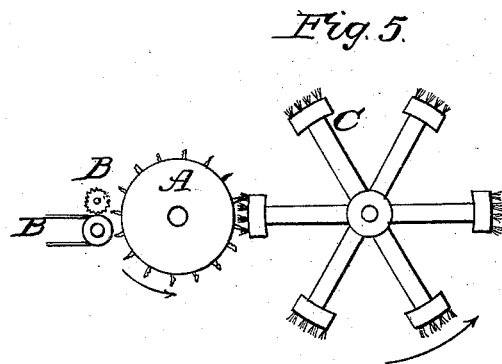
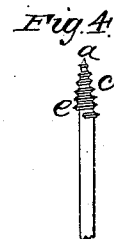
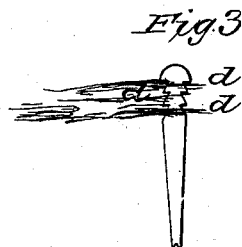
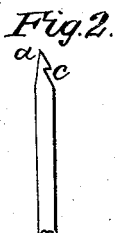
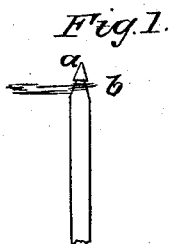


B. M. SMITH.

Teeth of Machine for Picking Cotton.

No. 54,619.

Patented May 8, 1866.



*Witnesses*

*J. W. Coombs*  
*L. Holmes*

*Inventor*

*Benjamin M. Smith*

# UNITED STATES PATENT OFFICE.

BENJAMIN M. SMITH, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN TEETH OF MACHINES FOR PICKING COTTON.

Specification forming part of Letters Patent No. 54,619, dated May 8, 1866.

*To all whom it may concern:*

Be it known that I, BENJAMIN M. SMITH, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in the Teeth of Machinery for Ginning, Picking, and Cleaning Cotton and other Fibrous Materials; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figures 1, 2, 3, 4, are longitudinal views of teeth of four different forms, in all of which the distinguishing characteristic of my invention is exhibited. Figure 5 is a diagram representing the principal working parts of a cotton-picker in which teeth constructed according to my invention are employed.

This invention consists in the construction of the teeth of machinery for picking, ginning, and cleaning cotton or other fibrous materials with notches or transverse grooves near the points thereof, whereby they are caused to catch and take hold of the fibers and draw them out in small and definite tuft-like quantities from the mass presented to them, and so separate and open them in a more perfect manner and with less breakage of the fibers than the teeth commonly employed, which operate by their points only and with a scratching action, by which the fibers are torn away from the mass in wads.

The tooth shown in Fig. 1 consists of a straight round pin having a conical point, *a*, at a short distance from which there is a circumferential notch or groove, *b*, which presents in the profile of the tooth an acute-angular form, the side of the groove nearest the point of the pin being nearly at a right angle to the length of the pin, and the other side at an obtuse angle thereto.

The tooth shown in Fig. 2 only differs from that shown in Fig. 1 in having a notch, *c*, in one side of the same profile form as and in the position of the groove *b* of that first described.

The tooth shown in Fig. 3, instead of being round, is flat, and has in its opposite edges two or more notches, *d d*, of a similar profile form to the groove *b* and notch *c* before described.

The tooth shown in Fig. 4 is round and

pointed, like that shown in Figs. 1 and 2, and grooved all around; but the groove *e*, instead of being simply circumferential, is spiral, as in a screw.

Any of these pins may be inserted into a cylinder like that of an ordinary picker, or of any suitable construction, either radial or at any suitable forward inclination from the radii of such cylinder, but preferably radial, or nearly so.

The teeth shown in Figs. 1 and 4 being alike all round, may be set with any side in a forward direction relative to the revolution of the cylinder; but that represented in Fig. 2 must be set with the notch *c* in a forward direction, and that represented in Fig. 3 with one of its notched edges in a forward direction.

The cylinder A, Fig. 5, in which such teeth are placed, may be arranged like that of the machines termed "pickers" or "openers," with feed-rollers B B in front to present the cotton or fibrous material to the action of its teeth, and with a rotating brush, C, behind it to brush the picked or opened material from the teeth. The cylinder armed with the flat notched teeth shown in Fig. 3 may, however, be arranged for the said teeth to operate like the saws of a cotton-gin between the ribs of a breast or grate.

The teeth with grooves running all round, as shown in Figs. 1 and 4, may be turned from time to time if that should be rendered necessary by wear, and those with two grooved edges (shown in Fig. 3) may be turned half-way round for the same purpose.

The notched or grooved teeth, as they revolve in contact with or through the mass of cotton or other fibrous material presented to them, draw out the fibers in small straight tufts (as shown in Figs. 1 and 3) of definite quantity, according to the size of the notches or grooves, without tearing the fibers, as is done by the scratching action of the teeth commonly used, the operating parts of which are simply the points, and which consequently tear and break the fibers. Notched or grooved teeth of this kind may be used with especial advantage, and I have so used them in a machine, the principal elements of which are represented in Fig. 5, for reginning or dressing

damaged cotton, or what is termed "pickings," taken from the holes of torn cotton-bales, reducing such cotton to a suitable condition for carding.

What I claim as my invention, and desire to secure by Letters Patent, is—

The construction of the teeth of machinery

for picking, ginning, or opening cotton or other fibrous material with grooves or notches, substantially as herein specified.

BENJAMIN M. SMITH.

Witnesses:

A. LE CLERC,

HENRY T. BROWN.