No. 863,092. PATENTED AUG. 13, 1907.

S. M. RENN.

CISTERN SCREEN AND FILTER.

APPLICATION FILED JUNE 28, 1906.

Fig. 1.

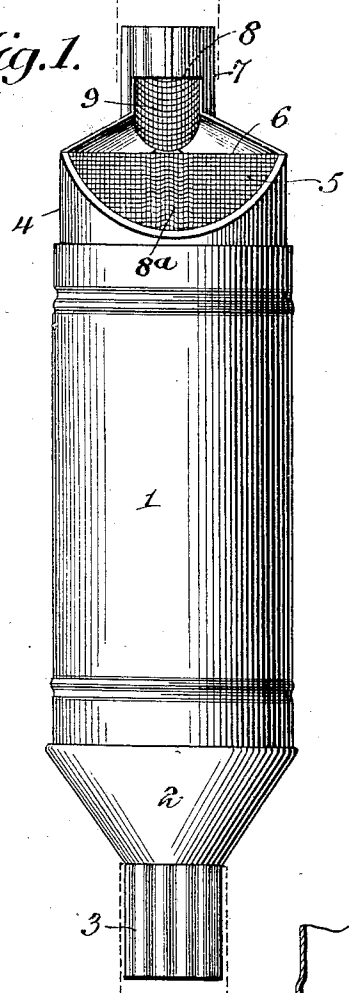


Fig. 2.

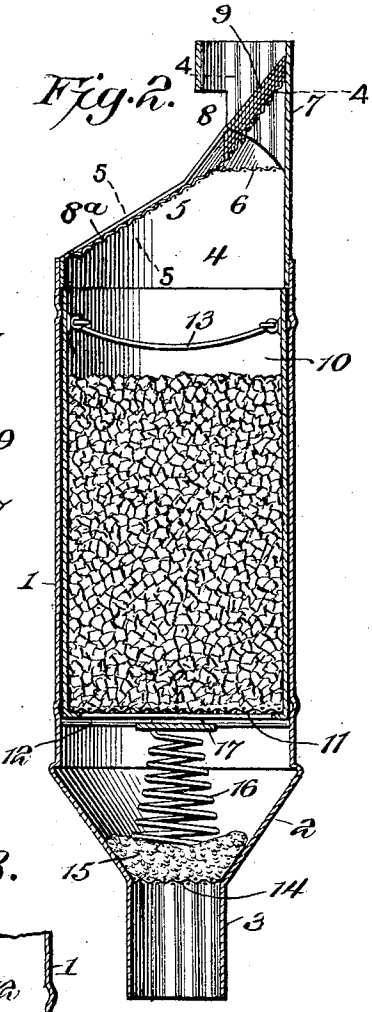


Fig. 4.

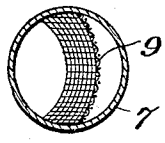


Fig. 3.

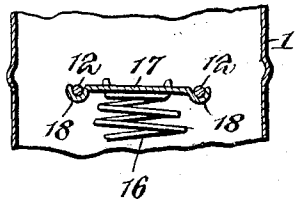
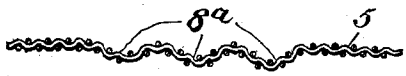


Fig. 5.



Witnesses

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CISTERN SCREEN AND FILTER.

No. 863,092. Specification of Letters Patent. Patented Aug. 13, 1907.

Application filed June 28, 1906. Serial No. 323,957.

To all whom it may concern:

Be it known that I, SAMUEL M. RENN, a citizen of the United States, residing at Spencerville, in the county of Dekalb and State of Indiana, have invented a new and useful Cistern Screen and Filter, of which the following is a specification.

The invention relates to a cistern screen and filter.

The object of the present invention is to improve the construction of cistern filters, and to provide a simple, inexpensive and efficient cistern and filter, adapted to both screen and filter rain water before the same is delivered into a cistern, so that the water from such cistern may be used for drinking and domestic purposes generally.

A further object of the invention is to provide a device of this character, which may be readily taken apart to enable the filtering material to be conveniently removed and easily cleaned.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is an elevation of a cistern screen and filter constructed in accordance with this invention. Fig. 2 is a central vertical sectional view. Fig. 3 is a detail sectional view, illustrating the arrangement of the upper portion of the spring. Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 2. Fig. 5 is a detail sectional view on the line 5—5 of Fig. 2.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

1 designates a cylindrical casing designed to be constructed of galvanized iron, or any other suitable material, and provided with a lower inverted conical section 2 and having a crimped neck 3 depending from the conical section and adapted to be fitted into a pipe or spout leading to a cistern. The casing, which may be of any preferred shape, may also be constructed of any desired size, and it is provided at the top with a removable cap 4, consisting of a substantially cylindrical body portion, detachably fitted on and preferably arranged within the upper end of the casing. The cap is cut away at one side, and it is provided with a top 5 consisting of a screen and constructed preferably of wire gauze. The top has a short horizontal portion 6, and it extends downwardly therefrom at an inclination, as clearly shown in Fig. 2 of the drawing. The horizontal portion 6 of the screen top of the cap is arranged at the back of the filter, and the cap is provided above the horizontal portion 6 with an upwardly extending neck 7, which is preferably crimped to enable it to be readily introduced into the rain spout, whereby it is detachably secured to the same. The neck 7 is cut away at the lower portion of its front at 8, and an inclined screen 9 of wire gauze, or other suitable material, is arranged within the neck, and extends downwardly and forwardly from the upper portion of the back thereof to the screen top 5 of the cap. The inclined screen 9 and the screen top of the cap are adapted to effectually separate leaves and the larger particles of solid matter from the rain water, and these impurities are discharged at the front of the device and do not enter the casing 1. The screen 9 is transversely curved and its lower edge is secured to the top screen 5. The rain water passes readily through the screens at the top of the device, and the top screen 5 is provided at its inclined portion with a plurality of grooves 8^a, which form passages for the water and which enable the same to readily pass beneath any leaves lying upon the grooved portion of the screen top 5. This will prevent any waste of the rain water in event of an accumulation of leaves upon the screen top 5 of the device.

Within the casing is arranged a removable receptacle 10, designed to contain charcoal and gravel, or other filtering material, for removing the small particles of solid matter and other impurities, which pass through the upper screens. The receptacle, which is provided with a screen bottom 11 of wire gauze, or other suitable material, is supported upon a pair of horizontal rods 12, which are secured at their ends to the opposite walls of the casing at the lower portion thereof, as clearly shown in Figs. 2 and 3 of the drawing. The receptacle is provided at its upper portion with a bail 13, and the cap or upper section 4 of the casing is detachable to permit the receptacle and the filtering material to be readily removed, when it is desired to clean the same.

The casing is provided at the bottom of the lower conical section 2 with a screen 14, which supports a sponge 15, or other absorbent filtering material, and the latter is adapted to remove or separate from the rain water any filth filtering through the receptacle. The sponge 15 is held on the screen 14 against accidental displacement by means of a coiled spring 16, interposed between the sponge and the rods 12, and secured at its upper end to a horizontal plate 17. The plate 17, which is oblong, is provided at its ends with grooves 18, forming seats for engaging the rods 12, which are preferably parallel. The plate 17, which is interlocked with the rods by means of the said grooves 18, is secured to the upper end of the spring by passing the upper coil thereof through suitable perforations of the plate. The spring retains the detachable plate 17 in its interlocked relation with the rods 12 and effectually prevents any accidental displacement of the sponge, so that there is no liability of dropping any accumulation of filth from the device into the spout or pipe, which is connected with the cistern.

It will be seen that the cistern screen and filter, which is simple and comparatively inexpensive in construction, is strong and durable, and is adapted to be readily connected with a rain spout, and that it is capable of screening the leaves and other large particles from the rain water and of filtering the latter.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A device of the class described comprising a casing having a removable upper section or cap provided with a screen top arranged to separate leaves from rain water and to prevent the leaves from entering the casing, a neck extending upwardly from the said upper section or cap and cut away at its lower portion, and an inclined screen mounted within the neck and arranged to discharge leaves through the cut away portion thereof.

2. A device of the class described comprising a casing, and a cap fitted on the casing and provided with a top consisting of a screen having an inclined portion, the latter being grooved to permit water to pass beneath any accumulation lying upon the said screen.

3. A device of the class described comprising a casing, a cap fitted on the casing and having a screen top, a neck extending upwardly from the cap and cut away from the bottom, an inclined screen mounted within the neck and extending downwardly to the cut away portion of the neck, and a filtering means located within the casing.

4. A device of the class described comprising a casing, a support arranged within the casing, a receptacle arranged upon the support and adapted to contain filtering material, an absorbent material located beneath the support, and a spring interposed between the absorbent material and the support.

5. A device of the class described comprising a casing, absorbent material arranged within the casing, a support located within the casing and arranged above the absorbent material, a plate also located within the casing and detachably interlocked with the support, and a coiled spring engaging the absorbent material and holding the same in position, said spring being interposed between the absorbent material and the plate and maintaining the latter in its interlocked relation with the support.

6. A device of the class described comprising a casing, supporting rods mounted within the casing, absorbent filtering material arranged within the casing and located below the said rods, a coiled spring engaging the absorbent material, and a plate secured to the spring and provided with grooves receiving the rods.

7. A device of the class described comprising a casing provided with a bottom screen and having supporting rods, a receptacle arranged upon the rods and adapted to contain filtering material, a sponge arranged on the screen, and a spring arranged upon and engaging the sponge and provided at its upper end with means for interlocking it with the rods.

8. A device of the class described comprising a casing provided at the bottom with a screen and having a support located above the screen, a receptacle having a screen bottom and arranged upon the support, absorbent filtering material arranged upon the screen of the casing, means interposed between the support and the absorbent material for retaining the latter in position, and a cap detachably mounted on the upper end of the casing and provided with an exterior top screen arranged at an inclination.

9. A device of the class described comprising a casing, a screen top consisting of a short horizontal portion, and an inclined portion extending downwardly from the horizontal portion, a neck located above the screen top and adapted to fit within a rain spout, and an inclined screen arranged within the neck and located above the screen top and leading to the same.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

SAMUEL M. RENN.

Witnesses:
J. S. HELTINGER,
ALEXANDER LEIGHTY.