cleaner, wherein the axis of the disks is horizontal. Said machine being fully described in the aforesaid Letters Patent, the present description will be mainly limited to the brushes.

D represents a stationary and E a rotating

brush, the latter being secured to the shaft B, driven by the pulley P in the direction shown by the arrow. Both brushes may, however, be rotated in opposite directions, if desired. The bristles or filaments of other suitable material, which constitute the working-face of each brush, are set in the brush-back to incline backward from their fixed ends to their free ends in the direction opposite to that of the relative motion of the brush, as shown. I prefer to give to such filaments an inclination of forty-five degrees from a vertical to the brush-back. By means of such inclination of the filaments the brushes may be set to press one upon the other in operation to give any desired severity of action upon the grain without material increase of the friction of the working-faces. This has not been found practicable in the case of brushes having vertical filaments, wherefore such brushes have been necessarily run at a slight distance apart or at such slight pressure upon each other as to fail of the utmost effectiveness as a means for cleaning grain. Moreover, in the use of single brushes having vertical bristles, or in the use of double brushes whereof the bristles of one brush are vertical, as shown in my aforesaid patent, the grain is found to enter between such vertical filaments and to materially impair the effectiveness of the machine. This fault is wholly remedied in the construction herein shown, any desired pressure of the brushes upon each other being practicable without producing either of the objectionable effects mentioned.

In the disk form of brush herein illustrated another advantage of the inclined arrangement of the bristles is found in the outward or tangential inclination which the filaments assume in operation under centrifugal action, which insures a proper discharge of the grain proportionate to the speed of the runner-disk, and notwithstanding the pressure between the disks may be great.

Disk-brushes containing the improvement described may be best made in the manner set forth in Letters Patent No. 227,890, granted to me May 25, 1880—that is to say, with the bristles or filaments clamped in a mass within a circumferential band under considerable pressure, and the inner ends of the filaments made fast by cement. Fig. 2 illustrates

substantially this construction, F being the mass of bristles or fibers forming the brush proper; G, a band encircling the same at their bases; J, a body of any suitable cement applied to the inner ends of the filaments, and L a rigid backing secured to the brush-body by means of the outer sheet-metal band, G'. My invention is not, however, limited to the disk form of brushes, but may obviously be applied to other forms—as, for example, the cylinder and concave or double cone.

I claim as my invention—

In a grain-cleaner, the combination of two

opposing brushes having the meeting brushes or filaments set inclined backward with reference to the several directions of their relative movement, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

LOUIS GATHMANN.

Witnesses:

M. E. DAYTON,

PETER J. ELLERT.