C. F. Burleigh.

Automatic Fan.

No. 98,347. Patented Dec. 28, 1869.

Fig: 1.

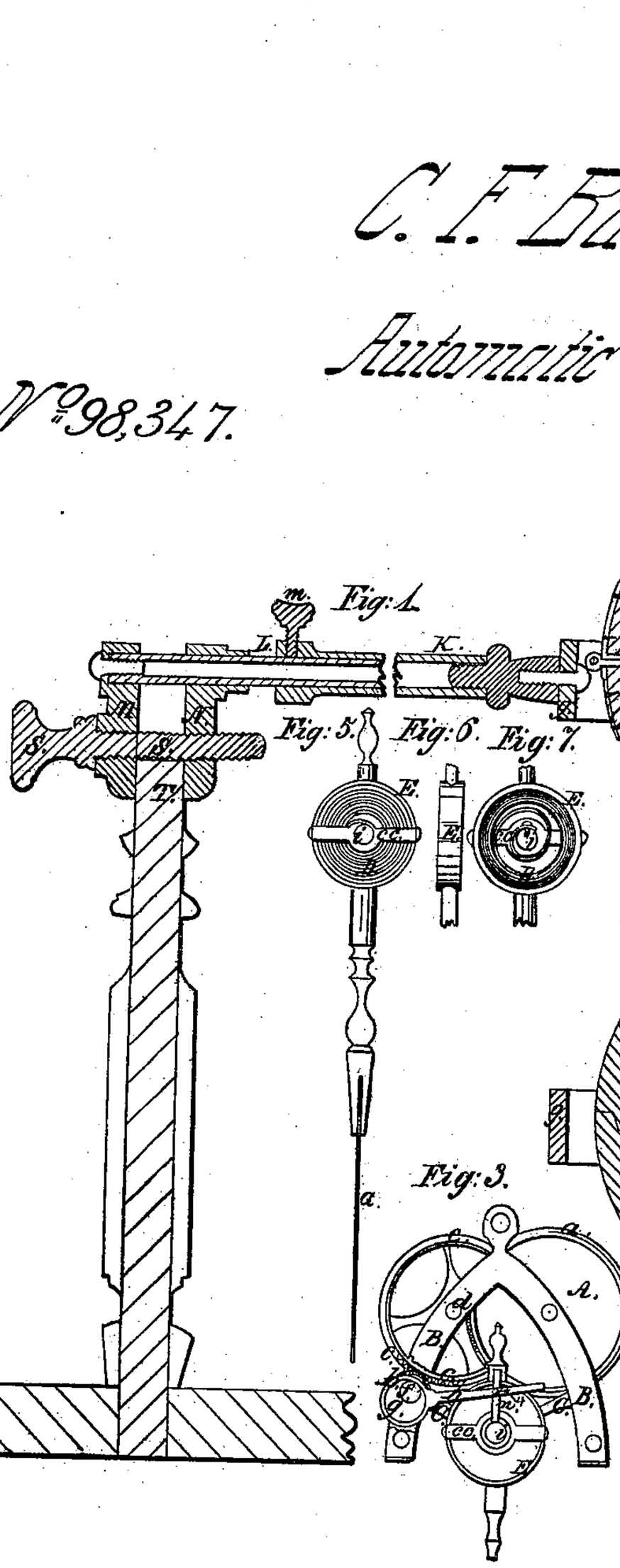


Fig: 5.

Fig: 6.

Fig: 7.

Fig: 2.

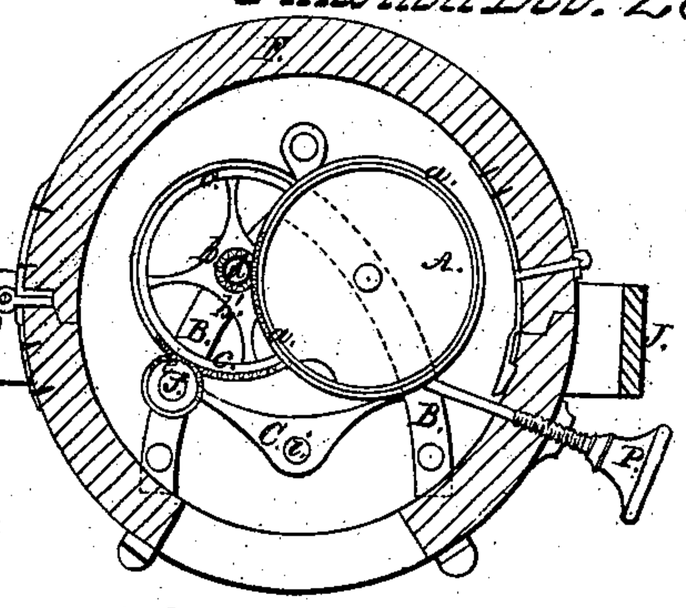


Fig: 3.

Fig: 4.

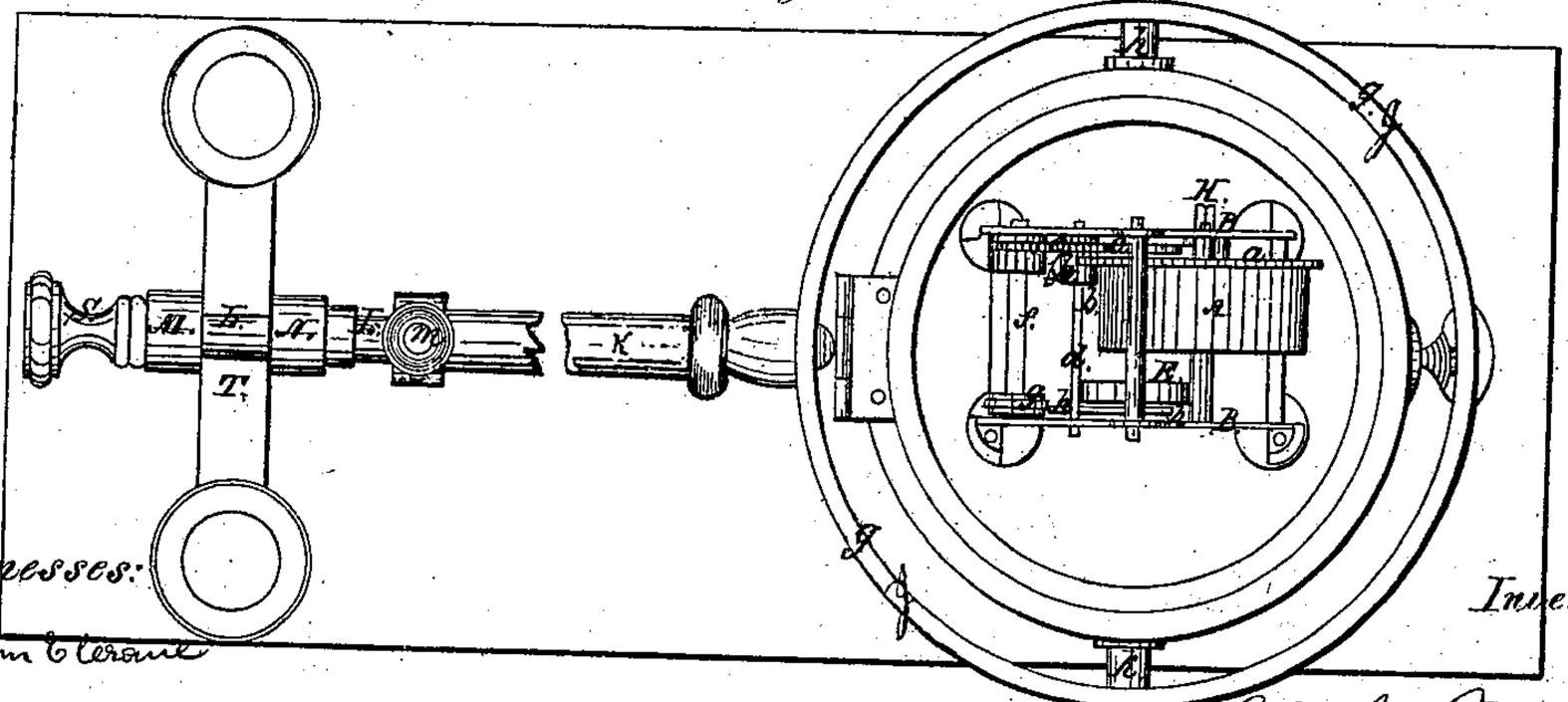
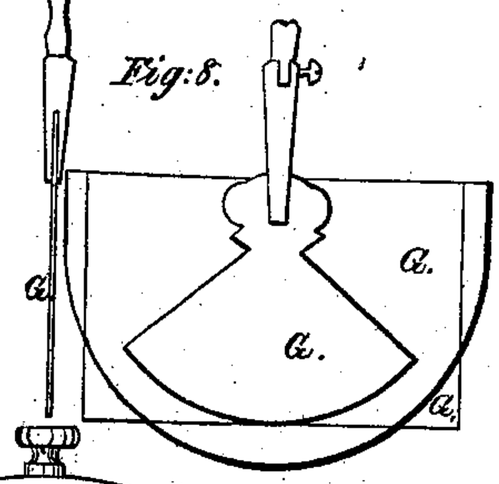


Fig: 8.



Witnesses:

John Clerque

S. S. Whitney.

Inventor:

Charles F. Burleigh

United States Patent Office.

CHARLES F. BURLEIGH, OF TUFTONBOROUGH, NEW HAMPSHIRE.

Letters Patent No. 98,347, *dated December* 28, 1869.

IMPROVED AUTOMATIC FAN.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, CHARLES F. BURLEIGH, of Tuftonborough, in the county of Carroll, and State of New Hampshire, have invented certain new and useful Improvements in "Automatic Fans," of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figures 1 and 2 represent opposite sectional elevations, the former with the adjustable connecting-device or apparatus by which it is applied to a support, and held in the operating position.

Figure 3 represents an end elevation of the clock and the operating-mechanisms, detached from the spherical case.

Figure 4 represents a plan or top view of fig. 1, after the hinged cover F has been removed.

Figure 5 represents the spring-pendulum and fan-blade detached.

Figures 6 and 7 represent an edge and front or side view of the pendulum-head, the latter with one of the supporting-bars *c c* removed, to show the position of the coiled spring D.

Figure 8 represents a side view of the fan-blade in three different forms, with the lower end of the pendulum-rod with which such blades are connected.

This invention relates to that class of automatic fans which is designed for agitating the air about the head and face of a person in a recumbent or reclining, or other posture or attitude, and in hospitals, sick rooms, or other places where it may be necessary, important, or agreeable to disturb and change the air about the head and face.

In constructing and operating my improved automatic fan, I employ a common flat coiled clock-spring, arranged within a drum, A, and geared in any suitable manner.

In the present instance, the first gear *a*, or first driver, is formed on the projecting flanged head of the drum, and this first driver gears into a small pinion, *b*, arranged on a cross-shaft, *d*, which, like all the other shafts, are hung or pivoted in the two end frames B.

On the shaft *d*, and outside of the pinion *b*, I apply a larger gear, *c*, which gears into a second pinion, *e*, on a lower shaft, *f*.

On the opposite end of the shaft *f*, I arrange an eccentric, *g*, and on this a strap having an arm, *h*, extending beyond the centre, as shown.

Supporting-girts C are arranged between the lower portion of each frame end B, and, between these girts, I hang the shaft *i* and the pendulum.

A lever, *n*, secured to the shaft *i* and rising above it, connects with the arm *h* by a pivot, 4.

The pendulum is connected with its shaft *i* by a coiled spring, D, arranged within a ring or hoop, E. One end of the spring is secured to the hoop, and the other end to the shaft *i*.

Supporting-bars *c c* extend across the hoop E, and the shaft *i* passes through these bars, and these support the pendulum and the fan-blade G.

To the winding-stem H, I apply the key, and wind the spring in the drum A, in the usual way. This sets the train of gears in motion, causing the shaft *f* and the eccentric to rotate, and, by means of the arm *h* and the lever *n*, impart an oscillating motion to the pendulum and the fan-blade, to disturb or agitate the air.

The fan-blade should be adjusted to a position over and near the head or face of the patient, or the person to be fanned, and this adjustment may be provided for in various ways.

In the present instance, the spherical case is hung in a ring, J, and on two trunnions or swinging pivots, *k*, passing through the ring and shouldered within it. The trunnions admit of one adjustment of the case and the fan, by swinging the latter on the former.

To one side of the ring J, I connect a tubular arm, K, and this slides on a smaller arm or bar, L, and is adjustable thereon by a set-screw, *m*, clearly shown in figs. 1 and 4.

One end of the bar L is connected with the outer jaw M, of a clamp, and the inner jaw N slides freely on this bar.

A clamping-screw, S, passes loosely through the outer jaw, and is screwed through the inner one. The clamp is intended for applying the apparatus to the head-board of a bedstead, the back of an easy-chair, or to any other suitable support, T, near the head of the patient.

It is evident that a wider scope of adjustment may be given to the spherical case and the fan, by employing swing-joints, like or similar to the swing-brackets used in gas-fittings, and still retain the other adjustment of the sleeved arms K and L, and set-screws *m*, to hold them in position.

Through one side of the case, I apply a regulating-screw, P, with its inner end capable of being pressed against the periphery of the drum A. This screw is intended as a friction device, to hold the drum while winding, and to prevent the too sudden and rapid motion thereof when the spring is fully wound.

The principal novelty of this invention is the spring-head, pendulum, and the operating-connections. The motion imparted to the former and to the fan, by the operating-mechanisms, is not only accelerated, but considerably extended or increased by the active force of the coiled spring D, which exerts a resistance to the action of the eccentric, twice at each revolution of the latter, and at each throw or oscillation of the

pendulum and the fan-blade; and this resistance or resisting action of the spring increases, extends, and accelerates the motion of the fan-blade, and renders it more potent for agitating the surrounding air.

The motion given to the lower extremity of the fan-blade, in an apparatus of the size shown, and by the eccentric alone, is less than two inches, and this motion is increased or extended, by the action of the auxiliary spring, to nearly four inches, or nearly or quite twice the extent of motion given by the eccentric.

I believe I have described and represented the improvements which I have invented, so as to enable any person skilled in the art to make and use them, without further invention or experiment. I will now state what I desire to secure by Letters Patent, viz:

1. The spring-head pendulum, as described, the same consisting of the ring E, bars *c c*, spring D, shaft *i*, pendulum-rod and fan-blade G, all combined, arranged, and operating as and for the purpose specified.

2. The combination, as described, of the eccentric *g* with the spring-head pendulum and fan-blade G, by means of the arm *h* and lever *n*, in the manner and for the purpose specified.

Witnesses: CHARLES F. BURLEIGH.

JOHN E. CRANE,

J. S. WHITNEY.