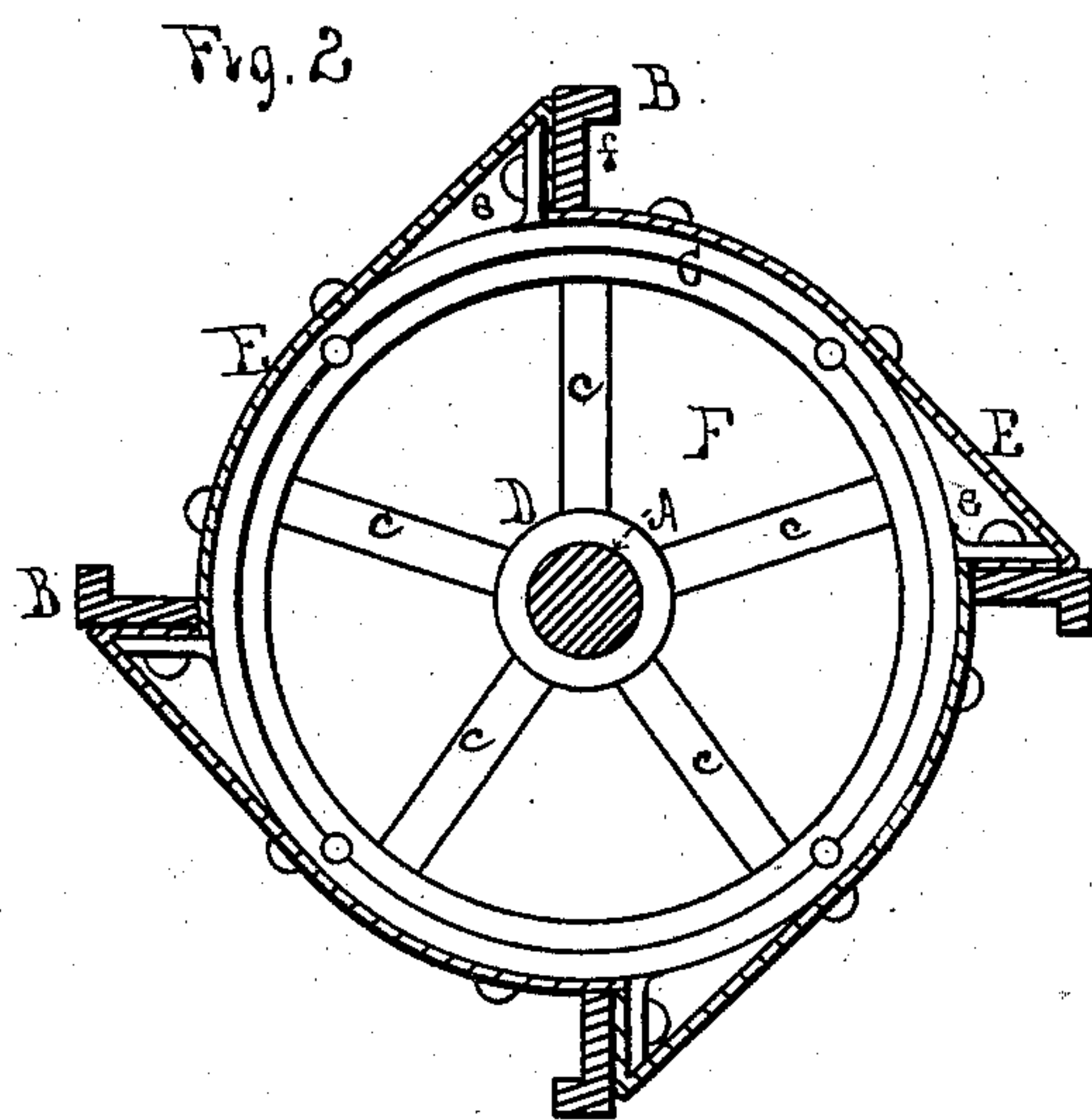
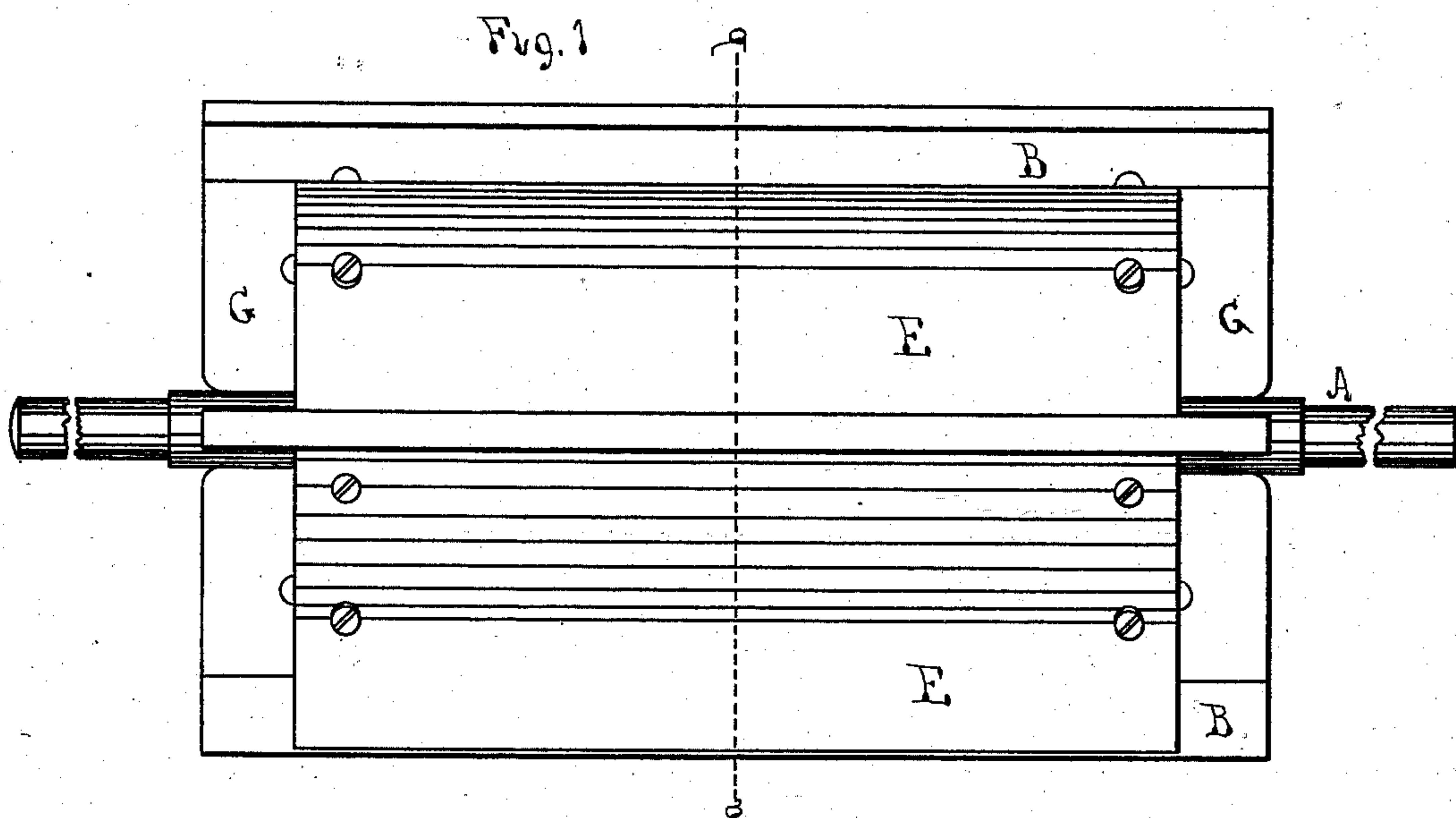


**R. KITSON.**  
**BEATERS FOR COTTON-OPENERS.**

No. 194,355.

Patented Aug. 21, 1877.



Witnesses  
*Wm. S. Brown*  
*A. K. Sarland*

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*Atty.*

# UNITED STATES PATENT OFFICE.

RICHARD KITSON, OF LOWELL, MASSACHUSETTS.

## IMPROVEMENT IN BEATERS FOR COTTON-OPENERS.

Specification forming part of Letters Patent No. **194,355**, dated August 21, 1877; application filed June 21, 1877.

*To all whom it may concern:*

Be it known that I, RICHARD KITSON, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Beaters for Cotton-Openers, of which the following is a description:

My invention consists in protecting the shaft, arms, and blades of the beater with longitudinal and end casings, the former extending from the back of the beater-blade to the face of the next blade, leaving exposed as much of the face of the blade as may be desirable, but inclosing the space between the blades heretofore left open, so that all parts of the beater are tightly inclosed, except the striking-face thereof while the end casings are provided with wings, which serve to protect the ends of the blades and shaft, and also create an air-draft to blow the cotton into and through the trunk, the object being to so construct the beater that the fibers of the cotton or other material shall be prevented from clinging to or winding around any of the parts of the beater.

In the drawings, Figure 1 is a plan of my improved beater. Fig. 2 is a vertical section on the line *a b*.

A is the shaft of the beater, to which I rigidly attach the collar D, provided with the radial arms *c c* and the concentric metallic band C. The beater-blades are attached to this band C, the latter being provided with projecting shoulders *e e*, which serve as abutments, against which the beater-blades are bolted. The beater-blades are also provided on their striking-face with projecting lips *f f*.

To the back of each blade I attach a casing, E, of thin sheet metal, which may extend the whole length of the blade; but I prefer to make this casing a little shorter than the blade. This sheet-metal casing may be attached in any convenient manner; but I prefer

to insert its edge between the blade B and the shoulder *e*, bending it back over the shoulder, which serves to bring the casing nearly to the top of the blade. The ends of the casing E are screwed to the band C, while the other longitudinal end is attached to the face of the next beater at any desirable point below the striking-face or lip *f*.

The ends of the beaters are inclosed by casings F, extending from the shaft to the band C. These end casings are provided with wings, extending radially from the shaft to each blade, and projecting outward from the end casings to the end of the beater-blade.

These wings serve to protect the shaft and the ends of the beater-blades when the top casings do not extend beyond the band C, and they also act as a fan, creating an air-draft of great force, driving the opened cotton through a trunk of considerable length.

These casings may also be applied to a beater of the ordinary construction.

This method of inclosing the whole space between the blades completely protects every part of the beater, leaving no part exposed to which the fibers of the material opened can cling; and it prevents the fibers of the cotton from clogging the blades or collecting around the shaft, while the wings create an air-draft, blowing the cotton out of the beater-box and through the trunk.

I claim as new and of my invention—

1. In combination with the blades B of a beater, the longitudinal casings E E and end casings F F, substantially as described.

2. The combination of the blades B, the longitudinal casings E E, and end casings F F, the latter provided with wings G G, substantially as described.

RICHARD KITSON.

Witnesses:

S. KITSON,  
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