

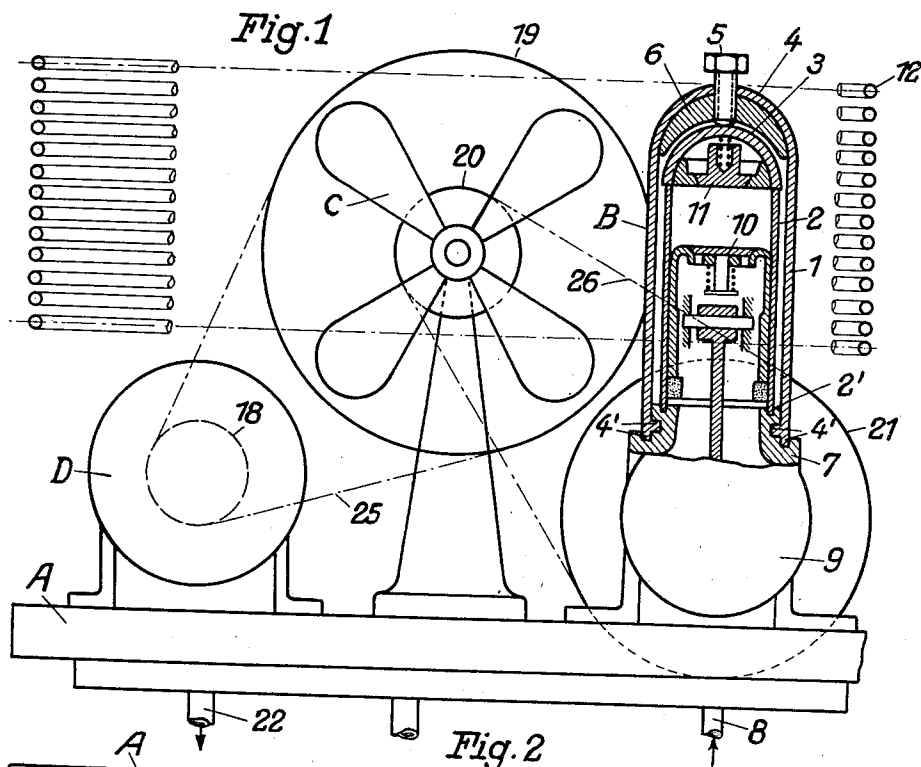
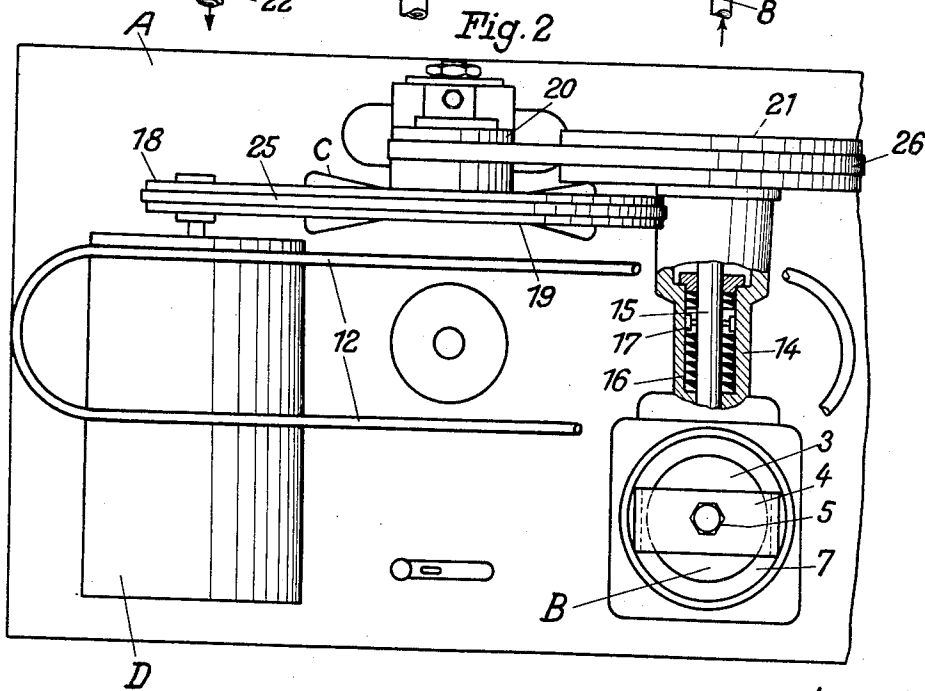
Jan. 9, 1934.

W. K. SCHMIDT
COMPRESSOR

1,943,091

Filed Oct. 24, 1931

2 Sheets-Sheet 1



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Fig. 3

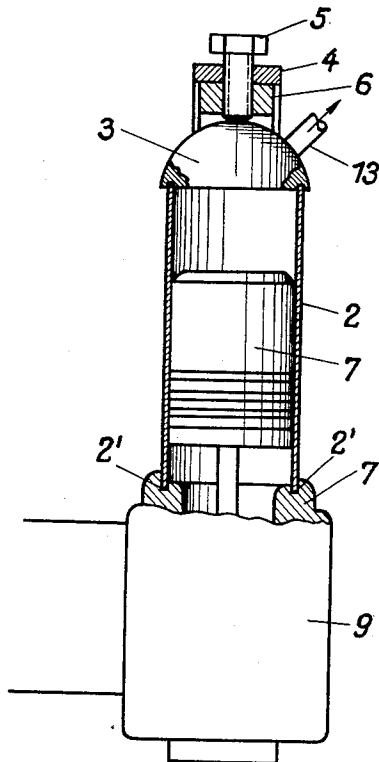
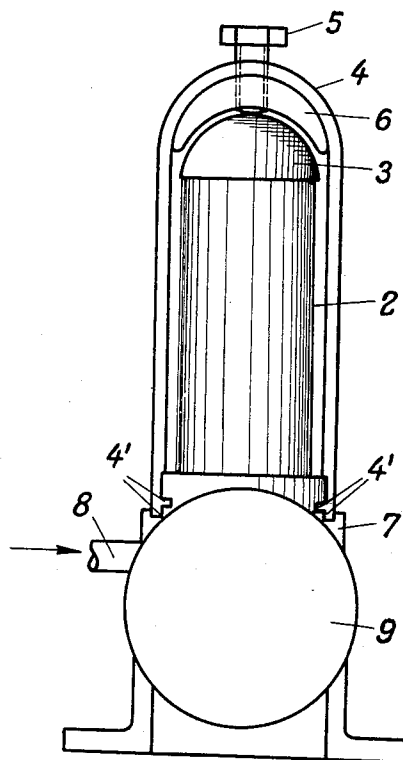


Fig. 4



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UNITED STATES PATENT OFFICE

1,943,091

COMPRESSOR

Wilhelm Kurt Schmidt, Berlin, Germany,

Application October 24, 1931, Serial No. 570,897,
and in Germany October 28, 1930

1 Claim. (Cl. 230—202)

My invention relates to compressors for refrigerators, particularly of the kind operating with a volatile refrigerant, for instance ethyl chloride.

5 It is an object of my invention to provide a compressor which can readily be taken to pieces and the parts of which are not interconnected by screws or the like so that the compressor is particularly suitable for use in cases where the
10 personnel handling it is unskilled as is the case for instance in confectioneries manufacturing ice-cream, cold beverages etc. Obviously in all such cases the attendant must be enabled to dis-
15 mantle the compressor for cleaning and to re-assemble the parts correctly without the least possible chances of failure. This can be done only if all the parts of which the compressor is composed, and the means for fixing them in place are extremely simple in construction and simply
20 handled.

In the drawings affixed to this specification and forming part thereof an embodiment of my invention is illustrated diagrammatically by way of example.

25 In the drawings

Fig. 1 is a front elevation, partly in vertical section and with some parts broken away, of a refrigerator comprising a compressor, a pipe coil, a fan and an electromotor, the evaporator being
30 omitted,

Fig. 2 is a plan view, partly in horizontal section, of the apparatus shown in Fig. 1,

Fig. 3 is a front elevation and

35 Fig. 4 is a side elevation of the compressor, partly in vertical section, drawn to a larger scale.

Referring now to the drawings, A is the foundation plate on which the compressor B, the fan C and the electromotor D are mounted. The evaporator (not shown) is arranged below the
40 plate A. The compressor comprises a cylinder 2, a cup-shaped cylinder cover 3 and a piston 1 designed in the usual manner. The cylinder is here formed as a plain cylindrical tube free from projections, perforations etc. and therefore easy
45 to clean. Similarly the cylinder cover has the form of a substantially plain hemispherical cup fitting the top edge of the cylinder, while the bottom edge of the cylinder fits in a circular groove 2' of the base 7. 4 is a strap having pro-
50 jections 4' formed on the lower ends of its legs engaging corresponding recesses in the compressor base 7. 5 is a screw bolt passing through the curved portion of the strap 4 and through a curved plate 6, the free end of the bolt 5 resting
55 on the cylinder cover 3 and holding same down

on the top edge of the cylinder 2, at the same time forcing the bottom edge of the cylinder 2 into a groove 2' in the compressor base 7. The cover 3 and the cylinder 2 can thus be readily removed by unscrewing the bolt 5, the cover 3, 60 cylinder 2 and base 7 being fitted together without screwing.

The refrigerant flows from the evaporator (not shown) through the bent pipe 8 (Figs. 1 and 4) into the crank case 9, through the suction valve 65 10 of the piston 1 into the cylinder 2 and from the latter through pressure valve 11 into the cylinder cover 3 and through the connecting pipe 13 (Fig. 3) to the coiled pipe 12 where it is cooled and condensed and is fed back to the evaporator 70 through connecting pipe 22 (Fig. 1). In order to prevent the vaporized refrigerant from escaping from the crank case 9, the crank shaft 15 is surrounded by a low-pressure packing (Fig. 2) comprising a stuffing box 14, asbestos cords 16, 75 17 being a chamber filled with a composition of graphite, aluminium powder and glycerine.

The crank shaft 15 is driven from the motor D (Figs. 1 and 2) indirectly. The motor sheave 18 drives by means of a belt 25 a relatively large 80 intermediate sheave 19 formed as a fan. 20 is a small sheave mounted on the shaft of the intermediate sheave 19; it drives the large sheave 21 mounted on the crank shaft 15 by means of a belt 26. This drive operates free of noise and 85 permits using an inexpensive small high speed motor for driving the compressor.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described for obvious modifica- 90 tions will occur to a person skilled in the art.

I claim:—

A compressor comprising a crank case having its top edge formed with a cylindrical groove, a plain tubular cylinder having its bottom edge 95 seated in said groove, a plain substantially hemispherical cover seated on the top edge of said cylinder, a piston mounted in said cylinder for axial reciprocating motion, a horse-shoe strap having its free ends anchored in said crank case 100 and a screw bolt extending across the middle portion of said strap and bearing on said cylinder cover so as to form together with said strap the sole coupling means for said crank case, cylinder 105 and cylinder cover.

WILHELM KURT SCHMIDT.