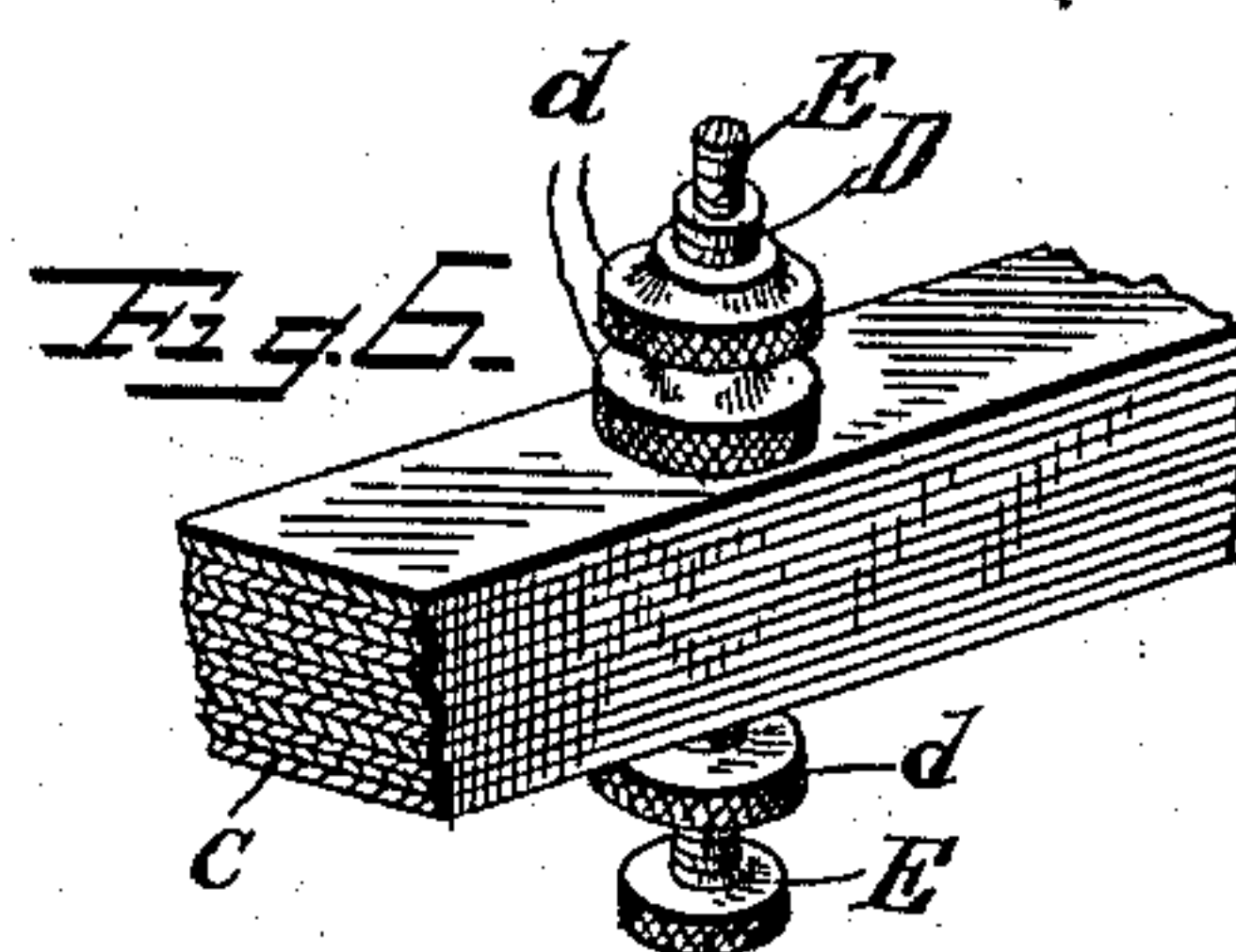
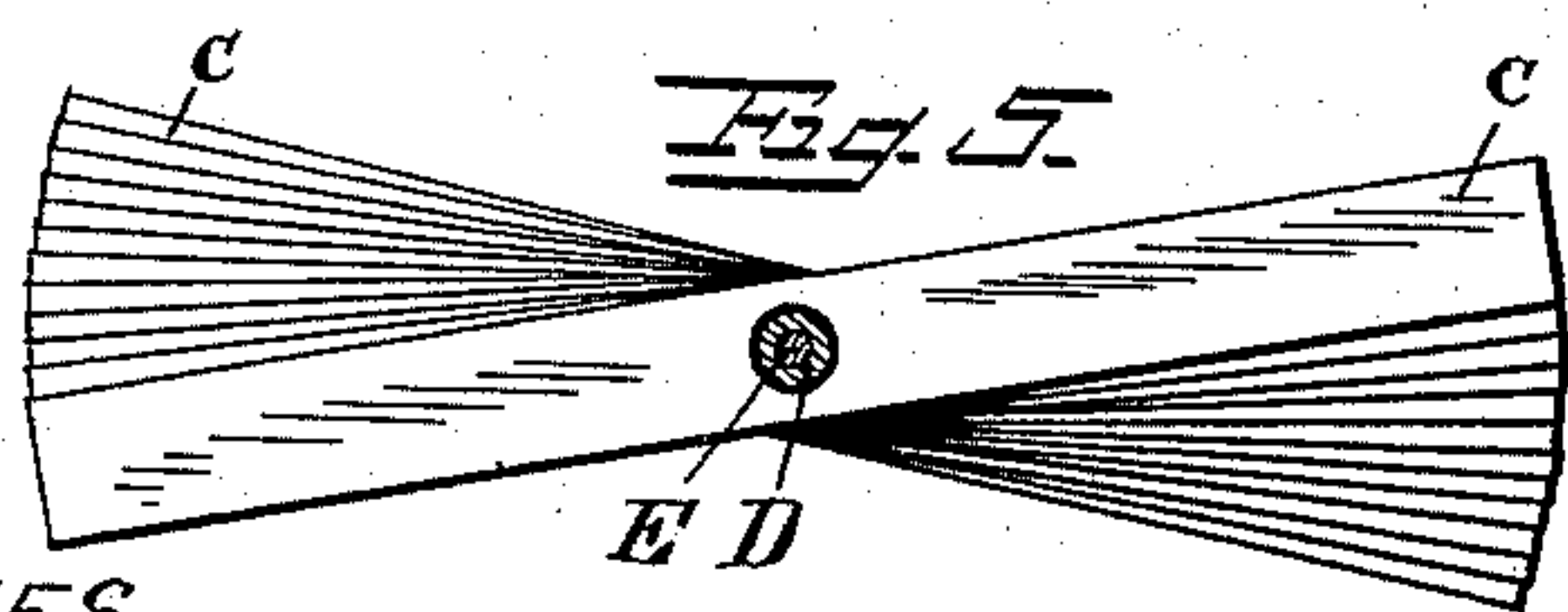
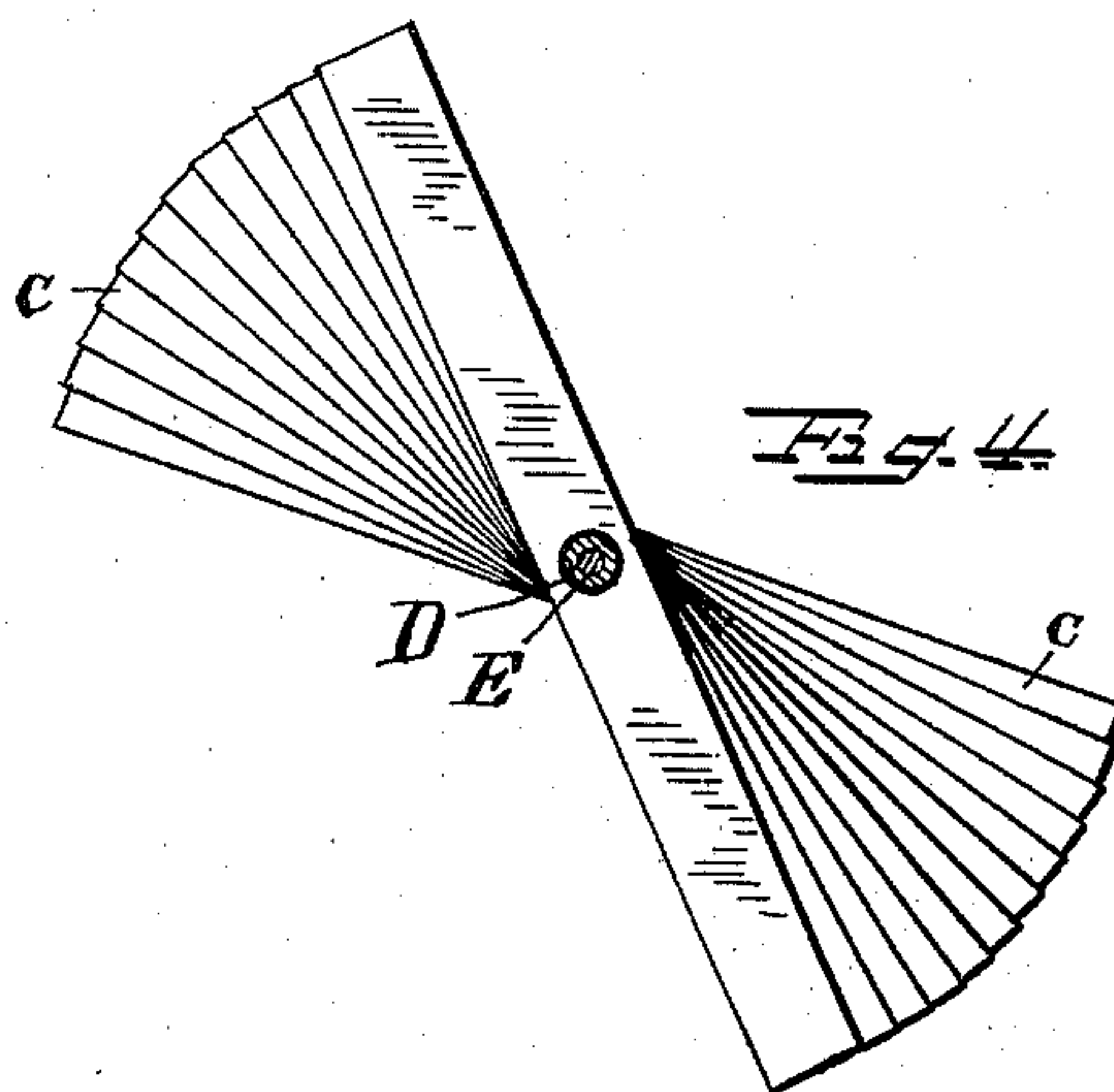
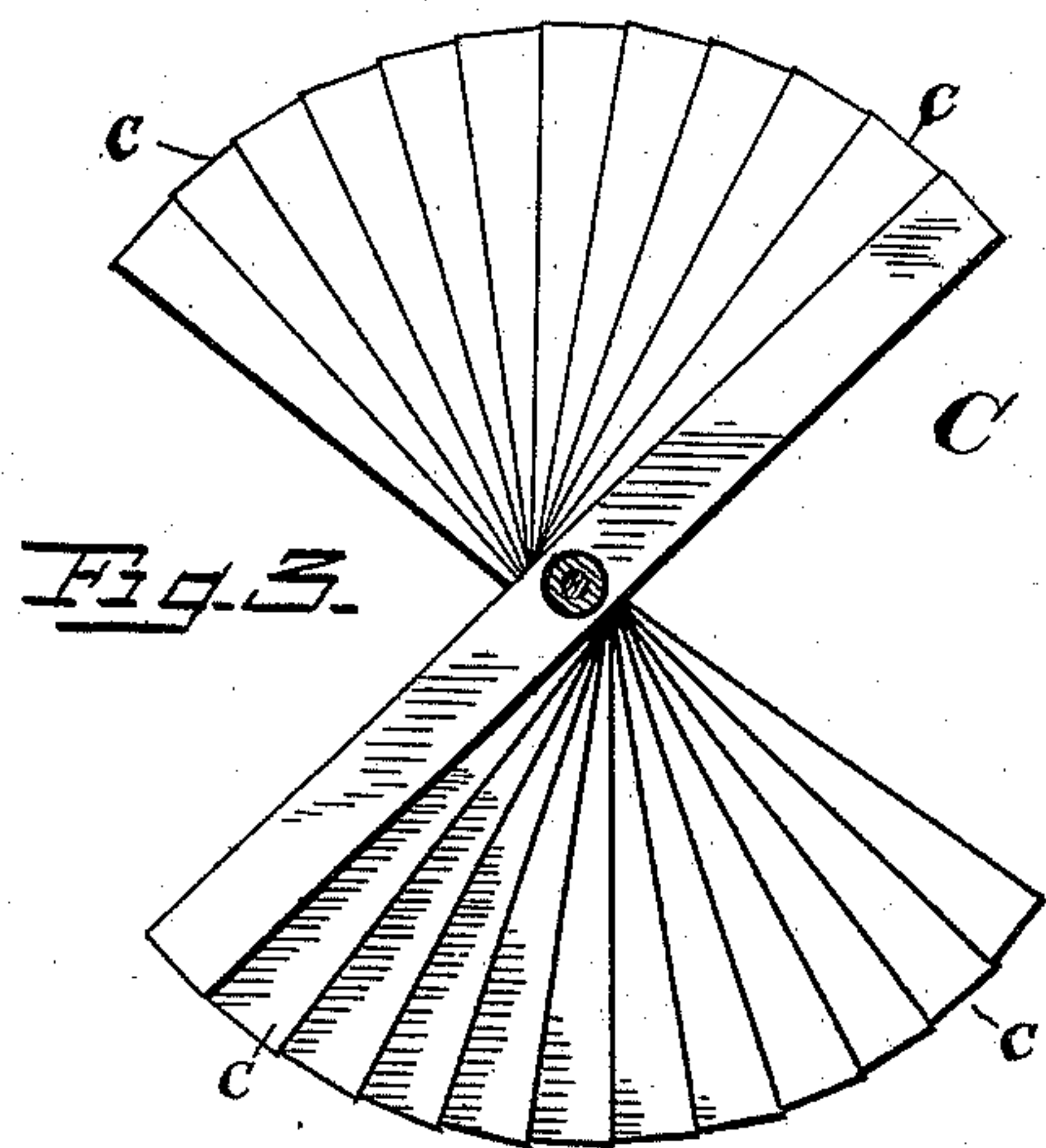
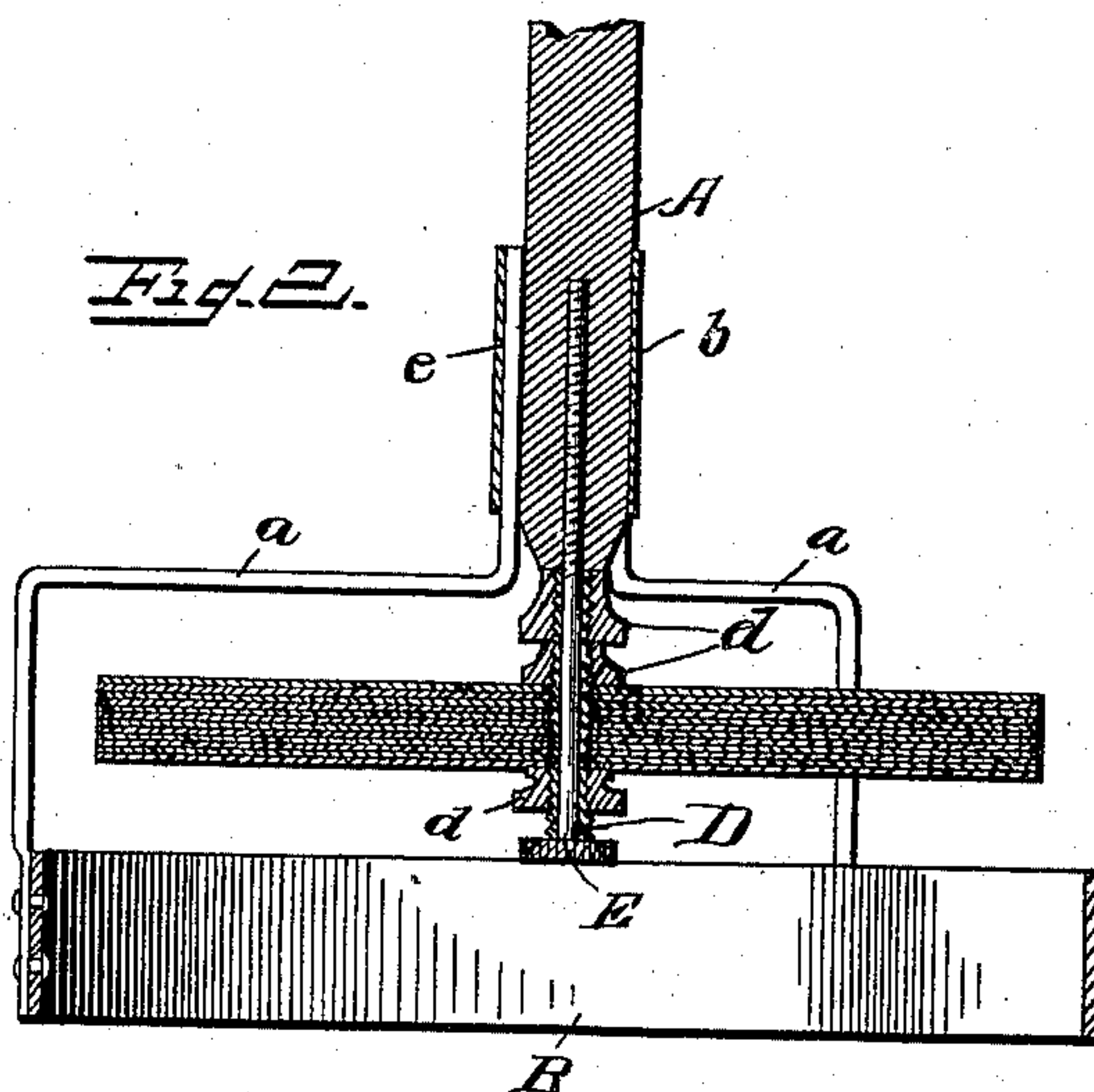
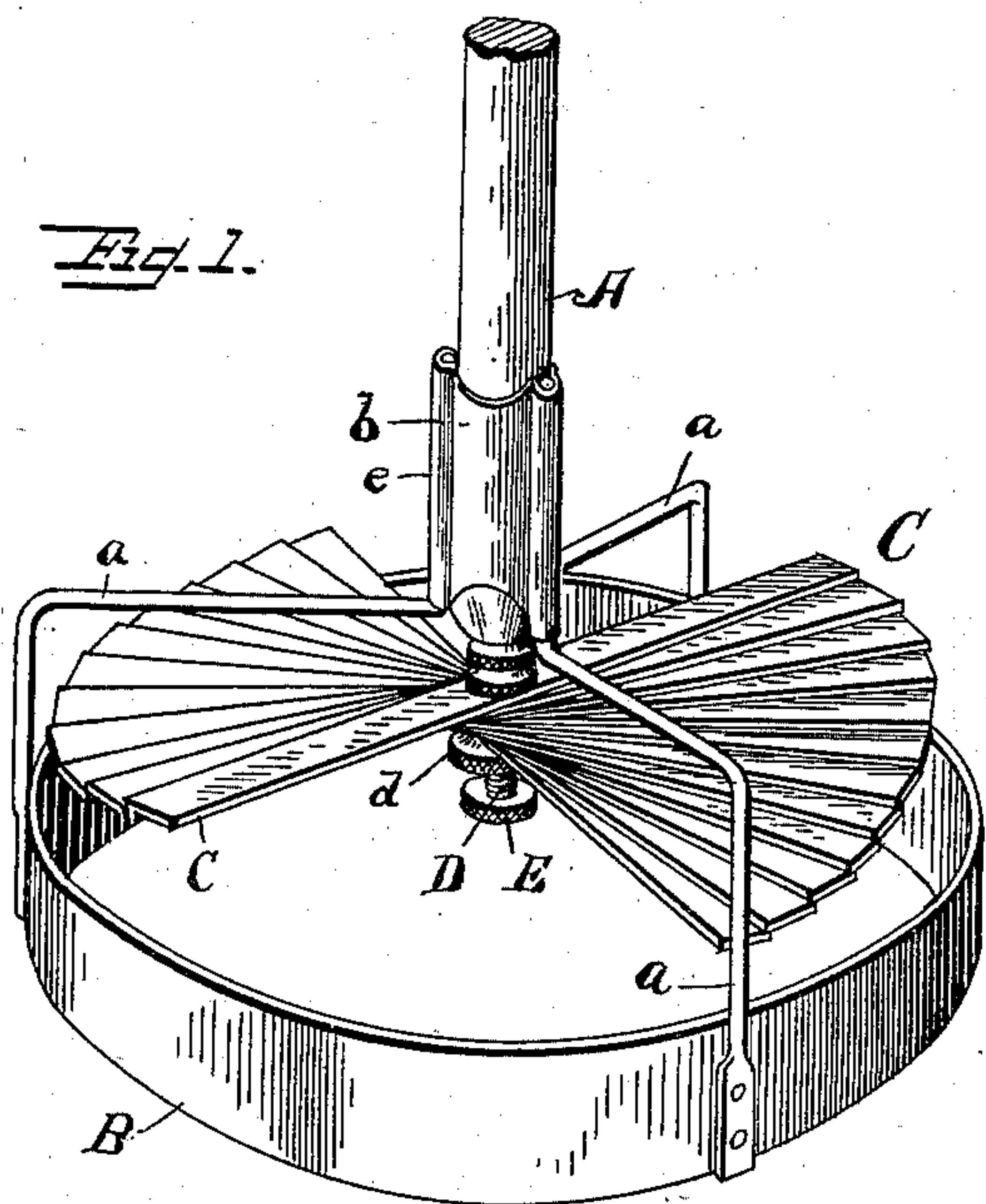


(No Model.)

C. H. HUDSON.
CHURN DASHER.

No. 535,447.

Patented Mar. 12, 1895.



WITNESSES.

Howard W. Orr.
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INVENTOR.
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BY
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HIS ATTY.

UNITED STATES PATENT OFFICE.

CHARLES H. HUDSON, OF MARSHALL, TEXAS.

CHURN-DASHER.

SPECIFICATION forming part of Letters Patent No. 535,447, dated March 12, 1895.

Application filed August 27, 1894. Serial No. 521,434. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. HUDSON, a citizen of the United States, residing at Marshall, in the county of Harrison and State of Texas, have invented certain new and useful Improvements in Churn-Dashers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to vertically reciprocating churn dashers, the object being to so construct a dasher that the force required to operate it may be varied and the time necessary to churn the butter be shortened as the force operating the dasher is increased. To attain these objects I make the blades of the dasher adjustable in width and give them a screw like form, somewhat in appearance like a propeller, so that when moved vertically through the cream a rotary movement will be given to the dasher, and it consists in the construction hereinafter described and more particularly pointed out in the claims.

Referring to the drawings, Figure 1, represents a perspective view of my improved dasher. Fig. 2, is a vertical transverse section of Fig. 1. Figs. 3, 4 and 5, are plan views showing the blades of the dasher in different adjustments, and Fig. 6, is a detached detailed view on an enlarged scale.

Similar letters of reference indicate corresponding parts in each of the respective figures.

A represents the dasher rod which is made of any desired kind of material suitable for the purpose, and B indicates a circular shield secured to the lower end of the dasher rod by bent rods *a*. The lower end of the dasher rod A is provided with a sleeve *b*, having a series of sockets *c*, in which the upturned portion of the rods *a* are rigidly secured. From the lower portion of these sockets the rods extend outward to the edge of the shield and then downward, and are secured to its outer surface. The circular shield B is constructed somewhat smaller in diameter than the interior of the churn to enable in to work up and down freely, there being left a sufficient space for it to have lateral play.

The blades C of the dasher are formed of a series of superimposed strips *c*, composed of any suitable material, which are perforated midway of their length. A sleeve D, which is somewhat smaller than the perforations in the strips *c*, is screw threaded on its outer surface and passes through the perforations of the strips which are loosely turned thereon. A headed pin or bolt E passes through the sleeve D into the lower end of the dasher rod A, and is secured therein by any suitable means. In the drawings this pin E is represented as having a threaded portion which is screwed into the dasher rod; but any other well known means of fastening the pin may be employed to secure it in the dasher rod. The lower end of the sleeve D is made to rest upon the head of the pin E, and the upper end extends up to the lower end of the dasher rod A, and is made to turn freely upon the pin E which is rigidly secured in the dasher rod.

The strips *c*, are adjustable on the sleeve D and are clamped together in any desired position by finger nuts *d*, working on the sleeve D above and below them, and when so clamped the strips will turn with the sleeve on the pin E; but when the nuts are loosened the strips may be turned independent of the sleeve.

The operation of my improved churn dasher is as follows: When it is desired to effect the churning so as to bring the butter quickly, the strips must be spread out to their full extent as shown in Fig. 3, to form two fan-like blades. The strips should not however be opened or spread sufficiently to allow the milk and cream to pass between them. When spread out these two fan-like blades present upper and lower inclined surfaces extending in opposite directions so that when the dasher is moved vertically the blades will be caused to rotate, and the rotary movement will be reversed at each upward and downward movement of the dasher.

It is obvious that when the strips *c*, are spread out to their full extent as shown in Fig. 3, the blades will offer greater resistance than when adjusted as presented in Figs. 4 and 5, and it will consequently require greater force to operate the dasher. This increased force is, however, compensated for by the gain in time necessary to effect the completion of

the churning, and is a matter of considerable importance during the hot weather. When the matter of a short period of time is not so important in churning, as in cooler weather, 5 the blades may be adjusted to either of the forms shown in Figs. 4 and 5, and the dasher be worked with a much less degree of strength or force.

10 The circular shield B serves to protect the inner surface of the churn from injury by the ends of the blades, as well as to guide the latter in their vertical movement.

Having thus fully described my invention, what I claim as new, and desire to secure by 15 Letters Patent of the United States, is—

1. In a churn dasher, the combination with a dasher rod, of a series of superimposed adjustable strips pivotally connecting midway of their length to the rod, and, when spread, 20 forming two fan-shaped blades having inclined upper and lower surfaces, and means for holding said strips in their adjusted position substantially as set forth.

2. In a churn dasher, the combination with

the dasher rod, of a pin secured to the lower 25 end of the rod, a sleeve threaded on its outer surface and supported on the pin, a series of superimposed strips pivoted midway of their length on the sleeve, and clamping nuts on the sleeve above and below the strips, sub- 30 stantially as set forth.

3. In a churn dasher, the combination with the dasher rod, and two fan-shaped blades composed of a series of adjustable strips pivotally connected to said rod, said blades hav- 35 ing upper and lower inclined surfaces, and means for holding said strips in their adjusted position of a circular shield connected to the dasher rod to guide the blades in their vertical movement and protect the interior of the 40 churn from injury by the blades, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. HUDSON.

Witnesses:

JNO. L. GARRISON,

R. BEAUREGARD LANCASTER.