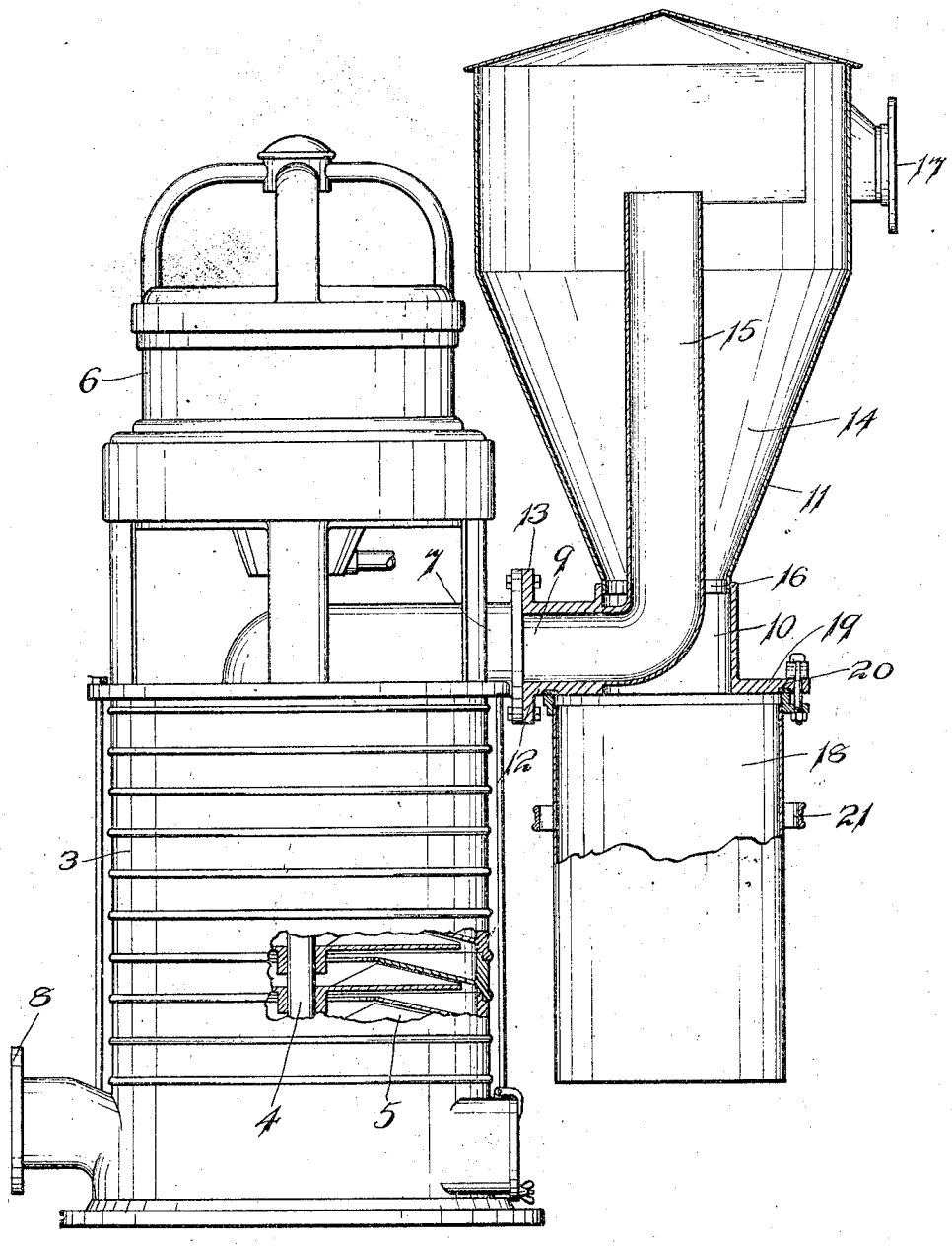
I. H. SPENCER.

DUST SEPARATOR.

APPLICATION FILED JAN. 17, 1912.

1,103,549. Patented July 14, 1914.




WITNESSES:

Louis Lucia

Eva L. Stoughton

INVENTOR.

Ira H. Spencer

BY

Arthur B. Jenkins

ATTORNEY.

# UNITED STATES PATENT OFFICE.

IRA H. SPENCER, OF WEST HARTFORD, CONNECTICUT, ASSIGNOR TO THE SPENCER TURBINE CLEANER COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

## DUST-SEPARATOR.

1,103,549. Specification of Letters Patent. Patented July 14, 1914.

Application filed January 17, 1912. Serial No. 671,633.

*To all whom it may concern:*

Be it known that I, IRA H. SPENCER, a citizen of the United States, and a resident of West Hartford, in the county of Hartford and State of Connecticut, have invented a new and Improved Dust-Separator, of which the following is a specification.

My invention relates to the class of devices employed for separating foreign matter from air to purify the latter, and more especially to that class of such devices as are used in connection with suction cleaning apparatus, and an object of my invention, among others, is to provide a device of this class which will effectively relieve the air from such heavier matter and leave the latter thereafter undisturbed and in such condition that it may be readily removed without being stirred up.

One form of device embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of an apparatus embodying my invention, the apparatus being partially cut and broken out in central lengthwise section, the general cross sectional form of such receiver and separator being round.

In the accompanying drawings the numeral 3 denotes the casing of a suitable device for creating flow of a current of air, the particular form herein shown being a turbine including a shaft 4 extending through the casing and having fans 5 secured thereto, the upper end of the shaft being connected with a motor 6 for driving the turbine. An inlet 7 is provided for the casing and an outlet 8 from the turbine may be connected with any suitable device, as a chimney or the like, into which the air may be delivered. The inlet 7 is connected with the outlet 9 of a separator embodying my invention.

In the use of cleaning apparatus it is important that the dust and dirt taken up in the cleaning operation shall be so deposited that it shall not thereafter be disturbed except for purposes of removal, and that it may be removed without being stirred up, and the importance of this will be seen when it is considered that cleaning apparatus is largely employed in the cleaning of hospitals and like places where contagious diseases are treated, and my improved device provides a separator which may be used with cleaning apparatus and the deposits so treated that they may be removed with safety.

In the preferred form of separator embodying my improvement and shown herein a separator base including a supporting neck 10 is provided having a lateral extension with a passage forming the outlet 9, this extension 12 having a flange 13 constructed to be attached to a flange surrounding the inlet 7 of the casing 3.

A jacket 14, preferably tapering from a smaller diameter at the bottom to a larger diameter at the top, is supported by said separator base, this jacket being secured with its small end in the supporting neck 10, said jacket rising from said neck for a suitable distance and being closed at its upper end. A conducting pipe 15 is connected with the outlet 9 from the separator, in fact the opening through the pipe being a continuation of the outlet passage, this pipe extending straight inward for a short distance and then being curved and extending lengthwise of the jacket at about the axis thereof and terminating a short distance from the top of the jacket.

The tapered part 11 of the jacket 14 terminates at its lower end in an opening 16 into and through the neck 10 and around the conducting pipe 15. A separator inlet 17 extends preferably tangentially from its mouth to the interior of the jacket at its upper end, this inlet being gradually elongated diametrically and terminating in a comparatively narrow opening into the separator casing. A receptacle 18 is also supported by the separator base, being removably secured to a flange 19 extending from the neck 10 and constituting a part of the separator base, any suitable means for removably securing the receptacle being employed. In the structure herein shown a packing 20 is located between the edge of the receptacle and the flange, and is secured preferably in a groove in the latter. The receptacle may have handles 21 by means of which it may be moved. The device is particularly adapted for use in connection with suction cleaning apparatus, the connection with the hose and tools commonly employed being attached to the inlet 17 of the separator. All

of the dust and dirt is thoroughly collected by the apparatus in a manner to permit its removal without being disturbed. The construction of a device to embody my invention need not necessarily be exactly like that herein shown.

I claim—

1. A casing having mechanism for producing a current of air and with an opening laterally therefrom, a separator base including a supporting neck secured to said casing and with a lateral opening therefrom registering with the lateral opening in said casing, a separator casing supported by and projecting upwardly from said separator base, said casing having an opening, and a receptacle supported by and removably secured to said separator base and depending therefrom.

2. A casing having mechanism for producing a current of air, a separator base including a supporting neck having a lateral opening and secured with said opening registering with an inlet opening to said casing, a conducting pipe projecting upward and having its opening registering with the outlet from said neck, a separator casing supported on said separator base and projecting upwardly from said neck and surrounding said conducting pipe, and a receptacle supported by said separator base and removably secured to and depending from said neck.

3. A separator base including a supporting neck having an outlet laterally from one side thereof, a conducting pipe projecting upwardly from the neck and with its central passage registering with said outlet opening and located at an angle thereto, a jacket supported by the separator base and having its small lower end extending into said neck, said jacket tapering gradually upward from the neck and having an inlet located opposite the mouth to said conducting pipe, and a receptacle supported by the separator base and removably secured to said neck.

4. A separator base including a supporting neck with a flange extending about its lower edge and projecting radially therefrom and with an outlet extending laterally from the neck and located on said flange, a receptacle supported by and removably secured to the under part of said flange, a conducting pipe extending upwardly from said neck and with its passage registering with said outlet, and a jacket supported by said separator base and secured to said neck and surrounding said conducting pipe, said jacket having an inlet at its top opposite said pipe.

5. A separator base including a supporting neck having an opening at one side with a conducting pipe registering with said opening and bent at an angle within said neck and extending upwardly therefrom, a receptacle supported by said separator base and removably secured to and depending from said neck, and a jacket supported by the separator base and secured to said neck and surrounding said conducting pipe, said jacket having an inlet opening thereto opposite said pipe.

6. A separator base including a supporting neck having an opening at one side with a conducting pipe registering with said opening and bent at an angle within said neck and extending upwardly therefrom, a receptacle supported by the separator base and removably secured to and depending from said neck, and a jacket supported by said base and secured to said neck and tapering upwardly and outwardly therefrom and surrounding said conducting pipe, said jacket having an inlet opening thereto opposite said pipe.

7. A casing having mechanism for creating a current of air and with a projecting tube from the side of said casing, a separator base secured to said projecting tube, a jacket supported by said base and projecting upwardly therefrom, a tube extending within said jacket and connected at its lower end with said projecting tube, and a receptacle supported by said separator base and depending from its under side.

8. A casing containing mechanism for producing a current of air and having a tube projecting laterally therefrom at a distance from the bottom, a separator base secured to said projecting tube and having a tube projecting upwardly therefrom, and a separator casing and a receptacle supported by and secured to the opposite sides of said separator base and in axial alinement one with another.

9. A casing containing mechanism for creating air currents, a pipe extending laterally therefrom and having a vertically arranged face, a separator base having a pipe opening laterally therefrom and with a flange to fit said face, means for securing the flanges together, a jacket secured to and supported on the upper side of said base, and a receptacle supported by and secured to the under side of said base.

IRA H. SPENCER.

Witnesses:
ARTHUR B. JENKINS,
H. H. RICHARDSON.