

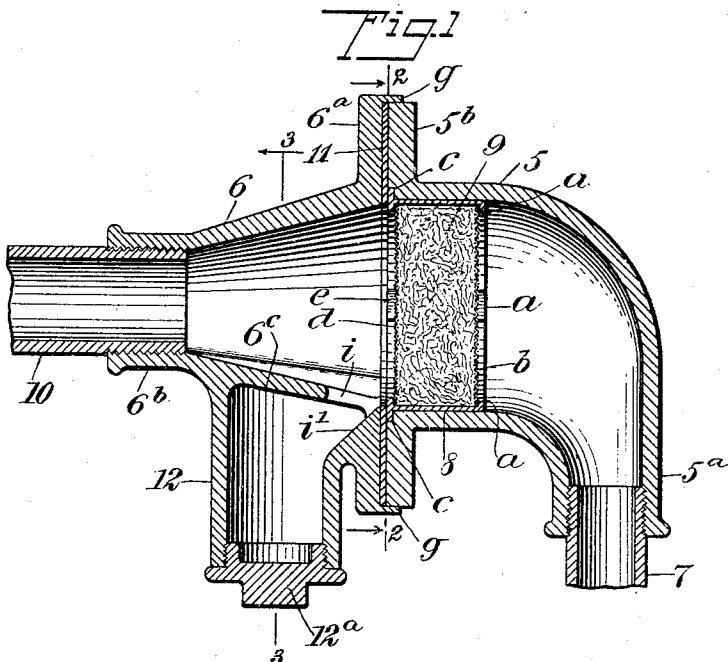
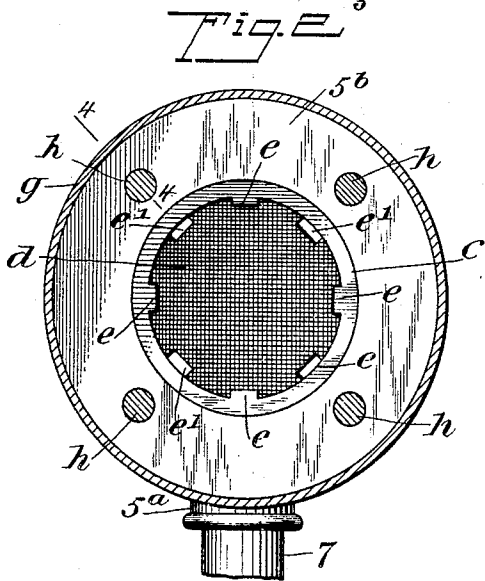
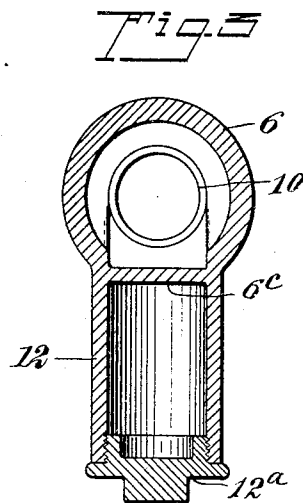
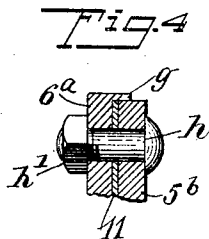
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PATENTED AUG. 16, 1904.

S. J. BALLANCE & A. & G. UHLICH.
STRAINER ATTACHMENT FOR AUTOMATIC AIR BRAKES.

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NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL J. BALLANCE, AUGUST UHLICH, AND GEORGE UHLICH, OF
LINCOLN, NEBRASKA.

STRAINER ATTACHMENT FOR AUTOMATIC AIR-BRAKES.

SPECIFICATION forming part of Letters Patent No. 767,859, dated August 16, 1904.

Application filed March 23, 1904. Serial No. 199,534. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL J. BALLANCE, AUGUST UHLICH, and GEORGE UHLICH, all citizens of the United States, and residents of Lincoln, in the county of Lancaster and State of Nebraska, have invented a new and Improved Strainer Attachment for Automatic Air-Brakes, of which the following is a full, clear, and exact description.

In the operation of automatic brakes that are actuated by air-pressure—such, for example, as the Westinghouse air-brake—it is very essential that means for filtering the air be provided, so as to prevent dirt, sand, metallic particles, or like impurities from being carried into the valves of the air-brake system.

One object of our invention is to provide a novel, simple, practical device which may be readily connected with a crossover-pipe between the train-pipe and the triple valve on cars and also between the engineer's brake-valve and the train-pipe on engines, the train-pipe, triple valve, and engineer's brake-valve being parts common to an air-pressure-brake system, and when so connected serve to arrest any kind of gritty or other impurity that enters the improved strainer device.

A further object is to so construct the improvement that it may be readily placed in position, be altered in adjustment to adapt it for connection with the train-pipe at a desired angle, and also be detachable in its main portions, so as to permit renewal of the straining medium as occasion may require.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional view taken through the axis of the device. Fig. 2 is a transverse sectional view substantially on the line 2 2 in Fig. 1. Fig. 3 is a transverse sectional view substantially on the line 3 3 in Fig. 1; and Fig. 4 is a fragmentary sectional view of details, taken substantially on the line 4 4 in Fig. 2.

The body of the device is formed in two main sections 5 and 6, that together provide a casing for the reception and holding of the interior parts in proper relative positions. The section 5 is cylindrical in the portion connected with the section 6 and, as shown in Fig. 1, is reduced in diameter and bent at a right angle laterally, this reduced portion affording an integral nipple 5^a, internally threaded at its end for the reception of a thimble 7 or pipe that extends to engage the triple valve or the engineer's brake-valve. (Not shown, but which is of any approved construction.)

A circumferential flange 5^b is radially projected from the open end of the casing-section 5 and rendered true on the outer surface, and at the inner corner of said flange a rabbet is formed. The interior of the body or casing portion 5 is rendered truly cylindrical in its base, and in said bore is closely fitted the cylindrical side wall of a strainer-box 8. The box 8 is formed with a thin side wall of any suitable metal and terminates at its normal inner end in inwardly-projected ears *a*, whereon a preferably screen-cloth bottom wall *b* is seated and secured by suitable means, such as soldering or the like. An outwardly-extended flange *c* is formed on the side wall 8 at its opposite end, said flange being seated and neatly fitting in the rabbet formed in the flange 5^b at its inner corner, as before mentioned.

A fibrous filling of suitable hair or other available material 9 is loosely packed into the strainer-box just described, and a closing-head *d*, formed of screen-wire fabric or other perforate material that is suitable, is removably secured on the side wall 8, affording a top wall for the box. A preferred means for removably securing the top wall or head *d* upon the side wall 8 is shown in Figs. 1 and 2, consisting in the inward projection of a plurality of spaced lugs *e* from the inner edge of the radial flange *c* on the wall 8. A corresponding number of spaced notches *e'* are formed in the peripheral edge of the reticulated head *d*, which will respectively receive the lugs *e* when the head is positioned in the open end of the wall 8 to effect such a passage of the lugs through the notches, and it will be seen that when the

perforated head d is thus imposed on the fibrous material 9 it may be held from displacement by turning it around edgewise sufficiently to remove the notches d from the lugs e , and thus cause the latter to bear upon the edge portion of the head for its retention. The other main section of the strainer-casing is coniform in its body portion 6, having a circumferential flange 6^a formed on its end of greatest diameter. The flange 6^a is rendered true on its outer face and may be furnished with a lateral annular flange g at its outer edge, the annular flange loosely fitting over the true peripheral edge of the circumferential flange 5^b when the two main casing-sections are to be joined together.

As shown in Figs. 2 and 4, the preferred means for connecting the flanges 5^b and 6^a together consists of four equally-spaced bolts h and nuts h' , said bolts engaging opposite evenly-spaced perforations in the flanges named, and a joint-washer 11, of a suitable material, is introduced between the flanges when they are clamped together by the bolts and nuts, thus insuring an air-tight joint between said flanges. The smaller end portion 6^b of the body 6 is rendered cylindrical and is internally threaded to receive the threaded end of a nipple or pipe 10, that may be extended for connection with the train-pipe of the air-brake system.

It will be seen that the provision of the equally-spaced clamping-bolts h and nuts h' , thereon enables the two main sections 5 6 of the casing to be rotated partially one on the other by temporary displacement of the bolts, so as to compensate for differences in relative positions had by the triple valve and the train-pipe or by the engineer's brake-valve and the train-pipe, and thus dispense with the employment of an elbow in the air-pipe leading from the triple valve or engineer's brake-valve, which might otherwise be needed.

Upon the side of the coniform body portion 6 that is normally lowermost a refuse-catching cup 12 is formed or secured, this cup being of a preferably cylindrical form and closable at the lower end by a removable cap 12^a , as shown in Figs. 1 and 3. The upper end of the refuse-catching cup 12 is nearly closed by the overhanging lip 6^c , forming a portion of the coniform casing-section 6, an opening i in said casing near the larger end thereof affording a sufficient passage for the refuse into the cup, which is facilitated by the formation of an incline j on the side wall of the cup near its upper edge and immediately below the opening i .

It will be seen that any sand, metallic particles, or other fine refuse that has accumulated in the train-pipe or connecting-hose will pass into the improved strainer device that is introduced in the crossover-pipe between the train-pipe and the triple valve, as the air is distributed to the auxiliary reservoirs through

the triple valve, and the heavy impurities will be arrested by the screen or reticulated head d , from which the impurities will fall down through the narrow opening i into the cup 12 to be removed by taking off the cap-piece 12^a . Obviously the hair or like fibrous filling 9 in the strainer-box will arrest quite fine dust, so that none will pass to the triple valve and then to the engineer's brake-valve and thence to other distributing valves, that ordinarily injures such valves, so as to render them worthless. By the disconnection of the casing-sections the fibrous filling 9 may be changed when fouled and new hair be inserted therein.

The provision of the overhanging lip 6^c , which guards the top of the refuse-cup 12, is very advantageous, as it will prevent the dirt in the cup from being lifted and drawn toward the train-pipe in case air is drawn directly therefrom to enable the sudden and forcible application of all the brakes, known as an "emergency application" of the brakes, to avoid an impending accident.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a strainer attachment for air-brakes, the combination with a two-part main casing securable together endwise, one section being cylindrical and the other section coniform, of a refuse-receiving cup projected from the coniform casing-section and having a restricted opening therein.

2. In a strainer attachment for air-brakes, the combination with a main section in two parts securable together endwise, one section being cylindrical and the other section coniform, of a refuse-receiving cup projected from the coniform section, a lip nearly closing the upper end of the cup but permitting a restricted opening from the casing-section into said cup, and a removable cap-piece closing the bottom of the cup.

3. In a strainer attachment for air-brakes, a two-part casing, one section thereof being cylindrical near one end, a radial flange on said end, the body of said casing-section, that is reduced diametrically toward the other end and bent laterally, ending in an internally-threaded nipple, the other casing-section being coniform at the larger end and having a radial flange securable on the other radial flange by a plurality of bolts and nuts, the smaller end of the coniform casing-section terminating cylindrically and having an internal thread, and a refuse-holding cup, closable at the lower end by a removable cap-piece, and partially closed at the upper end by an overhanging lip that leaves a restricted opening for impurities to pass down therethrough into the cup.

4. In a strainer device for air-brakes, the combination with one main section of a two-part strainer-casing, said section having a radial flange on one end portion which is cylindrical

drical, said flange having a rabbet in its inner
corner, of a strainer-box having a cylindrical
side wall neatly fitted in the cylindrical portion
of the casing-section, and a radial flange on
5 one end, which flange seats in the rabbet, a
perforated bottom wall secured to the box, and
a removable perforated top wall thereon, said
box being adapted for holding a filling of hair
or other fibrous straining material.

In testimony whereof we have signed our 10
names to this specification in the presence of
two subscribing witnesses.

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AUGUST UHLICH.
GEORGE UHLICH.

Witnesses:

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