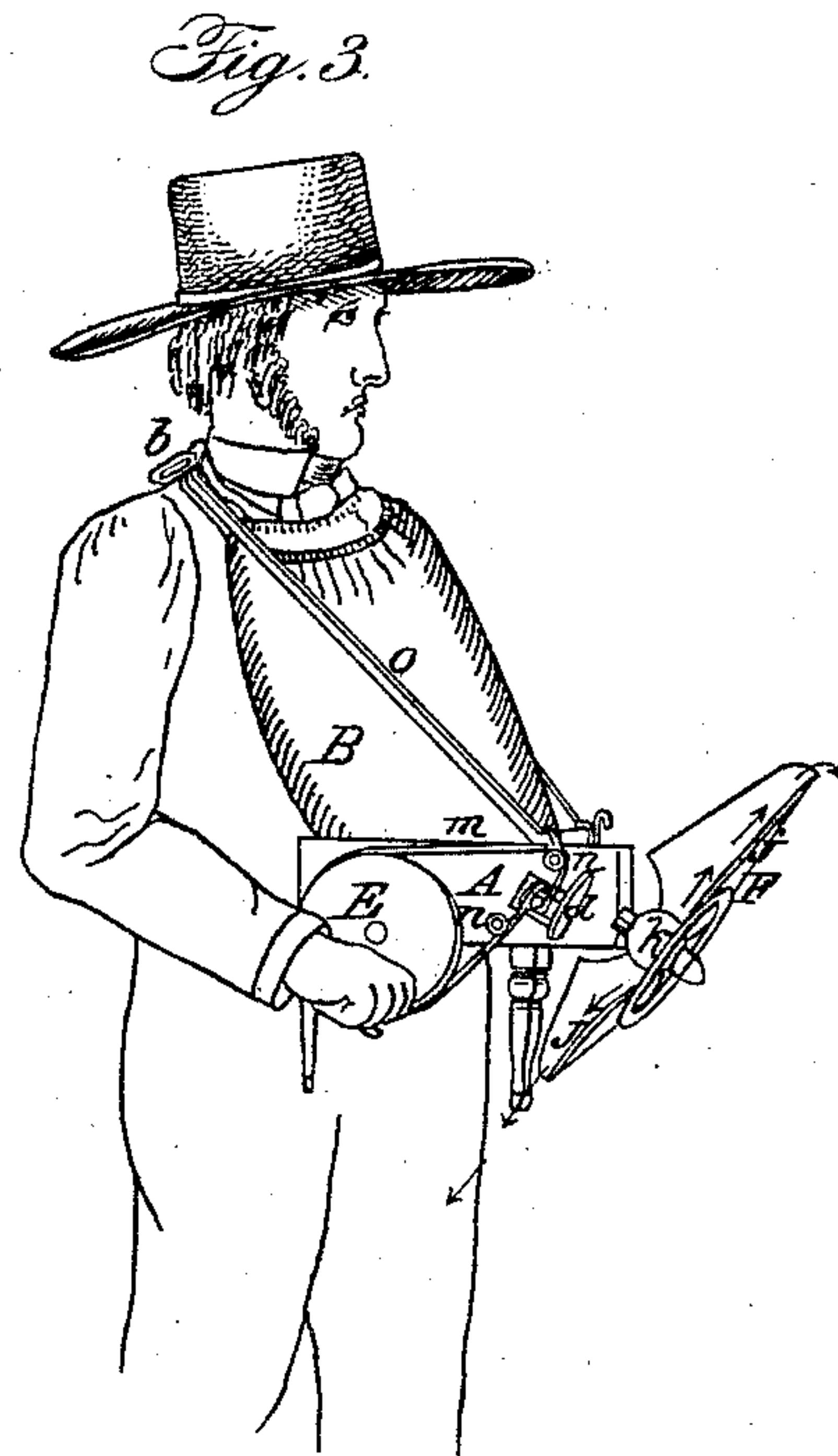
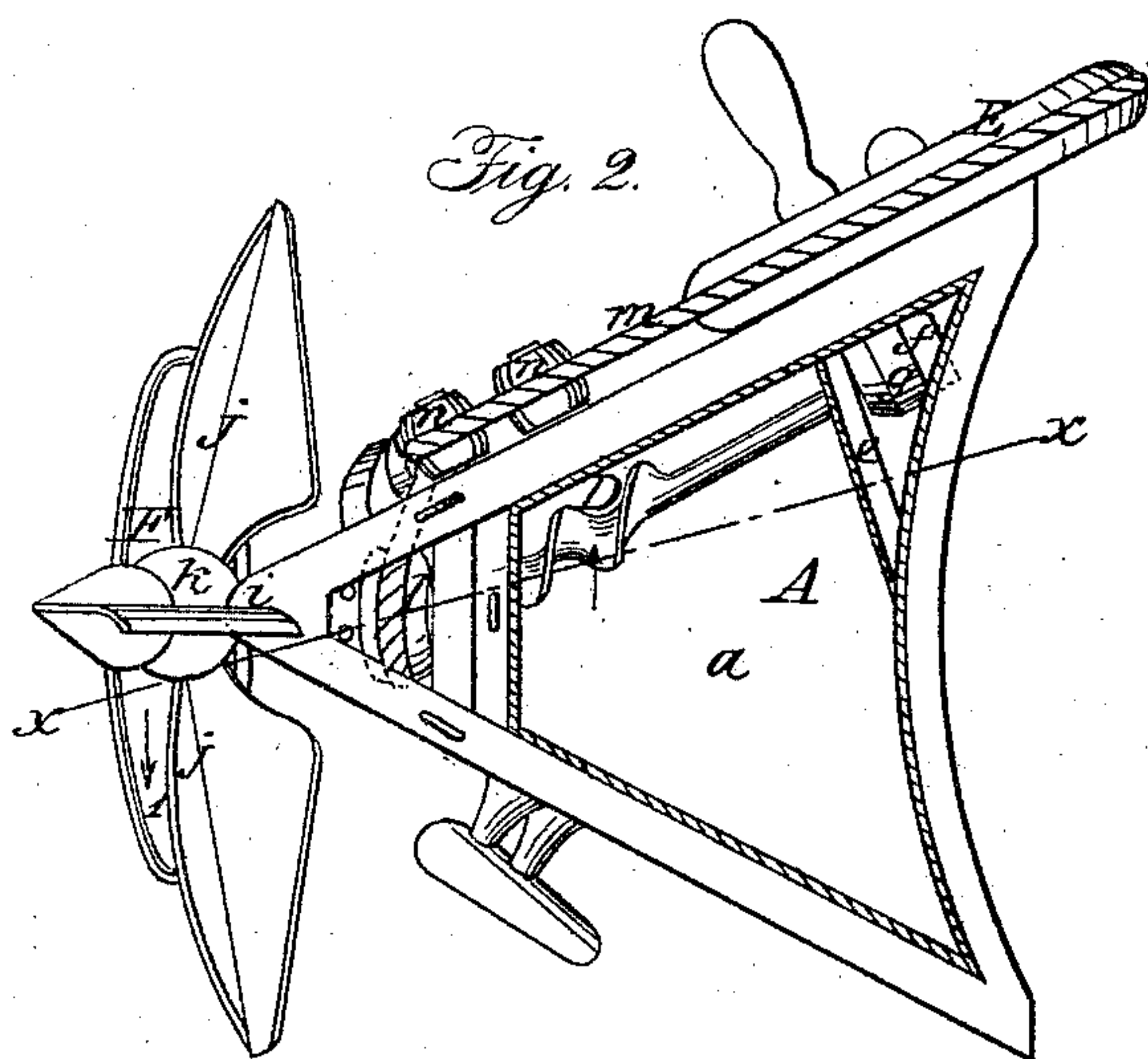
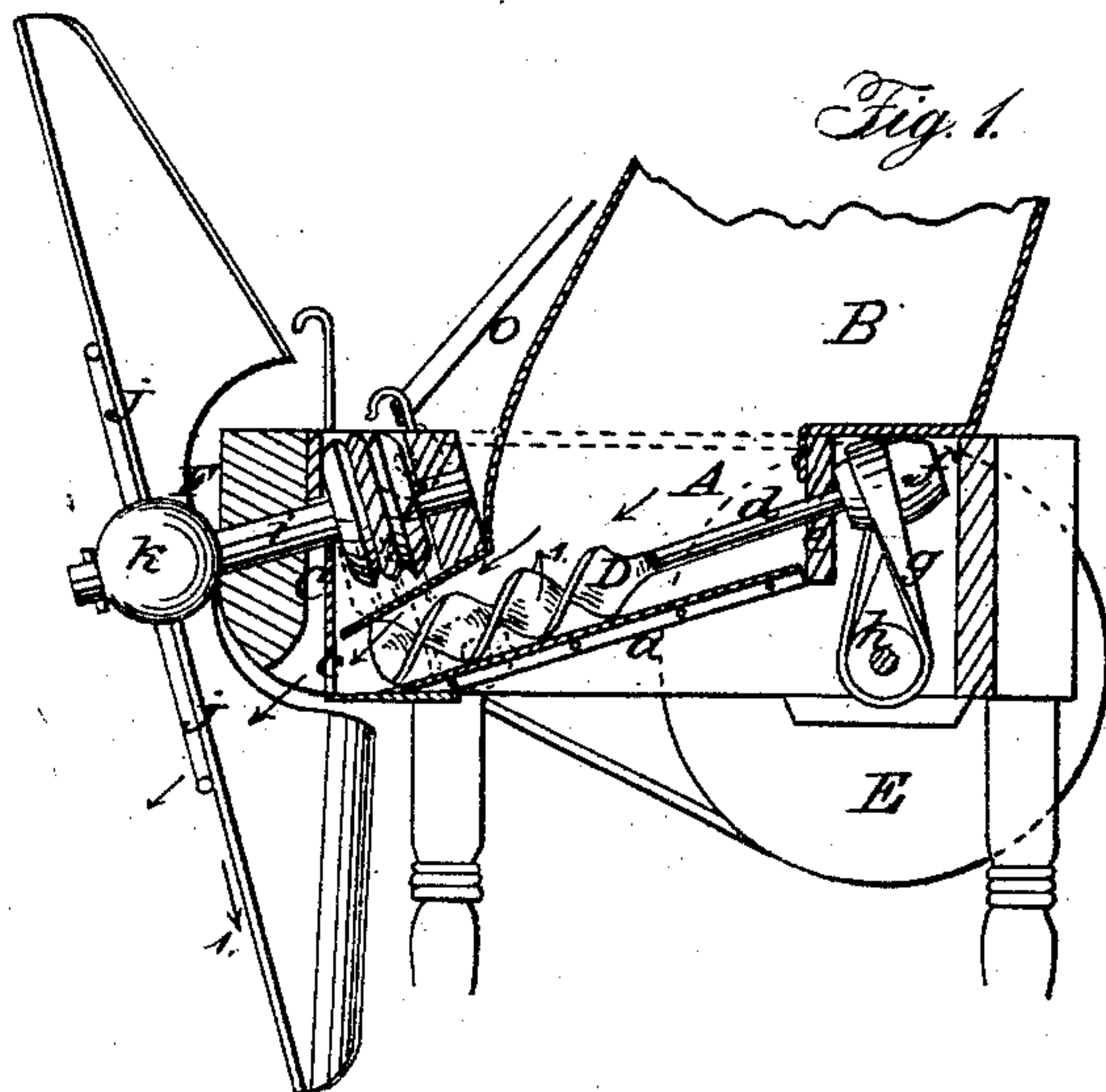


G. COPELAND.
Broadcast-Seeder.

No. 27,273.

Patented Feb. 28, 1860.



Witnesses:
Joel L. Bailey
George C. Foster

Inventor:
Geo. Copeland.

UNITED STATES PATENT OFFICE.

GEORGE COPELAND, OF GRAY, MAINE.

IMPROVEMENT IN SEEDING-MACHINES.

Specification forming part of Letters Patent No. 27,273, dated February 28, 1860.

To all whom it may concern:

Be it known that I, GEORGE COPELAND, of Gray, in the county of Cumberland and State of Maine, have invented a new and Improved Hand Seeding-Machine for Sowing Seeds Broadcast; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *x x*, Fig. 2. Fig. 2 is a plan or top view of the same. Fig. 3 is a perspective view of the same applied to the operator.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a simple, portable, and economical implement that may be carried by the operator and manipulated with the greatest facility in order to sow seed broadcast in a more even manner than can be done direct by the hand.

The invention consists in the employment or use of a feeding-screw placed within a suitable hopper or seed-box and used in connection with a rotary throwing device attached to the seed-box and arranged to operate substantially as hereinafter described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a box, which may be of tri-lateral form, with its inner or back side curved, so that it may fit snugly against the body of the operator. This box may be constructed of wood, and it has an inclined bottom, *a*, as shown clearly in Fig. 1.

To the top of the box A a bag or sack, B, is attached, having a draw-string, *b*, in its upper end, the box forming the bottom of the sack.

At the front part of the box A there is a vertical gate, C, by adjusting which the discharge-orifice *c* of the box may be enlarged or contracted, as occasion may require.

Within the box A a left-hand screw, D, is placed. This screw is parallel with the bottom of the box, and it extends down nearly to the gate C of the discharge-orifice *c* of the box. The shaft *d* of the screw D extends through a partition, *e*, at the back part of the box, and a pulley, *f*, is placed on its outer end, said pul-

ley having a belt, *g*, passing around it, which belt also passes around a pulley, *h*, on the shaft of a driving-pulley, E, at the outer side of the box A.

At the front end of the box A there is an inclined shaft, *i*, to the outer end of which the throwing device F is attached. This throwing device is formed of a series of radial wings or arms, *j*, attached to a hub, *k*, on the shaft *i*. Each wing or arm is formed of two longitudinal pieces or strips of sheet metal secured at right angles to each other, as shown clearly in Fig. 2. The back pieces of the wings or arms are slightly curved at their back parts to catch and insure the proper action of the arms on the seed, and at their inner ends, adjoining the hub, they are scooped or scalloped out, so as to clear the end of the box A in their rotation. By having the shaft *i* inclined the plane of rotation of the wings or arms *j* is brought under the discharge-orifice *c* of the box A, as shown clearly in Fig. 1. On the shaft *i* a pulley, *l*, is placed, around which a belt, *m*, passes, said belt also passing around the driving-pulley E and over and around guide-pulleys *n*. To the front end of the box A a strap, *o*, is attached.

The operation is as follows: The box A is placed on the ground and the bag B supplied with seed. The draw-string *b* is then tightened and the bag B closed. The operator then places the string *b* around his neck, and also the strap *o*, the back part of the box A bearing against the front of the operator, as shown in Fig. 3. The operator then raises the gate C a certain distance, turns the pulley E, and thereby rotates the screw D and throwing device F in the direction indicated by the arrows 1. The screw D, as it rotates, discharges the seed from the front end of the box A, and the seed as it falls from the box is, in consequence of the inclination of the throwing device, thrown upward in an inclined direction in front of the operator and falls a requisite distance in front of him, and in such a manner as to enable him to see precisely the way in which the seed falls.

The relative speed of the throwing device and screw, as well as their dimensions, may be regulated as desired or as occasion may require, and the amount of seed to be sown on a given area may be regulated by adjusting the gate C.

I do not claim broadly a centrifugal discharger rotating vertically on a horizontal shaft, as that is old, being seen in J. H. Bonham's canceled drawing, December 10, 1856; nor do I claim the use of a seed-bag separately; nor do I claim broadly the invention of a discharger. I am also aware that dischargers with fans are not new; but

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

1. The distributing-fan or throwing device F,

when constructed in the peculiar form herein shown and described.

2. The arrangement and combination of the throwing device F, hopper or seed-box A, bag B, and screw D, as and for the purposes herein shown and described.

GEO. COPELAND.

Witnesses:

JOEL L. BAILEY,

GEORGE E. FOSTER.