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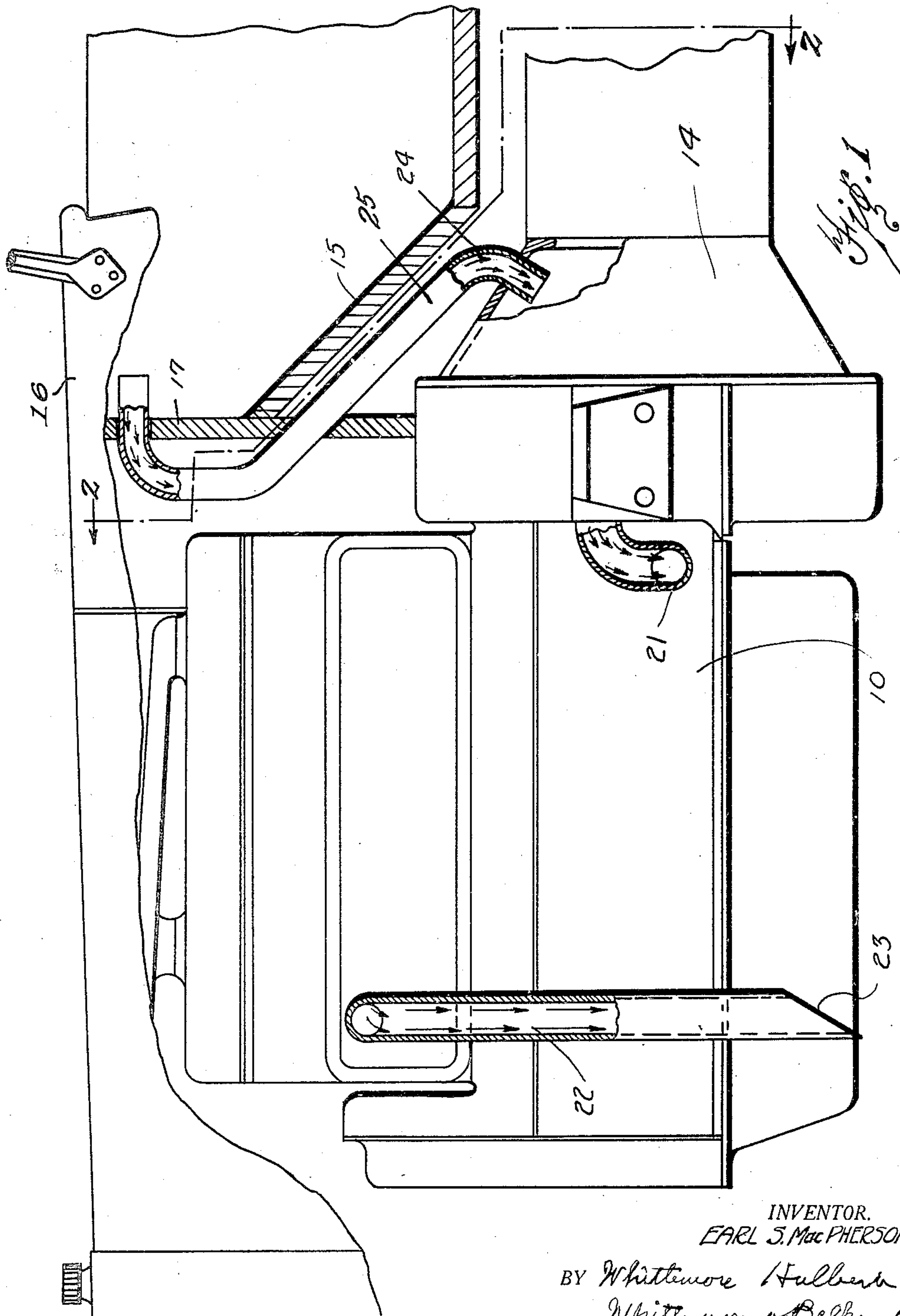
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CRANKCASE VENTILATING SYSTEM

Filed March 14, 1927

2 Sheets-Sheet 1



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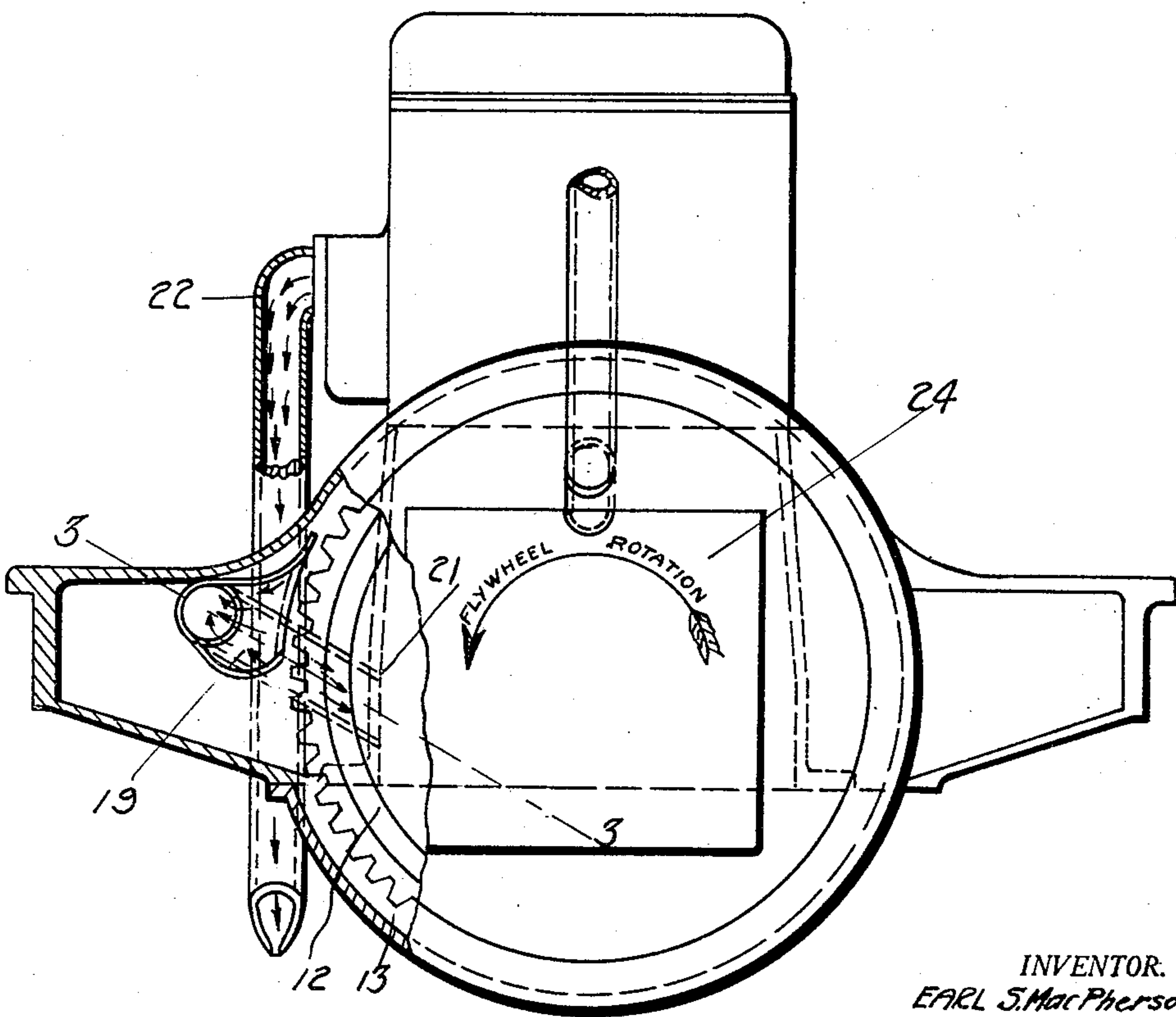
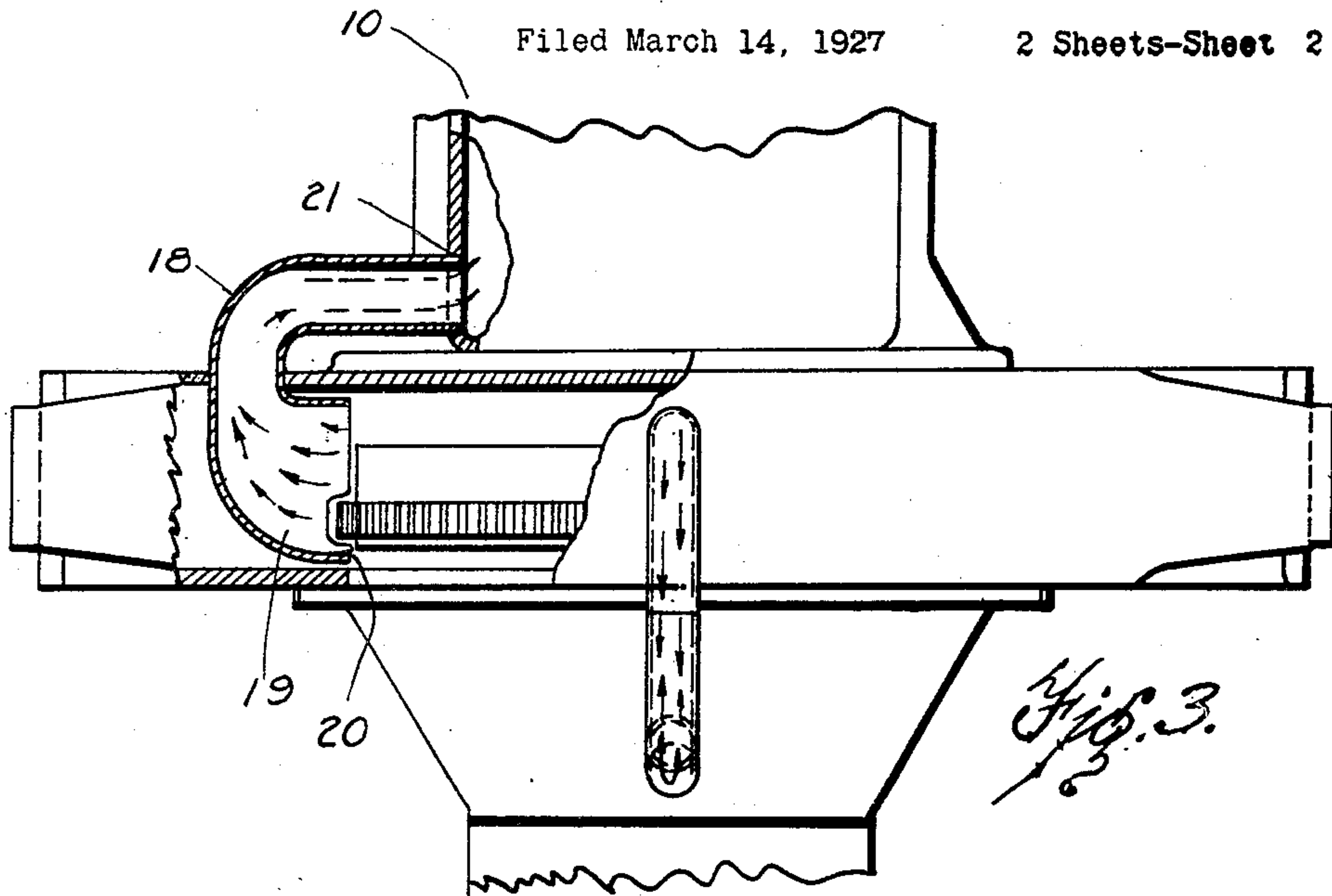
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UNITED STATES PATENT OFFICE

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CRANK-CASE-VENTILATING SYSTEM

Application filed March 14, 1927. Serial No. 175,359.

This invention relates to crankcase ventilating systems for internal combustion engines of motor vehicles and more particularly to an improved construction or arrangement wherein in the interior of the crankcase is cooled or ventilated in a simple but efficient manner.

One of the objects of this invention is to provide a system of crankcase ventilation wherein the air displaced or set in motion by the periphery of the flywheel is employed for promoting or inducing the desired circulation of air. Among the advantages obtainable from such an arrangement is that of eliminating the necessity of a special impeller or fan or other means for propelling the air through the crankcase.

Another object of the invention accomplished as a result of the herein described construction is that of ventilating the interior of the body of the vehicle by supplying the air drawn into the crankcase from the interior of the vehicle body so that the air therein is being constantly changed.

The above, as well as other objects, advantages and novel details of construction of an illustrative embodiment of the invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings wherein

Figure 1 is a fragmentary side elevational view of a motor vehicle and internal combustion engine showing an adaptation of the principles of this invention.

Figure 2 is a fragmentary sectional view taken substantially on the plane indicated by line 2—2 in Figure 1, and

Figure 3 is a fragmentary sectional view taken substantially on the plane indicated by line 3—3 in Figure 2.

Referring now particularly to the drawings wherein like reference characters indicate like parts it will be noted that there is illustrated a conventional form of internal combustion engine having a crankcase 10 and upon the crank shaft 11 of which engine a flywheel 12 is mounted. This flywheel rotates in a housing 13 to which a clutch housing 14 is connected. The reference character 15 indicates generally the floor and toe board of

the motor vehicle body, 16 the cowl and 17 the instrument board.

As previously pointed out it is proposed to utilize the air which is displaced or set in motion by the flywheel at the periphery thereof for inducing or producing a circulation of air through the crank case and for this purpose, in the embodiment of the invention herein illustrated, I provide a conduit 18 which extends into the flywheel housing 13 and terminates in an open flared or funnel-shaped end 19 which is arranged adjacent to but slightly spaced from the periphery of the flywheel 12. By comparison of Figures 2 and 3 the position of the conduit 18 and the funnel-shaped end 19 will be more readily appreciated and by particular reference to Figure 3 it will be noted that this funnel-shaped end may be extended laterally as indicated at 20 so as to catch or gather air displaced by the side faces of the flywheel. The theoretic path of the air is quite clearly illustrated by arrows. The conduit 18 after emerging from the flywheel housing 13 communicates with the crank case 10 as indicated at 21. Thus it will be seen that air displaced or set in motion by the flywheel will be collected or caught by conduit 18 and conducted to the crankcase. This air will be under a pressure above atmospheric pressure and will as a consequence cause a displacement or circulation of the air in the crankcase. To facilitate the circulation of air in the crankcase and the discharge of the air and fumes therefrom I provide a discharge conduit 22 which may, as most clearly illustrated in Figure 1, extend downwardly to a point adjacent the bottom of the engine. The discharge end 23 of this tube may open rearwardly so that a draft will be induced in the pipe 22 when the vehicle is in motion to facilitate the discharge of the air and fumes.

Air is supplied to the flywheel housing 13 through, for instance, an aperture 24 provided in the clutch housing 14, which aperture is arranged at a point inside the diameter or periphery of the flywheel. In order that the present system may be employed also for the purpose of ventilating or changing the air within the body of the vehicle I may conduct

the air to aperture 24 through a conduit 25 which extends up to a point, for instance under the cowl 16 and back of the instrument board 17 whereby the air supplied to the fly-wheel housing is taken from the inside of the car body. Thus this system will operate effectively not only to ventilate the crankcase but to effect a change of the air inside of a closed car body.

While an illustrative embodiment of the invention has been described and illustrated herein somewhat in detail it will be readily apparent to those skilled in this art that the invention is capable of expression in numerous other constructions and arrangements and as a consequence the herein described disclosure should not be considered as limiting the invention in any particular, reservation being made to make such changes in many of the essential and all of the non-essential details as may come within the purview of the accompanying claims.

What I claim as my invention is:

1. In a crank case ventilating system, an internal combustion engine having a flywheel, a crank case and a conduit connected to said crank case and extending adjacent said fly-wheel, said conduit being adapted to receive blasts of air from the fly-wheel and to discharge the same into the crank case.

2. In a crank case ventilating system, an internal combustion engine having a fly-wheel, a crank case and conductive means connecting the crank case to the periphery of the flywheel whereby the air discharged from the periphery of the flywheel may be conducted to the said crankcase.

3. The combination with an internal combustion engine having a flywheel, and a crank case, of means extending from a point adjacent the flywheel to said crankcase for collecting air set in motion by said flywheel and introducing the same into said crankcase.

4. The combination with an internal combustion engine having a flywheel, and a crank case, of a conduit extending from the periphery of said flywheel to said crankcase for conducting air displaced by the flywheel to said crankcase.

5. The combination with an internal combustion engine having a flywheel, and a crank case, of means for collecting air displaced by said flywheel and conducting the same to said crankcase and means for discharging air from said crankcase.

6. The combination with an internal combustion engine having a fly-wheel, a crank case, of means for discharging air into said crank case to ventilate the same, said means including a conduit having a funnel shaped end arranged tangentially to the fly-wheel for receiving the peripheral discharge therefrom, the said conduit communicating with the said crank case for discharging the pe-

ripheral discharge from the fly-wheel into the said crank case.

7. The combination with an internal combustion engine having a fly-wheel, a crank case and a housing for the fly-wheel, of means for discharging air into said crank case to ventilate the same, said means including a conduit having a funnel shaped end arranged tangentially to the fly-wheel for receiving the peripheral discharge therefrom, the said conduit communicating with the said crank case for discharging the peripheral discharge from the fly-wheel into the said crank case, and a second conduit for supplying air to said fly-wheel housing.

8. In a motor vehicle, the combination with a vehicle body, an internal combustion engine having a fly-wheel, a crank case and a housing for the fly-wheel, of means including a conduit having a funnel shaped end arranged tangentially to the fly-wheel for receiving the peripheral air discharge therefrom, the said conduit communicating with the said crank case, and a second conduit communicating at one end with the interior of the said vehicle body and communicating at its other end with the said fly-wheel housing.

9. In a crankcase ventilating system, an internal combustion engine having a crankcase and a fly-wheel, a housing for said fly-wheel, a conduit having one end arranged adjacent the periphery of said fly-wheel for receiving air set in motion by said fly-wheel and having its other end communicating with said crankcase for discharging the air collected from the fly-wheel into the crankcase, a second conduit for supplying air to the fly-wheel housing, and a third conduit for discharging air from the said crankcase.

10. In a motor vehicle, the combination with a vehicle body, an internal combustion engine having a fly-wheel, a crank case and a housing for the fly-wheel, of means for conducting air from the interior of said vehicle body to the said fly-wheel housing, means for collecting the air set in motion by the fly-wheel and for conducting the same to the crankcase and means for discharging the air from the said crankcase.

In testimony whereof I affix my signature.
EARLE S. MACPHERSON.