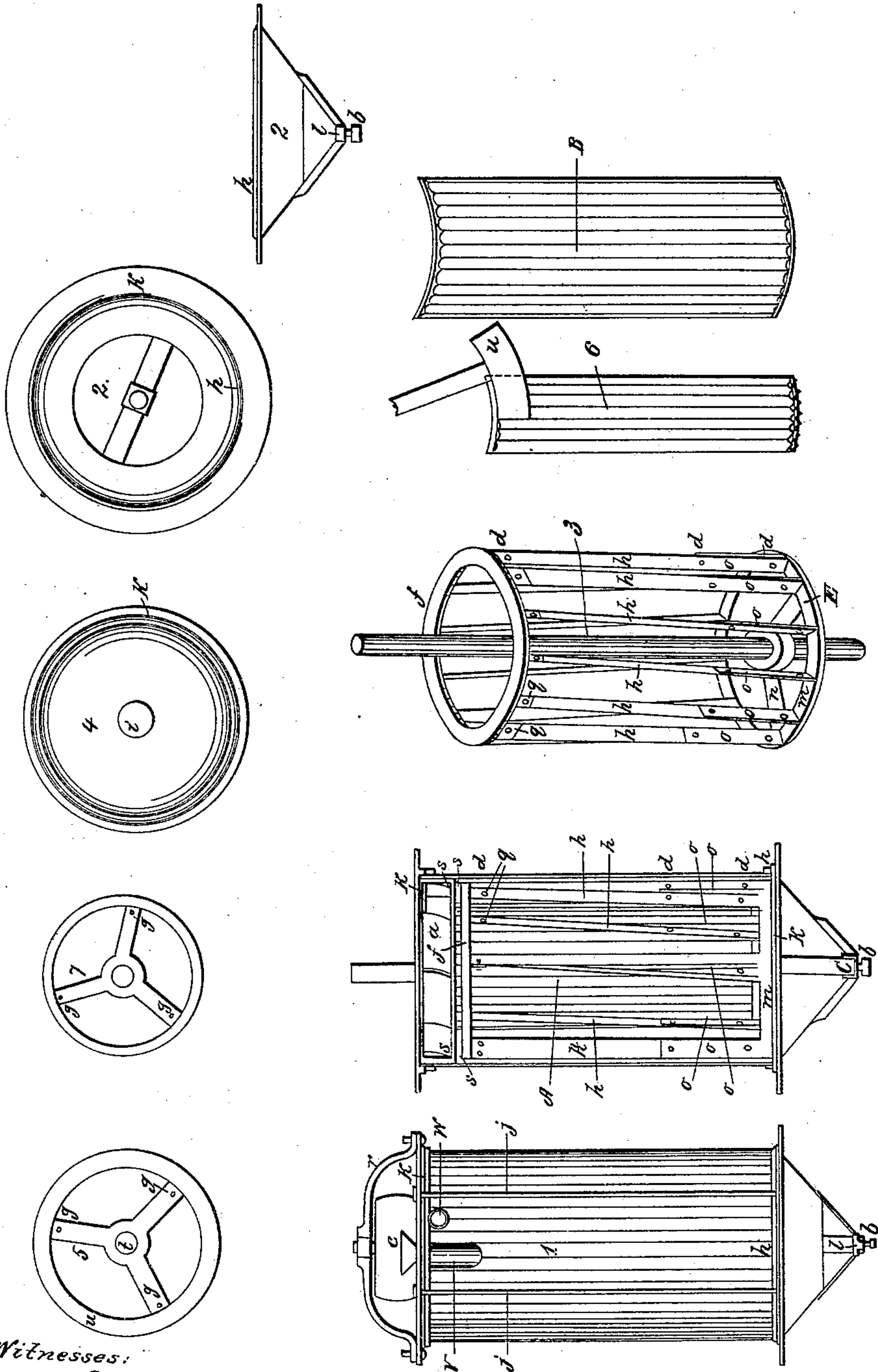


H. A. BUCK.  
Smut Machine.

No. 2,162.

Patented July 10, 1841.



Witnesses:  
Francis H. Riggles  
Orren ell. Chew.

Inventor.  
Henry A. Buck.



# UNITED STATES PATENT OFFICE.

HENRY A. BUCK, OF FREDONIA, NEW YORK.

## SMUT-MACHINE.

Specification of Letters Patent No. 2,162, dated July 10, 1841.

*To all whom it may concern:*

Be it known that I, HENRY A. BUCK, of Fredonia, in the county of Chautauqua and State of New York, have invented a new and useful improved machine for cleaning wheat from smut and other impurities, called "Buck's Stationary Center Double Cylinder Smut-Machine"; and I do hereby declare that the following is a full and exact description of my said invention.

My said machine consists of three principal parts, viz: 1st, the moving part, consisting of an upright shaft, twelve or more beaters, supported by an open head attached to the said shaft below the center cylinder hereinafter mentioned, surrounding the said cylinder, and eight wings revolving above the said center cylinder. 2d, the stationary center cylinder surrounding the said shaft, though not attached thereto, and made fast to the outer cylinder hereinafter mentioned by a projecting head above the upper end of the beaters and below the wings above mentioned. 3d, the outer cylinder, also stationary, surrounding and containing the parts before mentioned.

The said machine when constructed exhibits an upright cylindrical structure of cast iron, (Figure 1,) about three feet high, exclusive of fixtures above and below, but may be made larger or smaller, the lower head of which, of cast iron (Fig. 2,) is made to receive and confine the ends of the cast iron plates of the outer cylinder within the circle of a raised flange (letter *h*,) on the upper face of the said head, the said head is sunk from the inner side of the cylinder (see Fig. 2,) to the depth of from three to six inches in the center with an open center of from eight to twelve inches in diameter, (see Fig. 2,). The outer cylinder is of equal size the whole length, and confined at the top in the same manner as at the bottom, the upper head (Fig. 4,) being flat and whole except a hole in the center (letter *i*,) through which the shaft above mentioned passes. The said cylinder is fluted inside and outside for the purpose of giving strength without weight and to form edges on the inside to assist in beating and scouring the grain. The two heads are held together by four or more bolts or rods (letter *j*,) passing through projections (letter *k*,) outside of the cylinder. Within the said outer cylinder is the said moving part of the machine (Fig. 3,) being an upright

shaft resting and turning at the bottom in a steel box (letter *l*,) resting on a screw (letter *b*,) with which the shaft may be raised or lowered, attached to which shaft is a horizontal rim (letter *m*,) and arms (letter *n*,) from which rim rises a number, twelve or more, of elbows (letter *o*,) one-third the height of the beaters upon which the beaters (letter *p*,) are bolted with two bolts (letter *d*,). The said elbows are to be perpendicular on the back side and slanting on the front side upon which the beaters are to be bolted. The beaters (letter *p*,) are of iron about an inch and a half wide, and of such form as is judged best, either flat, oval, three cornered or of other shape, and are secured at the top by a rim or head of cast iron (letter *f*,) with short elbows (letter *q*,) projecting downward, to which the beaters are fastened with one bolt (letter *d*,). Also attached to said shaft at such distance above the beaters as to admit the head of the center cylinder to be connected with the outer cylinder are the wings (letter *a*,) eight or more in number, about three inches wide, and extending from the shaft as near to the inner surface of the outer cylinder as they can and revolve within it. The shaft passes upward through the head of the outer cylinder (Fig. 4,) above which is attached to it a pulley (letter *o*,) about eight inches in diameter upon which a band is placed to drive the machine, above which pulley the end of the shaft is supported by a yoke, brace or arch, (letter *r*,) the ends of which are bolted to the outer sides of the upper head of the cylinder. This shaft, with the beaters and wings, revolves when the machine is in operation about six hundred times in a minute. Within the beaters and outer cylinder above described is the center cylinder (see letter *A*,) made fast at the top by the head (Fig. 5,) between the top of the beaters and the bottom of the wings, to the outer cylinder by means of projections (letter *s*,) on the inner side of the castings of said outer cylinder. The body of said center cylinder consists of perpendicular bars of iron (Fig. 6,) of triangular or other form placed within about the sixteenth of an inch of each other so as to leave a very small open space for air and dust but not sufficient for wheat to pass through. The heads of the said center cylinder consist, each, of a rim and arms (Figs. 5 and 7,) leaving the main part open with



a hole through the center of the arms where they cross, (letter *t*,) through which the shaft passes but does not touch so as to produce any friction. The upper head  
5 (Fig. 5,) projects (letter *u*,) beyond the said bars which form the body of the cylinder so as to connect with the outer cylinder as above described, but the lower head (Fig. 7,) of the said center cylinder is only as  
10 wide as the body of the cylinder and used to give it strength and steadiness.

The wheat is conveyed into the said machine by a hopper through a hole (letter  
15 *v*,) in the side of the outer cylinder just below the head of the center cylinder, and here meeting the beaters revolving with great velocity, is freed from dirt, and the smut is pulverized, and the clean wheat runs out  
20 at the bottom through the open space in the lower head of the outer cylinder, while a

strong current of air produced by the swift revolution of the wings, assisted by the beaters, rushes up through the same hole and carries all the smut and dirt and dust  
25 up through the open heads of the center cylinders where it is finally blown out through a hole (letter *w*,) in the outer cylinder, above the head of the center cylinder, about three inches by four, on a level with  
30 the wings.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the revolving frame or beaters with the inner and external stationary cylinders, constructed and operating  
35 as above set forth.

HENRY A. BUCK.

Witnesses:

FRANCIS H. RUGGLES,  
OWEN M. CLUER.