

(No Model.)

T. BLASS.
DUST GUARD FOR ATTRITION MILLS.

No. 479,547.

Patented July 26, 1892.

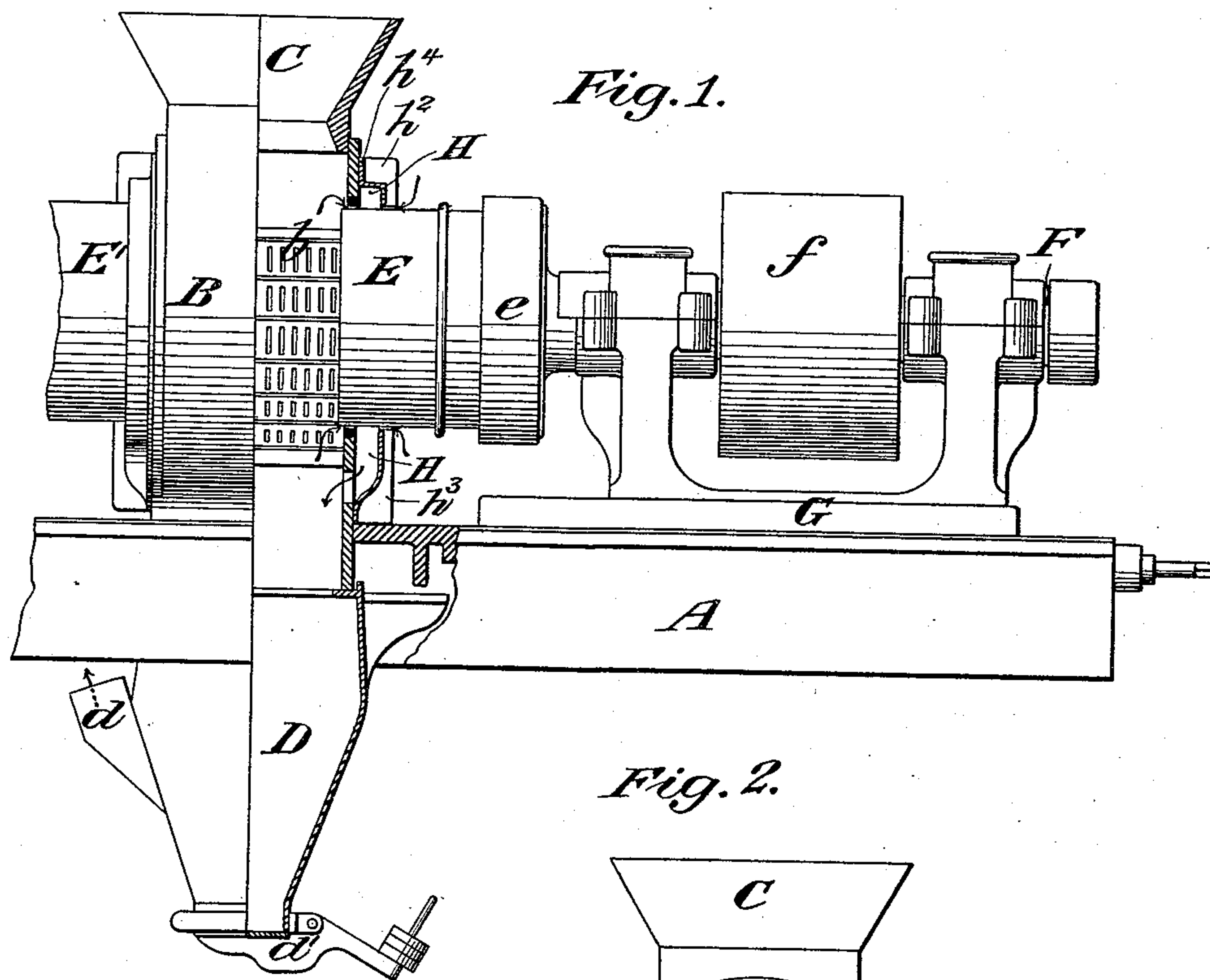


Fig. 2.

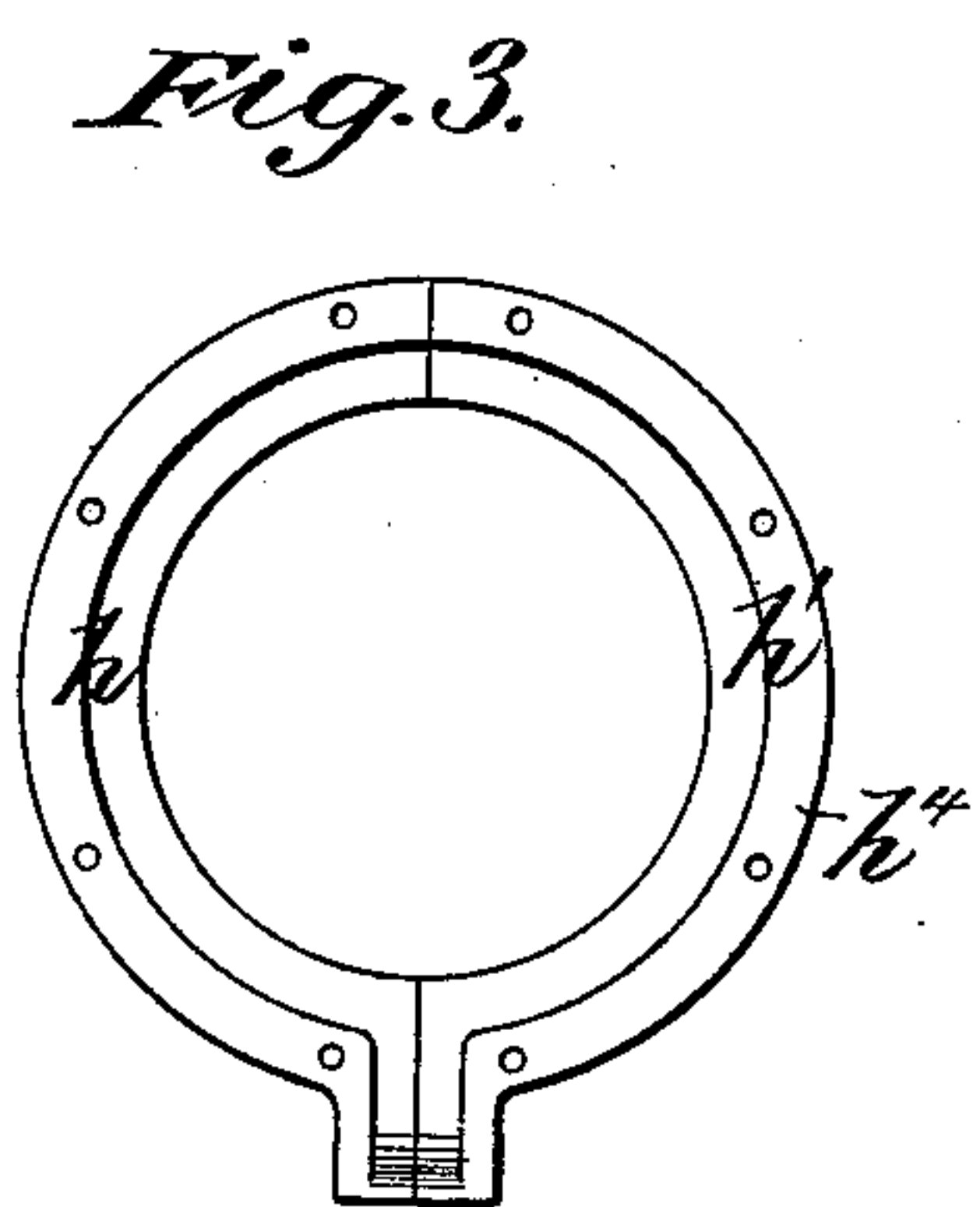
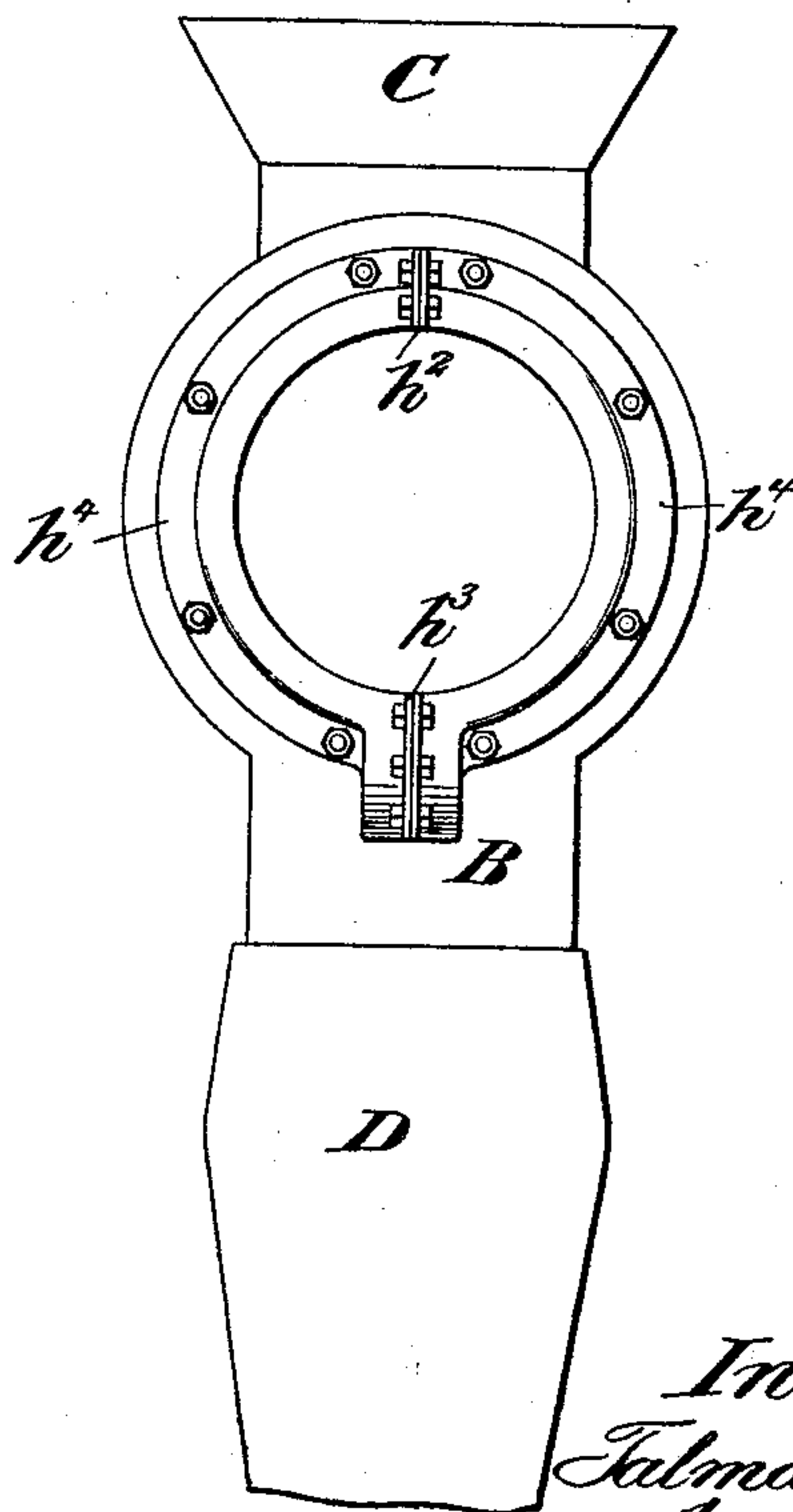


Fig. 3.



Witnesses:-
B. N. Raymond
J. B. Decker

*Inventor:-
Falmadge Blass
by attorneys
Brown & Seward*

UNITED STATES PATENT OFFICE.

TALMADGE BLASS, OF BREWSTER, NEW YORK.

DUST-GUARD FOR ATTRITION-MILLS.

SPECIFICATION forming part of Letters Patent No. 479,547, dated July 26, 1892.

Application filed December 9, 1891. Serial No. 414,497. (No model.)

To all whom it may concern:

Be it known that I, TALMADGE BLASS, of Brewster, in the county of Putnam and State of New York, have invented a new and useful
5 Improvement in Dust-Guards for Attrition-Mills, of which the following is a specification.

My invention relates to an improvement in dust-guards for attrition-mills, with the object in view of effectually preventing the escape
10 of dust from the interior of the mill by means of an air-exhaust of comparatively lower power.

In attrition-mills of the type shown and described in Letters Patent No. 316,921, granted
15 to T. L. Sturtevant April 28, 1885, and which is now known in the art as the "Sturtevant mill," there has been great annoyance from the escape of the dust from within the mill through the spaces between the rapidly-rotating bush-
20 ings and the casings which surround them. Several attempts have been made to prevent such escape by packing the joint by a powerful suction power from within to induce a cur-
25 rent of air through the spaces surrounding the bushings in a direction opposite to the current of escaping dust and by forcing an air-blast from without through said spaces to keep the dust back.

My present invention contemplates the em-
30 ployment of an air-exhaust in such a manner as to permit the free escape of the dust from within the mill under the powerful action of the whirling mass and to act upon it to re-
35 move it as soon as it has escaped from the interior of the mill and before it is allowed to distribute itself into the surrounding air.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

40 Figure 1 is a view of a portion of an attrition-mill in side elevation, partly in section, showing the application of the dust-guard thereto. Fig. 2 is a view of the mill-casing in end elevation, the bushing being removed;
45 and Fig. 3 is a view in detail of the dust-guard.

The bed-frame is represented by A. The casing within which the screen-blocks *b* are fixed is denoted by B, the feed-hopper by C, the receiver by D, air-exhaust pipe by *d*, and
50 the balanced gate for regulating the discharge from the receiver D by *d'*. The bushings for imparting the rotary movement to the mass

of ore or other material fed through the hop-
per C into the space surrounded, or partially
so, by the screen-blocks *b* are denoted by E 55
and E'. The chuck or head to which the bushing E is secured is denoted by *e*, and the shaft which carries the head *e* is denoted by F and is provided with a band-pulley *f*. The shaft F is mounted in suitable bearings upon
60 a sliding support G, rising from the bed A and capable of being moved toward and away from the casing B to adjust the ends of the bushing E within the casing. A portion of the bushing E', the shaft for driving it, and
65 the sliding support in which such shaft is mounted are broken away upon the left-hand side of the casing B; but it is to be understood that they are similar in all respects to that shown in connection with the bushing E. 70

The several parts of the mill as thus far de-
scribed are substantially the same in structure and arrangement as those in common use in the Sturtevant mill, hereinbefore referred to.

In operation the rapid whirling of the mass 75
by means of the rotation of the bushings E and E' and the grinding action of the screen-blocks *b* thereon cause a great amount of fine dust to be forced out into the open air between the exterior of the bushing E and the casing 80
B, which surrounds the bushing. To prevent this dust from distributing itself in the surrounding air and thereby rendering it disagreeable and injurious for the attendants to remain at their posts of duty, I provide an an- 85
nular chamber H, exterior to the casing B and in communication with the space leading from the interior of the mill between the exterior of the bushing and the casing. The annular chamber H is in open communication, prefer- 90
ably at its lower end, with the space exterior to the screen-blocks and in free communication with the interior of the receptacle D, from which the air-exhaust leads. I find it con-
venient to form the annular chamber H by 95
means of a guard composed of two half-sections *h* and *h'*, L-shaped in cross-section and provided with flanges for securing them to-
gether and to the casing. The flanges for se- 100
curing them together are represented at *h*² and *h*³, Fig. 2, and the flange for securing them to the casing is represented by *h*⁴. It is intended that the leg of the guard which ex-
tends transversely to the bushing E shall rest

with its inner edge in proximity to the exterior of the bushing, leaving a sufficient space for the free rotation of the bushings without friction. As the air is exhausted from the receptacle D through the pipe *d* it will draw the air from within the annular chamber H down into the receptacle D and with it the dust which may have escaped into such chamber. This draft of air from the chamber H will not be opposed to the current of air and dust from within the mill and through the space between the bushing and casing, and hence it will effectually withdraw the dust from the chamber H. The current of dust as it issues from the narrow space around the bushings distributes itself within the chamber H and loses its force, so that it readily yields to a light draft, due to the exhaust from the receptacle D, said draft at the same time introducing the current of air from the outside into the chamber H between the outer leg of the guard and the exterior of the bushing.

It is obvious that the chamber H might be made to communicate with the receptacle D

at a point below the casing B, and that the said annular chamber might be made of various other forms in cross-section than that here shown.

What I claim is—

1. The combination, with the casing and bushing of an attrition-mill, of a chamber exterior to the casing and communicating with the space which surrounds the bushing between it and the casing, and an exhaust-conduit in communication with the chamber, substantially as set forth.

2. In combination, the mill-casing, the bushing, and the guard-plates forming, in connection with the casing and bushing, an annular dust-receiving holder surrounding the bushing in proximity to the casing, and means for removing the dust from the casing, substantially as set forth.

TALMADGE BLASS.

Witnesses:

FRANK HARVEY FIELD,
GEORGE BARRY.