

G. SEYMOUR.
MACHINE FOR SHELLING AND GRINDING CORN.

Fig. 1.

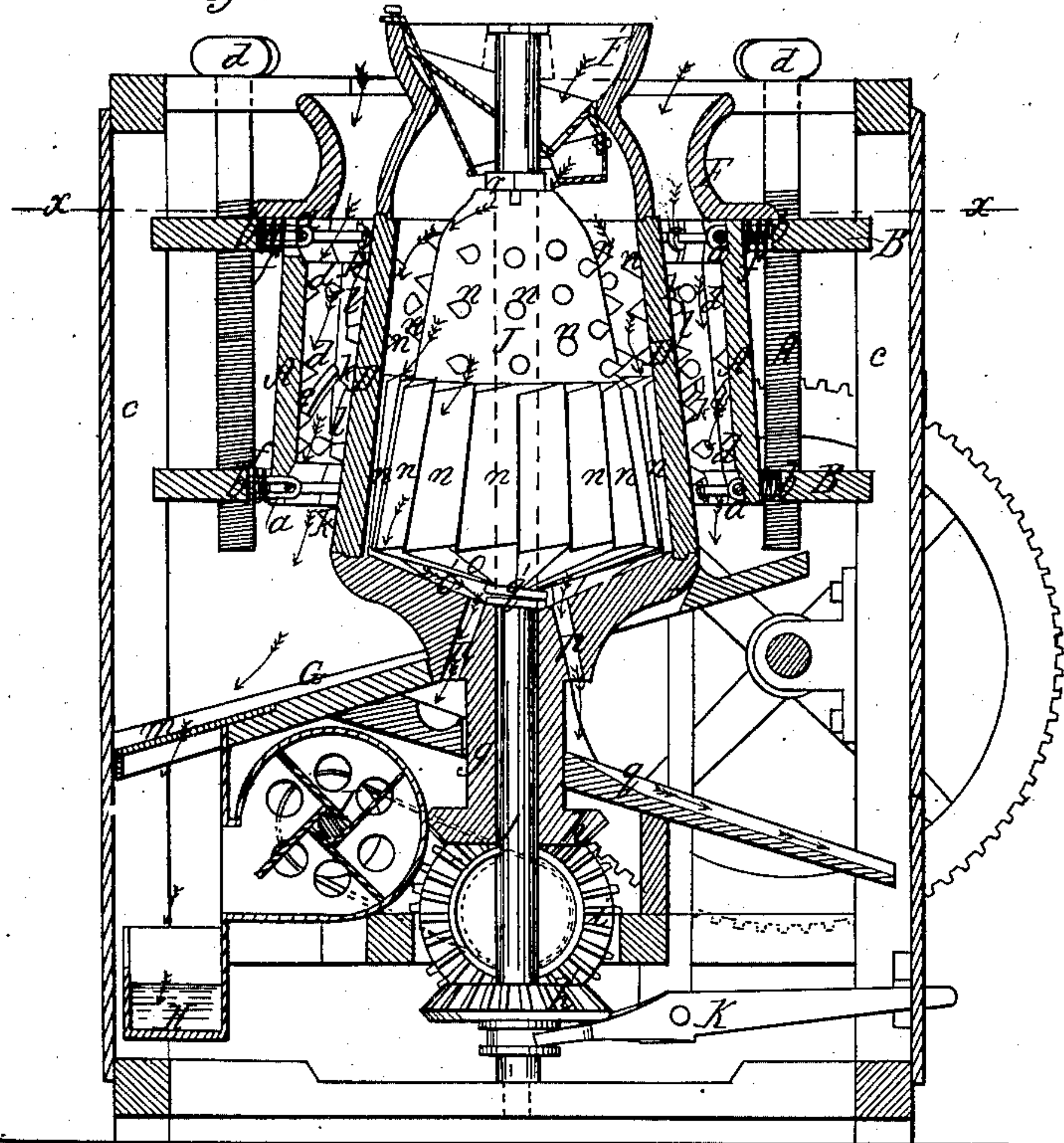


Fig. 4.

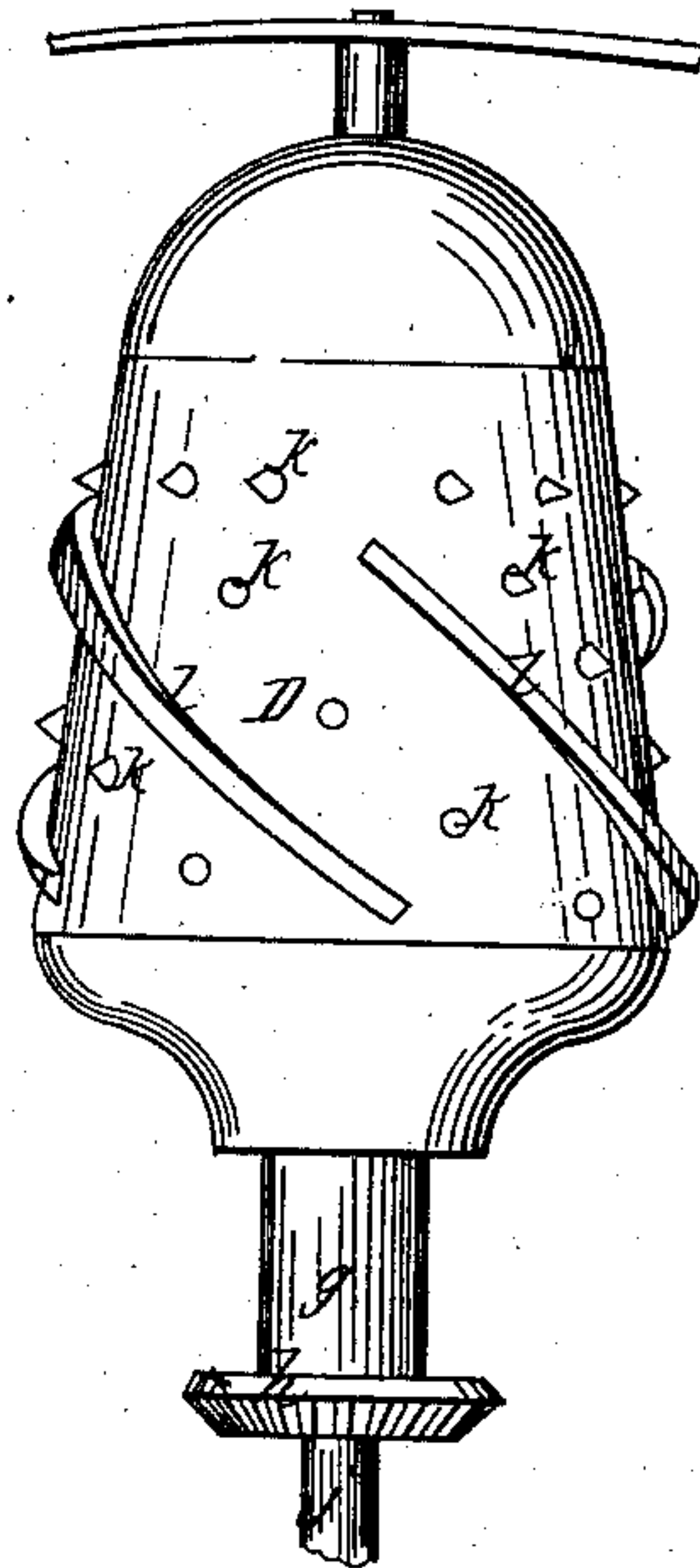


Fig. 2.

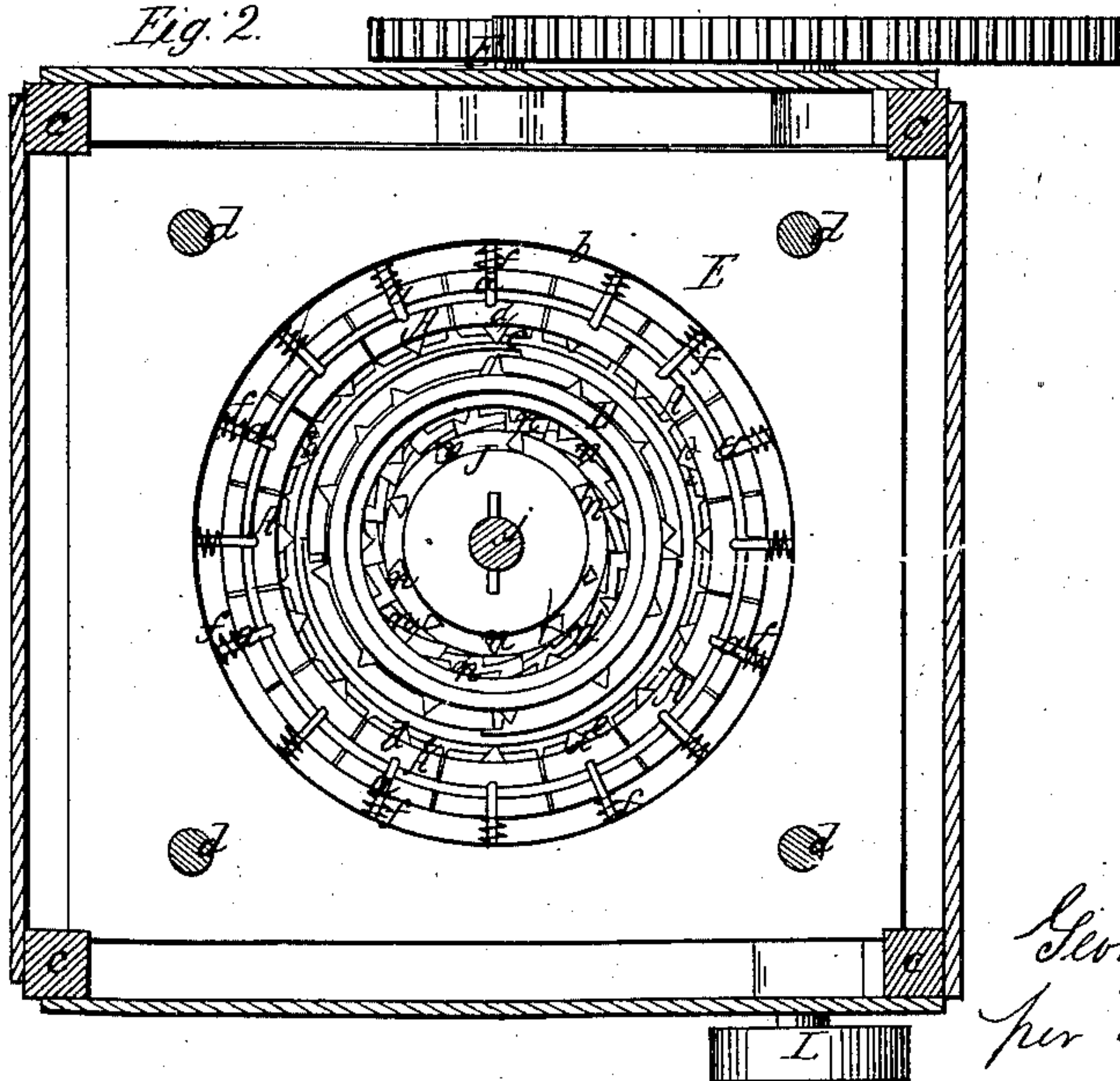
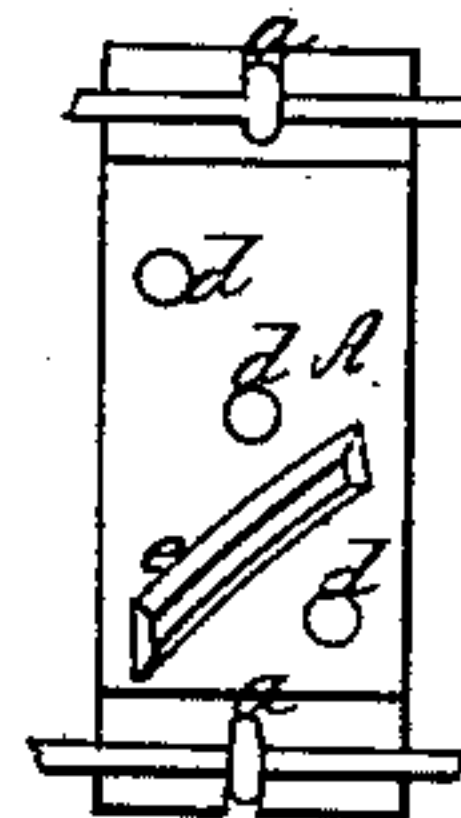


Fig. 3.



Witnesses;
J. W. Smith
W. L. Smith

Inventor,
George Seymour
per Munn & Co
Attorneys.

UNITED STATES PATENT OFFICE.

GEORGE SEYMOUR, OF CEDAR RAPIDS, IOWA.

MACHINE FOR SHELLING AND GRINDING CORN.

Specification of Letters Patent No. 32,898, dated July 23, 1861.

To all whom it may concern:

Be it known that I, GEORGE SEYMOUR, of Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and Improved Machine for Shelling and Grinding Corn; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1, represents a vertical central section of my invention; Fig. 2, a horizontal section of the same; the line x, x , Fig. 1, indicating the place of section; Fig. 3, a detached inside view of one of the adjustable slats of the shelling device; and Fig. 4, a detached elevation of the shelling cone.

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

This invention consists in the arrangement of a series of adjustable yielding slats, with teeth and spiral ridges, placed side by side in an upright position, so as to form a conical shell, in combination with a rotary toothed cone, in such a manner that said slats adapt themselves readily to ears of different size, and the ears are perfectly shelled from beginning to end;—also, in arranging in the interior of the hollow shelling-cone, a solid vertically-adjustable grinding-cone, to which a rotary motion in a direction opposite to the motion of the shelling-cone can be imparted, and which operates in combination with a grinding surface on the inside and on the bottom of the hollow shelling-cone in such a manner that the corn or other substance which may be introduced between said grinding surfaces is speedily reduced to flour or meal of any desired fineness.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, with reference to the drawing.

A series of slats A, are arranged on lugs or guide-pieces a , which project from the inner edges of round apertures b , cut into two platforms, B. These platforms slide up and down on the uprights c , of the frame C, and they are adjustable in a vertical direction by thumb-screws d , which also serve to keep said platforms apart as far as necessary, according to the length of the slats A. Said slats are provided on their inner surfaces with teeth d , and with spiral ridges e ; and springs f , placed around the lugs or

guide pieces a , have the tendency to force the same up toward the surface of the shelling-cone D. This cone is secured to a vertical hollow shaft g , to which a rotary motion is imparted by a bevel gear h i , from the horizontal shaft E, and which is guided by the vertical arbor j . The outer surface of the shelling-cone D, is furnished with projecting teeth k , and spiral ridges l , which, together with the teeth and ridges on the inner surfaces of the slats A, perform the shelling of the corn.

The slats A, are adjusted according to the size of the ears to be shelled, by the thumb-screws d :—by lowering the platforms B, the inner surfaces of the slats approach the outer surface of the shelling-cone, and by raising the platforms up, the distance between the shelling surfaces is increased. The slats adjust themselves by means of the springs f , according to the varying diameters of the ears.

The ears to be shelled are introduced through the hopper F, between the two shelling surfaces, and on being discharged, the corn, together with the cobs, drop down the inclined apron G, and in rolling down over this apron the corn drops through the screen m , into the discharge channel H; and while passing over the screen and from the screen to the discharge channel, it is exposed to the blast from a fan-blower I, and thereby separated from the chaff. The cobs roll down over the screen m , and are deposited on the side of the machine.

The shelling-cone is hollow, and it surrounds a solid cone J, which is firmly attached to the vertical arbor j , to which a rotary motion is imparted by means of the bevel-wheel h^1 , which, when raised up by the forked lever K, gears into the bevel-wheel i , on the end of the horizontal driving-shaft E. The wheel h^1 , is so arranged that it can be thrown in and out of gear at pleasure; and by its position opposite to the bevel wheel h , the motion which it imparts to the cone J, is necessarily in a direction opposite to that in which the shelling cone D, moves.

The inner surface of the shelling-cone D, and the outer surface of the grinding-cone J, are both furnished with teeth n , which serve to crush the corn which may be introduced between the two surfaces through the hopper F¹. The bottom o , of the grinding-cone is slightly inclined, and it corresponds to the bottom o^1 , of the shelling-cone D.

The inner surface of the bottom o^1 , of the shelling-cone, and also the outer surface of the bottom o , of the grinding-cone, are both provided with suitable grooves and ridges
 5 in the manner of ordinary grinding surfaces; and the corn or meal, after having been reduced to the desired fineness, is discharged through openings p , in the bottom o^1 , on an inclined conduit q , carrying it over
 10 the side of the machine to any desired receptacle.

The grinding-cone J , rests on a spiral spring q^1 , which has a tendency to force it upward; and a nut r , serves to depress the
 15 cone against the action of the spring. By means of this nut and spring, the grinding surfaces o , o^1 , are adjusted according to the degree of fineness to which it is desired to reduce the corn.

20 This machine may be driven either by hand or by any other power and in order to be able to attach it conveniently either to a horsepower or to a steam-engine, a pulley

L , is provided; and by passing a suitable belt over this pulley, the machine is driven. 25

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The arrangement of a series of slats A , attached by means of lugs a , to adjustable platforms B , and acted upon by means
 30 of springs f , in combination with the shelling cone D ; the whole being constructed and operating as and for the purpose described.

2. The arrangement and combination of 35 the hollow shelling-cone D , solid adjustable grinding-cone J , grinding surfaces o , o^1 , hollow shaft g , vertical arbor j , and bevel-wheels h , h^1 ; all constructed and operating
 40 substantially as and for the purpose specified.

GEORGE SEYMOUR.

Witnesses:

THOS. J. DUELLEY, Jr.,

B. T. BOUGHTON.