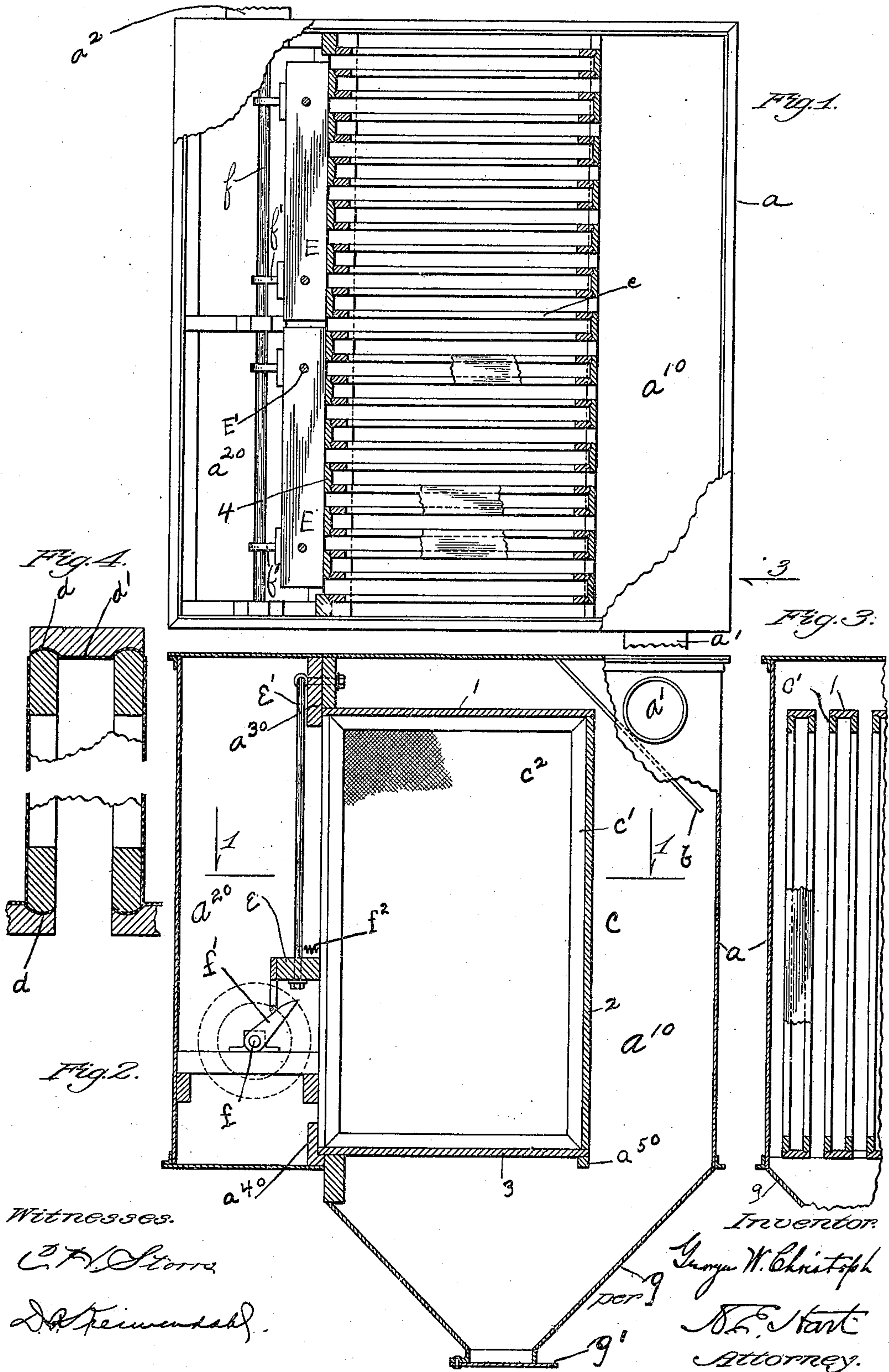


G. W. CHRISTOPH.
SEPARATOR.

APPLICATION FILED AUG. 1, 1906.

934,042.

Patented Sept. 14, 1909.



UNITED STATES PATENT OFFICE.

GEORGE W. CHRISTOPH, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE STERLING BLOWER & PIPE MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SEPARATOR.

934,042.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed August 1, 1906. Serial No. 328,751.

To all whom it may concern:

Be it known that I, GEORGE W. CHRISTOPH, a citizen of the United States of America, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Separators, of which the following is a specification.

The object of my invention is to produce a device for cleaning air by separating out the dust and solid matter.

In the drawings: Figure 1 is a plan view showing the screens in section on the line 1—1 of Fig. 2. Fig. 2 is a sectional elevation. Fig. 3 is a detail sectional view in side elevation as indicated by the arrow 3. Fig. 4 is a detail plan view showing the method of connecting the screen frames.

In carrying out my invention I make use of a casing a , which, as shown in the drawings, is of rectangular shape, having an inlet a' at one end and an outlet a'' at the other end. The inlet is preferably arranged at the top of the casing and near one side thereof; the outlet being located at the opposite side of the other end as indicated in the plan view of the device. Extending from end to end of the casing on the inlet side is a shield b supported at the top of the casing and extending diagonally toward the side and being out of alinement with the direction of the inlet. This shield prevents any sharp particles which are carried into the casing from cutting the screens. Such particles strike on this shield and slide down it dropping through the opening between the edge of the shield and the side of the casing to the bottom of the separator. The casing is divided into two chambers, the inlet chamber a^{10} and the outlet chamber a^{20} by suitable screens through which air must pass in going from first to last, these screens being so fine that they will not permit the passage of the dust. The screens c which are of less width than the casing, are arranged transversely thereof as seen in Fig. 1, and extend substantially from top to bottom thereof as seen in Fig. 2. These screens are made up of the frame c' on which there is tightly stretched a fine gauze c^2 through which the dust cannot pass. The frames are secured at their rear edges to the partitions a^{30} a^{40} which extend throughout the length of the casing to prevent the passage of the dust

laden air from the inlet to the outlet chamber above or below the screens. At their front edges the screens are supported on the beam a^{50} . These frames are secured together in pairs along their top and bottom and front edges by strips 1, 2, 3. The rear edges of inner frames of adjacent pairs are secured together by the strips 4. Thus the air entering the casing passes in between the pairs of frames, through the gauze, and into the outlet chamber. Thus there is provided a very large screen surface in a small space and a plurality of compartments opening in opposite directions.

In securing the strips 1, 2, 3, 4, to the edges of the frames I groove them as indicated at d and stretch a strip of gauze d' around over the grooves. The edges of the frames which are rounded to fit the grooves are then forced into the grooves and the strips secured in place, thus forming a tight joint which will prevent the escape of dust laden air except through the screens c^2 .

The dust will gather on the screens and it is necessary to shake it off, which I do by hanging fairly heavy weights or beams E on suitable swinging supports E' , the latter pivoted to said support a^{30} and providing a suitable shaft f with cam fingers f' which in its rotation will swing the beams out and release them simultaneously, when the springs f^2 draw them back, causing them to strike the frame a sharp blow and shaking the dust to the floor of the casing, which is of funnel shape as indicated at g and equipped with a suitable slide door g' for cleaning. A plurality of beams E and fingers f' may be advantageously employed as illustrated in the drawings.

I claim as my invention:

1. In a dust separator, a casing divided into two chambers, by screens arranged in the form of compartments alternately opening in opposite directions, one of said chambers provided with an inlet orifice adjacent the top thereof, an obliquely arranged shield supported by the top of the casing and out of alinement with the direction of the inlet, the said screens and rigid supports therefor, means for jarring said screens to remove the dust therefrom and comprising a plurality of weights hung on swinging members from said rigid supports, a shaft and a plurality of tripping fingers carried thereby and

adapted to engage each of said weights to swing the same outwardly and release them simultaneously.

2. A device of the class described, comprising a casing having inlet and outlet orifices therethrough, dust separating screens located within said casing, a guard plate located in said casing between said inlet orifice and said screens and extending lengthwise of said casing and diagonally downward above the screen and toward the side of said casing and terminating adjacent and in parallel relation thereto, rigid supports for said screens, means for jarring said

15 screens to remove the dust therefrom and comprising a plurality of weights hung on swinging members from said rigid supports, a shaft, and a plurality of tripping fingers carried thereby and adapted to engage each of said weights to swing the same outwardly 20 and release them simultaneously.

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

GEORGE W. CHRISTOPH.

Witnesses:

FLORENCE E. RILEY,
D. I. KREIMENDAHL.