Dec. 15, 1936. W. A. SCHMIDT ET AL 2,064,271

REFRIGERANT CONDENSING APPARATUS

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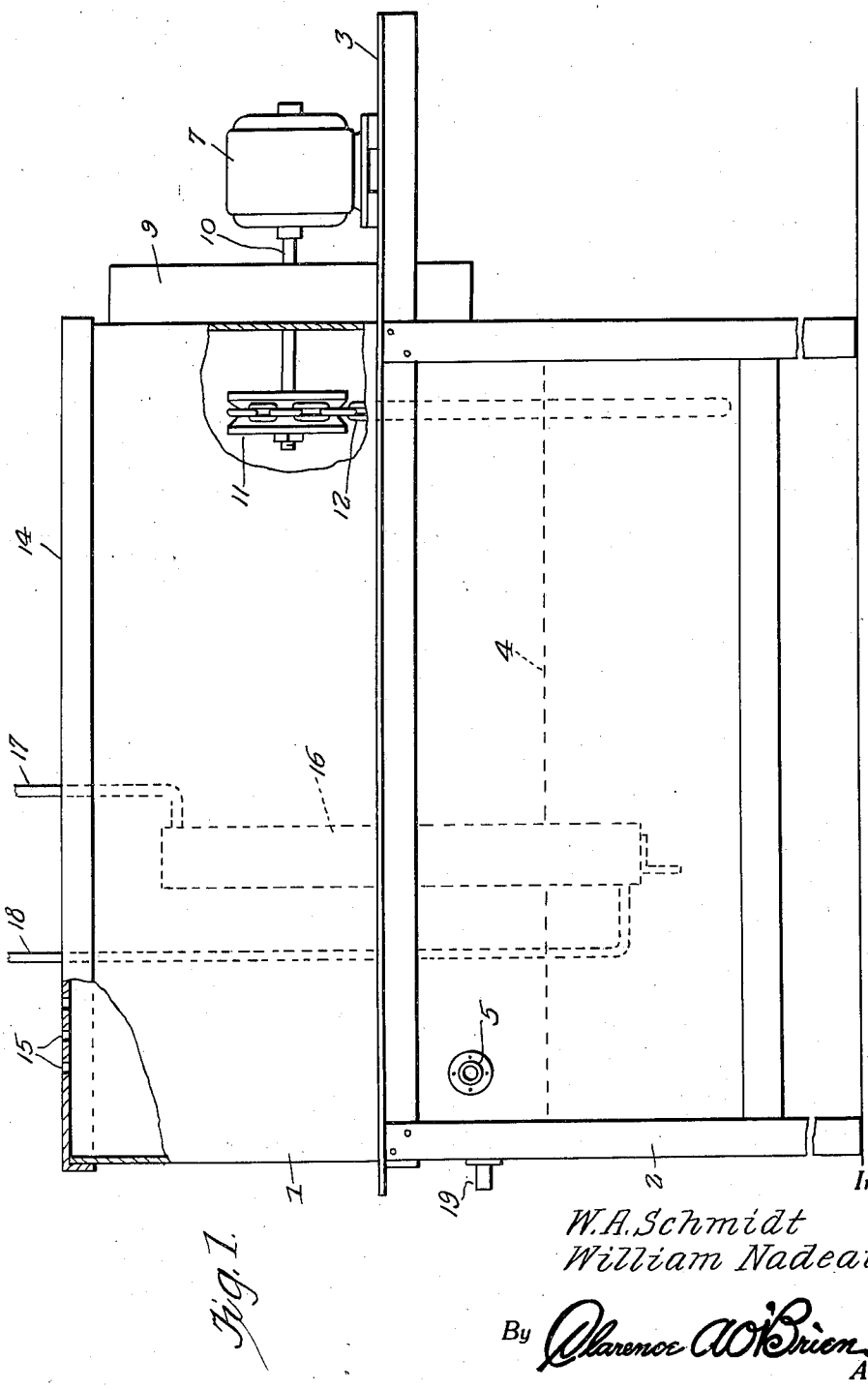


Fig. 1.

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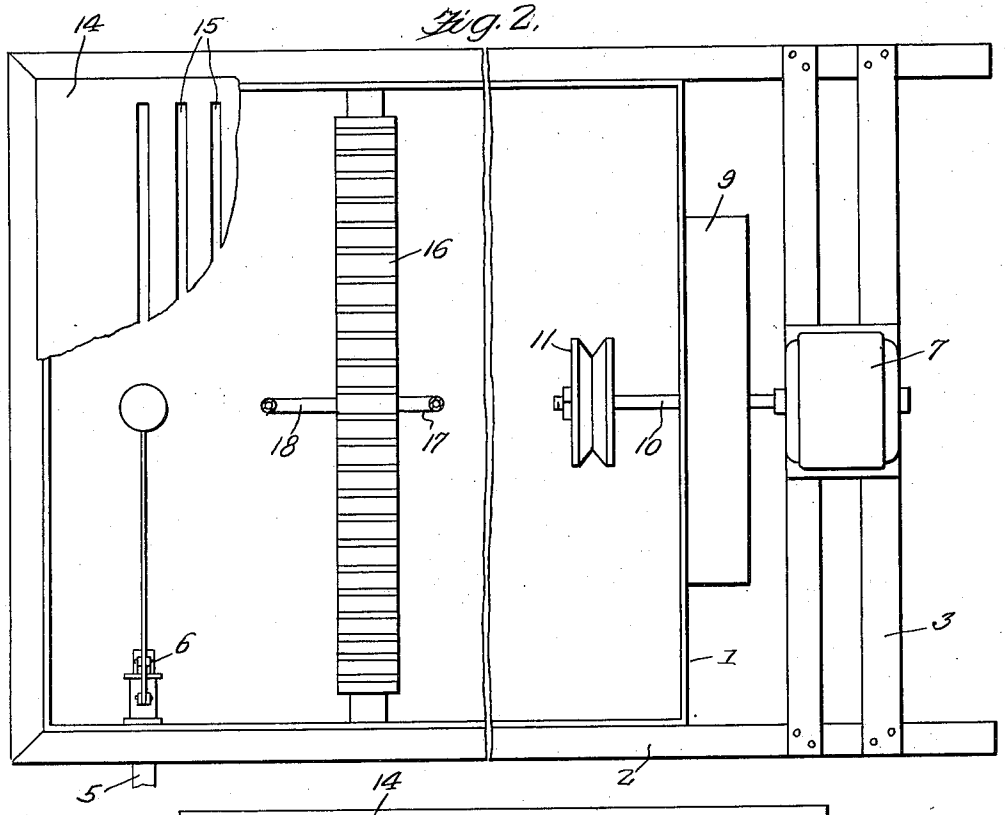
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Fig. 2.



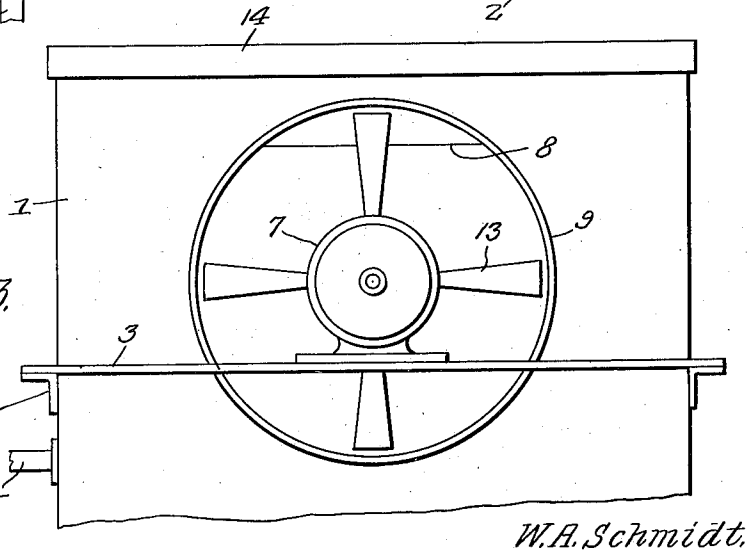


Fig. 3.

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UNITED STATES PATENT OFFICE

2,064,271

REFRIGERANT CONDENSING APPARATUS

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Application August 12, 1935, Serial No. 35,844

3 Claims. (Cl. 257—37)

The present invention relates to new and useful improvements in refrigerant condensing devices and has for its primary object to provide, in a manner as hereinafter set forth, an apparatus of this character embodying a novel construction, combination and arrangement of parts through the medium of which water may be utilized as the cooling medium in an economical and satisfactory manner.

Other objects of the invention are to provide a refrigerant condensing apparatus of the aforementioned character which will be comparatively simple in construction, strong, durable, reliable in operation, compact and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a view in side elevation of an apparatus constructed in accordance with the present invention with portions broken away in section.

Figure 2 is a top plan view of the invention, a portion only of the cover being shown.

Figure 3 is a view in end elevation of the upper portion of the apparatus.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a container 1 which is mounted in a suitable supporting frame 2. At one end, the frame 2 is formed to provide a platform 3, the purpose of which will be presently set forth. The container 1 is adapted to be filled to the desired level, as at 4, with water. The water may be received from any suitable source of supply through a conduit 5. A float actuated valve 6 controls the level of the water in the container 1.

Mounted on the platform 3 is an electric motor 7. The adjacent end of the container 1 has formed therein an opening 8 from which an annulus 9 projects. A shaft 10 from the motor 7 extends through the opening 8 into the container 1 and has fixed on its inner end portion a grooved pulley 11. Trained over the pulley 11 and depending loosely therefrom into the water 4 is an endless agitating and elevating chain 12. A fan 13 is fixed on an intermediate portion of the motor shaft 10 for operation in the annulus 9.

The container 1 includes a cover 14 having formed in the end portion thereof which is remote from the opening 8 a plurality of air discharge or outlet openings 15, as illustrated to advantage in Figures 1 and 2 of the drawings. The reference numeral 16 designates a condensing unit which is mounted vertically in the container 1. Inlet and outlet pipes 17 and 18, respectively, are connected to the upper and lower portions of the condenser unit 16.

It is thought that the operation of the invention will be readily apparent from a consideration of the foregoing, particularly to those skilled in the art to which the apparatus pertains. The refrigerant in gas form enters the upper portion of the condenser unit 16 from the usual compressor. The refrigerant is condensed in the unit 16 and flows to the bottom thereof and is discharged through the pipe 18. With the electric motor 7 in operation, water is agitated and picked up by the elevating chain 18. This water is blown by the fan 13 against the unit 16 and against one end of the container 1. This water then returns by gravity to the lower portion of the container 1 to be reused. It will be observed that the construction and arrangement is such that substantially the only loss of water that is sustained is by evaporation. The air escapes from the container 1 through the discharge openings 15. The container 1 may be provided with a suitable drain 19.

It is believed that the many advantages of a refrigerant condensing apparatus constructed in accordance with the present invention will be readily understood, and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:—

1. A refrigerant condensing apparatus of the class described comprising, in combination, a container for the reception of water, a supporting frame for the container, said supporting frame including a platform projecting beyond the container, said container having an air inlet opening therein adjacent the platform, an annulus projecting from the container around the air inlet opening, said container comprising a cover having air outlet openings therein at a point remote from the air inlet opening, a condensing unit mounted vertically in the container between the air inlet and outlet openings, an electric motor mounted on the platform, a shaft opera-

tively connected to the motor and projecting therefrom into the container, a grooved pulley fixed on the inner end portion of the shaft, an endless chain trained over the pulley and depending loosely therefrom into the water, said chain constituting means for agitating and elevating the water, and a fan fixed on the shaft and operable in the annulus for blowing the elevated water against the condensing unit.

2. A refrigerant condensing apparatus comprising, in combination, a container for the reception of a liquid, a condensing unit mounted in said container, endless conveying means operable in the container for elevating the liquid, and means for blowing the liquid from said endless conveying means against the condensing unit.

3. A refrigerant condensing apparatus comprising, in combination, a container for the reception of a cooling liquid, a condensing unit mounted in said container, a rotary member operable in the container in spaced relation to said condensing unit and engaged in the liquid for picking up and elevating said liquid, and means for blowing the liquid from said member against the condensing unit.

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