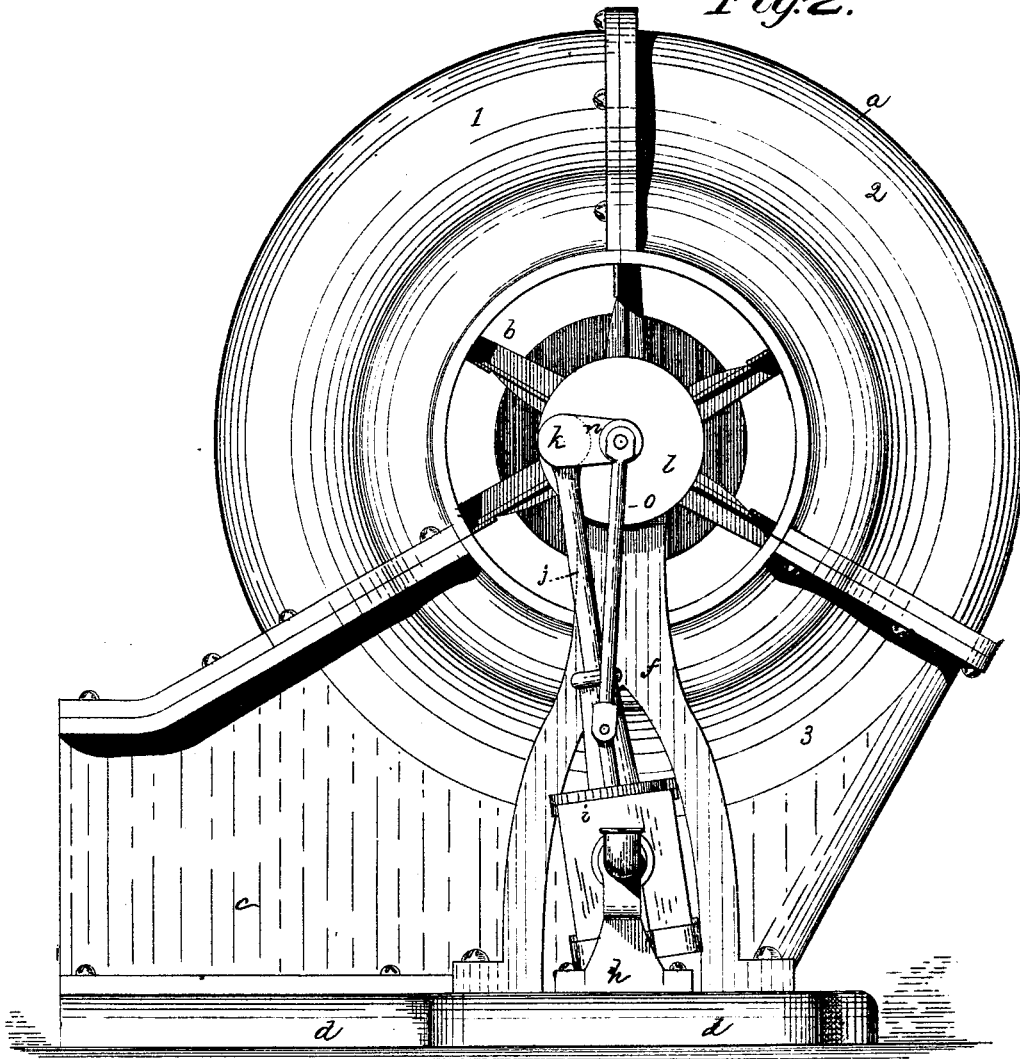


B. F. STURTEVANT.
PORTABLE STEAM FAN.

No. 183,825.

Patented Oct. 31, 1876.

Fig. 2.



Witnesses.
L. H. Latimer.
S. B. Kidder.

Inventor
Benjamin F. Sturtevant
per *Leroy Gregory Atty.*

UNITED STATES PATENT OFFICE.

BENJAMIN F. STURTEVANT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PORTABLE STEAM-FANS.

Specification forming part of Letters Patent No. 183,825, dated October 31, 1876; application filed August 12, 1876.

To all whom it may concern:

Be it known that I, BENJAMIN F. STURTEVANT, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Portable Steam-Fan, of which the following is a specification:

This invention has for its object the production of a portable steam-fan; and the invention relates to the combination, in portable form, with an engine and its bed, of a blast-wheel and casing, substantially as described, the whole constituting a new article of manufacture.

Figure 1 represents one of my improved portable steam-fans in front view, and Fig. 2 a side elevation.

The casing *a* is shown as made in three sections, 1 2 3, properly bolted or secured together; but these sections may be more than three. The sections that cover the upper portion of the blast-wheel *b* are detachable from the lower or base section 3, which forms the mouth *c*, so as to permit the casing to be readily taken down and arranged in compact space for shipping. The base-section is connected with the engine bed-plate *d*, properly shaped for such purpose. This bed-plate *d* also sustains the uprights *f* for the shaft of the blast-wheel, and has bearings *h* for the trunnions *q q'* of an oscillating engine, *i*, of any usual construction. The piston-rod *j* of the oscillating engine is connected with a crank-pin, *k*, on a disk or crank, *l*, of the fan-wheel shaft, and it rotates such shaft and blast-wheel at the required speed. At one end of this blast-wheel shaft is a balance or fly wheel, *m*, and at the other end is a crank, *n*, connected by a link with the valve-moving mechanism of the engine.

Steam for operating the engine and blast-wheel is admitted at *r*, and thence passes into the projecting portion 4 of trunnion *q*, its outer end fitting the stuffing-box *u*, while the portion 4 has its bearing at 5, such construction enabling the engine to be better supported than would be the case if the portion 4 were a separate stationary steam-pipe fitted to trunnion *q* by means of a stuffing-box. The

end of trunnion *q'* has its bearing in a standard, *h'*, rising from the engine-bed, and a pipe or projection, *w*, connected and movable with the trunnion *q'*, enters a stuffing-box, *x*, the steam passing out at the exhaust *t*.

I have described one method of connecting or mounting an engine of usual construction with a fan, and the engine and fan, being both on the engine-bed, are together portable; but it is understood that any other suitable or well-known form of engine may be attached with, and made part of, the fan-blower, so that steam may be led to it from any usual steam-supply.

The blast-wheel and case may be of any usual or proper construction.

The hollow plate *p* for the passage of steam has crooked tubular trunnions *q q'*, adapted to conduct free and exhaust steam, and the bearing parts of these trunnions are arranged substantially in line with the center of motion and center of gravity of the oscillating parts.

In this apparatus the blast-wheel shaft and engine-shaft are common, one shaft serving for both. The blast-wheel serves the purposes of a balance-wheel for the engine, and the engine-bed, extended laterally, is used as the base upon which is built up the casing for the blast-wheel.

I claim—

1. An engine, its extended bed-plate, a casing, and a blast-wheel, in combination with a shaft that serves as the shaft of the blast-wheel and as the shaft for the engine, substantially as described.

2. The hollow plate *p* and crooked steam-conducting trunnions *q q'*, arranged with relation to the center of motion and center of gravity of the oscillating parts, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJ. F. STURTEVANT.

Witnesses:

G. W. GREGORY,
W. J. PRATT.