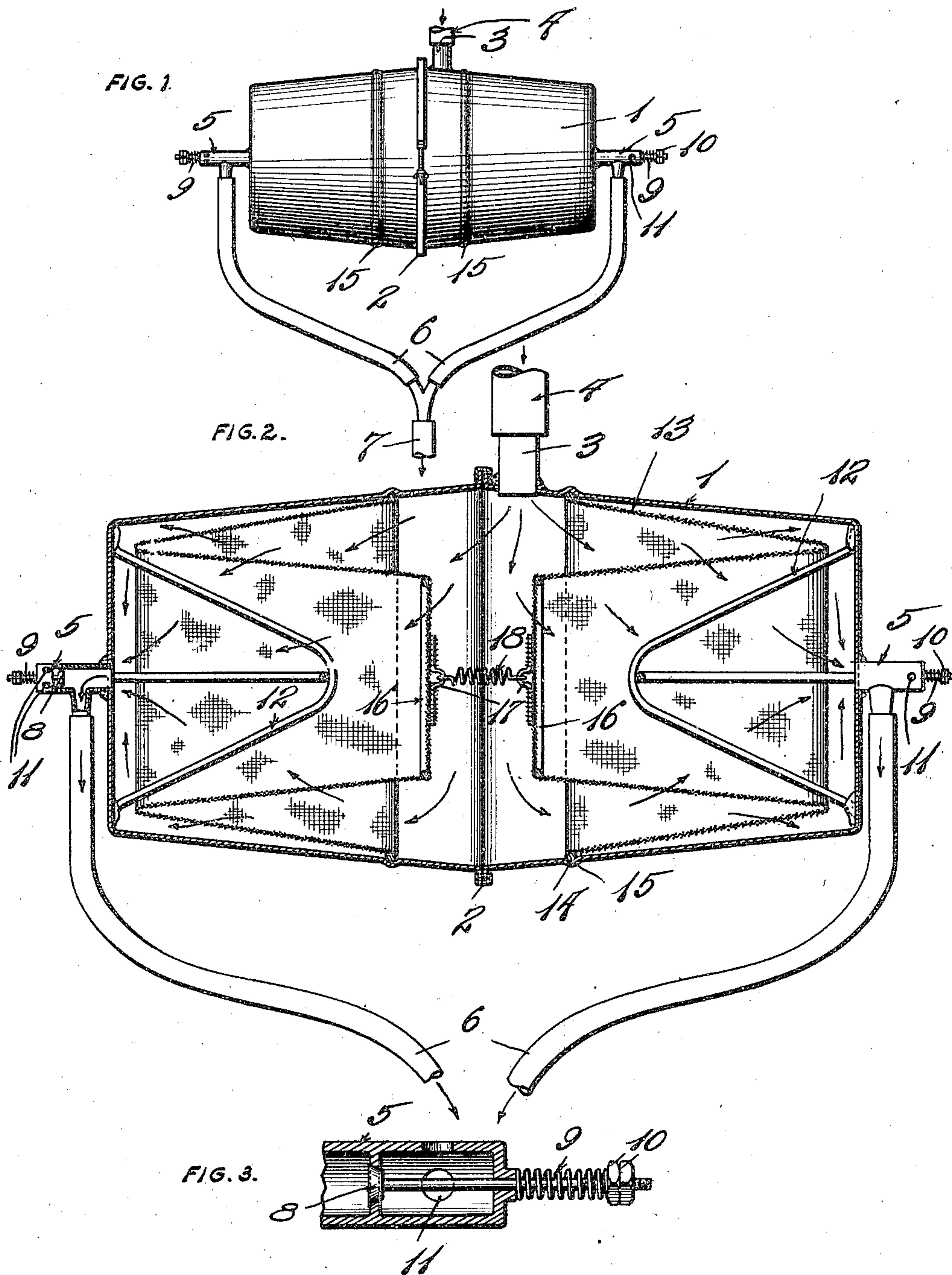


G. SNIPEN.
DUST COLLECTOR FOR VACUUM CLEANING SYSTEMS.
APPLICATION FILED NOV. 2, 1910.

998,648.

Patented July 25, 1911.



WITNESSES

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UNITED STATES PATENT OFFICE

GULBRAN SNIPEN, OF ST. LOUIS, MISSOURI.

DUST-COLLECTOR FOR VACUUM CLEANING SYSTEMS.

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Specification of Letters Patent.

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Application filed November 2, 1910. Serial No. 590,379.

To all whom it may concern:

Be it known that I, GULBRAN SNIPEN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Dust-Collectors for Vacuum Cleaning Systems, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of my improved dust collector for vacuum cleaning systems. Fig. 2 is a horizontal section taken through the center of my improved dust collector. Fig. 3 is an enlarged section of one of the safety air inlet valves used in connection with the collector.

My invention relates generally to vacuum systems and more particularly to the means employed for separating and collecting the dust from the dust laden air as it passes through the pipes of the cleaning system.

The principal objects of my invention are first; to provide a simple inexpensive receptacle in which is arranged a pair of fabric sacks which separate the dust from the air drawn into the receptacle; second; to provide means whereby the inner ends of the fabric sacks are yieldingly supported in order that said sacks may give readily as a result of the suction through the receptacle; third; to provide means for maintaining the sacks in a distended position thereby materially increasing the dust collecting surface; fourth; to arrange means within the receptacle for preventing the fabric sacks from choking the air outlet openings in the ends of the receptacle, and fifth; to provide safety air inlet valves which open under atmospheric pressure when an excessive degree of vacuum or suction is produced within the receptacle forming the body of the collector.

Referring by numerals to the accompanying drawings 1 designates a receptacle preferably formed of sheet metal and constructed in mating halves, and the meeting edges of said mating halves are united by a suitable removable loop or band 2.

3 designates an air inlet pipe which is positioned adjacent the center of the receptacle and to which pipe the flexible suction pipe 4 of the vacuum cleaning apparatus is connected.

Arranged in the ends of the receptacle are tubular outlet fittings 5 to which are connected flexible tubes 6 which unite with a single suction tube 7 leading to the air pump or suction device utilized for creating a partial vacuum within the receptacle 1.

Arranged in the fittings 5 are air inlet valves 8 and arranged on the stems thereof outside said fittings are expansive coil springs 9. Nuts 10 are located on the ends of the valve stems outside the springs and by adjusting these nuts the tension of the springs can be adjusted. Formed in the outer ends of the fittings 5 are air inlet apertures 11.

Fixed to the ends of the receptacle 1 and projecting toward the center thereof are wire frames 12 which form guards to support the fabric sacks hereinafter described.

The dust collecting and separating sacks designated by the numeral 13 are preferably made of canvas or like closely woven fabric, and said sacks gradually taper from their open ends toward their closed ends. The open end of each sack is attached to a ring 14 of wire or the like and said ring is detachably seated in an annular groove 15 formed in each of the mating halves of the receptacle 1. Located within the closed end of each sack is a ring 16, and when the sacks are positioned in the ends of the receptacle 1 the closed ends of said sacks provided with the rings 16 occupy positions adjacent the center of the receptacle, and the bodies of the sacks extend from said rings 16 toward the ends of the receptacle over the wire frames 12, and from thence the bodies of said sacks extend toward the center of the receptacle and terminate at the rings 14. This arrangement provides a comparatively large area of dust collecting surface within a comparatively small receptacle. Loops 17 are attached to the closed ends of the sacks 13 and connecting these loops 17 is a retractile coil spring 18.

In the practical use of my improved dust collector and separator the air pumps or other suction device connected to the pipe 7 exhausts the air from the receptacle 1 thereby creating a partial vacuum therein, and as a result suction is produced through the pipe 4. The cleaning tools are connected to this pipe 4 and the dust collected by said tools is drawn with the air through the tube 4 and enters the receptacle through the inlet connection 3. The air thus drawn into

the receptacle 1 readily passes through the fabric sacks and passes from thence through the outlet connections 5 into the pipes 6, and from thence into and through the pipe 7 while the dust drawn into the receptacle is collected upon the outer surfaces of the fabric sacks. As hereinbefore stated these sacks are of such length as to necessitate their being doubled when located in the ends of the receptacle and this construction materially increases the dust separating and collecting surface. The wire frames 12 in the ends of the receptacle maintain the portions of the sacks in proper position in the ends of the receptacle and the retractile spring 18 yieldingly holds the closed ends of the sack in position at the center of the receptacle. Should excessive degree of vacuum be produced within the receptacle 1 the air inlet valves 8 will open under normal air pressure, thereby permitting air to enter the suction pipes 6 and relieve the excess of vacuum. To discharge the dust collected within the receptacle the hook or band 2 is removed to permit the mating parts of the receptacle to be separated after which the fabric sacks are removed by detaching the rings 14 from the annular grooves 15.

A dust collector of my improved construction is comparatively simple, presents a maximum amount of dust collecting surface in a receptacle of comparatively small size, and said receptacle can be readily set up for use and quickly taken apart for the purpose of removing the collected dust.

It will be readily understood that minor changes in the form, size and construction of the various parts of my improved dust collector may be made and substituted for those herein shown and described without departing from the spirit of my invention.

I claim:

1. In a dust collector for vacuum cleaning systems, a receptacle formed in mating parts, detachable means for uniting the meeting edges of said parts, an inlet tube connected to the central portion of the receptacle, outlet tubes at the outer ends of the mating parts, of the receptacle, fabric sacks arranged in each part of the receptacle, the body portions of which sacks are doubled with the closed ends of the sacks positioned adjacent the center of the receptacle, a retractile coil spring attached to and forming a yielding connection between the closed

ends of the sacks, and skeleton frames in the ends of the receptacle beneath the doubled portions of the sacks.

2. A dust collector for vacuum cleaning systems, comprising a receptacle formed in halves, a removable band engaging the meeting edges of said halves, for uniting the two parts of the receptacle, an inlet tube connected to the central portion of the receptacle, outlet tubes at the ends of the receptacle, a fabric sack arranged in each part of the receptacle, a ring around the mouth of each fabric sack, which rings are seated in grooves formed on the interior of the parts of the receptacle, the body portions of which fabric sacks are doubled with the closed ends of said sacks positioned adjacent the center of the receptacle, and a retractile coil spring attached to and forming a yielding connection between the closed ends of said sacks.

3. In a dust collector for vacuum cleaning systems, a cylindrical receptacle, an inlet tube connected to the receptacle adjacent its center, outlet tubes at the ends of the receptacle, there being annular grooves formed on the interior of said receptacle adjacent the center thereof, rings seated in said annular grooves, fabric sacks arranged within the receptacle with their edges attached to the rings, and the inner ends of said sacks positioned adjacent the center of the receptacle and a retractile spring connecting the closed ends of said sacks.

4. In a dust collector for vacuum cleaning systems, the combination with a receptacle having air inlet and outlet connections, of a pair of fabric sacks removably positioned in the ends of the receptacle, the body portions of which sacks are doubled with the closed ends of said sacks positioned adjacent the center of the receptacle, said sacks being arranged between the inlet and outlet openings of the receptacle, and a retractile coil spring connected to and forming a yielding connection between the closed ends of said sacks.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 25th day of October, 1910.

GULBRAN SNIPEN.

Witnesses:

M. P. SMITH,
ALMA GEBHART.