No. 685,439. Patented Oct. 29, 1901.

A. CAMPBELL.

COTTON PICKER SPINDLE.

(Application filed Mar. 27, 1901.)

(No Model.)

Fig. 2.

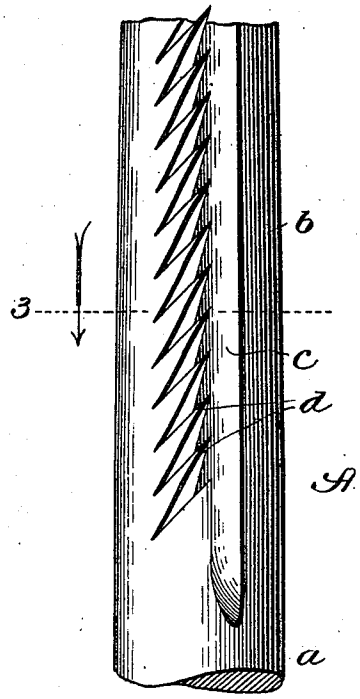


Fig. 1.

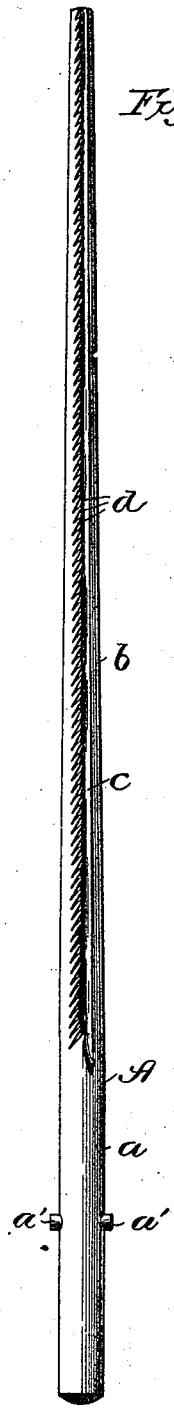


Fig. 4.

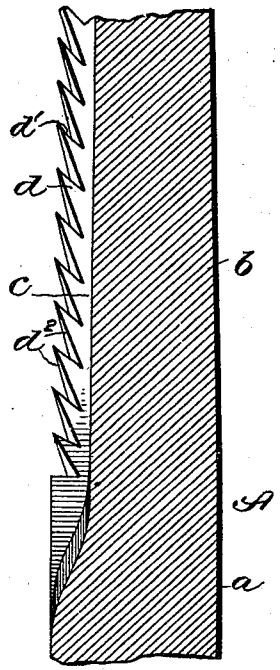
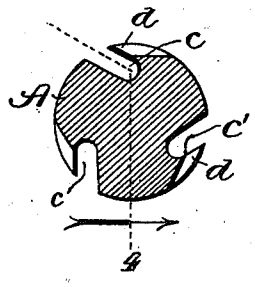


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ANGUS CAMPBELL, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO AMERICAN COTTON PICKER COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

COTTON-PICKER SPINDLE.

SPECIFICATION forming part of Letters Patent No. 685,439, dated October 29, 1901.

Application filed March 27, 1901. Serial No. 53,054. (No model.)

To all whom it may concern:

Be it known that I, ANGUS CAMPBELL, a subject of the King of Great Britain, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Cotton-Picker Spindles, of which the following is a specification.

My invention relates to improvements in rotary picker stems or spindles for cotton-harvesting machines.

My improvement is intended for use more especially in cotton-harvesting machines of the type shown and described in United States Letters Patent No. 542,794, granted to me July 16, 1895. Each machine of this type employs a large number of picking-spindles, and the successful operation of the machine to properly gather and save the cotton depends to a large extent upon the peculiar construction of the spindles employed.

My object is to provide a picking-spindle of improved construction which renders it peculiarly effective in gathering cotton from the open bolls of cotton-plants and which will permit the cotton to be easily and cleanly stripped from the spindle in the machine. It is also my object to provide a picking-spindle which in use will not injure the cotton-plants and is comparatively free from danger of injury to itself by striking the plants, and, furthermore, to provide a picking-spindle which may be manufactured at comparatively small cost.

In the drawings, Figure 1 is a view in elevation of my improved picking-spindle; Fig. 2, a broken and enlarged view in elevation of the spindle, showing more clearly the form of the teeth; Fig. 3, a section taken on line 3 in Fig. 2 and showing the construction involving three sets of teeth, and Fig. 4 a broken section taken on irregular line 4 in Fig. 3 and viewed in the direction of the arrow.

The blank from which my improved picking-spindle is formed comprises a rod A, of steel or other suitable metal, about one foot in length. The shank portion *a* is cylindrical and about one-third of an inch in diameter. The stem portion *b* tapers from the shank to the end, where it is about one-sixth of an inch in diameter. The size of the spindle may be varied as desired. In the stem portion are preferably equidistant and parallel longitudinally-extending grooves *c*, extending into the stem more or less tangentially with relation to the center of rotation of the stem. Thus each groove presents a more or less undercut side *c'*. Formed in the stem at the undercut side of each groove is a series of teeth *d*, the serrations being formed in the stem itself. I prefer to produce the serrations with gangs of rotary angular-faced milling cutters, and the teeth may extend at an angle of, say, forty-five degrees to the body of the spindle, pointing in the direction of the small end of the stem. The teeth may number, say, fourteen to the inch; but I do not limit myself to the exact number, angle, or way of cutting. The side edges *d'* of the teeth, which are the sides toward the reduced or free end of the stem, are more or less abrupt, while the opposite sides d^2 of the teeth are beveled to incline outward in the direction of the free end of the stem.

Owing to the undercutting and the angle of extent of the teeth, their free ends project comparatively far past a line drawn radially from the center of the stem through the bases of the grooves, thus producing long sharp points. The teeth project much farther over the grooves than they would if the serrations extended transversely instead of slantingly with relation to the body of the stem, which causes them to present long sharp points which will readily engage and hold the cotton while it is being picked and wound upon the stem. The stripping of the stem is performed in the machine by sliding the cotton wound thereon in a direction longitudinal of the stem after its rotation has been stopped. The fact that the teeth point in the direction of the reduced end of the stem renders this operation easy to accomplish without cutting the cotton-fibers. The inclined sides d^2 of the teeth also facilitate this operation and permit the cotton to be stripped cleanly from the stem.

In practice the butt-end of the spindle carries a gear-wheel and clutch to engage the clutch-pin *a'* shown, and the end portion of the shank *a* and part thereof between the pin

and end of the grooves rotate in bearings, r which purpose they are left cylindrical, described. The tapering stem portion of e spindle extends about the length of the oove.

I have shown the stem provided with three dercut serrated grooves *c*, this being the mber I prefer to employ. The number of ooves may be increased or diminished and e spindle otherwise modified without de-rting from the spirit of my invention as fined by the claims.

While the longitudinally-extending grooves re shown to be straight, obviously they may tend more or less spirally without depart-g from the invention.

What I claim as new, and desire to secure Letters Patent, is—

1. A picking-spindle for cotton-harvesters, rmed with a tapering stem provided with a ngitudinally-extending groove undercut at one side, and a series of teeth at the undercut side of said groove wholly within the circumference of the circle described by the body of the stem and each presenting an inclined face at its side toward the butt-end of the stem and pointing at an angle, to the length of the groove, inclined toward the free end of the stem.

2. A picking-spindle for cotton-harvesters, formed with a tapering stem provided with two or more longitudinally-extending grooves undercut at one side, and a series of teeth at the undercut side of each groove wholly within the circumference of the circle described by the body of the stem and pointing at an angle, to the length of the groove, inclined toward the free end of the stem.

ANGUS CAMPBELL.

In presence of—
WM. B. DAVIES,
ALBERT D. BACCI.