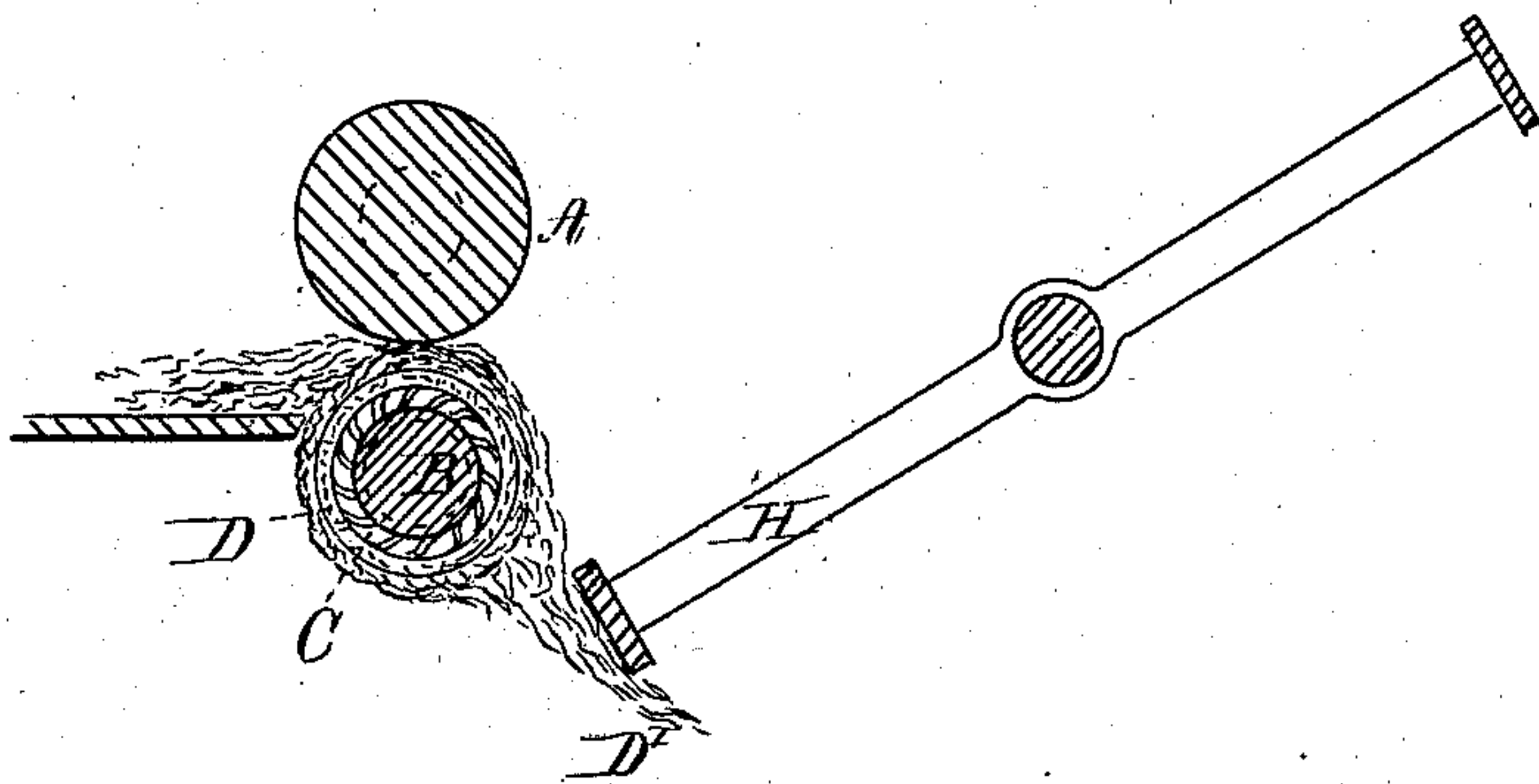


S. D. KEENE.

Art of Cleaning and Opening Spinners' Staples.

No. 229,256.

Patented June 29, 1880.



WITNESSES

John B. F. Emery.  
Augustus Andrews

INVENTOR

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Per Frank G. Parker Atty

# UNITED STATES PATENT OFFICE.

SAMUEL D. KEENE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO ANDREW HAMMOND, OF WILLIMANTIC, CONNECTICUT.

## ART OF CLEANING AND OPENING SPINNERS' STAPLES.

SPECIFICATION forming part of Letters Patent No. 229,256, dated June 29, 1880.

Application filed October 18, 1879.

*To all whom it may concern:*

Be it known that I, SAMUEL DAVIS KEENE, of Providence, in the county of Providence, in the State of Rhode Island, have invented a certain new and useful Improvement in the Art of Cleaning and Opening Spinners' Staples, of which the following is a specification.

My invention relates to an improvement in the art of preparing crude and dirty staple for the lapper, the object being to open and cleanse the material by means which will more thoroughly accomplish the cleansing, and leave it with the staple much less broken, and thereby injured, than is done by the methods in common use.

In the drawing which I introduce for the purpose of illustrating my method, A represents the compressor-roll; B, the receiving-roll, having a yielding outer surface, C. H represents one of the beater-arms; D, the material which is being acted upon accumulated upon the receiving-roller B. D' is a fluttering apron, consisting of the material under the action of the beater H.

I accomplish this object by the following treatment: The staple is fed, by any of the well-known devices, between two rolls, one of which, A, is comparatively smooth and hard, which I will call the "compressor." The other roll, B, is made with a yielding outer surface, C, such, for instance, as might be formed by winding about a spindle a mass of rope or canvas, so as to get a comparatively true and yielding roll. This may be covered by flannel or any other cloth having a long nap. This roll B, which I call the "receiving-roll," when complete, is so adjusted in relation to the compressor-roll A that the two surfaces shall be distant from each other to the extent of one-fourth of an inch or more, this distance to depend upon the quality of the staple to be acted upon. In connection with these two rolls I arrange any of the well-known beating devices, the beater being adjusted to the receiving-roll, so as to allow of an accumulation of staple upon the receiving-roll B.

The method may now be set forth, and it consists in feeding staple onto the receiving-roll B, until it has accumulated thereon sufficiently to come in contact with the compressor-roll A and into the field of action of the beater H. Now, the beater in its action draws the staple from the thick yielding and slightly-tenacious mass which has accumulated upon the receiving-roll B. This drawing from the accumulated staple on the roll B by the beater H is effected by the united action of the beater H, which comes in frictional contact with the staple, and the effect caused by the strong current of air following in the line of motion of the beater. By this treatment it is readily seen that the staple is much less liable to be broken by the action of the beater than in case it is drawn directly from between two inflexible feed-rolls, as by the ordinary method.

By my method the staple is formed by the action of the beater H into a thin fluttering apron, D', extending a considerable distance below the receiving-roll B. While in this condition its entangled dirt is blown or beat out by an air-current. The action of the beater continually detaches from the lower edge of this apron D' the cleansed staple, which is delivered with its fibers much longer and more nearly paralleled than can be done by the machines in common use.

I claim as my invention—

The above-described method of treating staple, viz: first forming it into a thick mass on a yielding roll, then allowing the beater to draw it out so as to form an apron, which is cleansed by an air-current, and finally detaching the staple from this apron by the continued action of the beater, substantially as and for the purpose set forth.

SAMUEL DAVIS KEENE.

Witnesses:

FRANK G. PARKER,  
CHAS. E. GRIFFIN.