

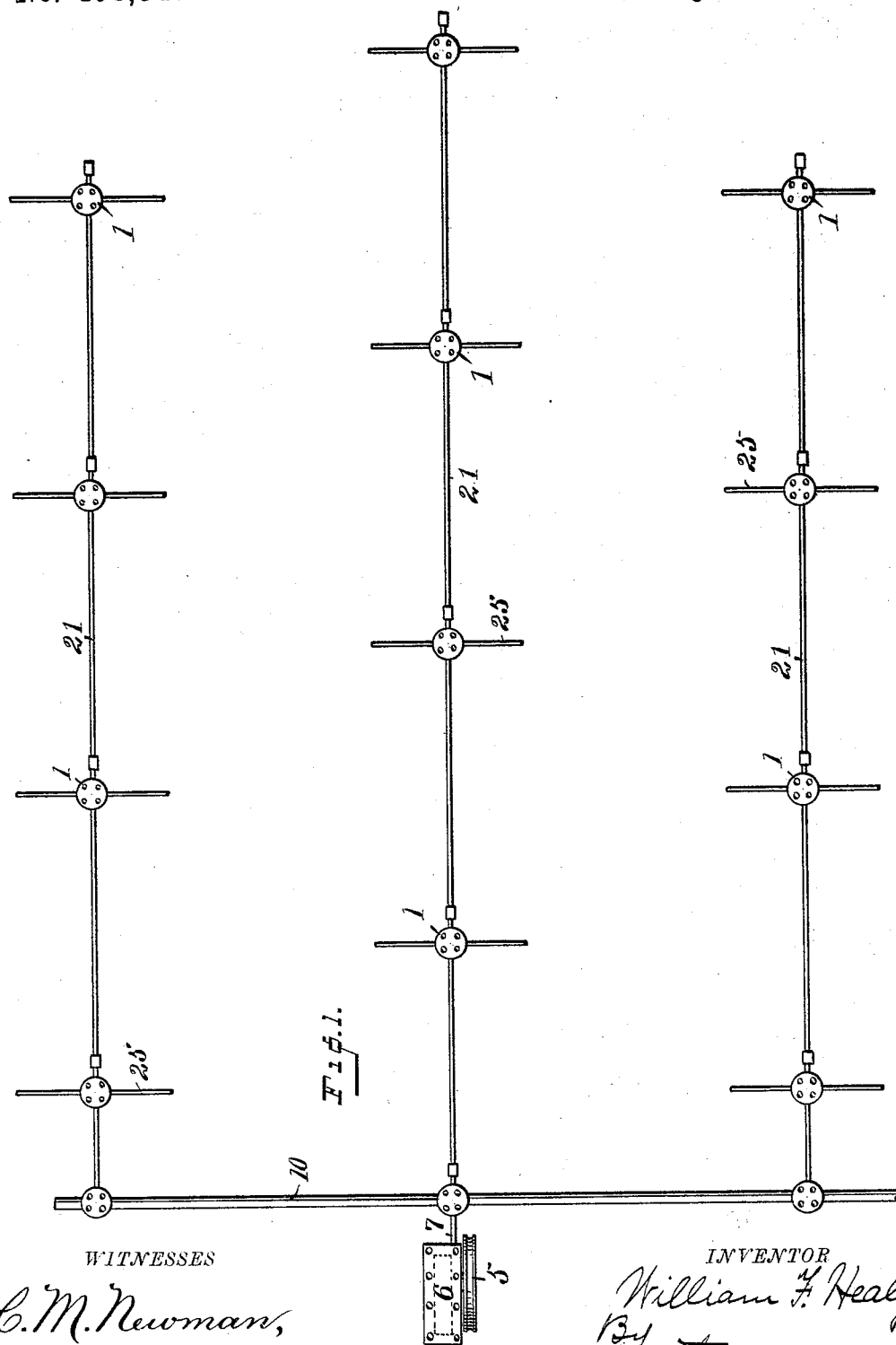
(No Model.)

2 Sheets—Sheet 1.

W. F. HEALY.
SYSTEM OF FANS.

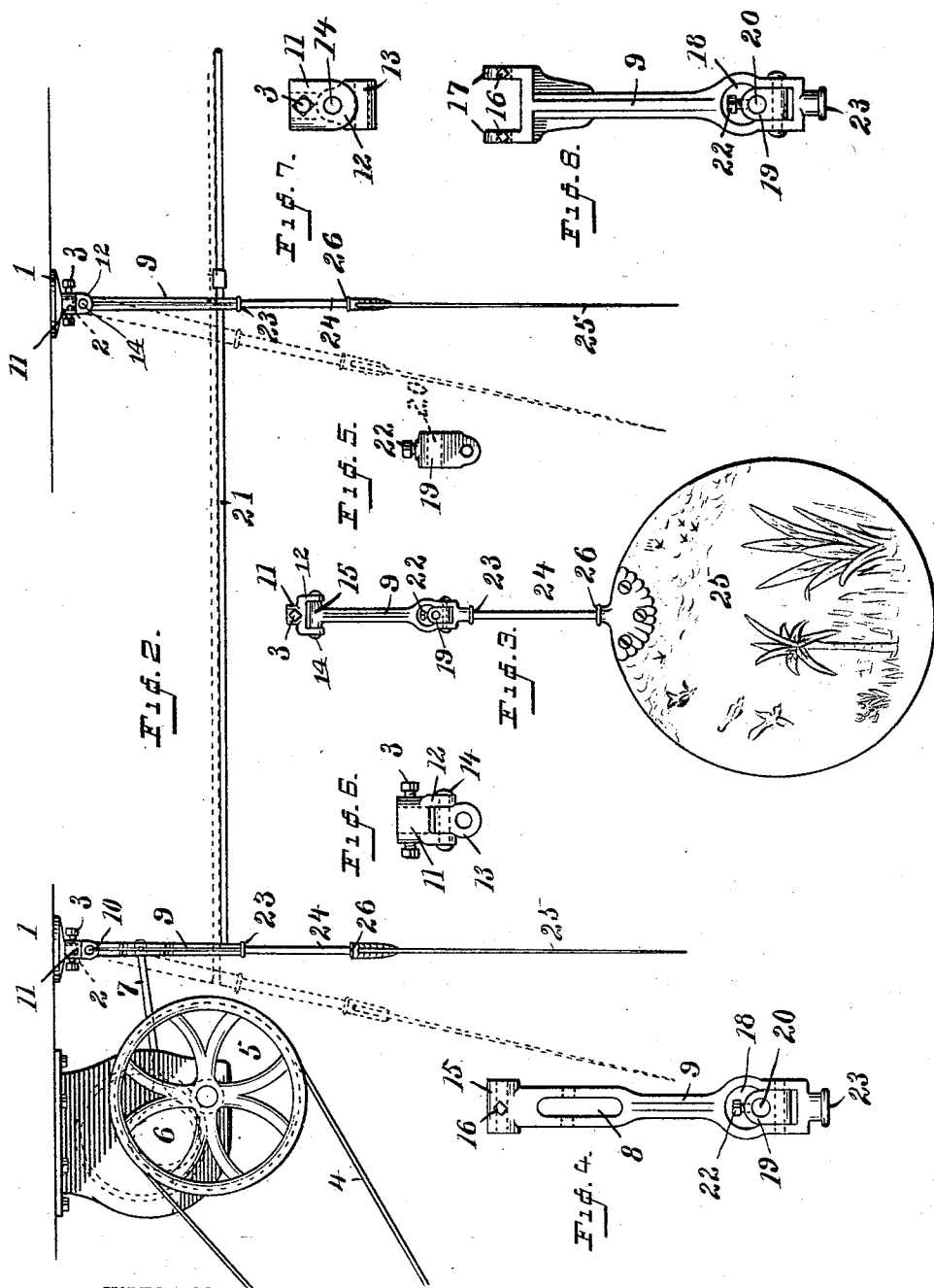
No. 498,547.

Patented May 30, 1893.



2 Sheets—Sheet 2.

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WITNESSES

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UNITED STATES PATENT OFFICE.

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SYSTEM OF FANS.

SPECIFICATION forming part of Letters Patent No. 498,547, dated May 30, 1893.

Application filed February 24, 1891. Renewed March 18, 1893. Serial No. 466,715. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. HEALY, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Systems of Fans; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the general class of fans illustrated and described in Letters Patent to Jesse Sands, No. 372,174, dated October 25, 1887, and has for its object to greatly improve their mode of operation and increase their durability.

With these ends in view, I have devised the novel construction of which the following description, in connection with the accompanying drawings, is a specification, numerals being used to designate the several parts.

Figure 1 is a plan view illustrating the manner in which the fans are attached to the ceiling; Fig. 2, a side elevation on an enlarged scale showing the driving connections between two fans; Fig. 3, an elevation of a single fan and its connections detached; Fig. 4, a view of one of the swinging hangers on an enlarged scale also showing the slot in which the connecting rod is pivoted; Fig. 5, a view of one of the oscillating blocks detached; Fig. 6, a side elevation, and Fig. 7, a front elevation of a special form of fixture adapted for attachment to uneven ceilings by which the oscillating shaft is carried; and Fig. 8, is a view on an enlarged scale of a special form of hanger adapted for use in connection with the fixtures illustrated in Figs. 6 and 7.

1 denotes ceiling plates which are provided with screw holes (see Fig. 1) for attachment in place, each ceiling plate having a depending lug 2 to which the hanger fixtures are attached by set screws 3. Power is conveyed from a suitable motor, not shown, ordinarily an electric or water motor by means of a belt 4 passing over a fly-wheel 5.

6 denotes a speed-reducer, the special construction of which is not illustrated as it forms no portion of my present invention.

It is deemed sufficient for the purposes of this specification to say that the connecting

rod 7 is mounted upon a suitable eccentric or crank, the other end thereof being pivoted in a slot 8 in a swinging hanger 9, said hanger being rigidly secured to the oscillating shaft 10. As it is absolutely essential that this oscillating shaft should be accurately adjusted, it frequently happening that the ceilings are uneven, I provide a special form of adjustable fixture (see Figs. 6 and 7) in which the oscillating shaft is mounted.

11 denotes a hub which is provided with ears 12 and is adapted to be secured to one of the depending lugs 2 by set screws 3.

13 denotes one of the adjustable bearings in which the oscillating shaft is mounted, these bearings being themselves mounted between ears 12 upon studs 14.

It will be seen that the adjustability of hubs 11, in connection with the adjustability of bearings 13, enables me to hang shaft 10 so that it will oscillate freely in any position in which it can ordinarily be required to place it. It will of course be understood that shaft 10 may be extended to any required length so that it will operate any number of rows of fans, three being shown in the present instance. The swinging hangers for the other fans in the series, that is those not connected directly to the oscillating shaft, oscillate on studs 14 which engage ears 12 on hubs 11 (see Fig. 3 also at the right in Fig. 2), said swinging hangers being provided with hubs 15 which lie between the ears. It should be noted, however, that the swinging hangers, which operate directly in connection with the oscillating shaft, are rigidly secured thereto by set screws 16 or in any suitable manner, the special hanger (see Fig. 8) which operates in connection with the special form of adjustable fixture illustrated in Figs. 6 and 7 being provided with ears 17 which lie outside of adjustable bearings 13, it being understood that the shaft oscillates in said bearings but that the ears 17 and the hub 15 of the special swinging hanger, which is provided with a slot 8 to which the connecting rod is pivoted, are rigidly locked to the oscillating shaft by said set screws 16. Swinging hangers 9 are provided near their lower ends with openings 18 in which oscillating blocks 19 are pivoted. At the upper ends of these blocks are open-

ings 20. The several fans in each row are connected by rigid connections 21 extending between the oscillating blocks. These connections may be rods or tubes. In practice, I ordinarily use light metallic tubes, each of the oscillating blocks being locked to the rigid connection by a set screw 22. At the lower ends of the swinging hangers are threaded sockets 23 which receive the shanks 24 of the fans 25. The fans themselves are provided with threaded sockets 26 which receive the other ends of the shanks.

Having thus described my invention, I claim—

1. In a system of fans, an oscillating shaft, and hangers rigidly secured thereto and provided with oscillating blocks 19, in combination with rows of other hangers placed in line with the hangers on the shaft, and also provided with oscillating blocks, and rigid connections between each hanger on the shaft and the hangers in line therewith, said connections being adjustably secured in the oscillating blocks.
2. The oscillating shaft, hangers rigidly secured thereto, and other hangers in line with the hangers on the shaft, each hanger being provided with an oscillating block 19, in combination with rigid connections between the oscillating blocks in each line of hangers, suitable operating mechanism, and a connecting rod between said mechanism and the central hanger upon the oscillating shaft.
3. In a system of fans, rows of swinging hangers each having an opening to receive an oscillating block and each oscillating block having an opening 20, in combination with rigid connections between the oscillating

blocks in each row, and set screws for adjustably locking said blocks to the connections. 40

4. In combination, fans having threaded shanks, swinging hangers having openings, oscillating blocks pivoted in said openings and threaded sockets to receive the shanks of the fans, and rigid connections between the fans in each row, said connections passing through the openings in the blocks which are locked thereto by set screws. 45

5. In a system of fans, the swinging hangers having hubs 15, in combination with hubs 11 having ears 12, in which hubs 15 are pivoted, and ceiling plates having depending lugs 2 to which said hubs 11 are adjustably secured. 50

6. In a system of fans, the oscillating shaft having hangers rigidly secured thereto, in combination with ceiling plates having depending lugs 2, hubs 11 adjustably secured to said lugs and having ears 12 and bearings 13 in which the oscillating shaft is mounted, said bearings being pivoted in ears 12. 55

7. In a system of fans, the oscillating shaft having hangers rigidly secured thereto, in combination with ceiling plates having depending lugs 2, hubs 11 adjustably secured to said lugs and having ears 12, bearings 13 in which the oscillating shaft is mounted, said bearings being pivoted in ears 12, and a connecting rod pivoted to one of the hangers upon the shaft by which movement is imparted to the system. 60

In testimony whereof I affix my signature in presence of two witnesses. 70

WILLIAM F. HEALY.

Witnesses:

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ARLEY I. MUNSON.