(Model.) 2 Sheets—Sheet 1.

D. J. OMSTEAD.

MEANS FOR REVERSING THE MOTION OF FANS.

No. 439,036. Patented Oct. 21, 1890.

FIG. 1.

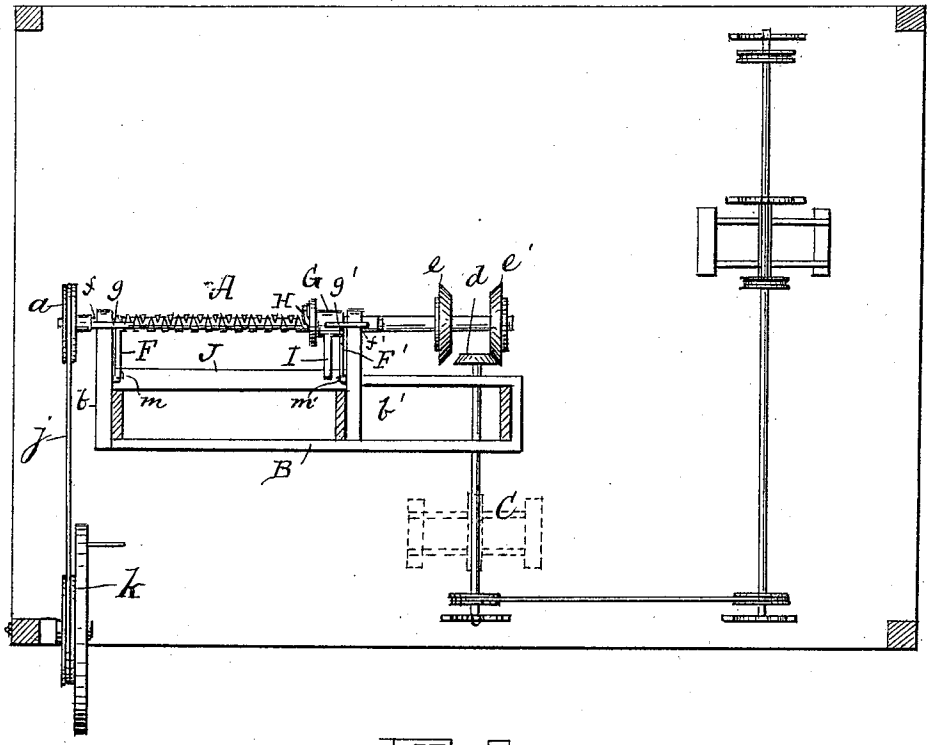
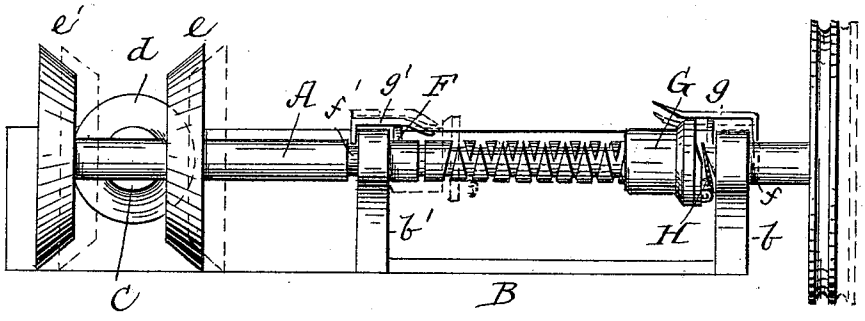


FIG. 2.



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(Model.) 2 Sheets—Sheet 2.

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FIG. 3.

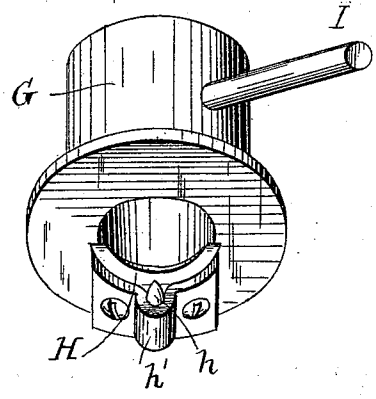
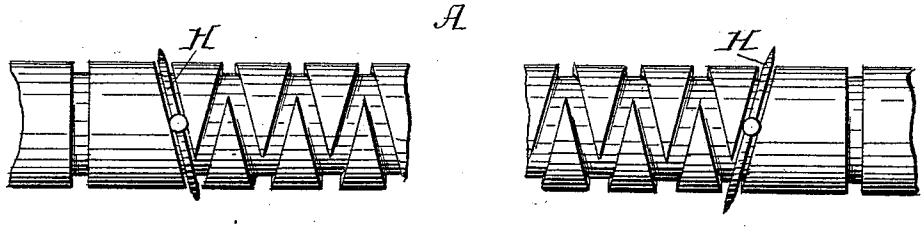


FIG. 4.



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UNITED STATES PATENT OFFICE.

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MEANS FOR REVERSING THE MOTION OF FANS.

SPECIFICATION forming part of Letters Patent No. 439,036, dated October 21, 1890.

Application filed June 30, 1890. Serial No. 357,264. (Model.)

To all whom it may concern:

Be it known that I, DAVID JOSEPH OMSTEAD, a citizen of the United States, residing at Beatrice, in the county of Gage and State of Nebraska, have invented certain new and useful Improvements in Means for Reversing the Motion of Fans; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of the invention is to provide a means for automatically reversing the motion of the fan at stated periods, whereby counter currents are produced, thereby rendering the action of the fan more effective as regards its cooling and fly-scaring capabilities.

The improvement consists of the novel features, which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a top plan view of a mechanism embodying my invention. Fig. 2 is a front view of the invention, showing its operation by dotted lines. Fig. 3 is a perspective view of the reversing-sleeve. Fig. 4 shows the left and right hand ends of the feed-shaft, showing the position of the yoke relative to the right and the left hand threads thereon.

The shaft A is provided with a right and left thread and is journaled in suitable bearings *b* and *b'*, which are provided on the plate B. The fan-shaft C is journaled in the plate B at right angles to the shaft A, and is provided at its inner end with the bevel-wheel *d*, which is adapted to mesh with corresponding bevel-wheels *e* and *e'* on the shaft A. The shaft A has a longitudinal movement in its bearings to bring either of the wheels *e* and *e'* in mesh with the wheel *d*, and is held in either position by the catches F and F', which engage with the shaft, preferably by entering the grooves *f* and *f'* formed therein. These catches F and F' are pivoted to the bearings *b* and *b'*, respectively, at the points *m* and *m'*, and have arms *g* and *g'*, which are beveled on their outer ends to ride on the releasing-sleeve or block G, when the latter engages with the said arms and disengages the catch from the shaft. The releasing-sleeve G, mounted on the shaft A, is adapted to travel back and forth on the shaft, being moved by the thread on the shaft and the yoke H, which is pivoted to the said sleeve. The yoke is curved and spans half the shaft, and is provided with a stem *h* midway of its ends, which is journaled in the bearing *h'* on the end of the sleeve. The ends of the yoke H are beveled from opposite sides to an edge, which facilitates the riding of said yoke in the thread on the shaft A and prevents the yoke catching on the points formed by the crossing of the two threads. The arm I, projecting from the sleeve G, is adapted to bear against the rail J and hold the said sleeve from turning. The shaft A is rotated continuously in the same direction when the fan is in operation, and motion is transmitted from the same to the fan-shaft C by means of the bevel-wheels *e e'* and the bevel-wheel *d*. The direction of motion of the fan-shaft depends upon which of the wheels *e e'* is in engagement with the wheel *d*, as will be readily comprehended. The shaft A may be rotated by any suitable means, as the pulley *a*, the band *j*, and the wheel *k*, which latter is driven by suitable power, either hand or any well-known motive power. The yoke engaging with one of the threads on shaft A causes the sleeve to move on the shaft in one direction, and as the sleeve approaches the end of its travel it engages with the catch at the said end and disengages it from the shaft, and a moment later the sleeve engages with the bearing and the yoke is reversed or automatically shifted from one thread to the other. During this shifting motion of the yoke the shaft is moved longitudinally, so as to bring the wheel previously idle in engagement with the wheel *d*, thereby reversing the motion of the fan-shaft. When the shaft is moved in its bearings the catch at the end opposite the catch just released is engaged with the shaft and locks it in place. During the interval between the releasing of the catch and the shifting of the shaft the fan-shaft becames stationary and in readiness to be rotated in a reverse direction.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. The combination, with the fan-shaft and a shaft having a right and a left hand thread and gearing between the two shafts, of the sleeve on the latter shaft held from rotation thereon and provided with a reversing device, as H, and constructed to shift the said threaded shaft in its bearings for reversing the motion of the fan-shaft, and locking mechanism, substantially as described, to hold the shaft in its new position, substantially as set forth.

2. The combination of the fan-shaft having wheel *d*, the right and left hand threaded shaft having wheels *e* and *e'*, the pivoted catches having beveled arms *g* and *g'*, respectively, the sleeve having arm I, the pivoted yoke, and the guard-rail J, substantially as and for the purpose described.

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

DAVID JOSEPH OMSTEAD.

Witnesses:
JOHN I. PETHOND,
JAMES ABBAR.