

H. E. SMITH.

Corn Sheller.

No. 16,191.

Patented Dec. 9, 1856.

Fig. 2.

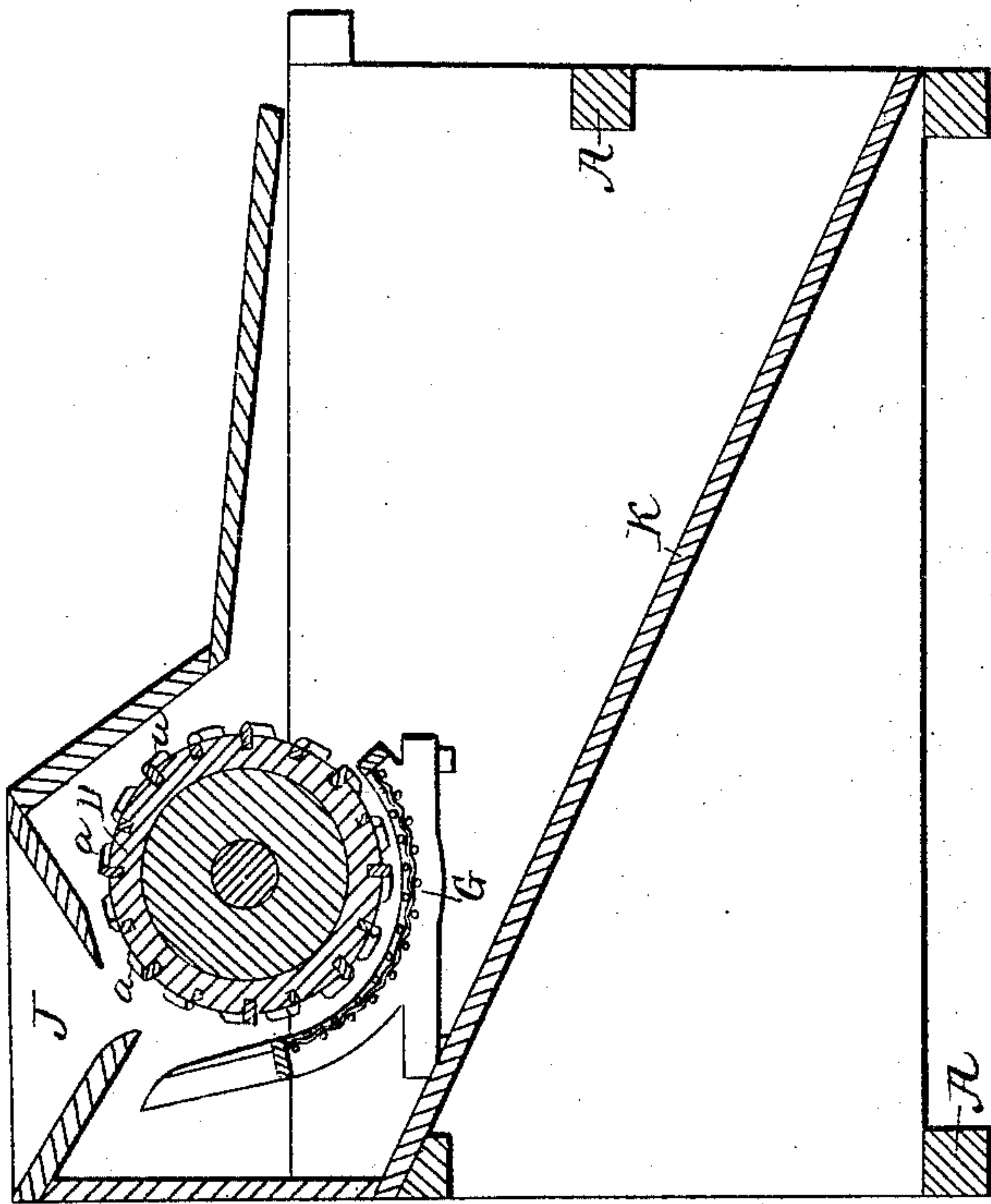


Fig. 4.

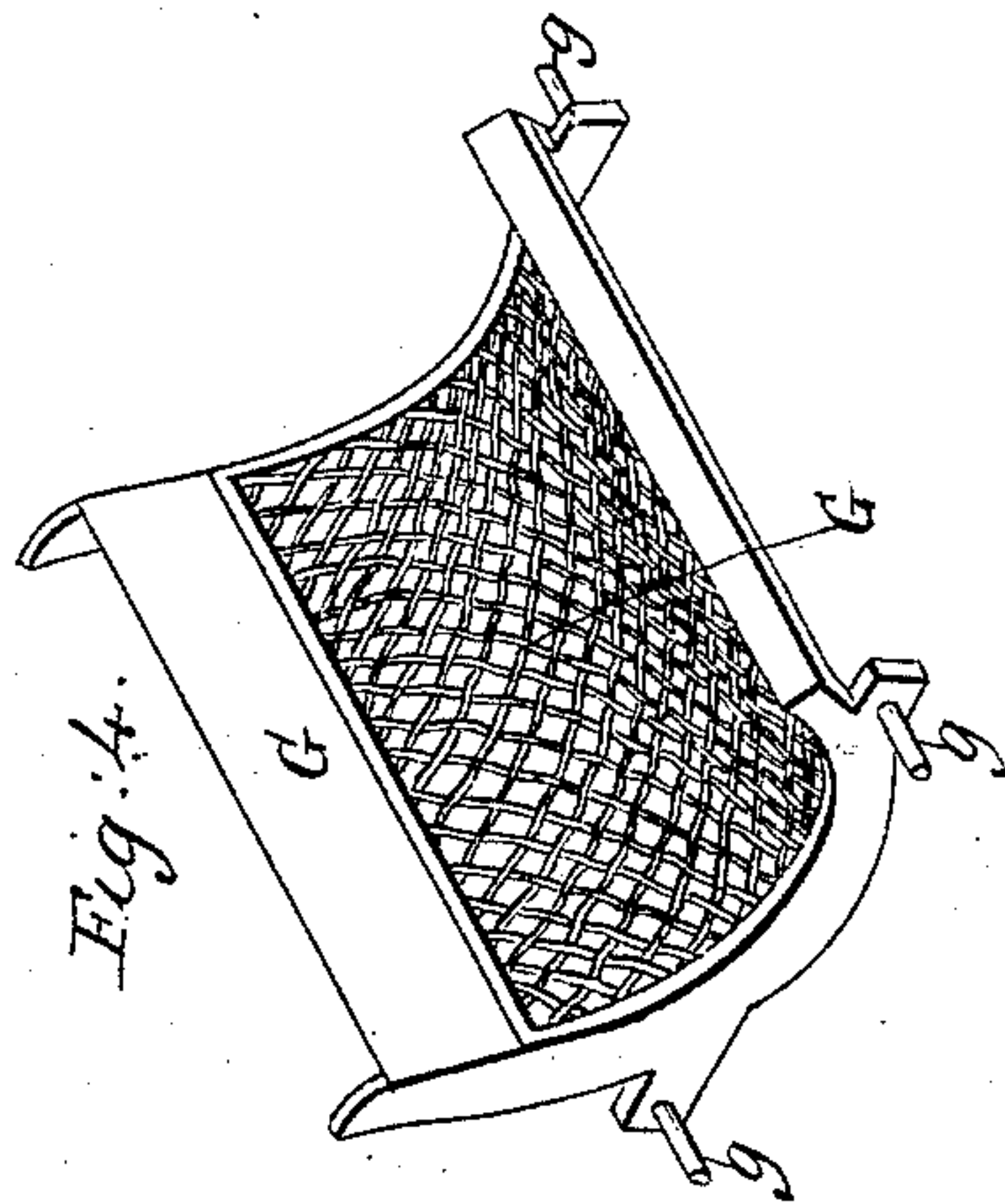


Fig. 3.

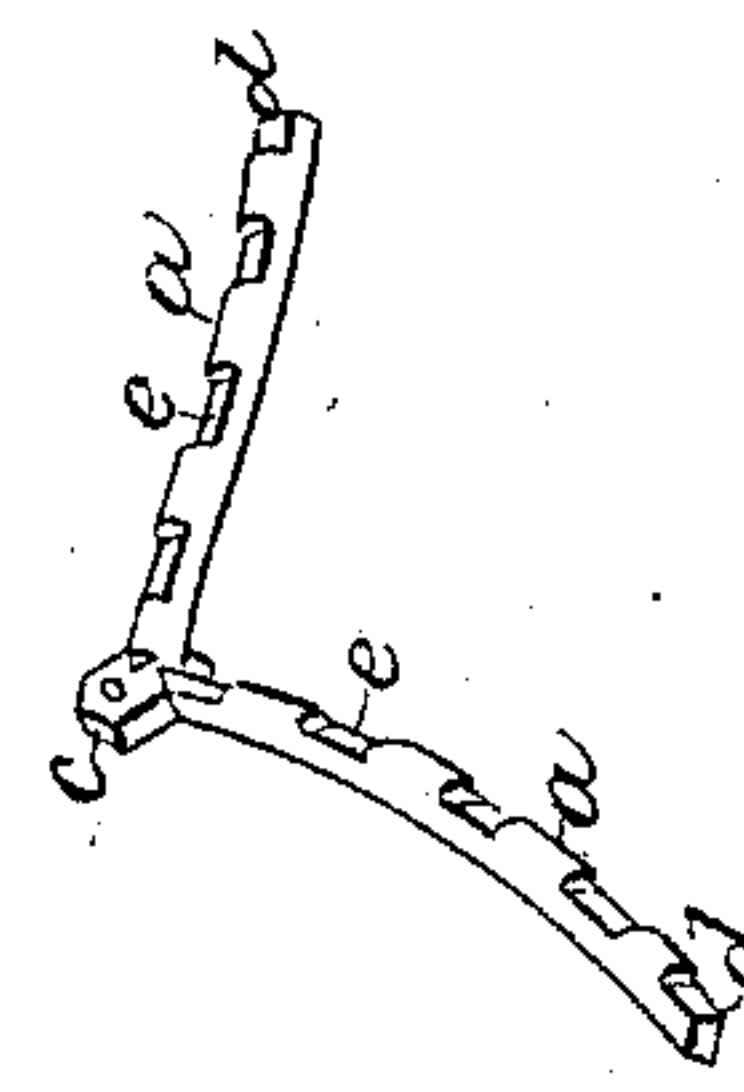
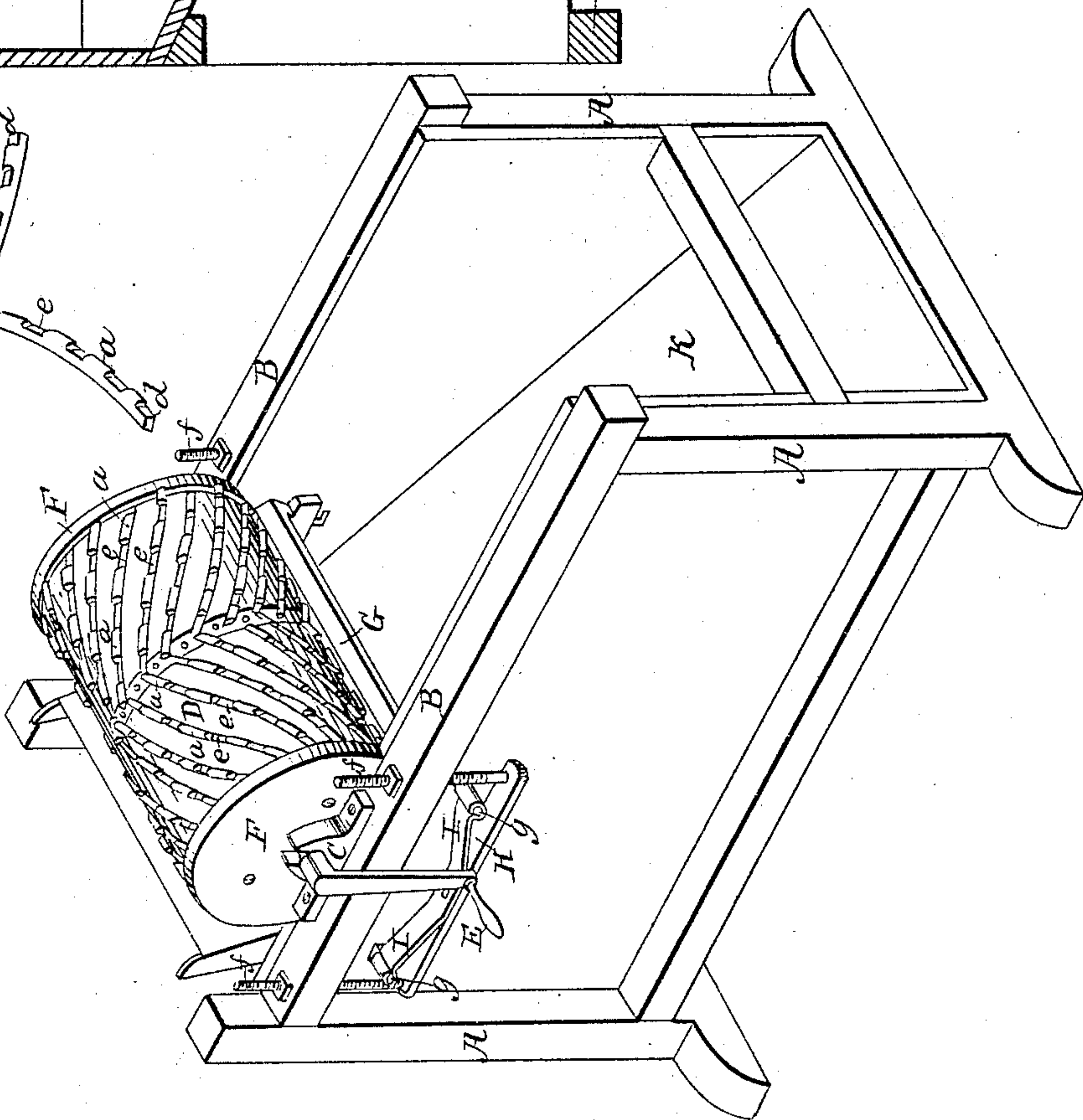


Fig. 1.



UNITED STATES PATENT OFFICE.

HAMILTON E. SMITH, OF PHILADELPHIA, PENNSYLVANIA.

CORN-SHELLER.

Specification of Letters Patent No. 16,191, dated December 9, 1856.

To all whom it may concern:

Be it known that I, HAMILTON E. SMITH, of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Corn-Shellers; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1 represents a perspective view of the machine with the cap or cover removed to show the interior. Fig. 2, represents a vertical, longitudinal section taken centrally through the machine, with the cap on. Figs. 3, 4, represent in perspective detached portions of the machine, which will be specially referred to in the description.

Where similar letters of the alphabet occur in the several figures, they denote in all cases the same parts of the machine.

To enable those skilled in the art to make and use my invention I will proceed to describe the same with reference to the drawings.

A, represents the frame of the machine, on the top rails B, of which, is mounted in suitable boxes C, a shelling cylinder D, which may be turned by the crank E, or in any other well known manner. The body of the shelling cylinder D, may be of wood, or metal, or portions of each, and its periphery armed with peculiarly formed teeth *a*, *a*.

The shelling teeth are formed as follows: Sections of curved ribs, are made of either steel, or cast metal, as seen in Fig. 3, which unite at the point *b*, and a projection *c*, is made at the junction of two ribs, through which a hole is made for a spike or bolt, to secure it to the cylinder at the center thereof. These ribs curve backward so as to fit an oblique line drawn from the center of the cylinder to its ends, and the projection *c* on one section, fits against or behind the next section, until the cylinder is full, as shown in Fig. 1, the projections *c* in their series capacity, forming a belt around the cylinder at its center. The heel, or rear ends of the sections (Fig. 3) have shoulders *d* *d* formed upon them; and when said sections are laid into the previously prepared grooves in the cylinder, two metallic heads F, are slipped on, one at each end of the cylinder, which catch over the shoulders *d* and thus firmly secure said ribs or sections

at the ends of the cylinder, and while they are thus firmly held to the cylinder, they can be removed or replaced in case of breakage. The teeth *a* are formed by taking, or leaving out, alternate spaces *e* and the teeth and spaces on one section break joint with the teeth and spaces of the next section to it. The points or angles of the sections run in advance of the heel or rear parts, and as they strike the ear of corn, carry it around and toward one end or the other of the cylinder, depending upon which side of the point or angle it is first struck. The machine may thus be fed at the center of the cylinder, and the obliquity of the teeth will so distribute the ears of corn, as to make every part of the shelling surface do its regular amount of work.

The concave G, is hung to the top rails B B, by four adjusting screws *f*, and sets immediately under the cylinder D. A cross bar H, unites the two screw bolts *f*, on each side (one side only being shown in the drawing, but both exactly alike), and on said cross bar on each side, is a spring I, the ends of which receive the four studs or pins *g*, *g*, &c., (see Fig. 4) on the concave G. Where the studs *g*, pass through the sides of the frame, slots are cut so that the concave may be properly adjusted to the shelling cylinder D. The concave is made of rods or wire, plaited, woven or interlocked, so that said rods, or wire shall also have an oblique direction from all its crossing points, to the sides of the concave. They thus, acting in concert with the oblique ribs, aid in rolling the ears toward the sides of the concave, and equally distribute the ears all over the shelling surfaces, which prevents one part from wearing away faster than another part.

The concave has the usual yielding motion, ordinarily given to them, by the springs I. But it has in addition to this the spring of the individual rods, wires, or strands, of which it is composed, while said strands are prevented, by being interwoven, from yielding too much, which they would do if laid parallel to each other either across, or lengthwise of the concave and not interlocked. The woven or plaited concave will yield at any one point to a large ear, such yielding causing some other part to more closely hug the cylinder, and this will be the case until the pressure becomes too great, when the springs I, will then yield,

and compensate for such undue pressure between the cylinder and concave. Thus it will be perceived that, a single large ear of corn instead of forcing away the whole concave from the cylinder, only forces away
5 that portion of the wires or rods of the concave against which it presses, and draws the balance of the concave tighter to the cylinder, until as before stated that pressure
10 becomes great enough to bring the springs I into action, which takes away the excess of pressure.

J, is the hopper through which the ears of corn are fed in, and K, is the guide board

for carrying off the shelled corn and cobs, 15 which are afterward separated in any of the usual well known ways.

Having thus fully described the nature of my invention, what I claim therein as new and desire to secure by Letters Patent is— 20

The combination of the cylinder D, and concave G, when made, and operating together, substantially in the manner herein described.

HAMILTON E. SMITH.

Witnesses:

HENRY MISEN,
A. FITCH.