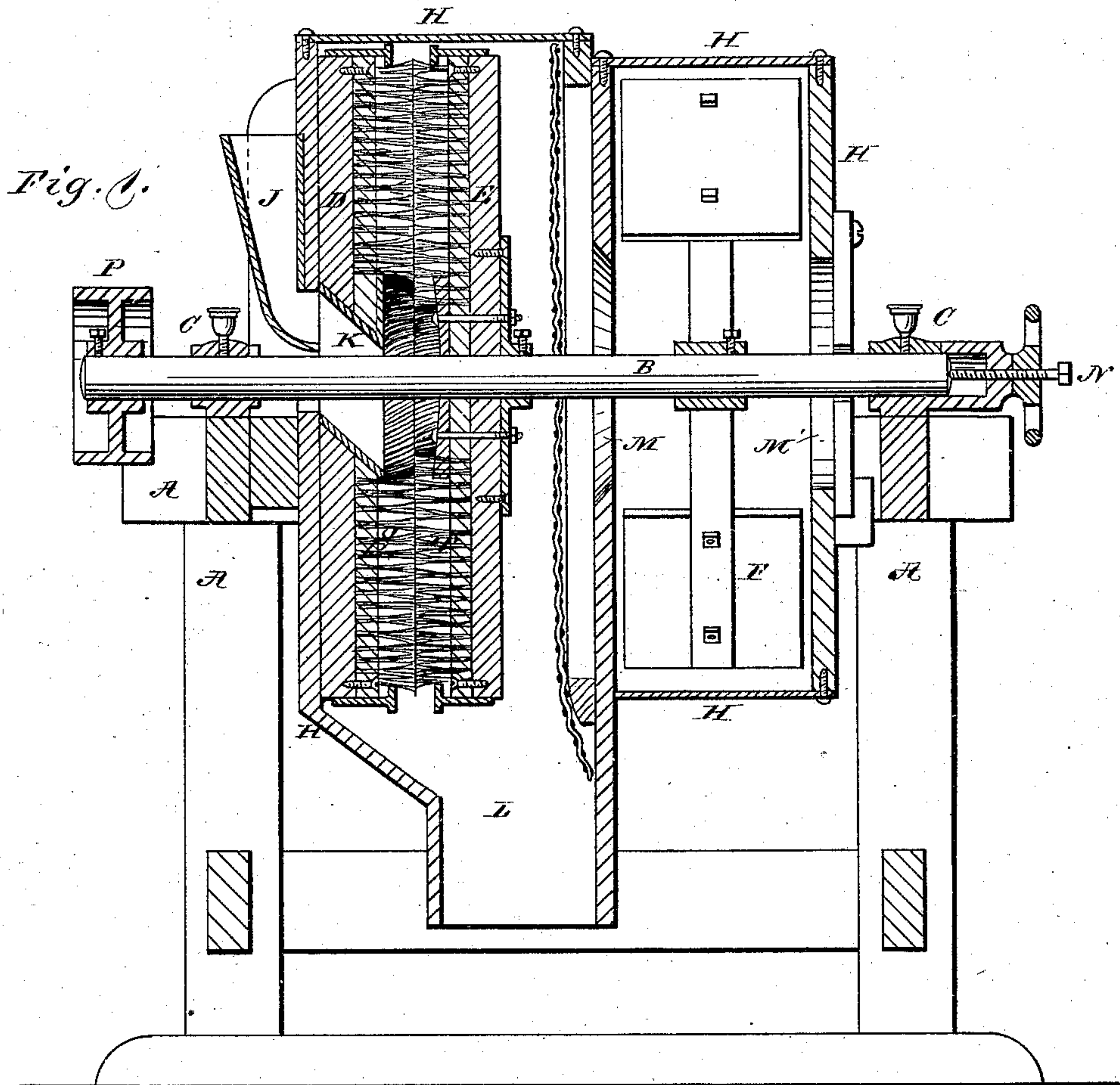


(No Model.)

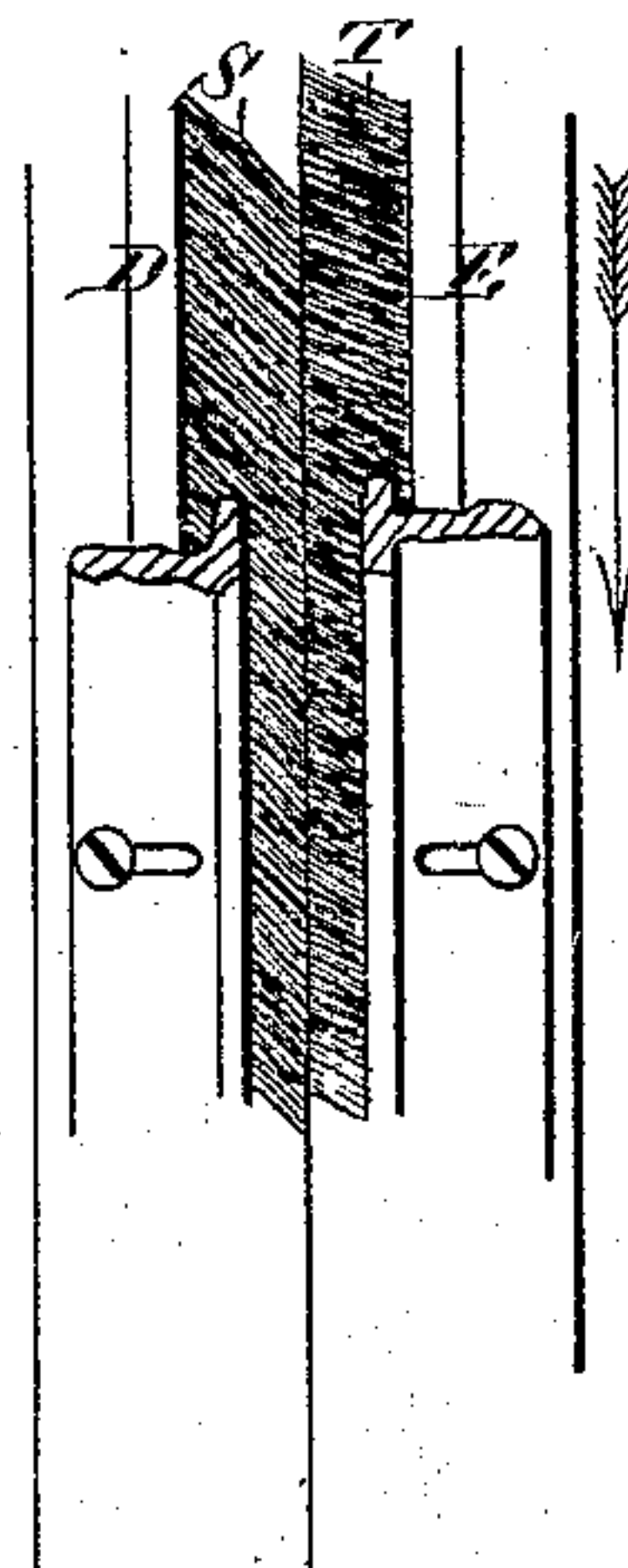
L. GATHMANN.  
Brush Grain Cleaner.

No. 241,487.

Patented May 17, 1881.



*Fig. 2.*



WITNESSES—

*F. B. Townsend*

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INVENTOR—

*Louis Gathmann*  
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# UNITED STATES PATENT OFFICE.

LOUIS GATHMANN, OF CHICAGO, ILLINOIS.

## BRUSH GRAIN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 241,487, dated May 17, 1881.

Application filed March 12, 1881. (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 Brush 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 brush grain-cleaners having two opposing brushes, and is intended as an improvement on a certain construction set forth and claimed in another patent to me—namely, a construction wherein the filaments of the two opposing brushes are in each brush set inclined backward with reference to the direction of its relative movement. In said patent the bristles are shown equally inclined in both brushes. While practice has demonstrated great value in a grain-cleaner of brushes oppositely inclined, two faults have been found to attend the use of brushes in which the filaments are thus equally inclined. The first of these particularly attends the use of disk-brushes arranged on a horizontal axis, or otherwise given vertical faces, and the second is common to opposing brushes of all forms and arrangements. The first is a tendency of the grain to pass downward and outwardly too freely and rapidly, and the second is an excess of rotation of the grain in the operation of cleaning it.

To remedy these faults is the object of this invention; and to that end said invention consists in constructing the brushes with the filaments of one brush inclined less or more than those of the opposing brush. Generally the filaments of the runner-brush will be made less inclined than those of the stationary one, and usually the inclination of the former will be less, and those of the latter greater, than experience has so far shown would be most desirable were the filaments in both brushes given the same inclination. By this means, while the difficulties mentioned are obviated, the essential advantages of the original invention are practically preserved.

In the accompanying drawings, Figure 1 is a central vertical section of a machine having

the disk form of opposing brushes mounted on a horizontal axis through said axis. Fig. 2 is a fragmentary side elevation of the brushes, with portions of the encircling metal band removed to better show the unequal inclination of the brush-filaments.

The same letter indicates the same part in both figures.

A represents the frame-work of the machine, supporting the driving-shaft B in the bearing-boxes C.

D is the stationary brush fixed to the end of the frame or housing, and provided with a central aperture, K, for the passage of the shaft B, and also for the admission of the grain to be cleaned from the hopper J.

E is the runner-brush, fixed to and rotated by the shaft B, which is driven by the belt-pulley P in the direction of the arrow, Fig. 2.

H is the housing, which incloses the brushes mentioned and also the fan F.

L is the bottom outlet for the cleaned grain, and M and M' are passages for the escape of the dirt detached by the brushes from the grain through the fan-chamber.

S are the bristles or filaments of the stationary brush D, and T are the filaments of the runner-brush E.

N is a set-screw applied to the end of shaft B, for the purpose of adjusting the pressure of the brushes upon each other or upon the interposed grain.

The filaments of both brushes are set at a backward incline with reference to the directions of their several relative movements; but the angle of inclination from a line vertical to the brush-back is greater in the filaments S than in T. By reason of the inclination of both sets of filaments the brushes may be made to bear with any desired severity upon the grain between them without forcing said grain into the body of the brushes, and also without producing an objectionable degree of friction between the brush-faces, as fully set forth and explained in said other patent. By giving the runner-filaments T a less inclination than is desirable and practicable in the filaments S of the stationary brush, these effects are substantially preserved, and at the same time the more vertical filaments, acting with the greater friction



tion upon the grain, in a sense "seize" upon it, and both scour the kernels more thoroughly in their passage and retain them longer between the brush-faces. In the disk form of brushes having a horizontal axis these results are better obtained by making the runner-filaments the less inclined. In other forms it is probably of little consequence which brush has the more or less inclined filaments.

Without limiting myself to any exact degrees of relative or actual inclination, I mention that I have found that the filaments S of the stationary brush in the disk form of machine shown may be set at an inclination of about thirty degrees from the vertical, and the filaments T of the runner at an inclination of from about fifteen degrees to about twenty degrees from the vertical, with advantageous results in respect to all of the objects sought to be obtained, reference being had to both the ease of running and the effective performance of the machine.

I claim as my invention—

1. In a double-brush grain-cleaner wherein the filaments of both brushes incline backward with respect to their several directions of relative movement, the filaments of one brush set at a greater degree of inclination than those of the other, substantially as and for the purposes set forth.

2. In a double-brush grain-cleaner wherein the opposing brushes are of disk form arranged on a horizontal axis and have their filaments inclined backward with reference to their several directions of relative movement, the filaments of the runner set at a less degree of inclination than those of the stationary brush, 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,  
JESSE COX, Jr.