

(No Model.)

2 Sheets—Sheet 1.

I. E. BAKER.
ATTACHMENT FOR DUST COLLECTORS.

No. 409,658.

Patented Aug. 27, 1889.

Fig. 1.

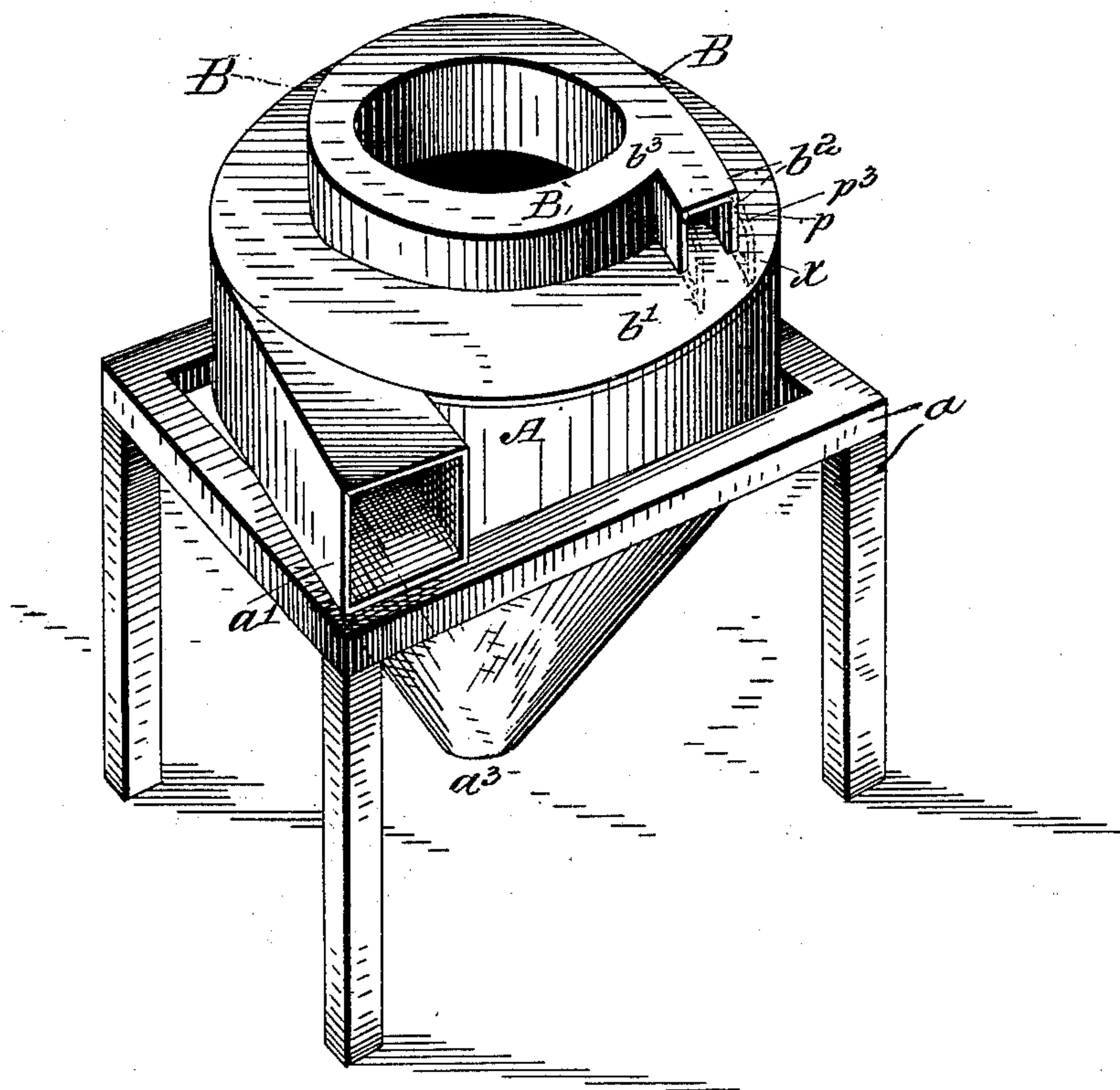
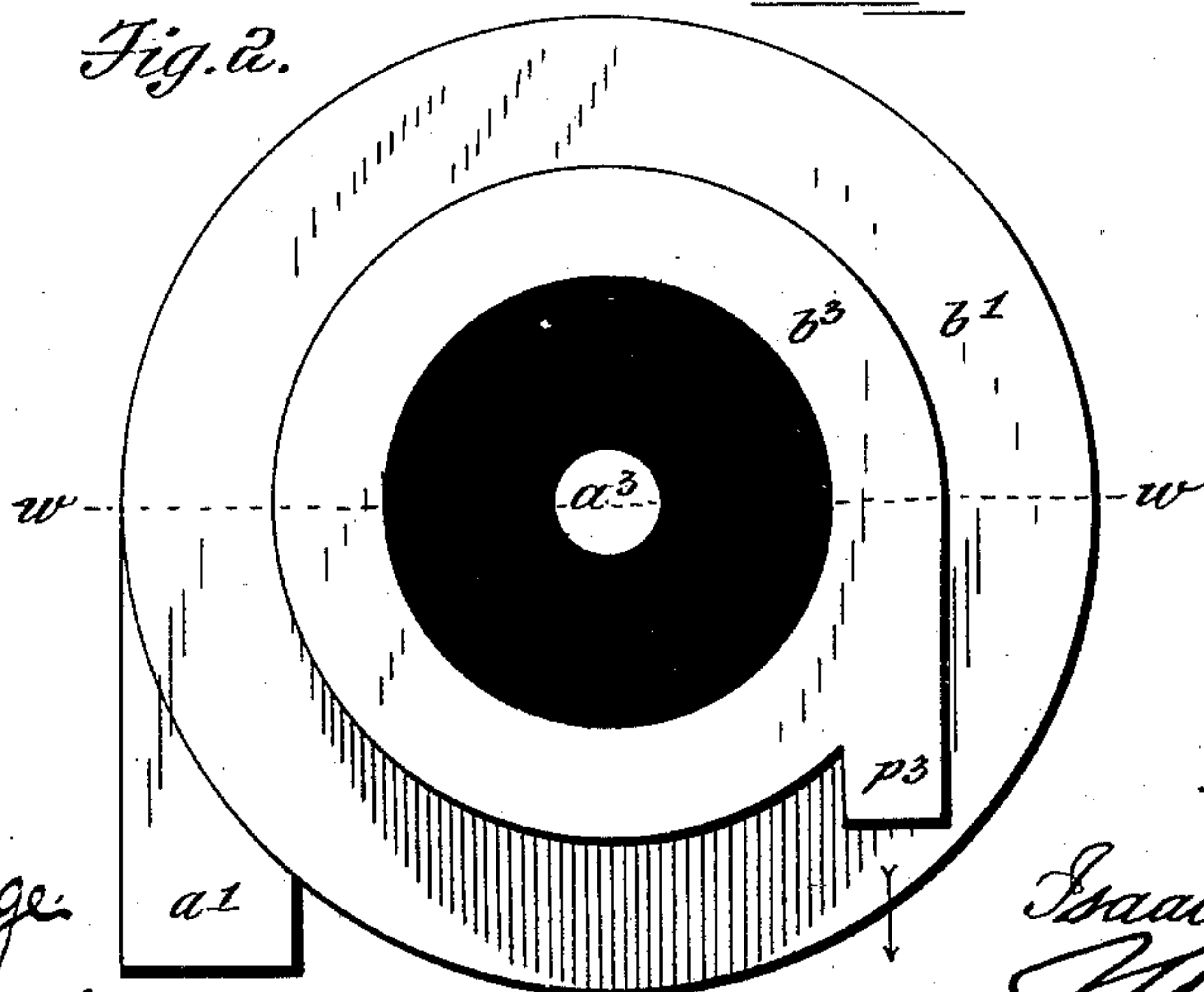


Fig. 2.



Witnesses:

Horace A. Dodge.
James F. Duhamel.

Inventor

Isaac E. Baker

per J. M. Hiley
Sattg

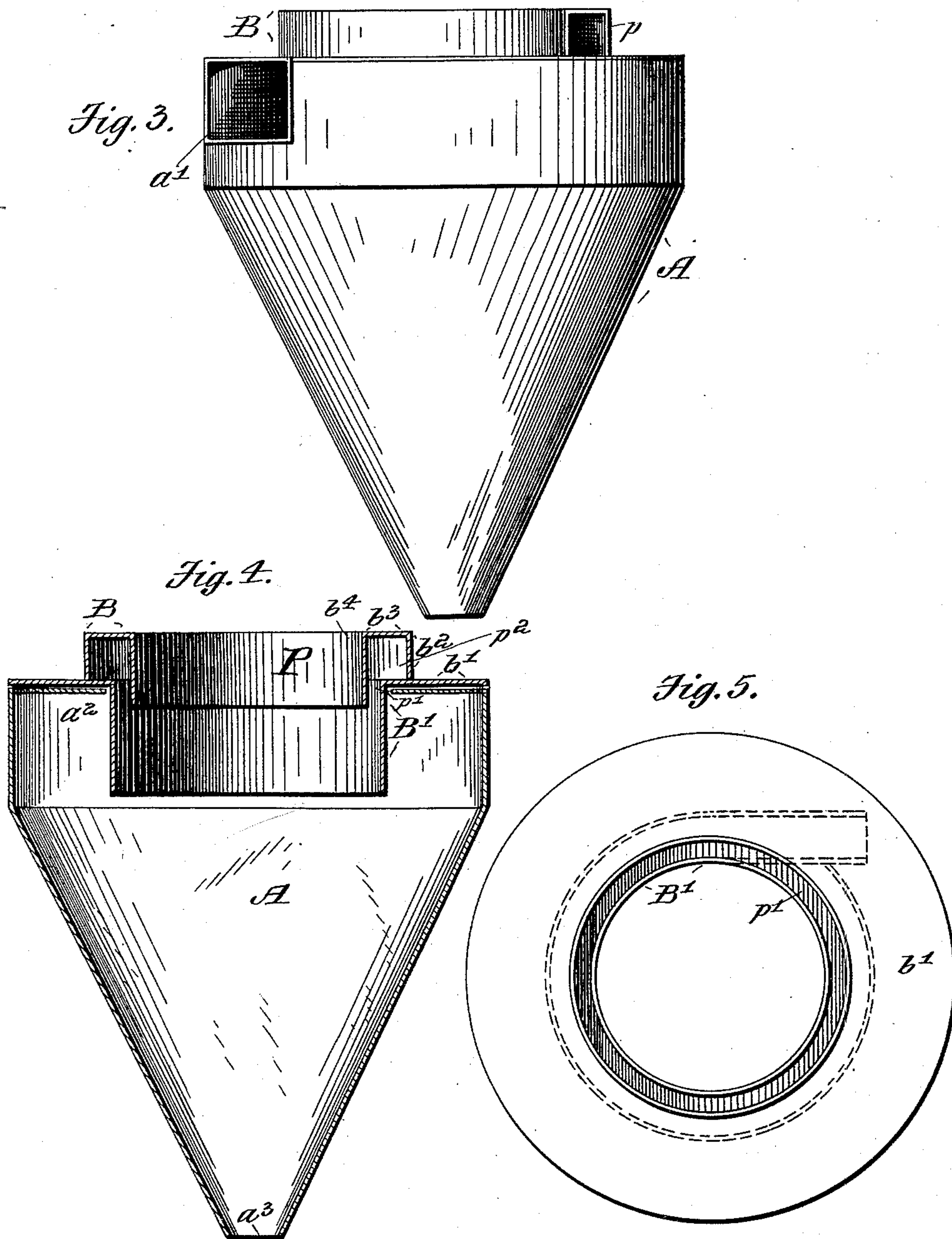
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UNITED STATES PATENT OFFICE.

ISAAC E. BAKER, OF RED WING, ASSIGNOR OF ONE-HALF TO LEVI S. HOGEBOOM, OF MINNEAPOLIS, MINNESOTA.

ATTACHMENT FOR DUST-COLLECTORS.

SPECIFICATION forming part of Letters Patent No. 409,658, dated August 27, 1889.

Application filed March 18, 1889. Serial No. 303,684. (No model.)

To all whom it may concern:

Be it known that I, ISAAC E. BAKER, a citizen of the United States, residing at Red Wing, in the county of Goodhue, in the State of Minnesota, have invented a new and useful Attachment for Dust-Collectors in Flouring-Mills, of which the following is a description.

The invention relates to that class of dust-collectors which are provided with a funnel-shaped separating and discharging chamber, into which the air and dust current is forcibly introduced through a horizontally and tangentially arranged induction passage or spout, so that a whirling or circling motion is imparted to the current, the circles described by the dust in the current continually diminishing toward the lower extremity of the chamber as the force of gravitation gradually overcomes the tangential or centrifugal force imparted to such current upon its entrance into the same, and the air, freed from a large proportion of the dust originally contained in it, escaping through a centrally-placed opening in the top of the chamber.

The invention consists in a novel attachment for a chamber of the character above described, or for any separating-chamber which has a circular air-escape opening in its top, whereby a considerable proportion of the dust which is still retained in the current of air, after it has been subjected to the action of the separator, is intercepted as it rises to the air-exit opening thereof, and withdrawn outwardly from such current, to be again subjected to the action of the circling and separating blasts of the incoming tangential current.

In the accompanying drawings, Figure 1 represents a perspective view of a separating-chamber which has my improved withdrawing and returning attachment applied thereto. Fig. 2 is a top plan view of the parts represented in Fig. 1. Fig. 3 is a side elevation of the same. Fig. 4 is a vertical central transverse section on the line *ww* in Fig. 2. Fig. 5 is a bottom plan view of the withdrawing and returning attachment detached.

A designates a circular separating-chamber, supported in a suitable frame *a*, and hav-

ing a lateral inlet-passage *a'* arranged tangentially to the chamber, an air-discharge opening *a²* in its top, and a dust-discharge opening *a³* at its lower extremity. Upon this chamber is placed the withdrawing and returning attachment B, consisting of the vertical ring or hoop *B'*, inclosing vertical air-escape passage P, the horizontal annular covering flange or rim *b'*, the vertical annular wall or plate *b²*, having tangential prolongation *p* resting upon and secured to the top of the flange or rim *b'* in a plane exterior to the plane of the hoop *B'*, a horizontal annular plate *b³*, extending inwardly from the vertical annular plate *b²* to a point within the plane of the hoop or cylinder *B'*, and the vertical annular plate *b⁴*, depending from the inner edge of the plate *b³*, and extending downwardly to a point a short distance below the upper extremity of the cylinder *B'*. Under this construction, as will be seen, a short vertical annular passage *p'* is produced between the short cylinder or ring *b⁴* and the larger cylinder or hoop *B'*, which passage opens into the annular passage *p²*, which is provided with tangential exit-passage *p³*. The exit-passage *p³* being connected by any suitable passage, as *x*, (seen in dotted lines in Fig. 1,) with the chamber of the purifier-fan, a partial vacuum will be produced within the annular passages *p²* and *p'* of the attachment, and a large proportion of the ascending volume of air and dust, all of which would otherwise pass out at the top of the separator and through the central opening *B²* of the attachment B, will be withdrawn outwardly, conveyed to the purifier-fan, and again forced into the separator to be still further deprived of its dust, the process continuing indefinitely, or so long as any appreciable quantity of dust can be observed.

Having described my invention, I claim—

1. The described attachment for dust-collectors, consisting of the vertical annular plate or cylinder *B'*, horizontal covering-plate *b'*, vertical annular exterior wall or plate *b²*, horizontal circular top plate *b³*, and vertical annular inner wall or plate *b⁴*, such attachment having a tangential exit opening or pipe, as described.

2. In a dust-collector for flouring-mills, the combination, with the separating-chamber having central air-escape opening in the top plate thereof, of the described withdrawing
5 attachment, consisting, essentially, of walls forming a central vertical air-escape passage P, plates, as set forth, inclosing the annular overhanging, intercepting, and withdrawing passage p' , and walls and plates, as specified,
10 inclosing the annular chamber or passage p^2 ,

overlying the vertical passage p' , and provided with tangential exit-opening or passage p^3 for connection by any suitable passage or conduit with the chamber of the purifier-fan, substantially as described.

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Witnesses:

DWIGHT M. BALDWIN,
L. S. HOGEBOOM.