

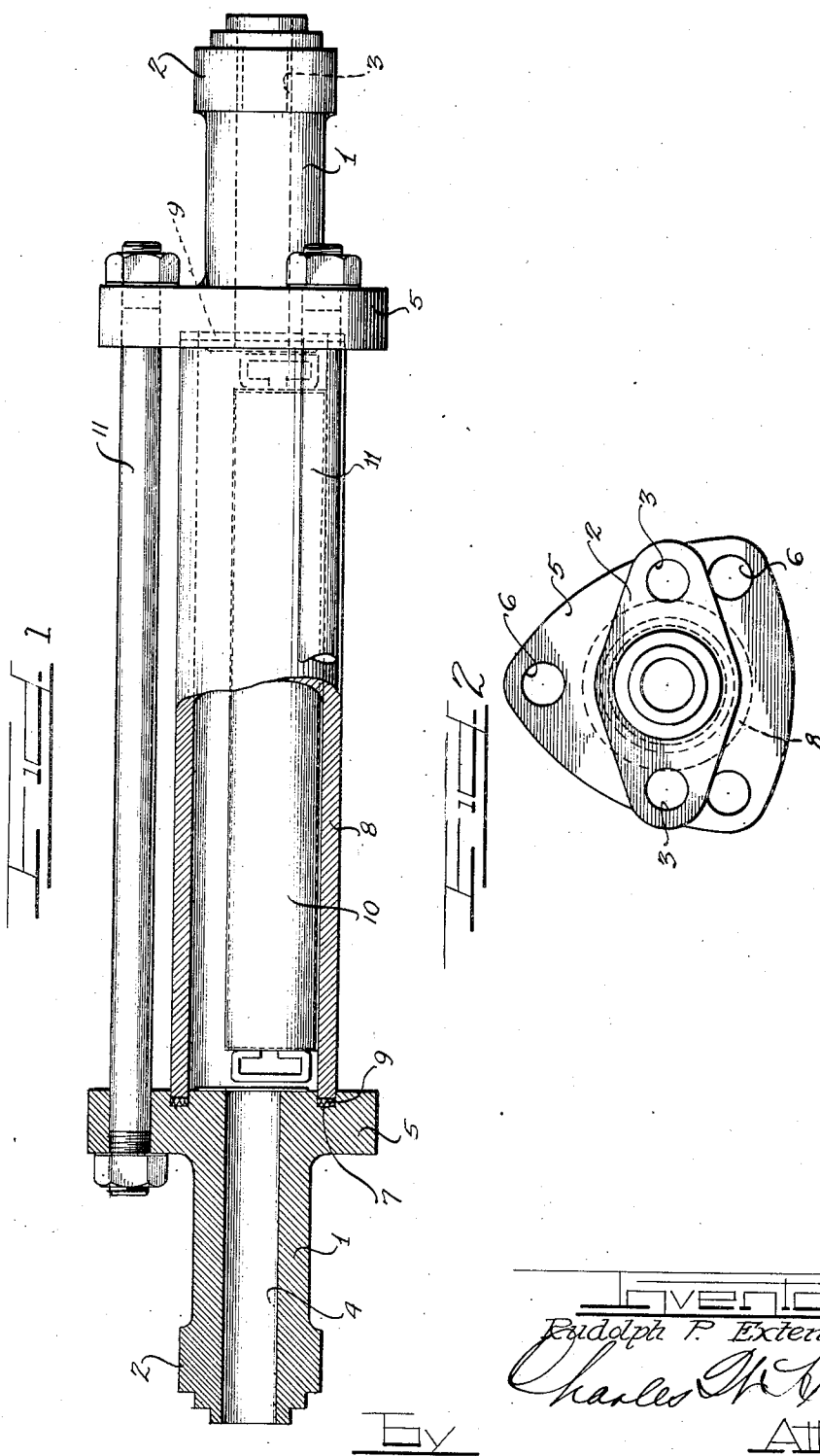
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R. P. EXTEN

RENEWABLE MOISTURE TRAP

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INVENTOR
Rudolph P. Exten
Charles H. H. G.
ATTY

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RUDDOLPH P. EXTEN, OF CLINTON, IOWA, ASSIGNOR TO CLIMAX ENGINEERING COMPANY, OF CLINTON, IOWA, A CORPORATION OF DELAWARE.

RENEWABLE MOISTURE TRAP.

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This invention relates to a renewable moisture trap, and more particularly to a calcium chloride cartridge adapted to be removably engaged in a sleeve interposed in the pipe line of a refrigerant circulating system, thereby affording an arrangement wherein the water contained in the refrigerant may be readily removed by the calcium chloride containing cartridge after which the saturated cartridge may be replaced by a dry one so that the moisture may be definitely removed from the refrigerant within the circulating system.

It is an object of this invention to provide a pipe line of a refrigerating system with a removable sleeve within which a renewable moisture removing cartridge is placed for absorbing the moisture from the circulating refrigerant.

It is also an object of this invention to provide renewable cartridges in the pipe line system of a refrigerating plant with said cartridges containing calcium chloride or other deliquescent substances of a hygroscopic character for the purpose of absorbing the moisture from the refrigerant passing over said cartridges.

It is an important object of this invention to provide the refrigerant circulating pipe system of a refrigerating plant with a desiccator which is readily removable from the system and which is adapted to abstract the water contained in the refrigerant so that the water collected in said cartridges may be definitely removed from the system.

Other and further important objects of this invention will be apparent from the disclosures in the specification and accompanying drawings.

This invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a longitudinal view of a portion of a refrigerating pipe line system with parts broken away to disclose a renewable moisture trap embodying the principles of this invention.

Figure 2 is an end view of the device disclosed in Figure 1, with the clamp bolts removed.

As shown on the drawings:

The reference numeral 1 indicates a pair of spaced aligned pipe sections or couplers, each of which has integrally formed on the

outer end thereof, a transverse elliptical flange 2 has apertures 3 therein to permit each pipe section 1 to be rapidly clamped by bolts or other similar means to a similar flange formed on one end of a section of a refrigerant pipe line. Each of the pipe sections is provided with a longitudinal passage 4 through which the circulating refrigerant from a refrigerating pipe system is adapted to pass. Integrally formed on the inner end of each of the pipe sections 1 is a clamping plate or shield 5, having a plurality of apertures or openings 6 therein. Each of the clamping plates 5 is also provided with a circular groove 7 in one surface thereof, concentric with the passage 4. The two clamping plates 5 are spaced apart and are separated by a removable sleeve or pipe section 8, the ends of which seat in the groove 7 of said plates against packing rings or washers 9, which are seated in said grooves, thereby hermetically sealing the sleeve to the pipe sections.

Disposed within the pipe section or sleeve 8 is a renewable cartridge 10 which contains a supply of calcium chloride. The sleeve 8 is clamped between the clamping plates 5 by means of retaining bolts 11 which project through the openings 6 of said clamping plates and connect the same, thereby removably clamping said sleeve in position with the improved calcium chloride cartridge contained therein.

It is to be noted that the passages 4 in the couplers 1 have smaller diameters or cross-sectional areas than the cartridge 10, and are much smaller in cross-sectional area than the passage through the sleeve 8. Shoulders are thereby formed adjacent the junctions between the sleeve 8 and the couplers 1, which effectively prevent longitudinal movement of the cartridge 10 and retains it definitely within the sleeve 8 regardless of the pressure in the pipe line.

It will thus be seen that the improved device consisting of the removable pipe sleeve 8 and the renewable calcium chloride cartridge 10 positioned between the clamping plates 5 of the pipe sections 1, forms a unit adapted to be removably engaged in a pipe line refrigerant circulating system of a refrigerating plant. The refrigerant passing through the passage formed in one of the pipe sections enters the sleeve 8 and passes over the cartridge 10 before entering the

second or opposite pipe section 1 to continue on through the system. As the refrigerant passes through the pipe sleeve 8 the calcium chloride within the cartridge acts as a desiccator which in this instance, removes the water from the refrigerant. When the calcium chloride within the cartridge is sufficiently saturated, the bolts may be released and the stem 8 removed to permit the cartridge 10 to be taken out of said sleeve and replaced by a new dry cartridge, after which the sleeve may be again clamped in position between the clamping plates 5 of the pipe sections 1. It will of course, be understood that control valves may be mounted in position in the refrigerant pipe line system adjacent the ends of the pipe sections 1 of the renewable moisture trap unit, so that the circulation of the refrigerant may be shut off when it becomes necessary to renew a cartridge within the sleeve 8. The improved renewable calcium chloride cartridge acts as a desiccator whereby the water from the circulating refrigerant may be definitely removed from the system while said refrigerant is in circulation.

I am aware that numerous details of construction may be varied through a wide range

without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. In a moisture trap unit, a pair of spaced pipe sections, flanges on the adjacent ends of said pipe sections, a sleeve clamped between said flanges, and a moisture collecting cartridge disposed within said sleeve, said flanges providing shoulders adjacent said pipe sections to abut said cartridge upon a relatively small horizontal movement thereof.

2. In a device of the class described, a pair of spaced pipe sections having flanges thereon, means for including said pipe sections in a pipe line, a sleeve removably disposed between said flanges, means for hermetically sealing the junctions between said sleeve and said flanges, means associated with said flanges for clamping said sleeve in position, a moisture absorbing cartridge removably and loosely disposed within said sleeve, and shoulders on said flanges to prevent said cartridge from leaving said sleeve.

In testimony whereof I have hereunto subscribed my name.

RUDOLPH P. EXTEN.