

D. S. Kimball
Carding Mach.

Nº 2,740.

33,744.

Patented Nov. 19, 1861.

Fig. 1.

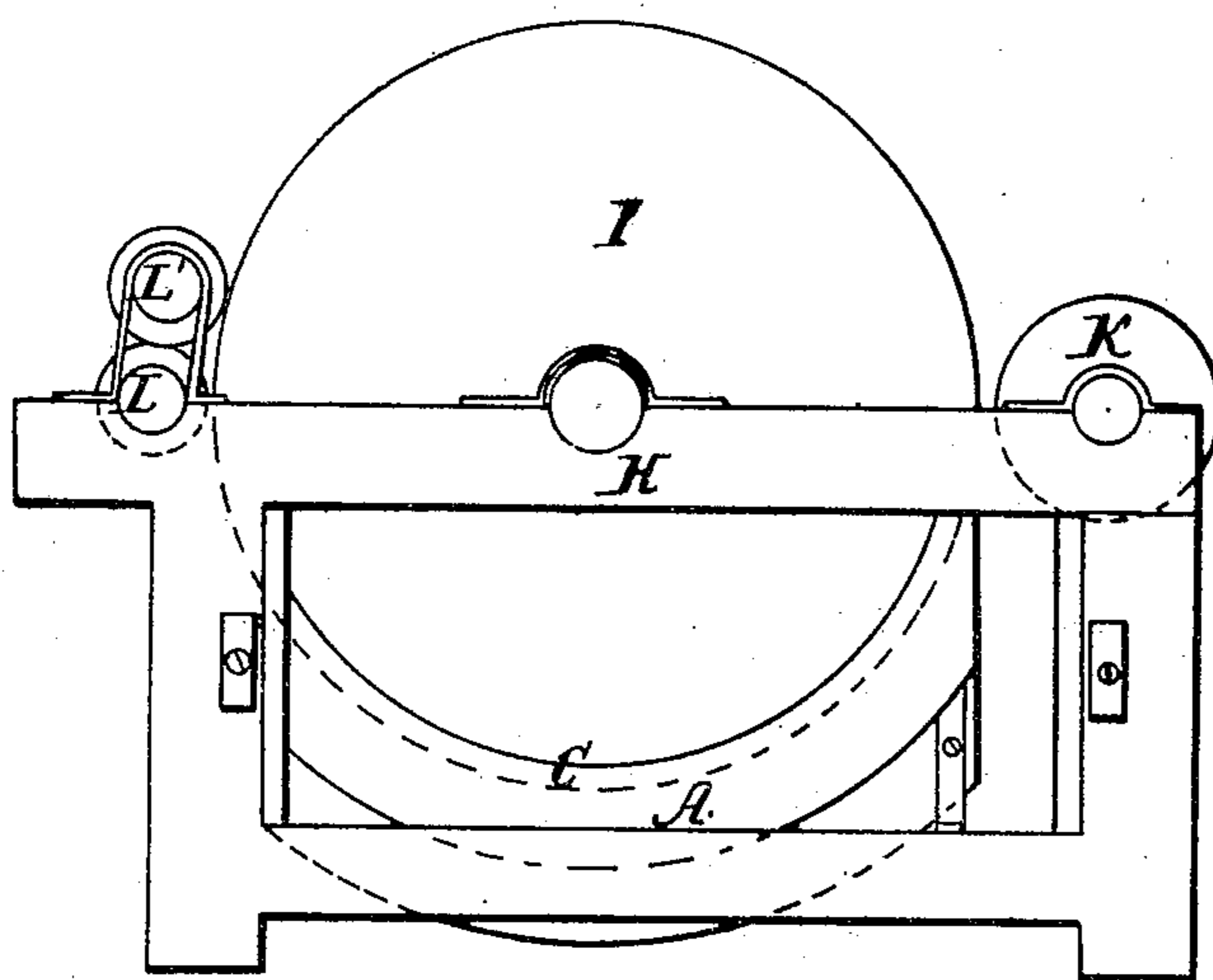


Fig. 2.

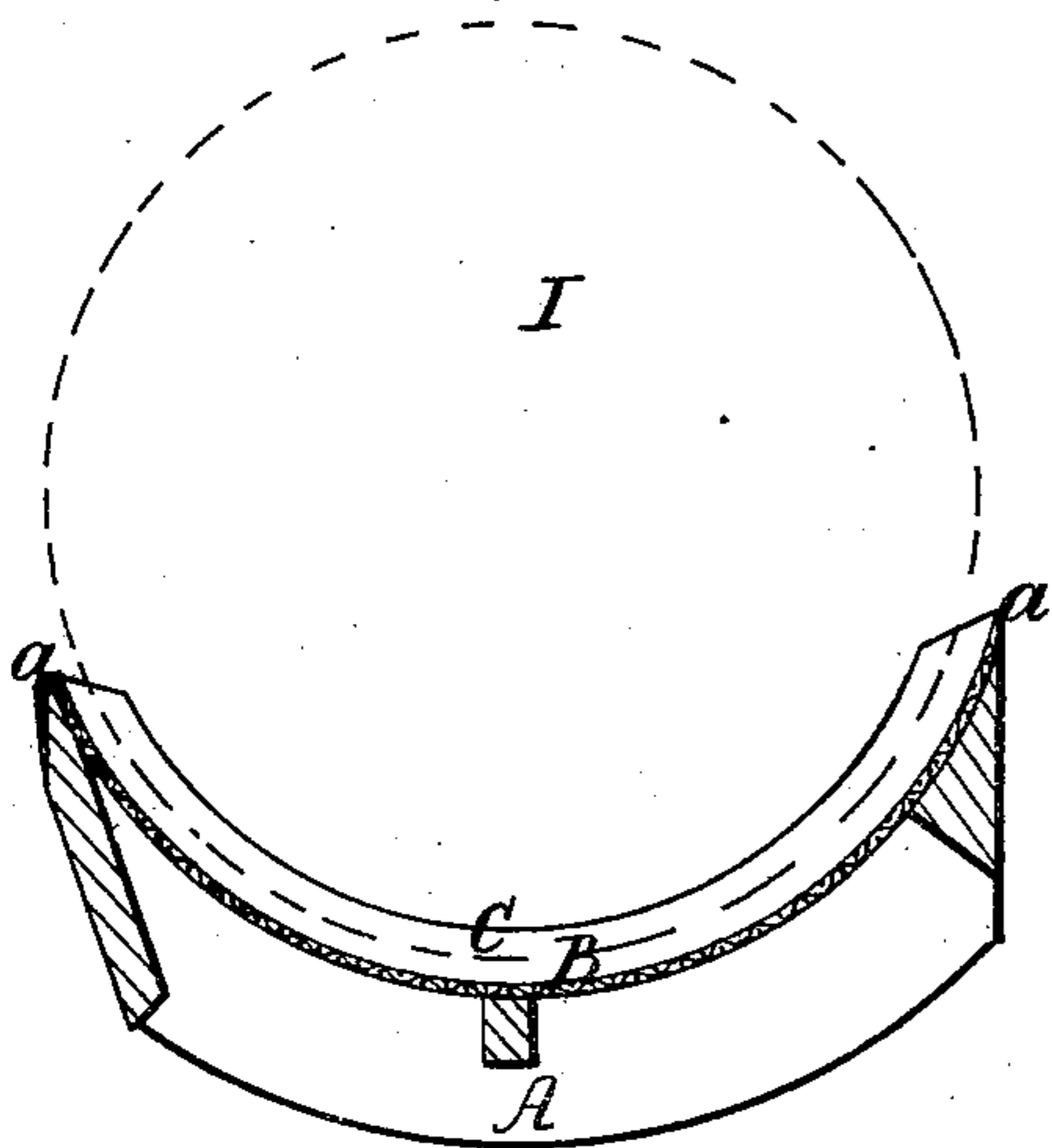
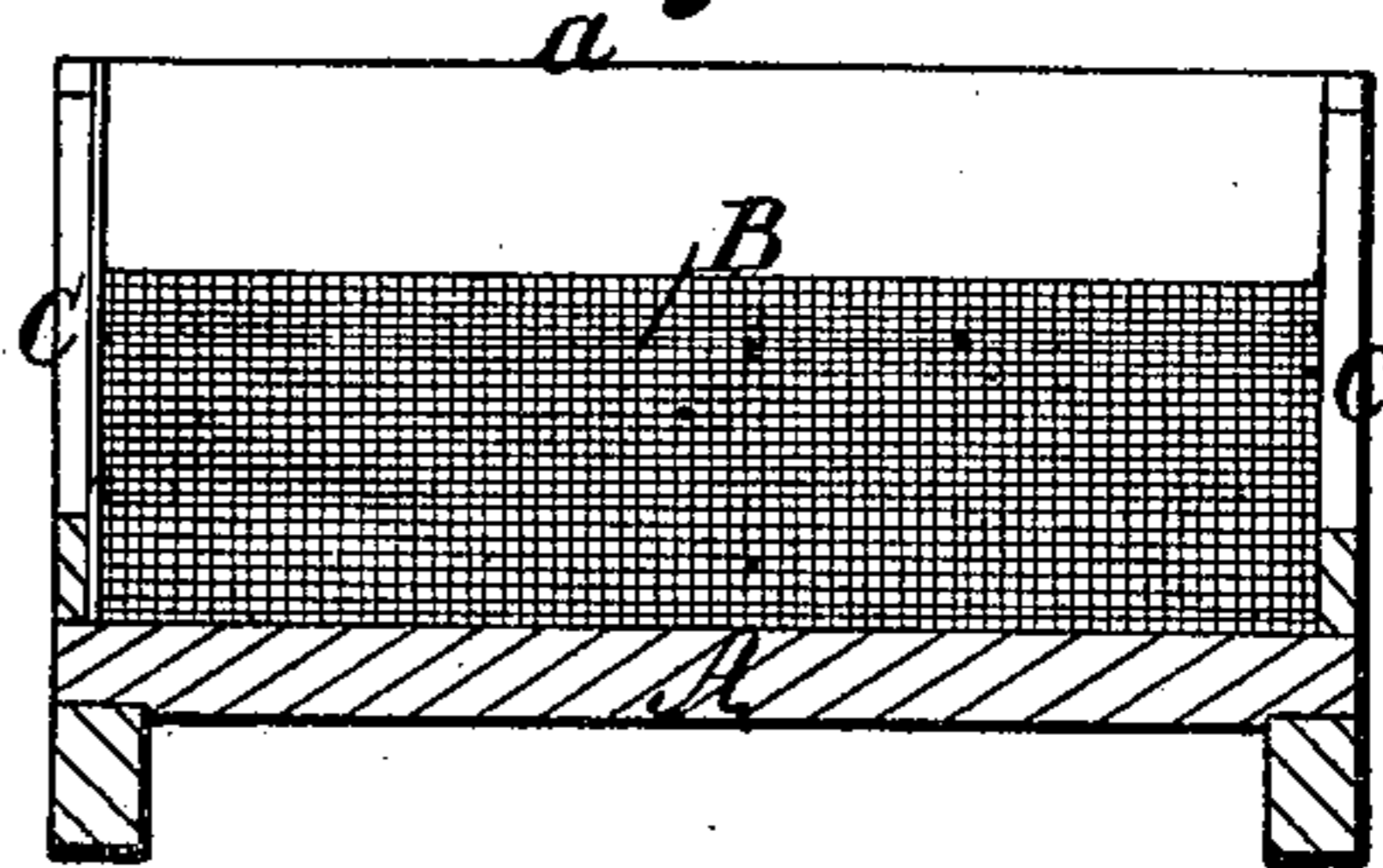


Fig. 3.



Witnesses;
Geo W. Bean
Geo Stevens.

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UNITED STATES PATENT OFFICE.

DANIEL S. KIMBALL, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN CARDING-ENGINES.

Specification forming part of Letters Patent No. 33,744, dated November 19, 1861.

To all whom it may concern:

Be it known that I, DANIEL S. KIMBALL, of Lowell, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Carding-Machines for Carding Wool, Cotton, or other Fibrous Material; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a side elevation of my improvement as applied to the frame of a carding-machine and underneath the main card-cylinder. Fig. 2 is a longitudinal and vertical section of the screen, and Fig. 3 a transverse section thereof.

It is a fact well known that there are several serious difficulties inherent to the common mode of constructing and applying a screen to operate with the main card-cylinder of a carding-machine. In the first place, currents of air produced by the revolution of the main card-cylinder have not been properly controlled—that is, they have been allowed to escape transversely of the screen, and thereby caused more or less of the fibers of the material while being carded to work out at the end of the cylinder and to lodge between the end of the cylinder and the side boards of the frame. And this waste by the revolution of the cylinder would be collected and formed into hard masses, which the feed-rollers, catching, would carry to the teeth of the main cylinder, passing them over the top of the same between the main cylinder and the top card-teeth, thereby greatly injuring both. Another difficulty has arisen from the accumulation of the waste on the frame near the feed-rollers, whereby when a considerable quantity has collected it would be caught by the teeth of the main card-cylinder and being carried around under the cylinder and between it and the screen would either stop the revolution of such cylinder or make the drawing uneven. Another objection also existed in the construction of the screen-frame near the doffer-cylinder, whereby the dirt and waste often accumulated and was caught and carried forward by the teeth of the doffer, thus not only giving the drawing a cloudy dirty appearance, but rendering the same uneven or broken. To remedy all these defects has been the object of my invention.

In the drawings, H denotes the frame of the machine, the same having a main card-cylinder I, a doffer cylinder or roller K, and two feed-rollers L L', applied to it and with respect to each other, as shown.

A denotes the frame of the screen, which is of a curved form in longitudinal section. On the top part of the said frame a net-work of wire B is arranged, the same being secured thereto by nails or in any other suitable manner. This screen is arranged directly under the main card-cylinder I, and is secured to the frame of the machine in the usual manner. The circle of curvature of the screen should be concentric with that of the main card-cylinder. Each of the top portions of the end of the screen I form sharp or with knife-edges *a a*, so as to prevent any dust or waste from gathering on them, so as to either cause the same to clog the card-cylinder or make the drawing uneven and broken or cloudy.

In order that the currents of air generated by the revolution of the main cylinder may be so controlled as to aid in guiding the fibers of the wool or material while being carded evenly and properly forward to the doffer, I dispose two guards *c c*, respectively, on the sides of the frame A, and so as to extend up around the edges of the main card-cylinder, in order that when such cylinder may be set in motion the currents of air shall be prevented from escaping sidewise, or transversely of the screen, and be caused to flow forward in uniform streams, whereby the fibers of the wool shall be acted upon uniformly and be borne forward to the doffer in an even mass.

In my construction of the ends of the screen, (viz., with acute edges,) I entirely avoid the lodgment or accumulation of dirt or waste on the same, as their edges prevent any such accumulation, and, besides, the end next the doffer is formed so nearly vertical that any extraneous matter will fall at once down the side and upon the floor.

A screen constructed and applied, as above set forth, to a carding-machine and under the main card-cylinder has been found to operate to excellent advantage and to remedy the defect incident to the common mode of construction and application.

Having described my invention, what I

claim, and desire to secure by Letters Patent, is—

1. My improved carding-machine having its parts constructed and made to operate together substantially in manner as set forth.

2. The application of the guards *c c* (or their equivalents) to the sides of the screen

and so as to operate with the main card-cylinder in manner and for the purpose set forth.

DANIEL S. KIMBALL.

Witnesses:

GEO. STEVENS,

GEO. W. BEAN.