

J. L. VIDAR.
 AUTOMATIC EXPANSION VALVE.
 APPLICATION FILED JUNE 22, 1911.

1,044,106.

Patented Nov. 12, 1912.

Fig. 1.

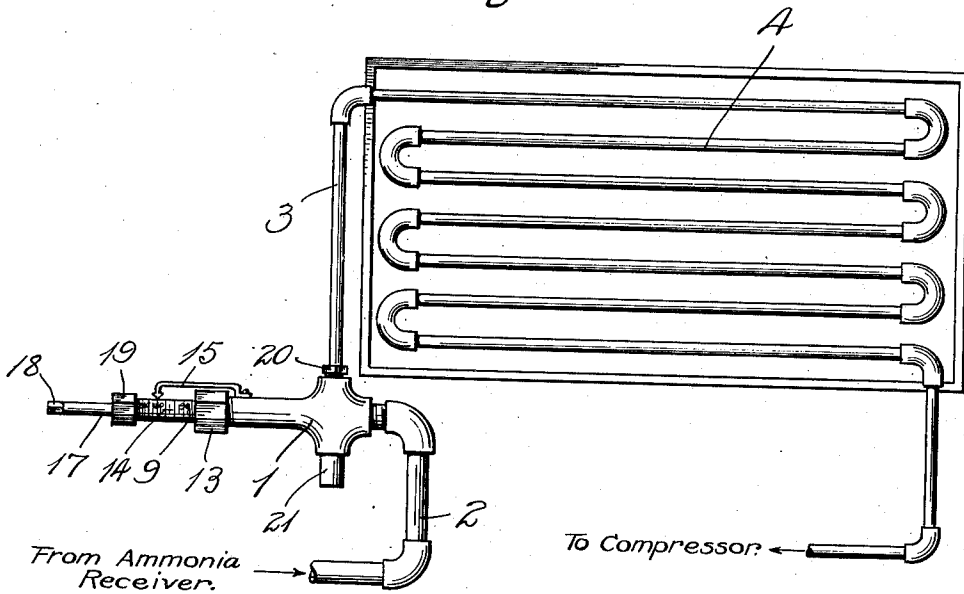


Fig. 2.

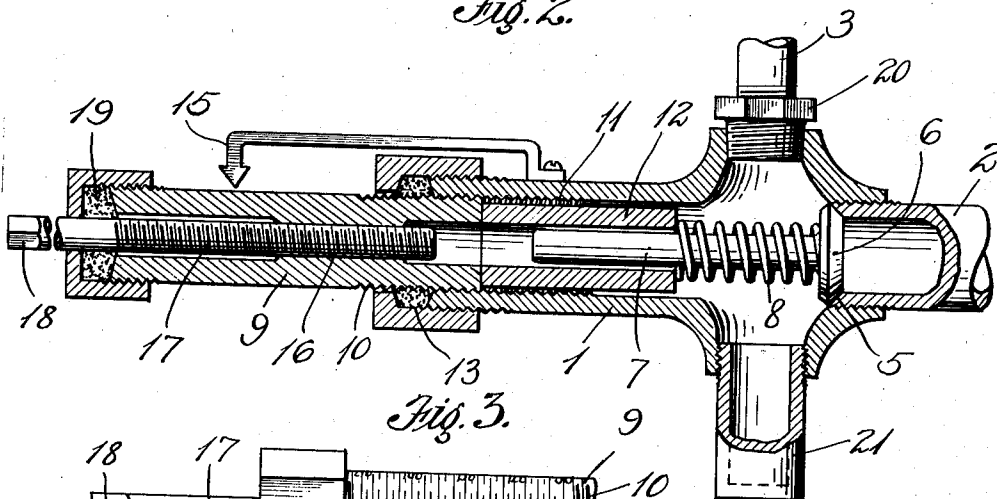
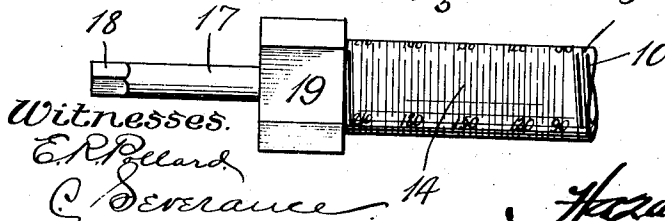


Fig. 3.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC EXPANSION-VALVE.

1,044,106.

Specification of Letters Patent.

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Application filed June 22, 1911. Serial No. 634,811.

To all whom it may concern:

Be it known that I, JOHN L. VIDAR, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Automatic Expansion-Valves, of which the following is a specification.

This invention relates to improvements in automatic expansion valves for refrigerating systems. It is an object of the invention to provide a valve adapted to control the passage of a refrigerant in a refrigerating system, under a given pressure, means being provided whereby a greater or less pressure will be required before the refrigerant can pass the valve.

It is a further object of the invention to provide an indicator in conjunction with the valve adjusting means, for showing the pressure which will be required in the refrigerant to pass the said valve.

In the accompanying drawing forming a part of this specification, Figure 1 is a side elevation of the improvement in valve mechanism adjacent portions of a refrigerating system being also shown. Fig. 2 is a longitudinal sectional view through the valve mechanism showing the same upon an enlarged scale. Fig. 3 is a detail view of the adjustable member of the valve showing a graduated scale thereon.

The details and features of the said invention will now be more particularly described reference being had to the said drawing in which 1 indicates a valve casing, 2 a pipe leading thereto from the ammonia receiver of the refrigerating system and 3 an outlet valve leading to a refrigerating coil 4. The inlet valve 2 for the ammonia enters one end of the casing 1 and is provided with a valve seat 5 at its inner end adapted to be engaged by a valve 6. The valve 6 is provided with a valve stem 7 which extends backwardly into the casing, and carries a compression spring 8 usually of the helical type by which the valve 6 may be held upon its seat.

The casing 1 is elongated opposite the pipe 2, so that provision is made for the stem 7 and also an adjusting member 9 by which the tension of the spring 8 may be controlled. The said member 9 is preferably a sleeve having exterior threads 11 in the casing 1. A sleeve 12 is interposed between the inner end of the said member 9

and the spring 8 so that when said member 9 is screwed inwardly the sleeve 12 will compress the spring 8 against the valve 6. A packing gland is formed at 13 around the end of the casing 1 and the adjacent end of the member 9 so that the adjustment of said member 9 will not produce leakage from the valve mechanism at this point.

In order to afford a gage so that the pressure exerted upon the valve may be indicated exteriorly, a scale 14 is provided upon the outer surface of the said adjusting member 9, the scale being arranged to indicate the number of pounds pressure which will be required to lift and pass the valve when the said member 9 is adjusted inwardly to a given point. Coöperating with the scale 14 is a pointer 15 which is rigidly secured to the casing 1 of the valve and extends at its outer free end to a point adjacent to the scale 14. The adjustable member 9 may thus be moved inwardly or outwardly in accordance with the scale 14 to regulate the pressure at the valve 6. The said member 9 is also preferably made hollow and formed with a screw threaded portion 16 interiorly thereof, which is adapted to be engaged by a screw threaded rod 17. The rod 17 extends into said member 9 from the exterior of the valve mechanism, its inner end being in alinement with the stem 7 of the valve 6, so that when the said rod 17 is screwed inwardly until it engages the valve stem 7, the valve 6 may be locked and positively held upon the valve seat 5 against all pressures. The outer end of the rod 17 is preferably made angular or squared at 18 for receiving a handle or wrench by which it may be turned.

The packing gland 19 is arranged about the said rod 17 upon the outer end of the adjusting member 9. The casing 1 is enlarged back of the valve 6 and adapted to receive a securing nipple 20 by which the end of the outlet pipe 3 is secured to said casing. Opposite to said outlet the casing 1 is also provided with an aperture into which is threaded a trap 21. The said trap tightly closes the aperture in the casing 1 and is adapted to collect any foreign substance that may enter the valve or any lubricating oil that may have been brought in with the ammonia.

What I claim is:

An automatic pressure controlling valve for refrigerating systems comprising a valve

casing, having a valve seat and a threaded opening therein, a valve adapted to engage said seat having a stem projecting from said valve, a spring surrounding said stem, an
5 adjusting member for entering the screw threaded opening in said casing, a scale upon said member, a sleeve interposed between the adjusting member and the spring of the valve, an indicator cooperating with
10 the adjusting member for showing the extent of compression exerted upon the valve

spring, and a screw threaded stem extending longitudinally of said adjusting member for holding said valve against said seat irrespective of said indicating means. 15

In witness that I claim the foregoing I have hereunto subscribed my name this 15th day of June, 1911.

JOHN L. VIDAR.

Witnesses:

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