

## Chapter 4

# VENTILATION

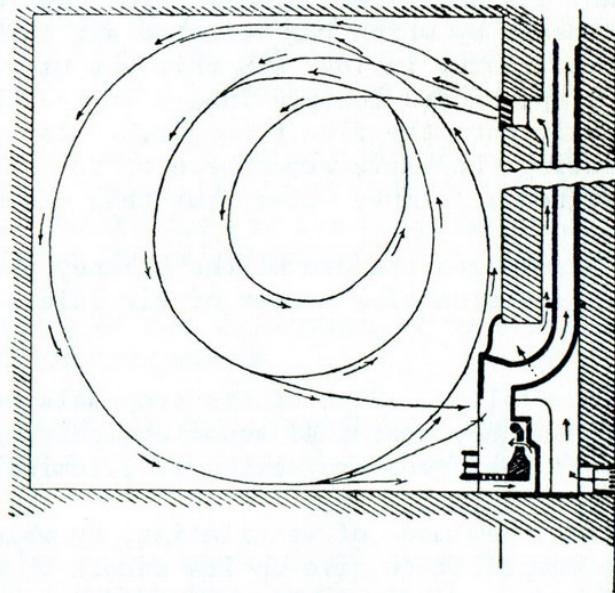


Fig. 4.1. Galton's ventilating grate.

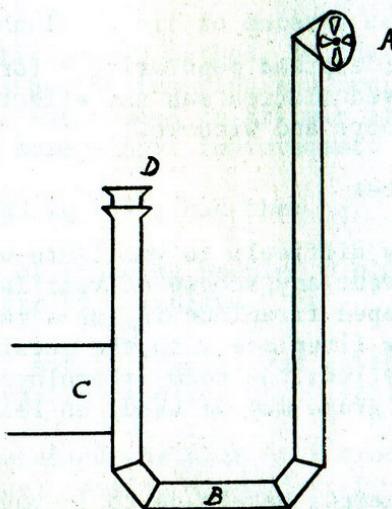
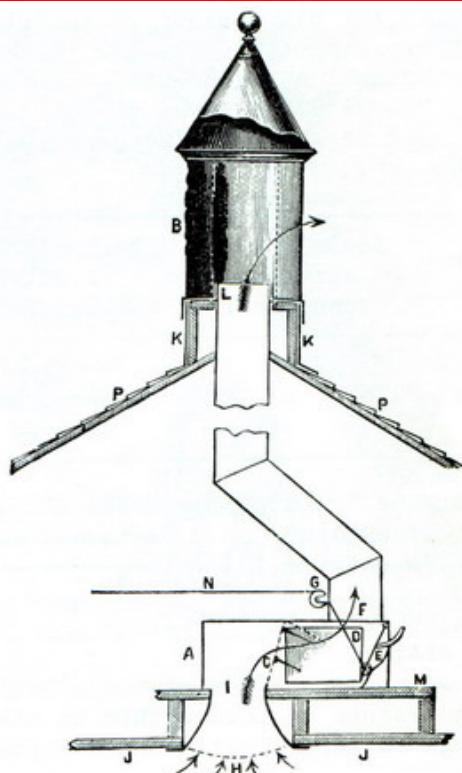


Fig. 4.2. Tredgold's siphon ventilator.



(a)

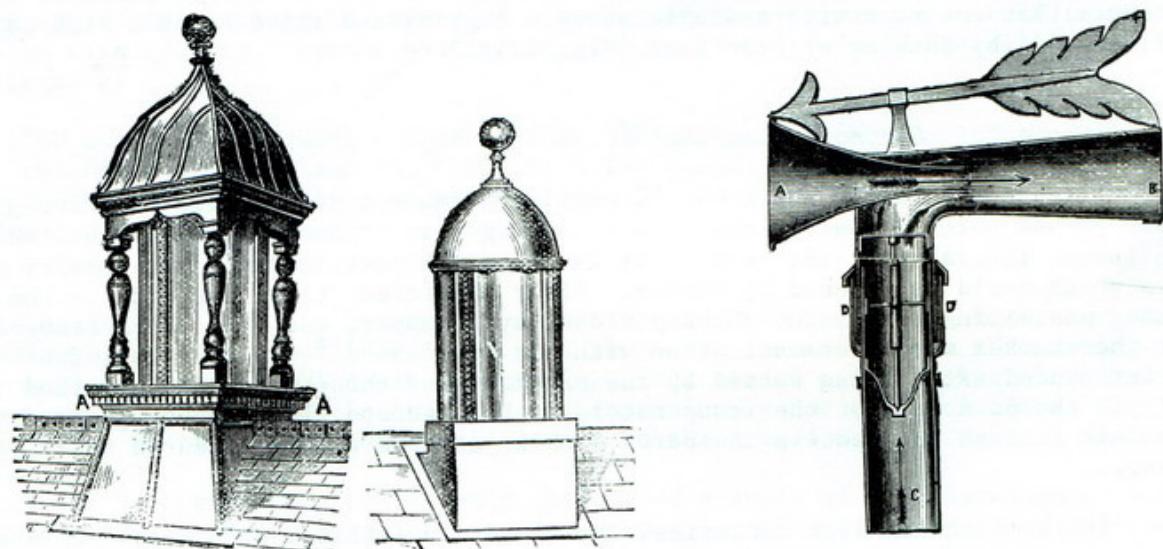


Fig. 4.3. A variety of ridge ventilators. (a) Buchan's patent. (1892)



Fig. 4.4. Böckler's stove, with warm-air ducts

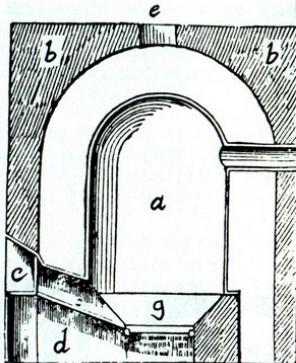


Fig. 4.5. Strutt's cockle stove. (a) cockle, (b) brickwork, (c) fuel door, (d) ashpit and draught hole, (e) aperture to room or shaft, (g) grate.

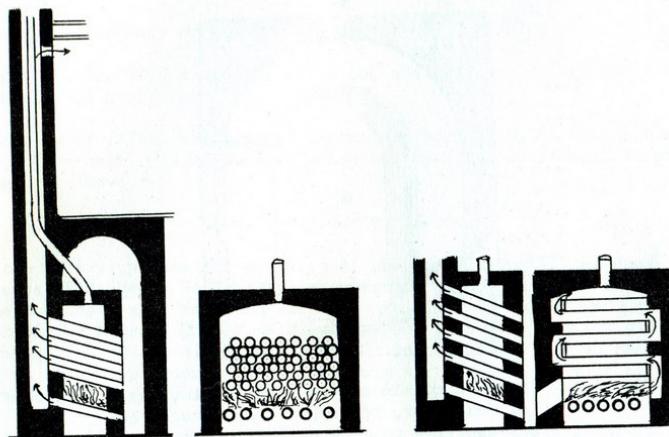
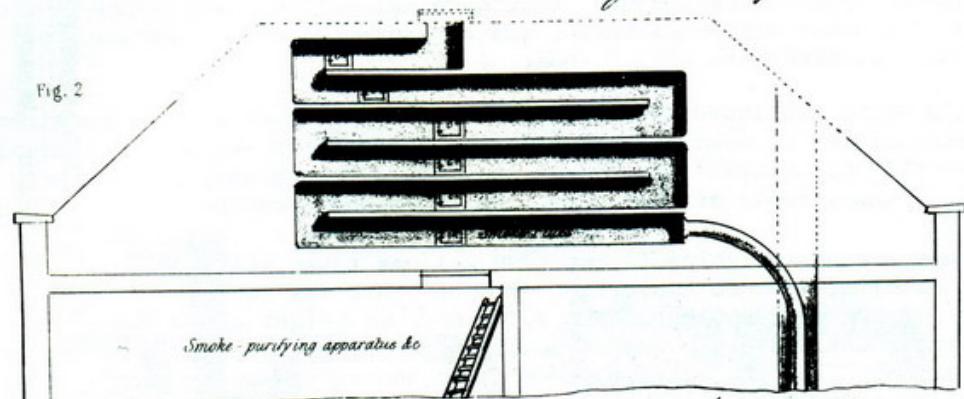


Fig. 4.6. Tube air heater (left). Plate air heater (right). (ca. 1798)

# M. F. A. Bernhardt's System of



## Heated Air for Warming and Airing Buildings.

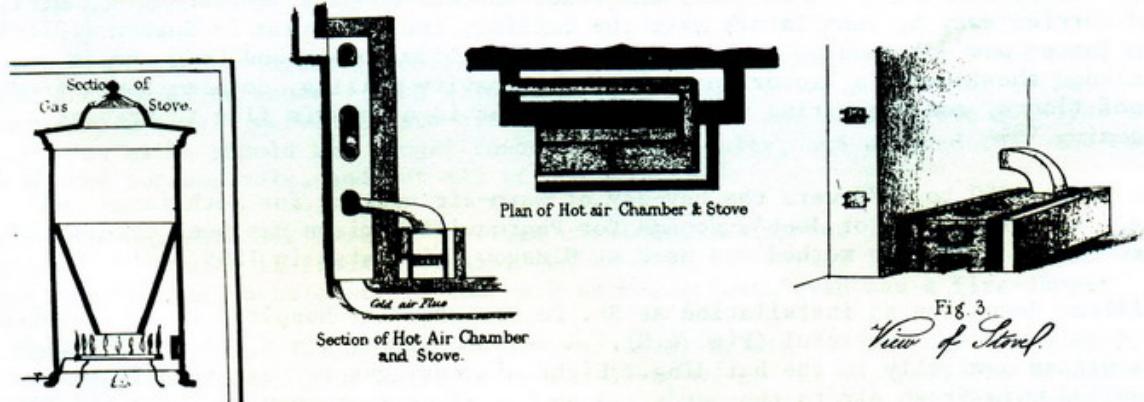
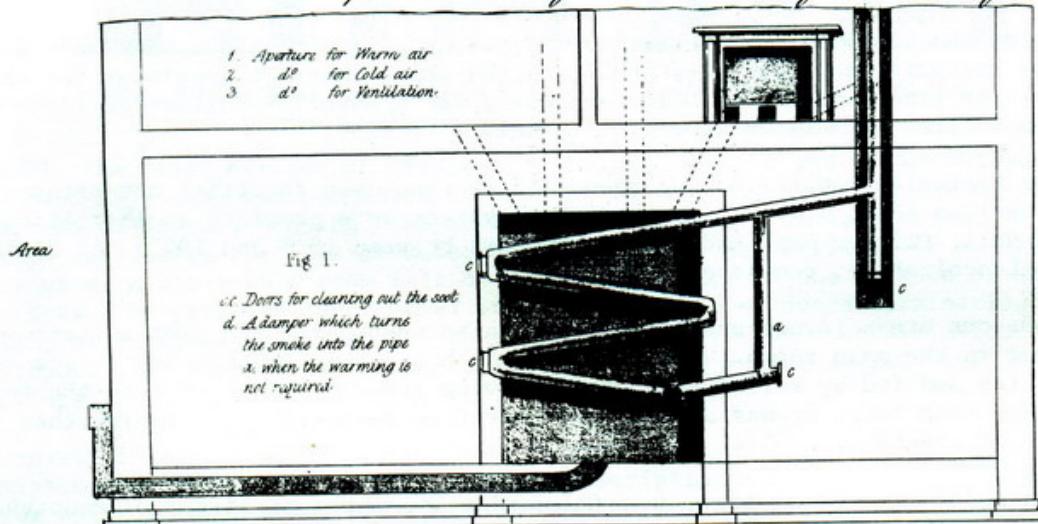


Fig. 4.7. Warm-air heating. (46)

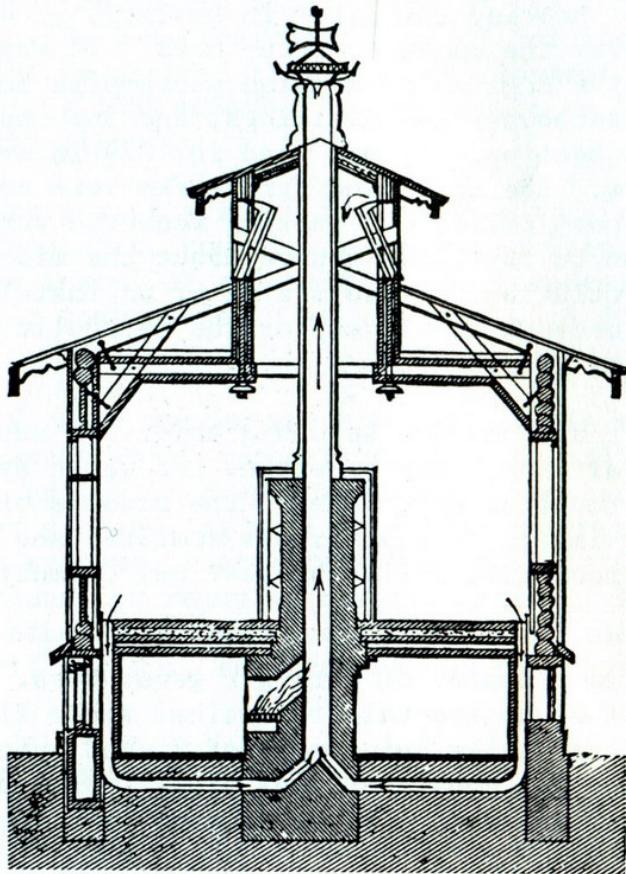


Fig. 4.8. St. Petersburg City Hospital<sup>(9)</sup>.

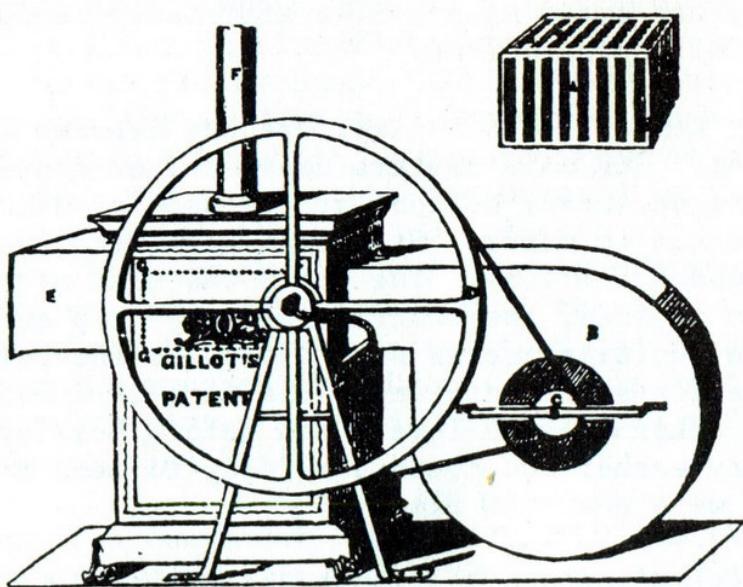


Fig. 4.9. Warm-air stove (1842).

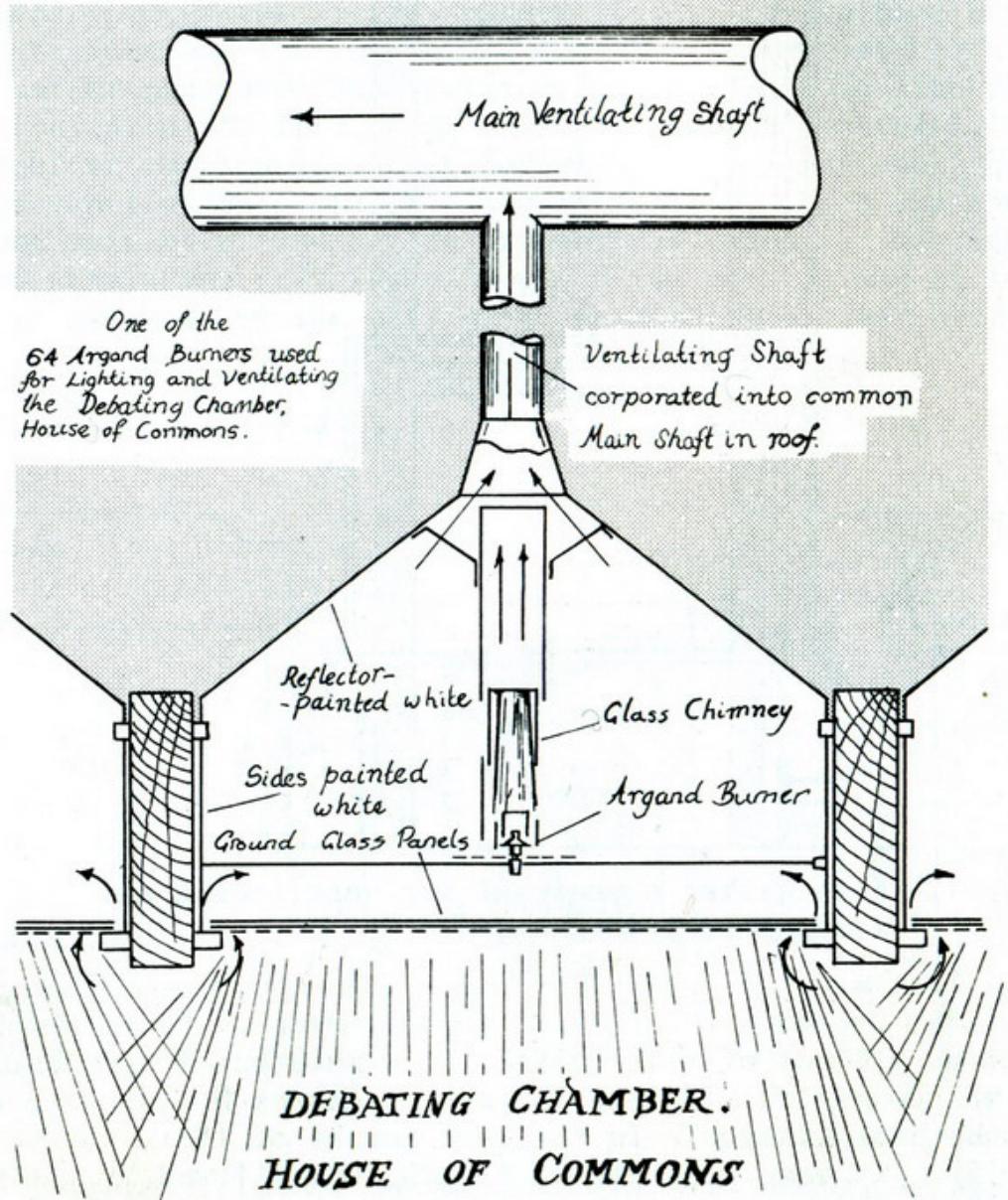


Fig. 4.10. Enlarged view of gas burner and ventilation duct, House of Commons, 1852. ("Outline of History of Lighting by Gas" D. Chandler).

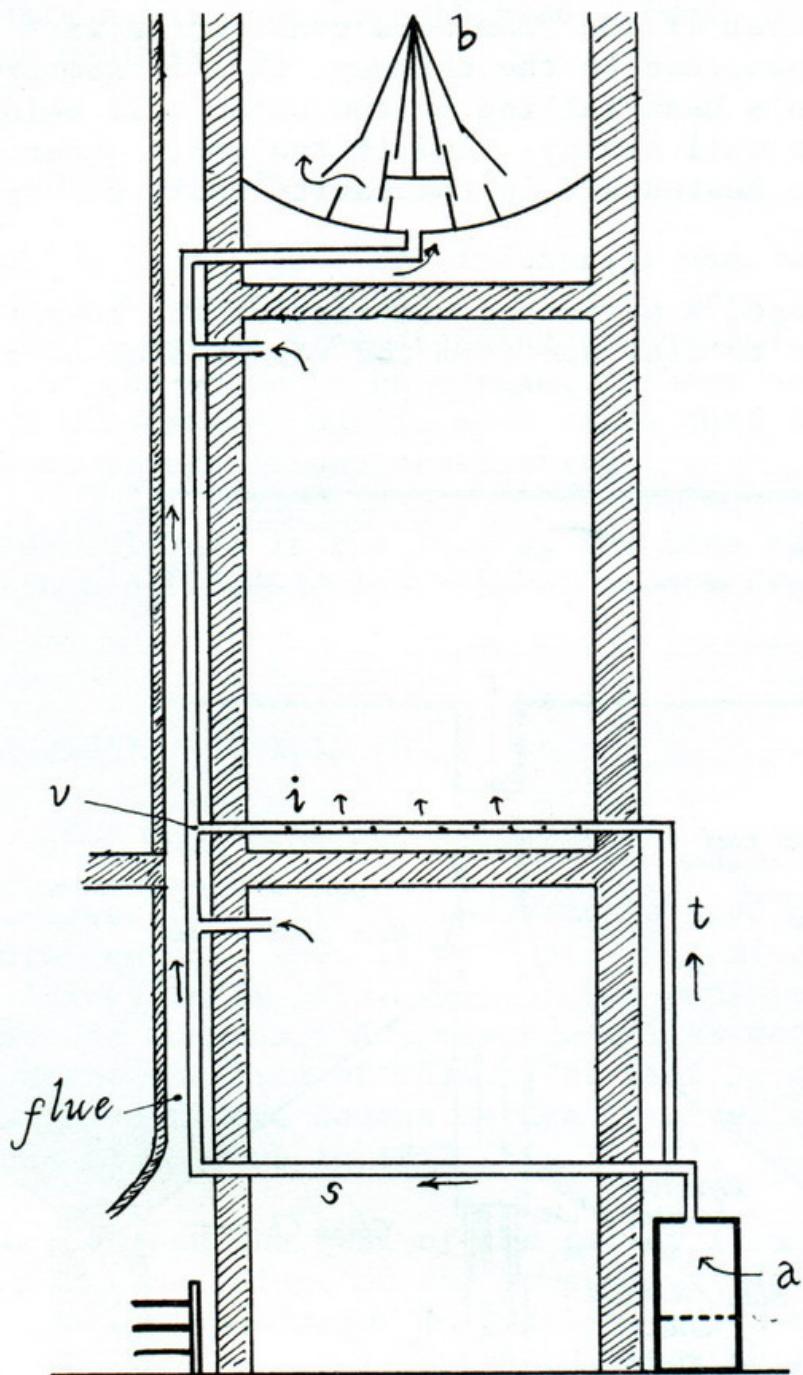


Fig. 4.11. Adam Walker's proposal for ventilating and warming an apartment.

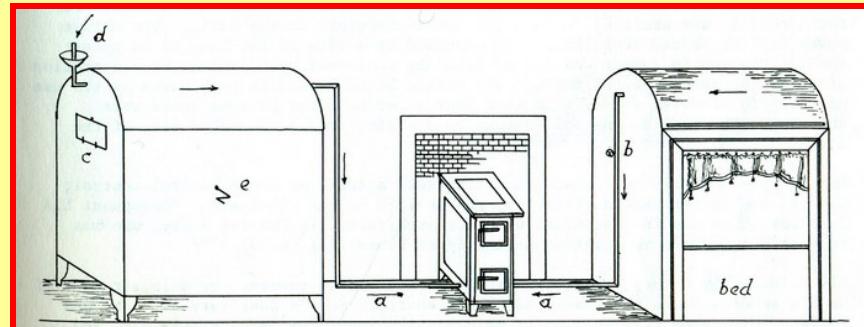


Fig. 4.12. Mr Fleming's ventilated bed and washing machine (ca. 1840).

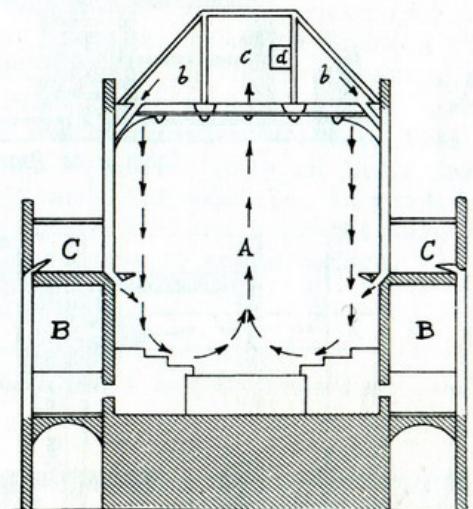
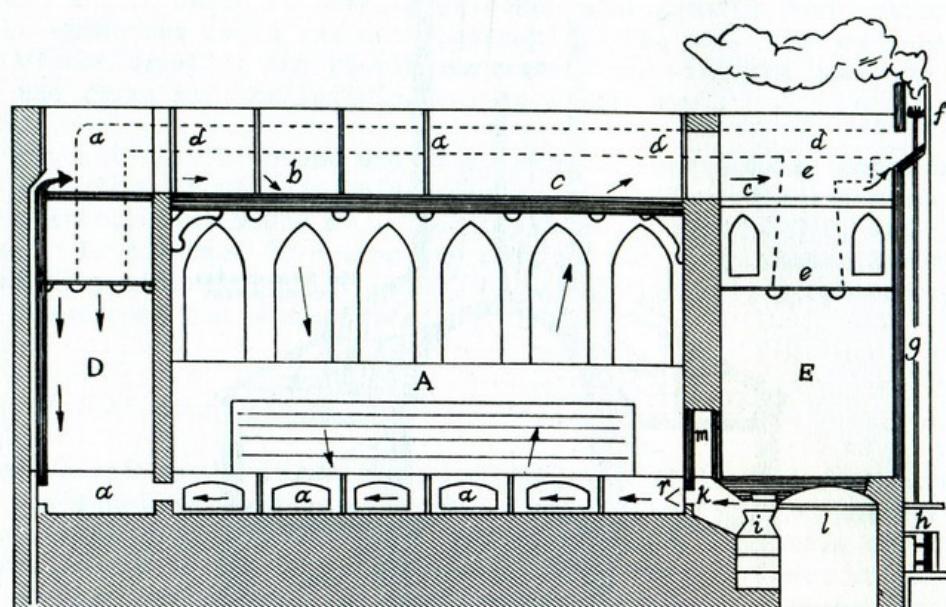
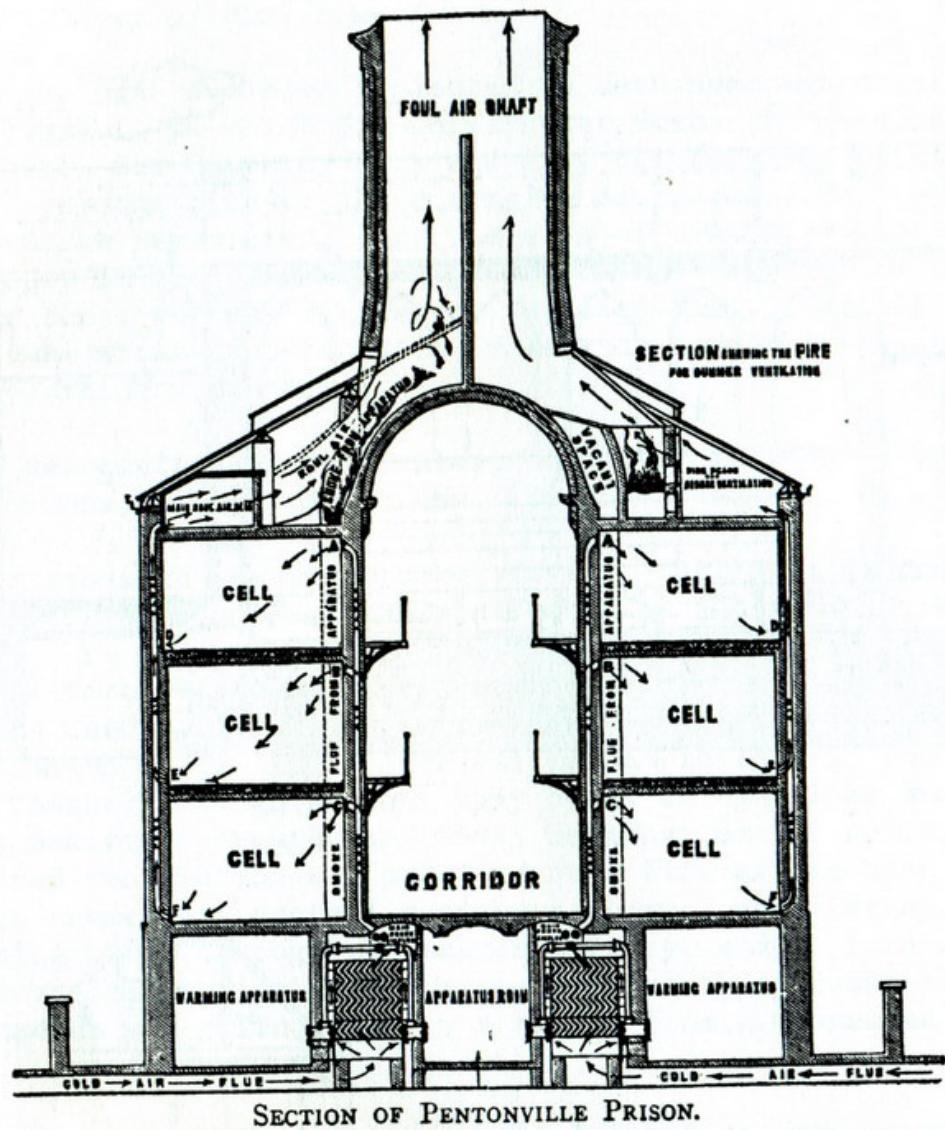
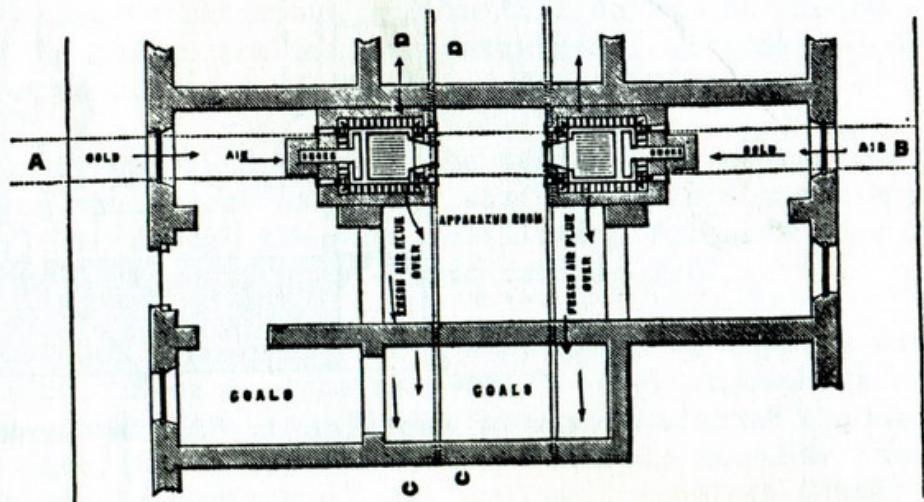


Fig. 4.13. Barry's system of ventilation for the House of Lords (1847).



SECTION OF PENTONVILLE PRISON.



PLAN OF APPARATUS ROOM.

Fig. 4.14. Jebb's scheme for Pentonville Prison.

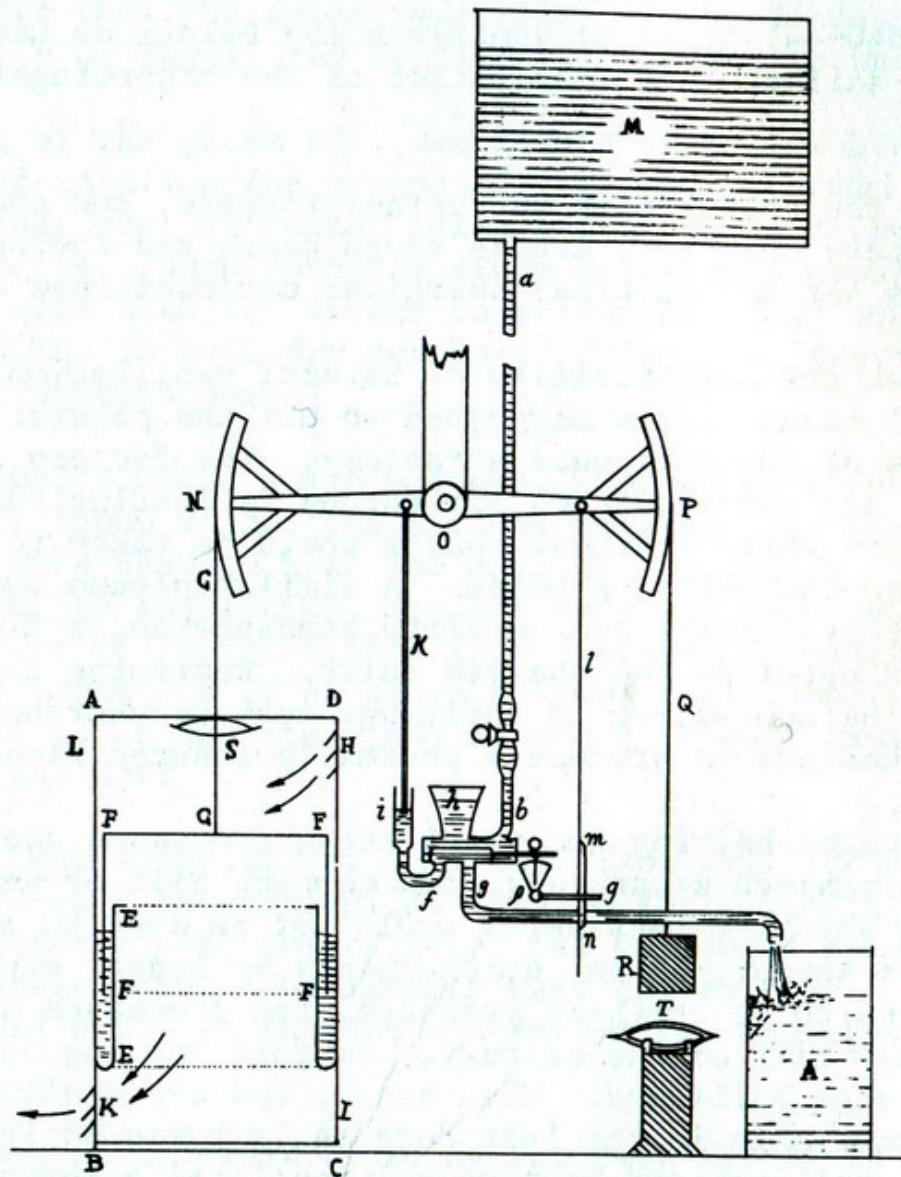


Fig. 4.15. Arnott's automatic air pump (York hospital) driven by water.

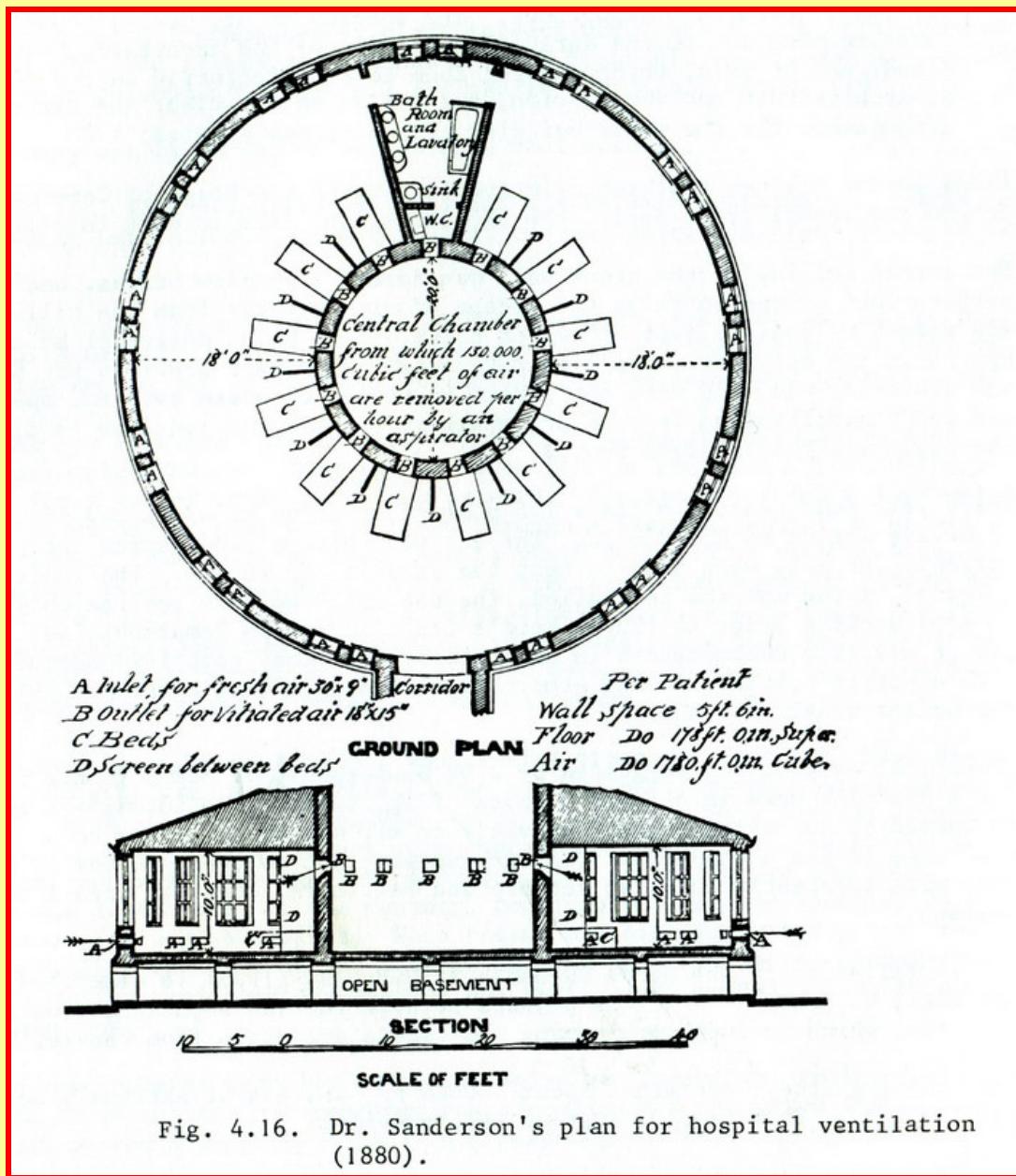
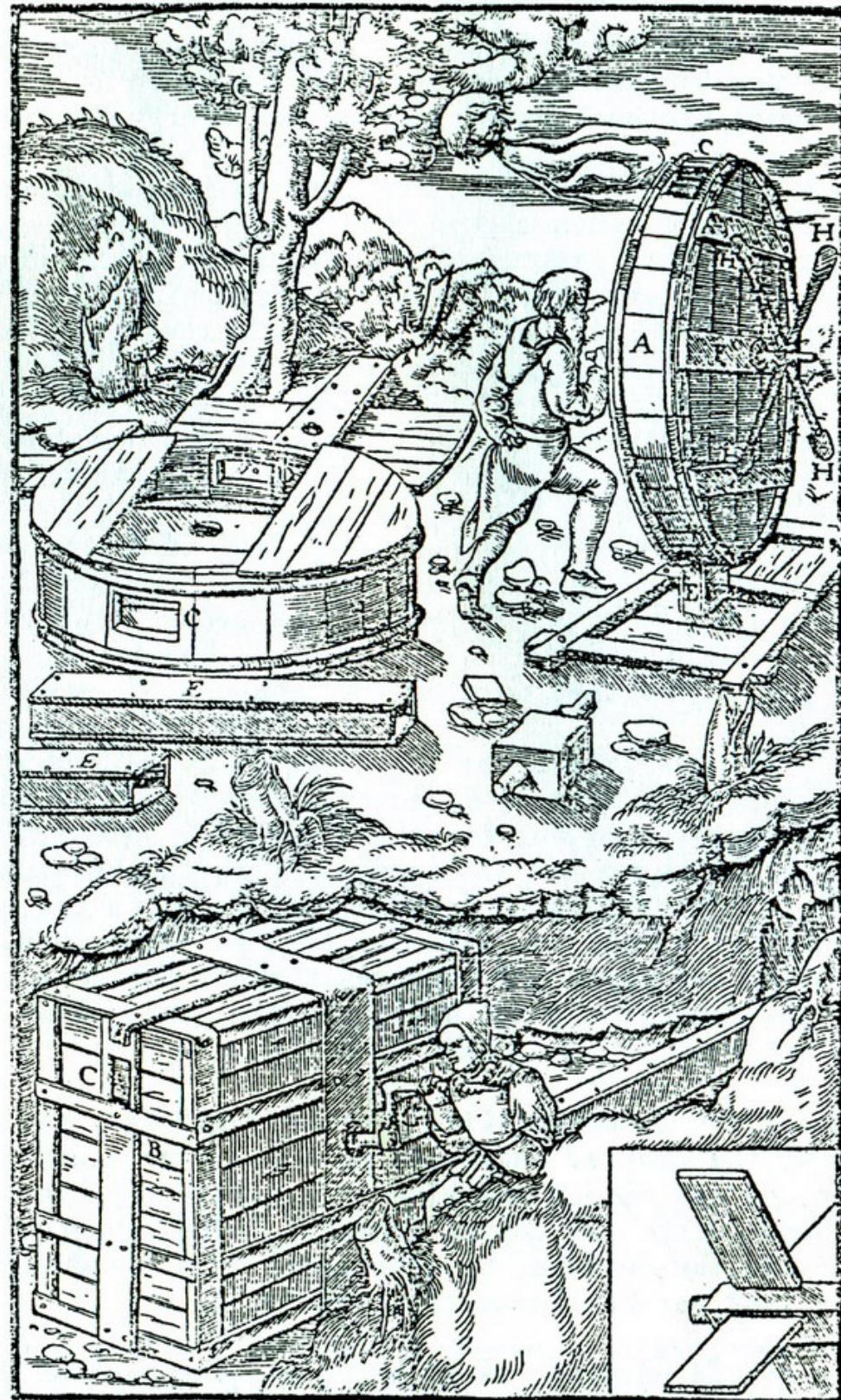


Fig. 4.16. Dr. Sanderson's plan for hospital ventilation (1880).



Fig. 4.17. Seistan windmills.



A—DRUM.    B—BOX-SHAPED CASING.    C—BLOW-HOLE.  
E—CONDUIT.    F—AXLE.    G—LEVER OF AXLE.    H—RODS.

Fig. 4.18. A selection of mine ventilation fans.<sup>(4)</sup>

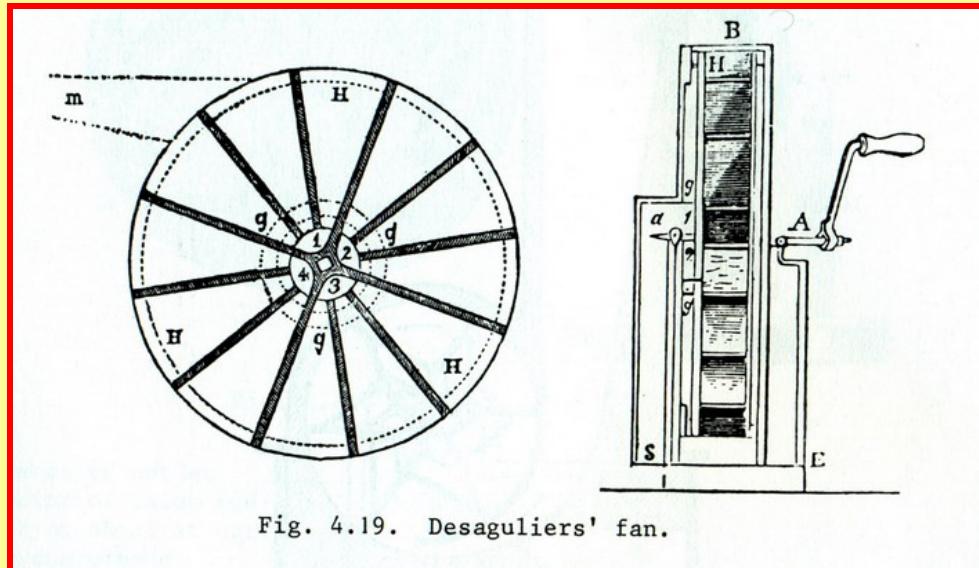


Fig. 4.19. Desaguliers' fan.

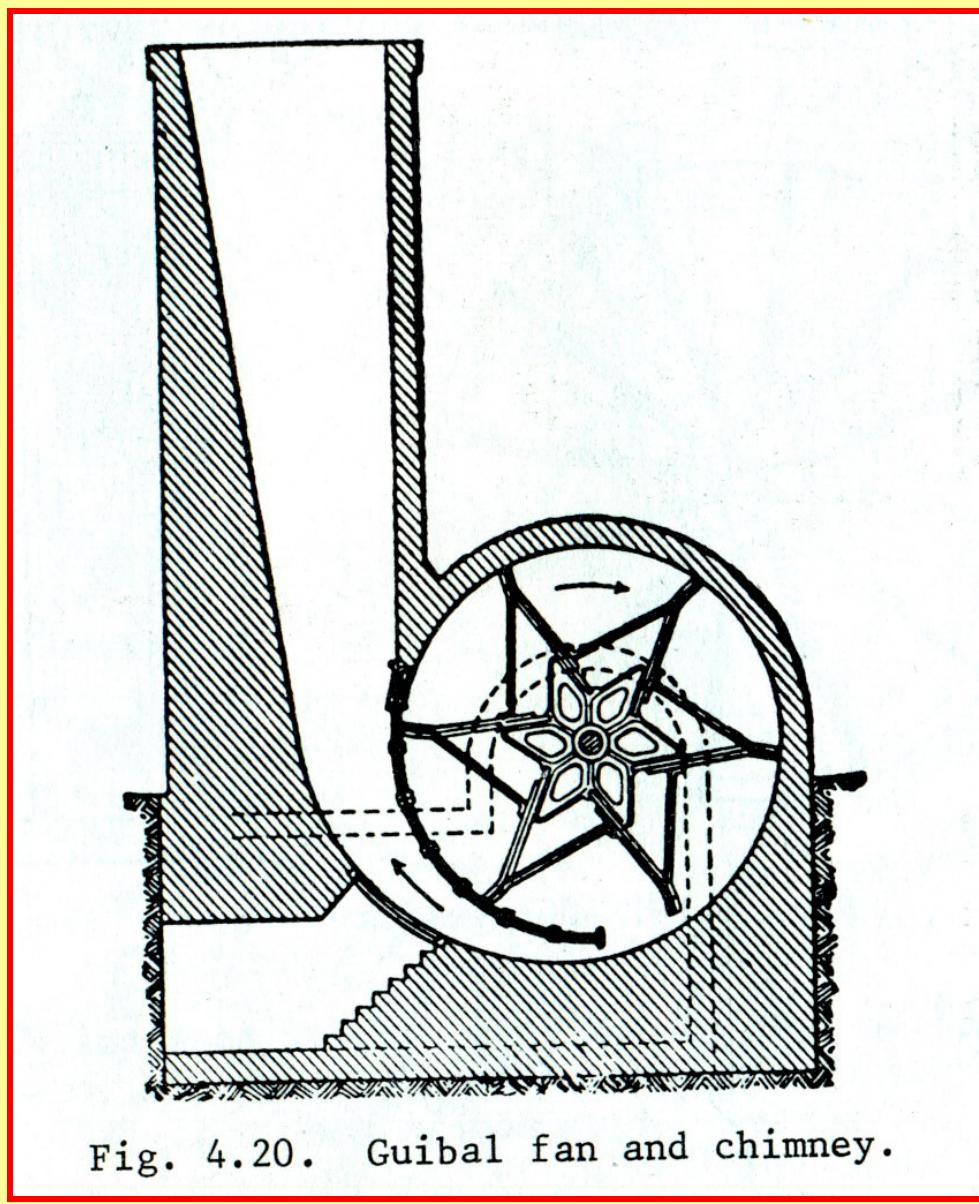


Fig. 4.20. Guibal fan and chimney.

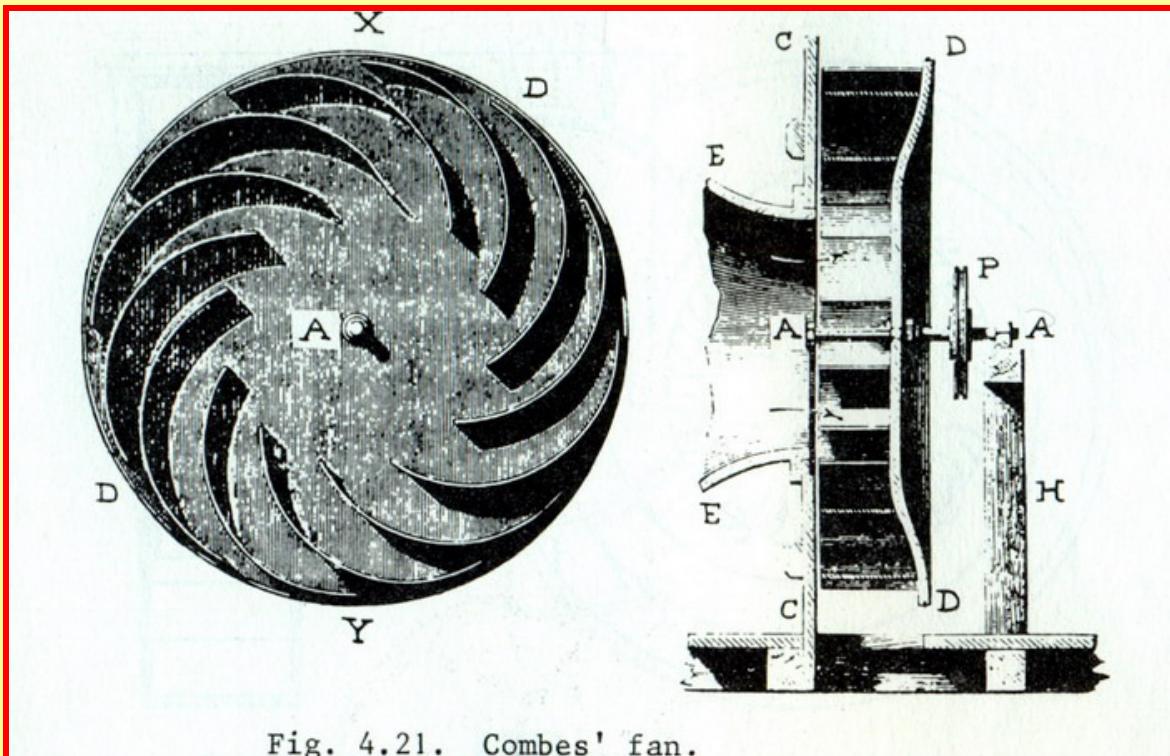


Fig. 4.21. Combes' fan.

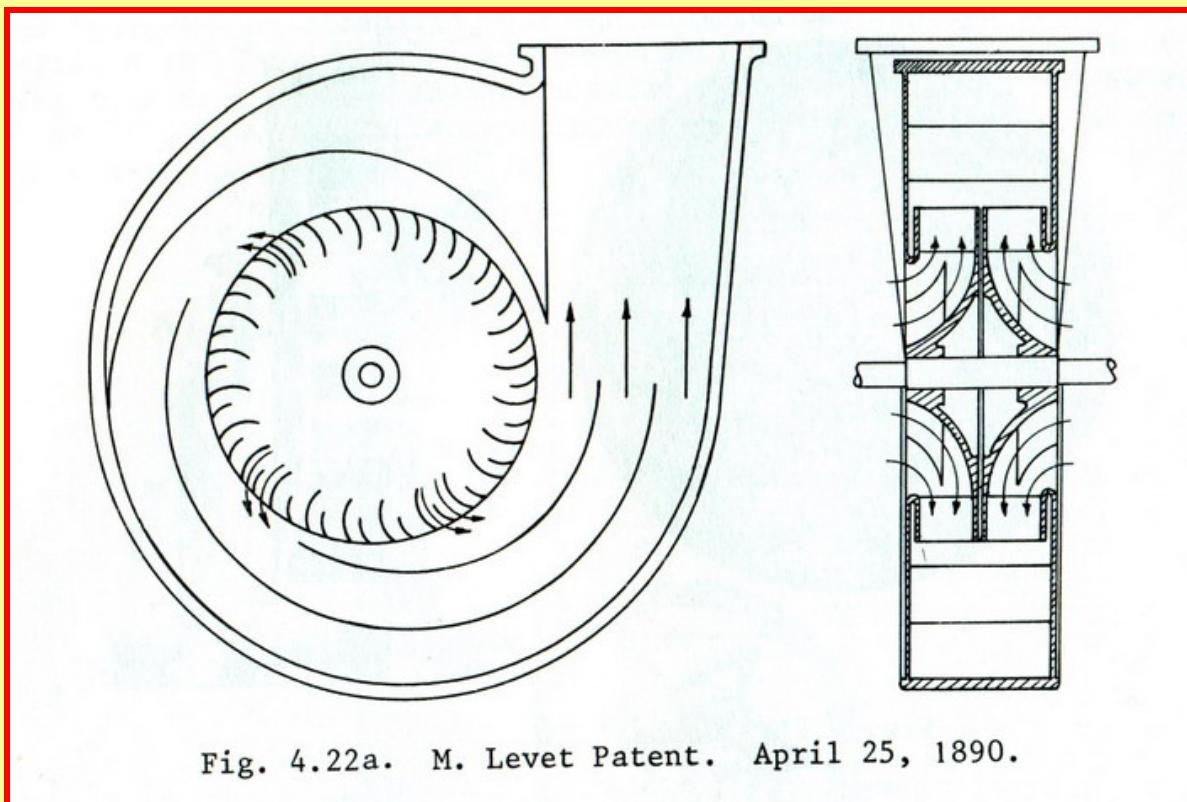


Fig. 4.22a. M. Levet Patent. April 25, 1890.

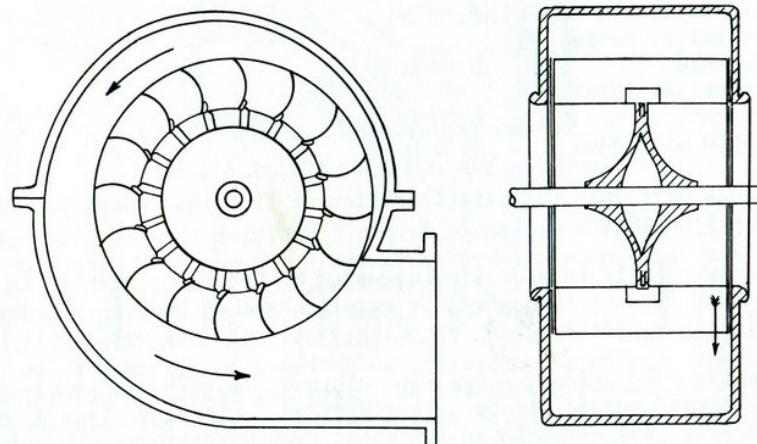


Fig. 4.22 b. Fournier and Cornu Patent. February 18, 1896.

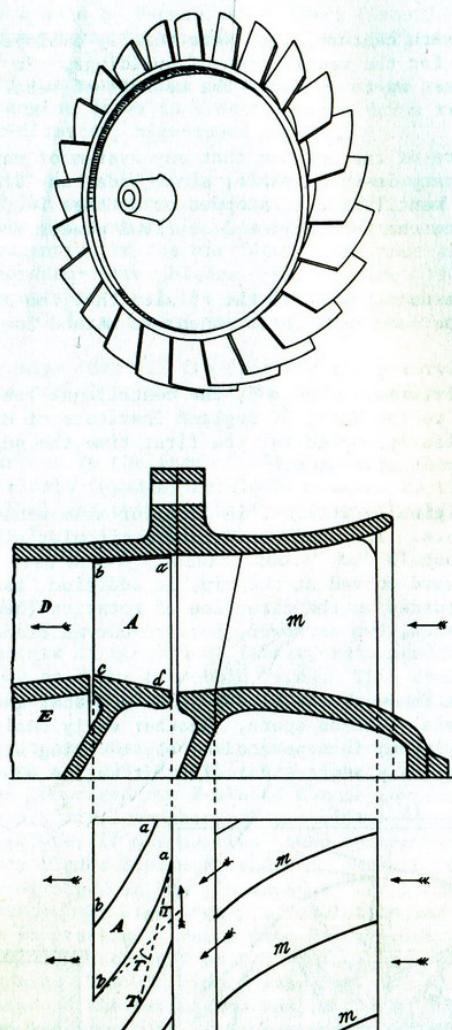


Fig. 4.23. Rateau screw fan. Top: fan wheel. Centre: details of inlet guide vanes, wheel, and outlet diffuser. Bottom: air path through fan.

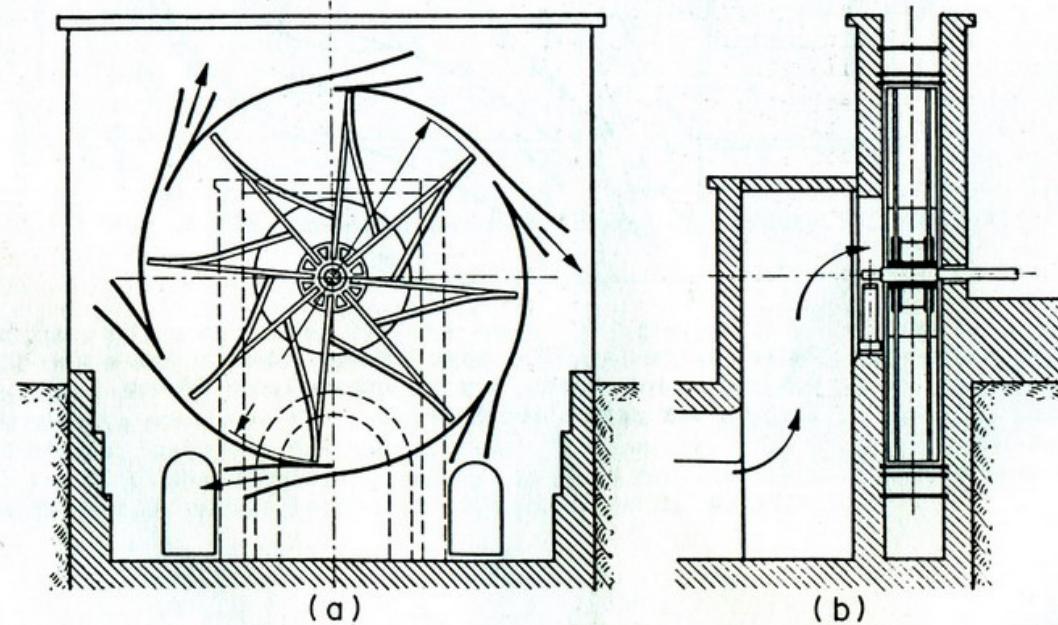


Fig. 4.24. Mine fan of Harzé with free-discharging partial diffusers.

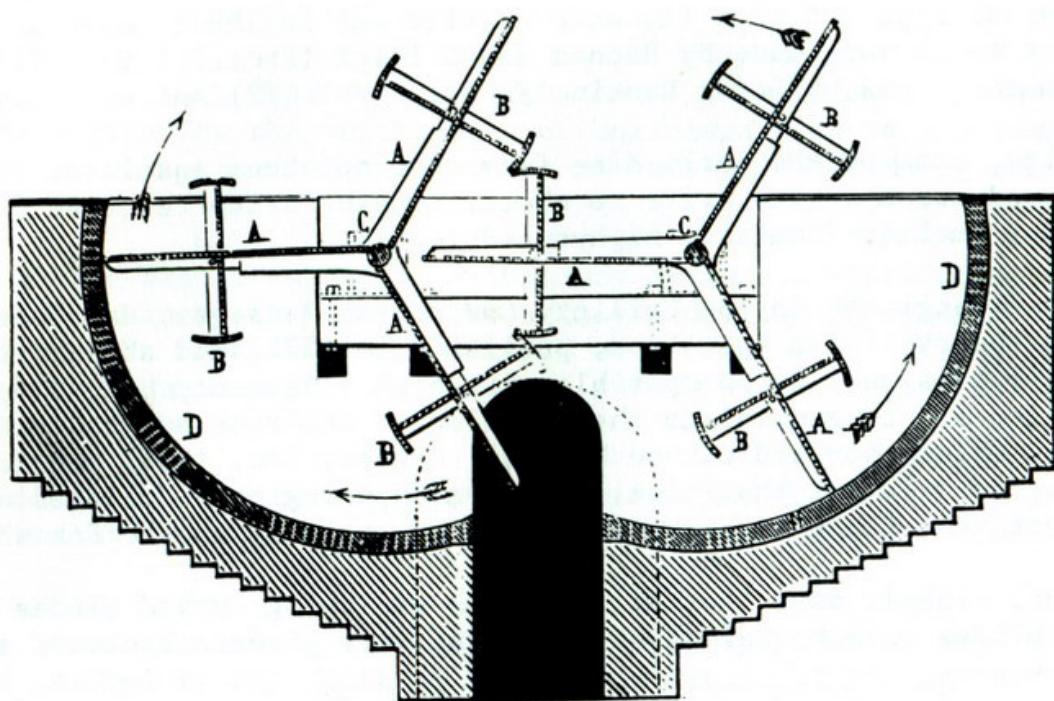


Fig. 4.25. Fabry's contra-rotating blower (early 19th century).

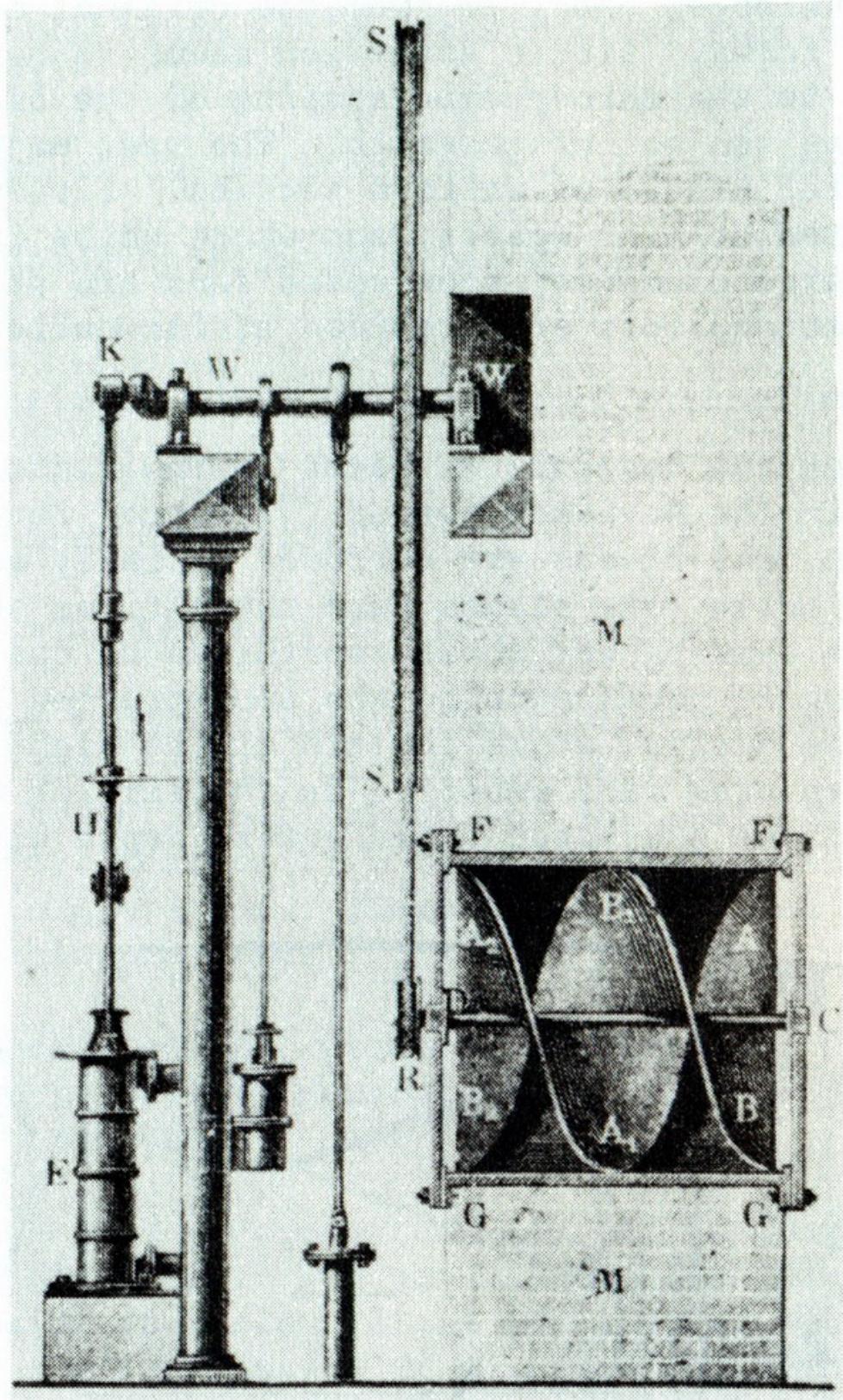


Fig. 4.26. Archimedean screw fan.

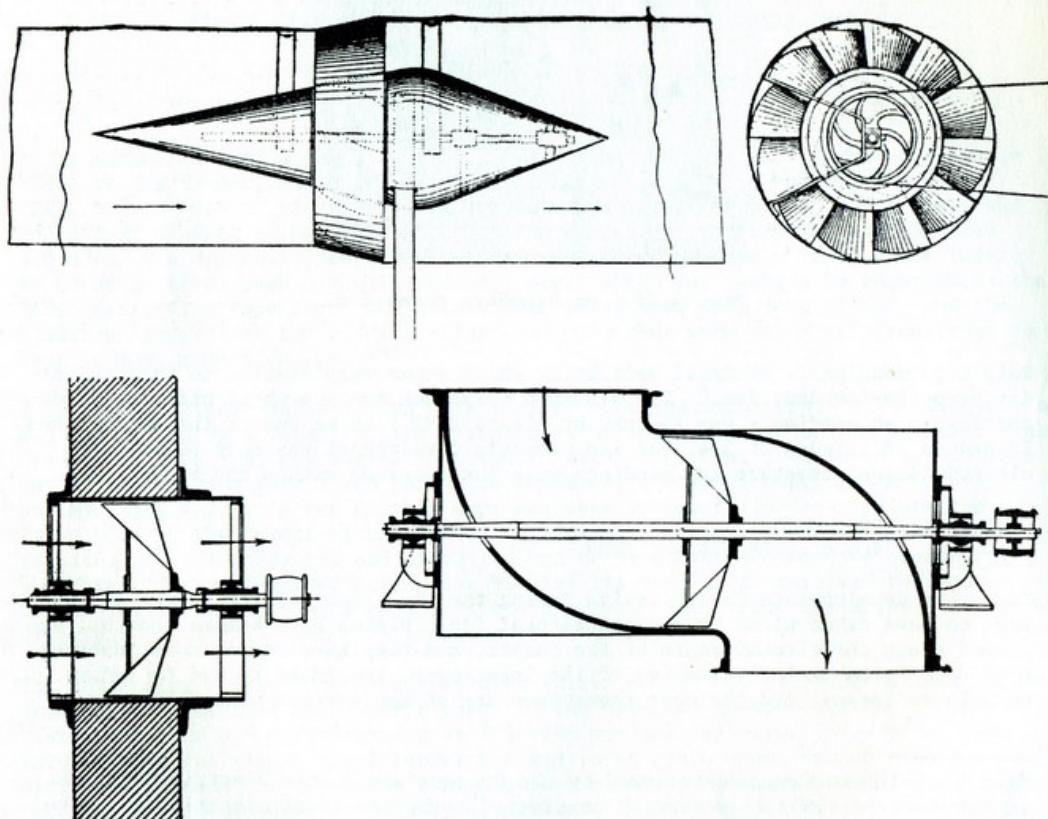


Fig. 4.27. Helical fans (late 19th century).  
(above) Geneste Henscher; (below) Farcot.

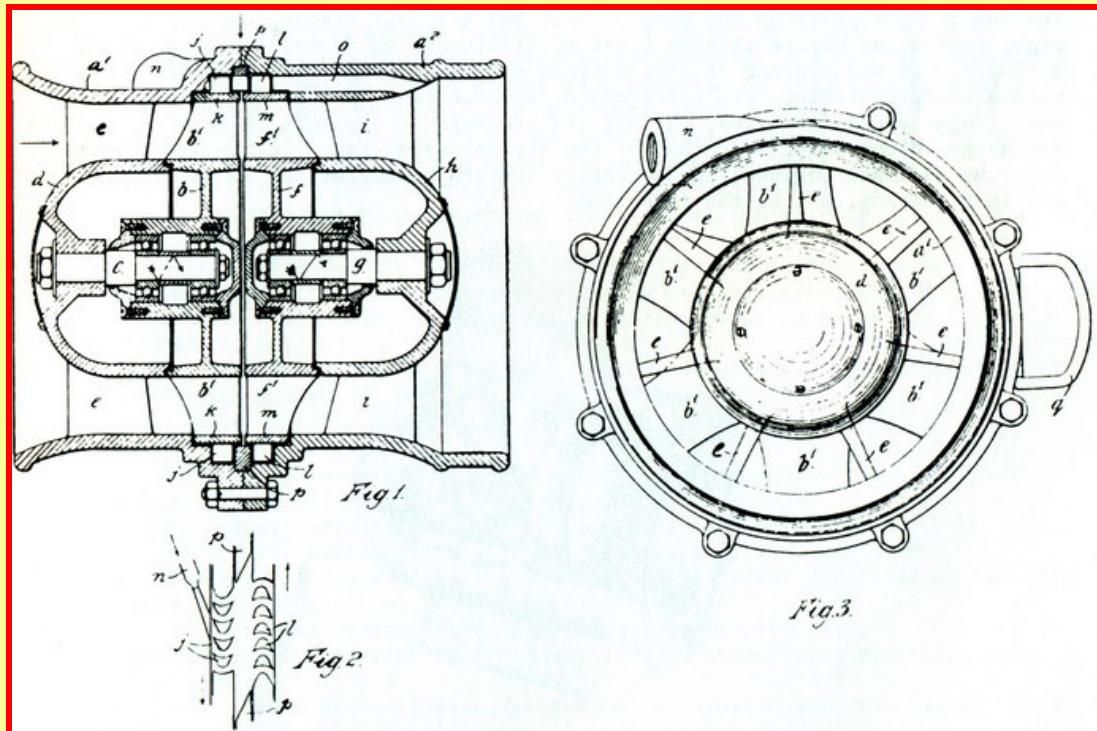


Fig. 4.28. Contra-rotating fan.  
(Courtesy, CIBS)

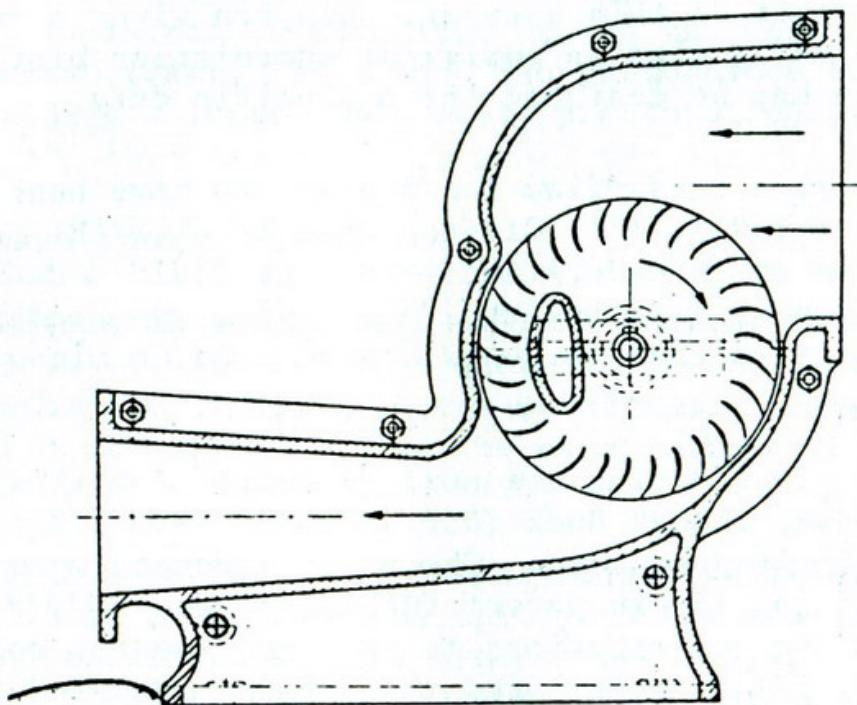


Fig. 4.29. Original fan of Mortier. (1892)

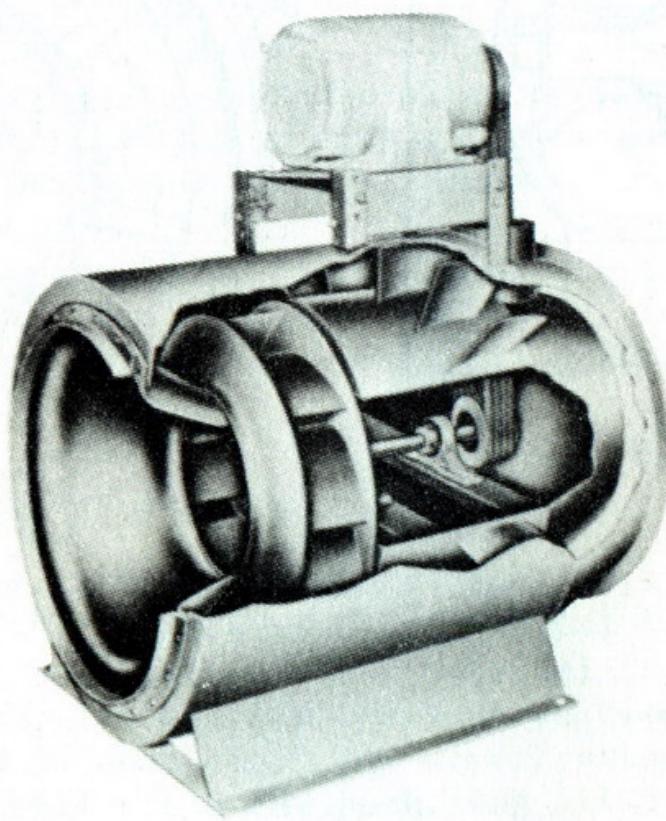


Fig. 4.30. Westinghouse mixed-flow fan (1960).

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