

(No Model.)

W. G. SEARS.  
COTTON PICKER STEM.

No. 353,085.

Patented Nov. 23, 1886.

Fig. 1.

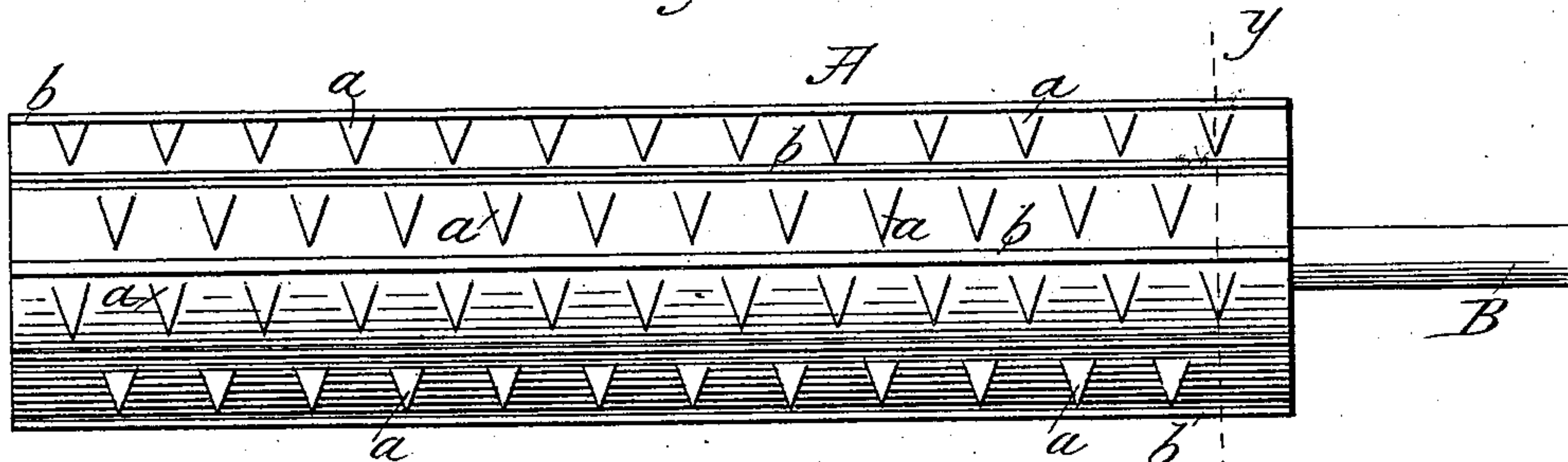


Fig. 2.

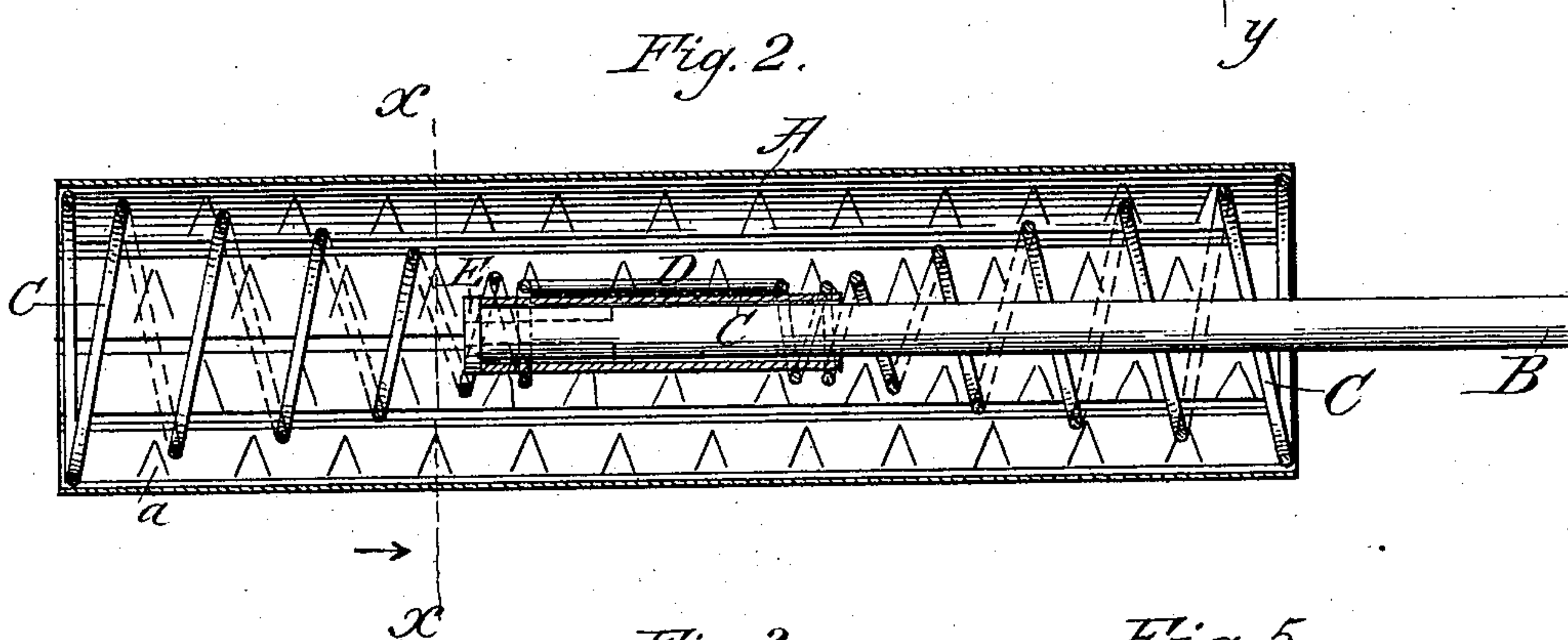


Fig. 3.

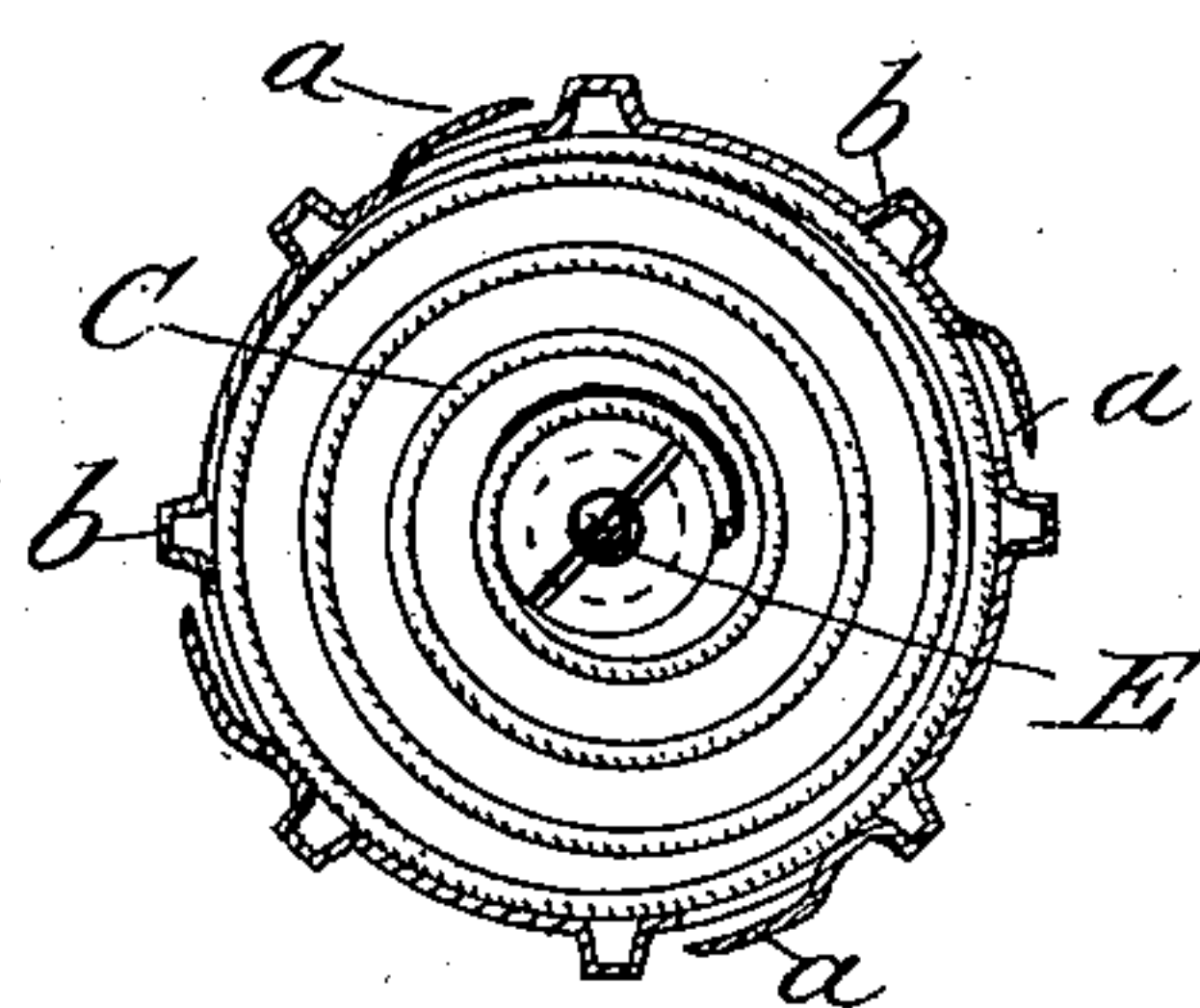


Fig. 5.

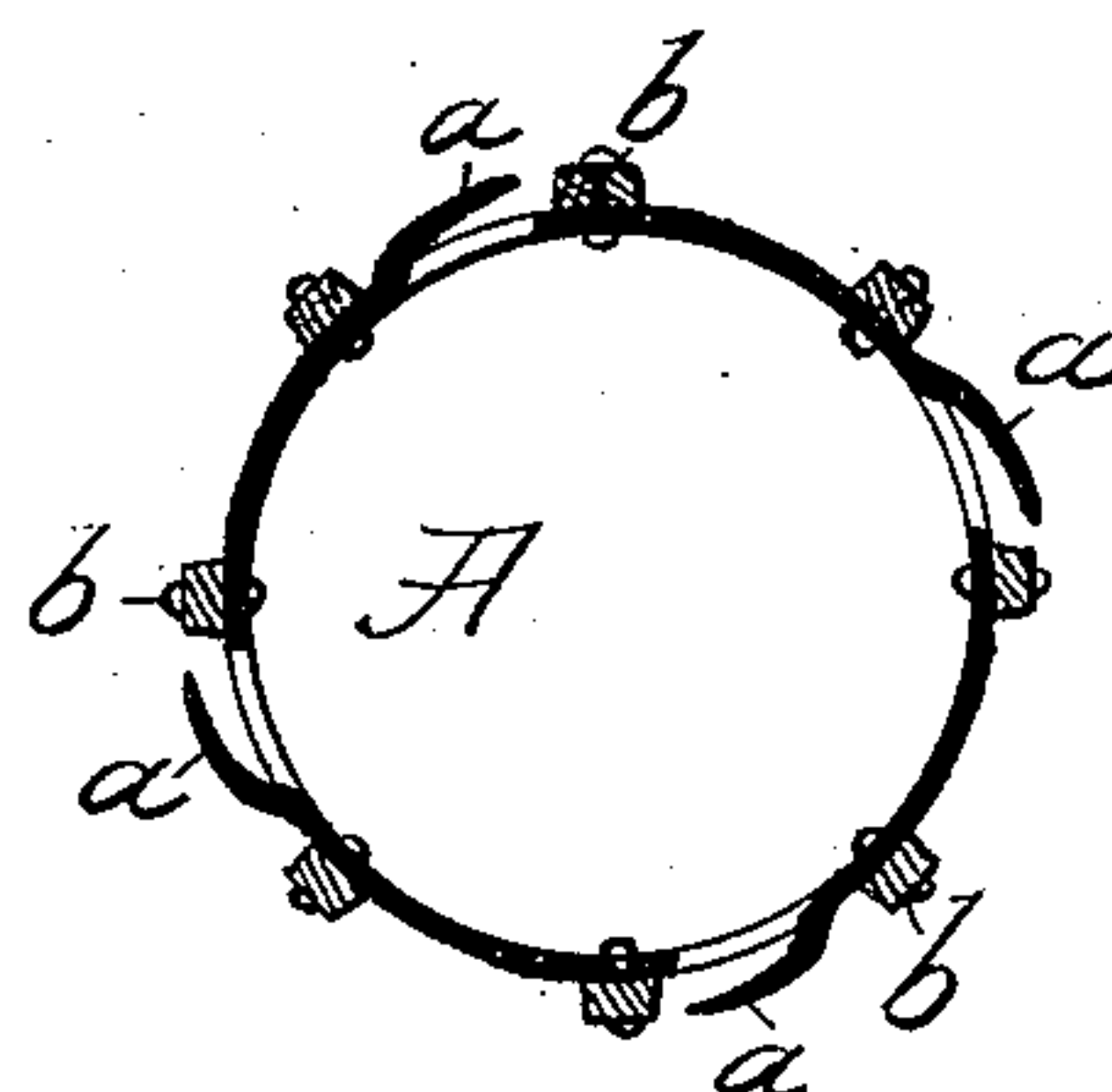
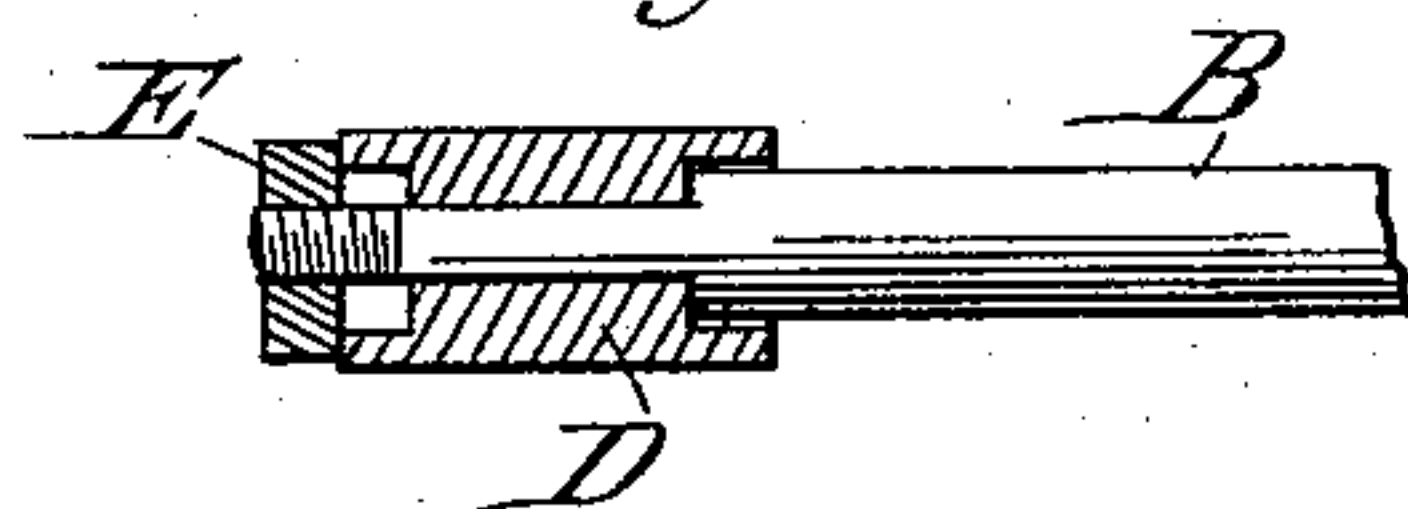


Fig. 4.



Attest:

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# UNITED STATES PATENT OFFICE.

WILLIAM GOFF SEARS, OF CHATTANOOGA, TENNESSEE, ASSIGNOR OF ONE-HALF TO HIRAM SANBORN CHAMBERLAIN, OF SAME PLACE.

## COTTON-PICKER STEM.

SPECIFICATION forming part of Letters Patent No. 353,085, dated November 23, 1886.

Application filed February 27, 1885. Serial No. 157,213. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GOFF SEARS, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Cotton-Picker Stems; and I do 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, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in the construction of cotton-picker stems, such as are used in pickers for gathering cotton from the bolls; and it consists of a stem particularly adapted to be attached horizontally to a cotton-picker, and containing a central rod secured to a double conical spring or to single springs, which are surrounded with a sheet-metal cylinder having parallel rows of teeth and parallel projections or ridges on the outer surface for the protection of the teeth.

In the annexed drawings, illustrating my invention, Figure 1 is a side view of the horizontal picker-stem. Fig. 2 is a longitudinal section, and Fig. 3 a transverse section, of the same on line *x x* of Fig. 2. Fig. 4 is a section through the ferrule and the inclosed supporting-rod. Fig. 5 is a transverse section through the cylinder alone, taken on line *y y* of Fig. 1, and shows the method of attaching the longitudinal strips to the cylindrical casing.

Like letters of reference designate like parts in the several views.

A represents a sheet-metal cylinder, made of one or more pieces of sheet metal, the edges of which are soldered together. At intervals in the circumference of the cylinder projections or ridges *b b* are struck up from the sheet metal parallel with each other; or, instead of striking these up from the cylindrical surface, they may be made as separate strips and attached by rivets, as shown in Fig. 5. Alternate with these projections are longitudinal rows of teeth *a a*, formed in the metal itself of the cylinder by stamping out rows of triangularly-shaped apertures, and leaving the parts *a a* of the cylinder thus stamped out to serve as the teeth. The triangular shape is not essential, as it is only

necessary to cut the aperture into a shape which will allow the tooth to have a point. These points are slightly elevated or projected, so as to readily engage with the cotton which is to be picked and tear it from the bolls, and these points are themselves protected from being broken or bent by means of the projecting ridges *b b*, above described.

B is the shaft or supporting rod, by means of which the stem here described is attached to the cylinder of the cotton-picking machine. Its end is preferably inclosed by a ferrule or band, D, as shown in Fig. 4, and the rod and ferrule are fastened together by means of flattened faces projecting from the inside of the ferrule and fitted to the spindle or shaft B, which is flattened near its end for the purpose; also, by a nut, E, screwed on the end of the rod B, which is screw-threaded. The cylinder A is suspended and held in position by two coiled springs, C, or by one double conical spring. The spring or springs are attached to the ferrule by any suitable means—such as soldering—and thence their coils wind with an increasing diameter until they reach the ends of the cylinder, and are firmly soldered thereto or otherwise attached, as shown in Fig. 2.

Hitherto it has been customary to support the cylindrical casing of the stem by fastening it rigidly at one or both heads to the supporting-rod, or a cross-partition in the middle is secured to said rod. The difficulty with such rigid connections is that when the stem in its revolution is opposed by the stalks and branches of the cotton-plant, or becomes entangled in a mass of leaves, the stem is often bent or broken, or, if that be strong enough to stand the strain, the plant itself will suffer injury by the breaking of the branches, &c. By suspending the casing upon springs, however, this difficulty is obviated, as a great amount of flexibility is imparted to the stem. This allows the outer end of the stem to yield sufficiently to pass an obstructing branch or to disentangle itself from matted leaves, &c. The stem will also, on account of the resiliency of the spring along the line of its axis, have considerable play in a longitudinal direction along the line of the rod B, and will avoid obstacles encountered in its upward and downward movements.



A stem constructed as herein described is adapted to be used with that class of cotton-picking machines which allows of the use of a horizontal stem. Such stems are attached to the machine in such a way that they will revolve about their own axes, and also horizontally around a common center, motion being imparted by the rod B, and these stems may be attached to either side of the cotton-picker, as desired.

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

1. In a cotton-picker stem, the combination of a central supporting-rod, an external sheet-metal cylinder, and two spiral springs connecting said cylinder to said rod, whereby the stem is rendered flexible, substantially as and for the purpose described.

2. In a cotton-picker stem, the combination of a central supporting-rod, a ferrule provided interiorly with flattened projecting faces en-

gaging the flattened end of said rod, an outer casing and intermediate spiral springs secured to said central rod and to said outer casing, substantially as and for the purpose described.

3. In a flexible cotton-picker stem, the combination of a toothed sheet-metal cylinder, A, internal springs C, ferrule D, and supporting-rod B, substantially as shown and described.

4. The combination, in a cotton-picker stem, of a toothed cylinder, internal coiled springs, and supporting-rod, as shown and described.

5. The combination, with a supporting-shank, of a picker-stem having picking-teeth upon its exterior and provided within its body with a yielding connection with its supporting-shank, substantially as described.

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

WILLIAM GOFF SEARS.

Witnesses:

DANIEL J. DUFFY,  
L. B. HEADRICK.