

(No Model.)

D. C. POWELL.
GRATER.

No. 594,424.

Patented Nov. 30, 1897.

Fig. 1.

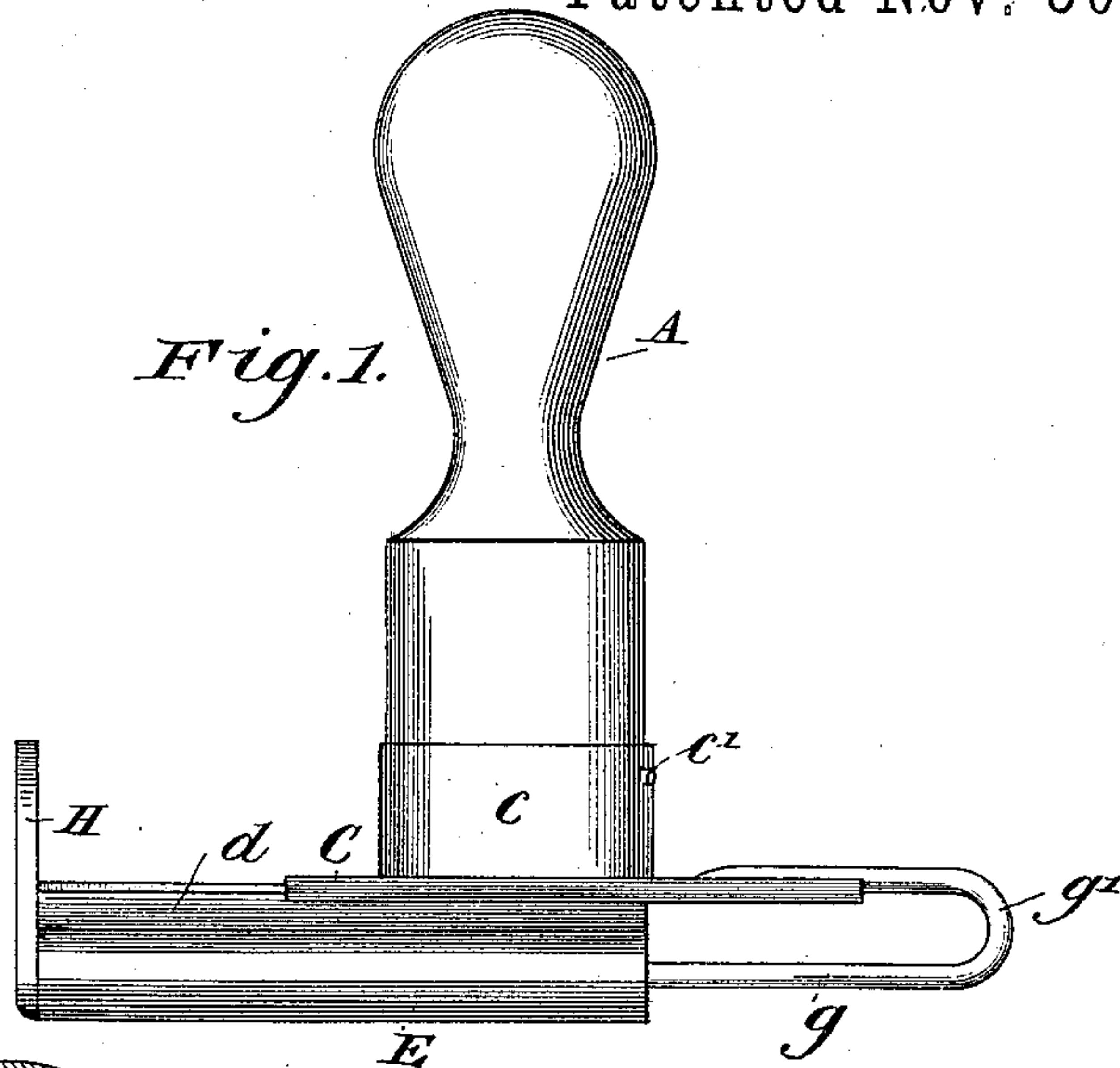


Fig. 2.

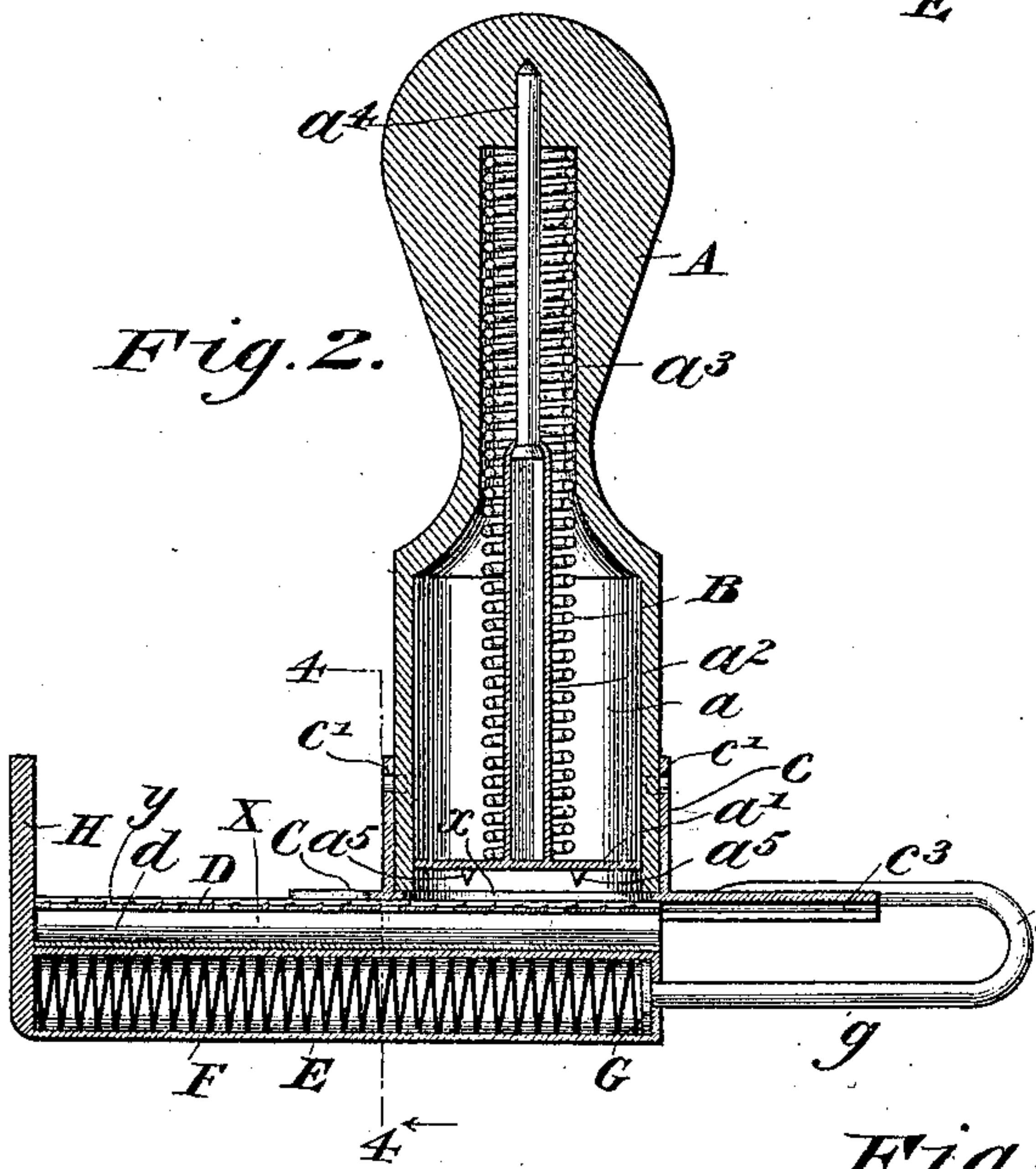


Fig. 3.

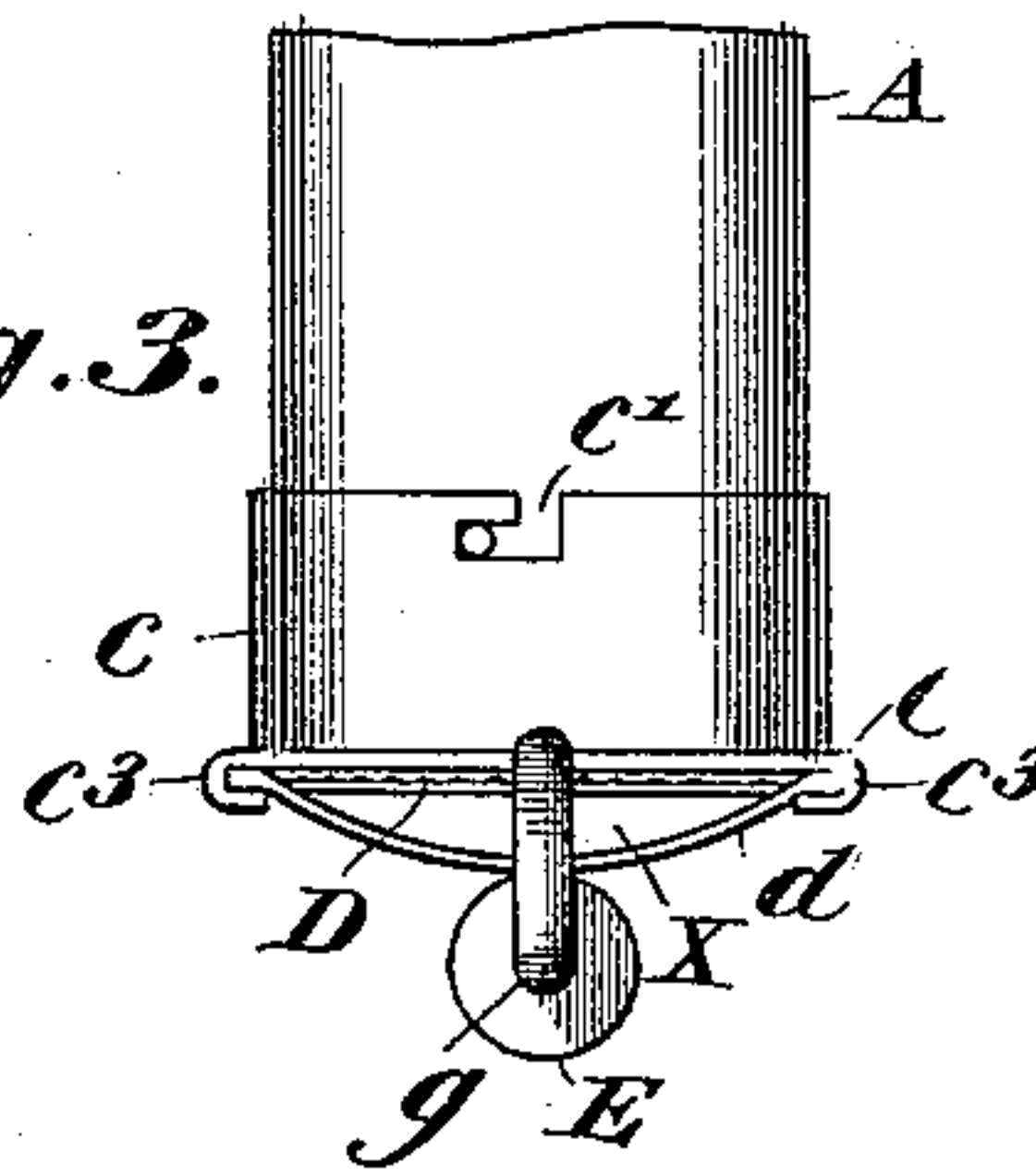


Fig. 4.

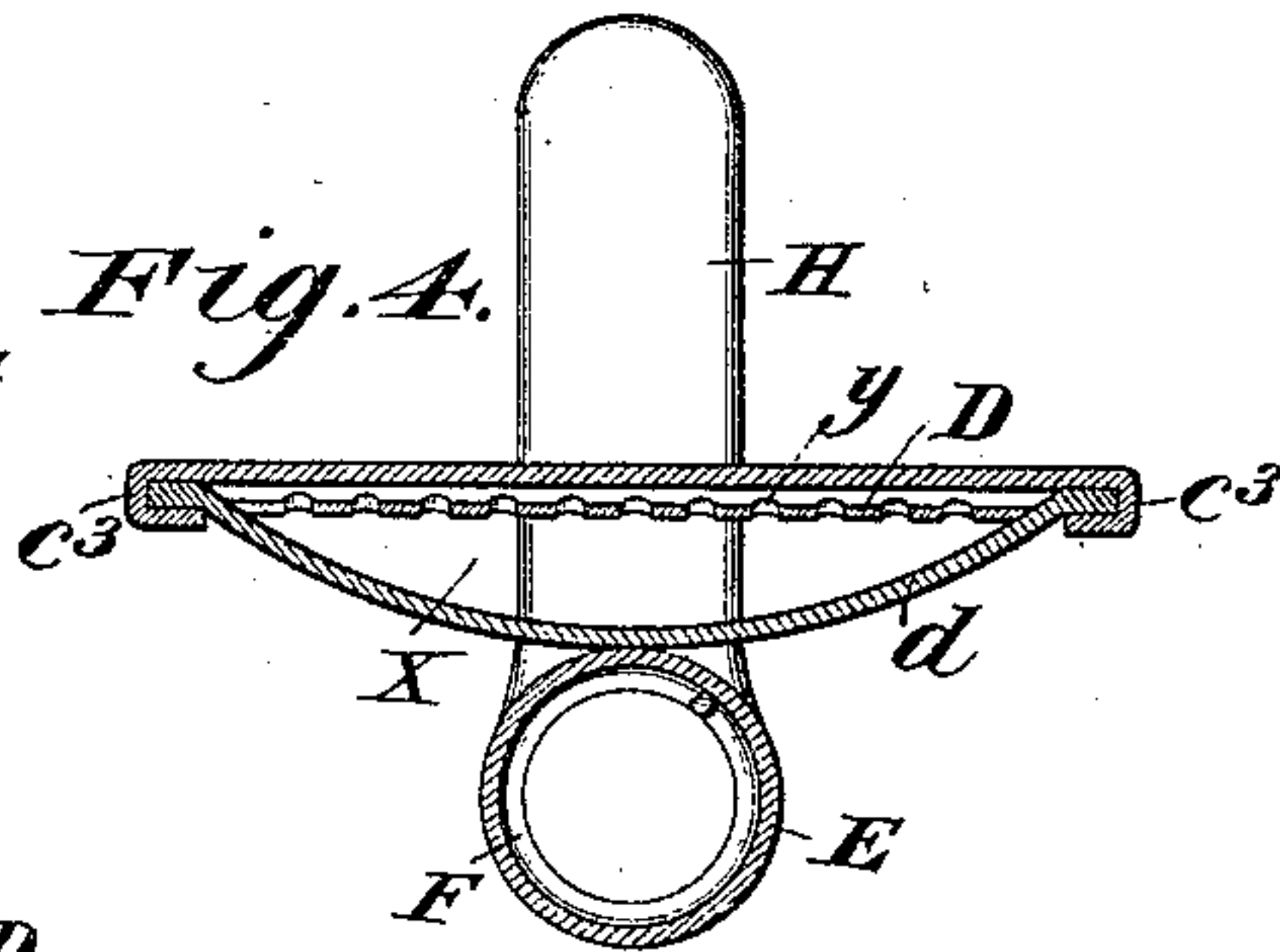


Fig. 5.

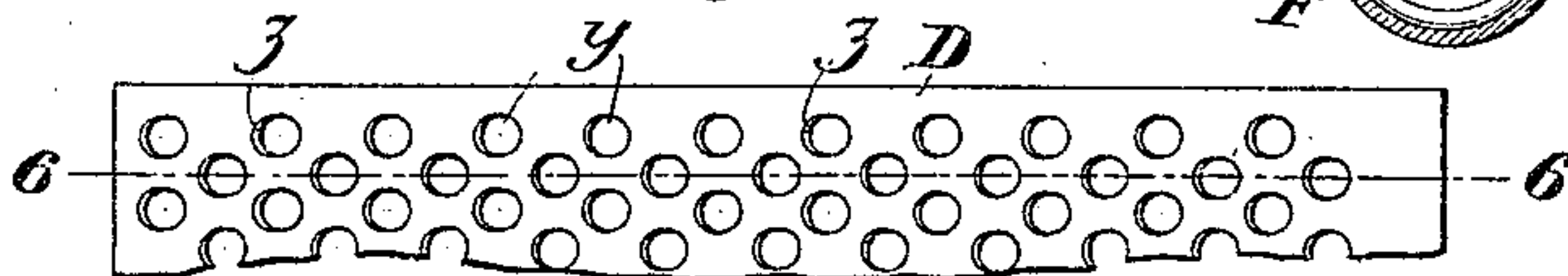


Fig. 6.



Witnesses

J. M. Withrow
B. H. Miller

Inventor,

D. C. Powell,

By his Attorneys,

Galdwin, Davidson & Wright

UNITED STATES PATENT OFFICE.

DAVID C. POWELL, OF MICHIGAN CITY, INDIANA, ASSIGNOR OF ONE-HALF
TO EDWARD J. POWELL, OF SAME PLACE.

GRATER.

SPECIFICATION forming part of Letters Patent No. 594,424, dated November 30, 1897.

Application filed December 28, 1896. Serial No. 617,237. (No model.)

To all whom it may concern:

Be it known that I, DAVID C. POWELL, a citizen of the United States, residing at Michigan City, in the county of La Porte and State of Indiana, have invented certain new and useful Improvements in Graters, of which the following is a specification.

The special object of my invention is to provide a grater, such as a nutmeg-grater, which may be held and operated by one hand and which has an improved grating-surface.

Heretofore nutmeg-graters have usually been operated by both hands, and the grating-surface has been formed by perforating sheet metal, so as to produce burs or annular ridges uniformly arranged around the perforations.

By my invention I provide a handle which is formed with a socket to hold the nutmeg or other such object, and the grating-surface is perforated and has projections, flanges, or cutters on one side only of the perforations, so that the grater may move easily in one direction without reducing the nutmeg, but when moved in the opposite direction will produce the powder or granular material in the usual way.

In the accompanying drawings, Figure 1 is a side elevation of my invention. Fig. 2 shows a vertical central section thereof. Fig. 3 shows an end elevation of the lower part of the device. Fig. 4 shows a transverse section on the line 4 4 of Fig. 2. Fig. 5 is a plan view of part of the grating-plate. Fig. 6 shows a longitudinal section on the line 6 6 of Fig. 5. Figs. 4, 5, and 6 are on an enlarged scale.

The handle A is provided with a chamber a to receive and hold the article, such as a nutmeg, to be reduced in the grating device. A plunger a' is arranged within the chamber a , and it is provided with a stem a^2 , around which is arranged a spiral spring B, which rests against the plunger-plate a' , surrounds the stem a , and extends up into a socket a^3 near the end of the handle. The spring at all times tends to press the plunger a' toward the lower end of the chamber a . The plunger may be prevented from moving too far downward in any suitable way, as by means of a nail a^4 , secured to the handle, as indicated in Fig. 2, and having its head arranged

within the stem a^2 . Burs a^5 may be cut in the plunger a' to engage with the nutmeg or other article to keep it from slipping. The handle is removably connected with a slide C, which has an annular flange c , having a bayonet-joint c' with the handle.

The grating-plate D is secured to a supporting-plate d , which is curved, as shown, so as to form a chamber X, extending longitudinally through the device.

The cylinder E is secured to the under side of the plate d , and it contains a spring F, against the end of which a disk G bears, secured to a rod g , bent at g' and secured to the slide C. The slide C is flanged at c^3 , so as to embrace the edges of the plate d , and the arrangement is such that the slide may be moved back and forth or reciprocated relatively to the plate d . When thus reciprocating, the spring F is alternately compressed and released. At one end the cylinder is connected with an upright arm H, which constitutes a means for reciprocating the slide and grating-plate relatively to each other. The slide C is provided with a large opening at x , through which the nutmeg or other object may project, and the arrangement is such that as the slide and the grating-plate reciprocate relatively to each other the nutmeg is carried back and forth over and in contact with the grating-plate, and the nutmeg is reduced in the usual way, the fine particles passing out through the opening X to either end of the device.

The grating-plate is perforated, as usual, but instead of having burs of the usual form each of the openings y has a bur or cutter on one side only, as at z . By this arrangement a sharp edge is presented to the nutmeg when the plate is moving in one direction—for instance, to the right, as viewed in Fig. 2. When moving in the opposite direction, the nutmeg will slide smoothly over the top of the grater without much friction being produced. One advantage of this arrangement is that when the plate moves to the right, as indicated in Fig. 2, it is done positively by the operator, but when the plate is moved in the opposite direction it is moved by the force of the spring F. It is desirable to relieve

the spring from as much work as possible, so that a light spring may be used and so that there will be no liability of clogging or binding.

In practice it is found most convenient to 5 grasp the handle with the four fingers, holding the end of the handle in the palm of the hand, while the thumb bears on the handle-piece H. In this way the thumb may be moved rapidly back and forth when moving 10 in one direction, causing the nutmeg to be reduced, and in the opposite direction the thumb will have no work to do, but will simply advance with the handle by the force of the spring.

15 I claim as my invention—

1. A grater comprising a handle provided with a chamber for holding the article to be reduced, a slide to which the handle is removably secured, a grating-plate, a cylindrical 20 casing attached thereto, a spring in the casing, a disk within the casing against which the spring bears, a rod connecting the disk with the slide, and a handle at the end of the grating-plate for moving the grating-plate 25 against the face of the spring.

2. A grater comprising a handle provided with a chamber for holding the article to be reduced, a perforated grating-plate having a bur or cutting edge on one side only of each 30 perforation, sliding connections between the handle and the grating-plate, a thumb-piece secured to the grating-plate and extending therefrom laterally on that side of the perfora-

tions on which the bur is located, and a spring for moving that end of the grating-plate on 35 which the thumb-piece is located away from the chambered handle, the arrangement being such that by the contraction of the hand the cutting edges of said perforations are forced against the article to be reduced, while 40 the spring moves the plate in the opposite direction without performing the grating operation.

3. A grater comprising a handle having a chamber for holding the article to be reduced, 45 and a socket for retaining a spiral spring, a spring arranged in said socket and extending into the chamber of the handle, a plunger having a hollow stem encircled by the spring, a rod secured at one end to said handle which 50 projects into the hollow stem of the plunger to serve as a guide therefor, a stop on said rod to limit the movement of the plunger, a grating-plate, sliding connections between the grating-plate and the handle, a spring 55 for moving the grating-plate in one direction relatively to the handle, and a thumb-piece for moving the grating-plate in the opposite direction.

In testimony whereof I have hereunto sub- 60 scribed my name.

DAVID C. POWELL.

Witnesses:

HENRY B. MORRIS,

DANIEL SHEA.