(No Model.) 4 Sheets—Sheet 1.

B. A. DOBSON & W. I. BROMILEY.

CARDING ENGINE.

No. 363,732. Patented May 24, 1887.

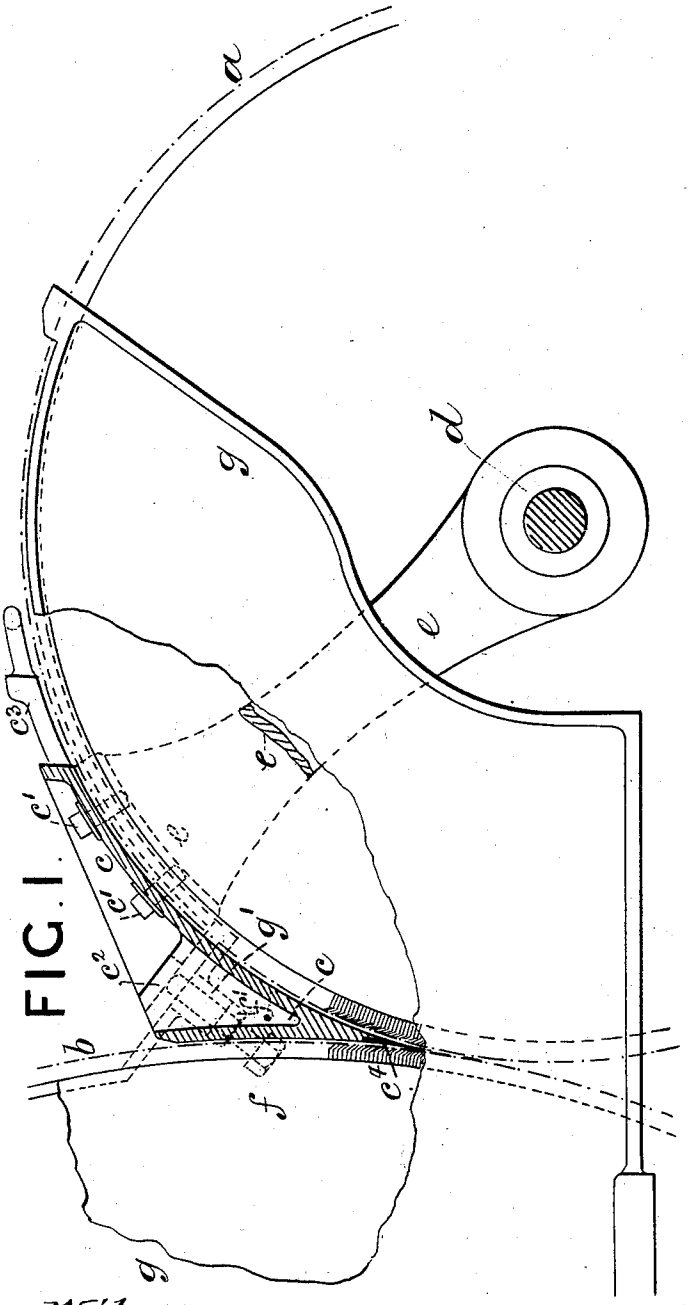


FIG. 1.

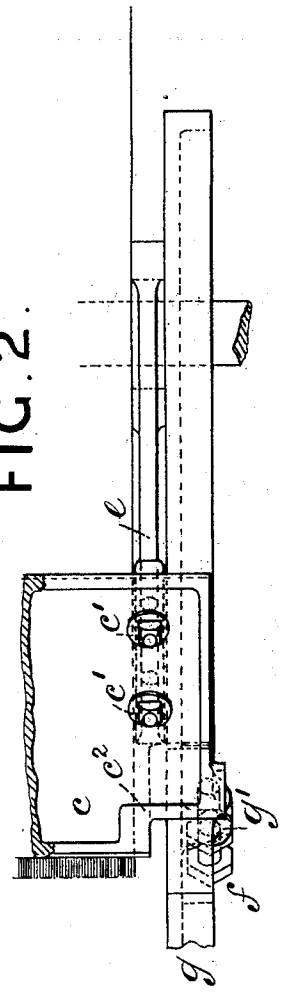


FIG. 2.

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CARDING ENGINE.

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FIG. 3.

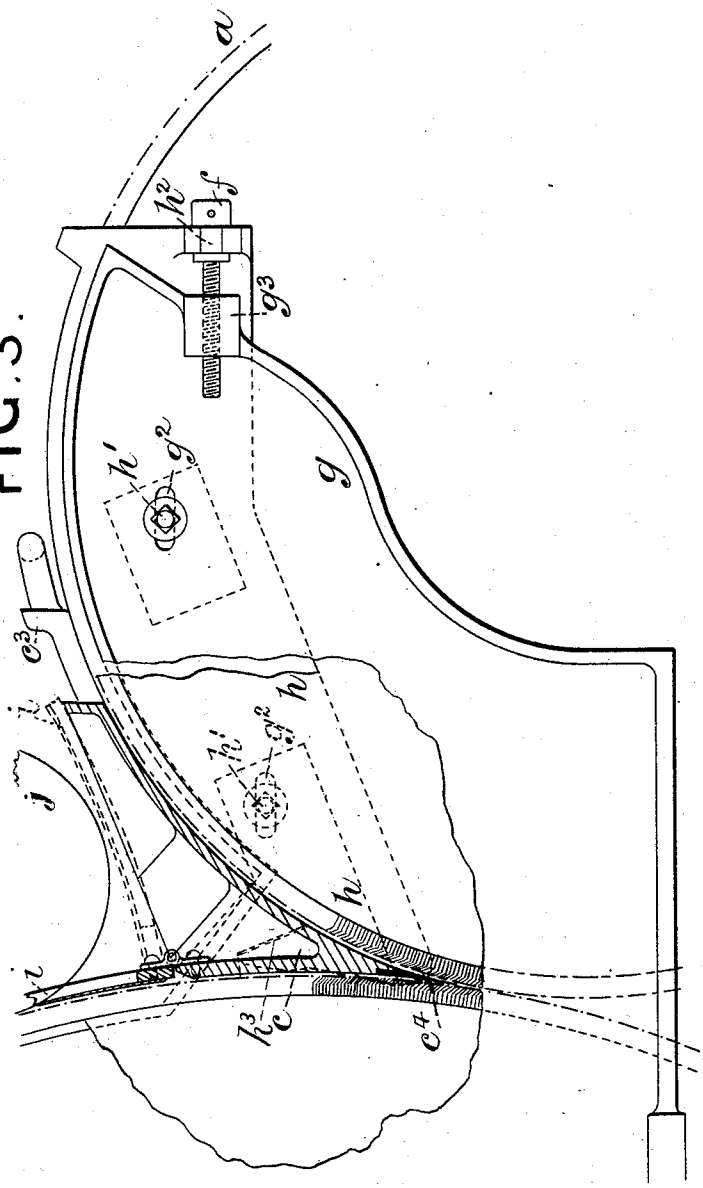
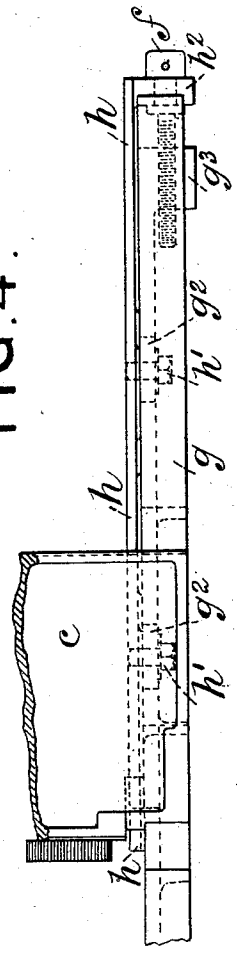


FIG. 4.



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CARDING ENGINE.

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FIG. 5.

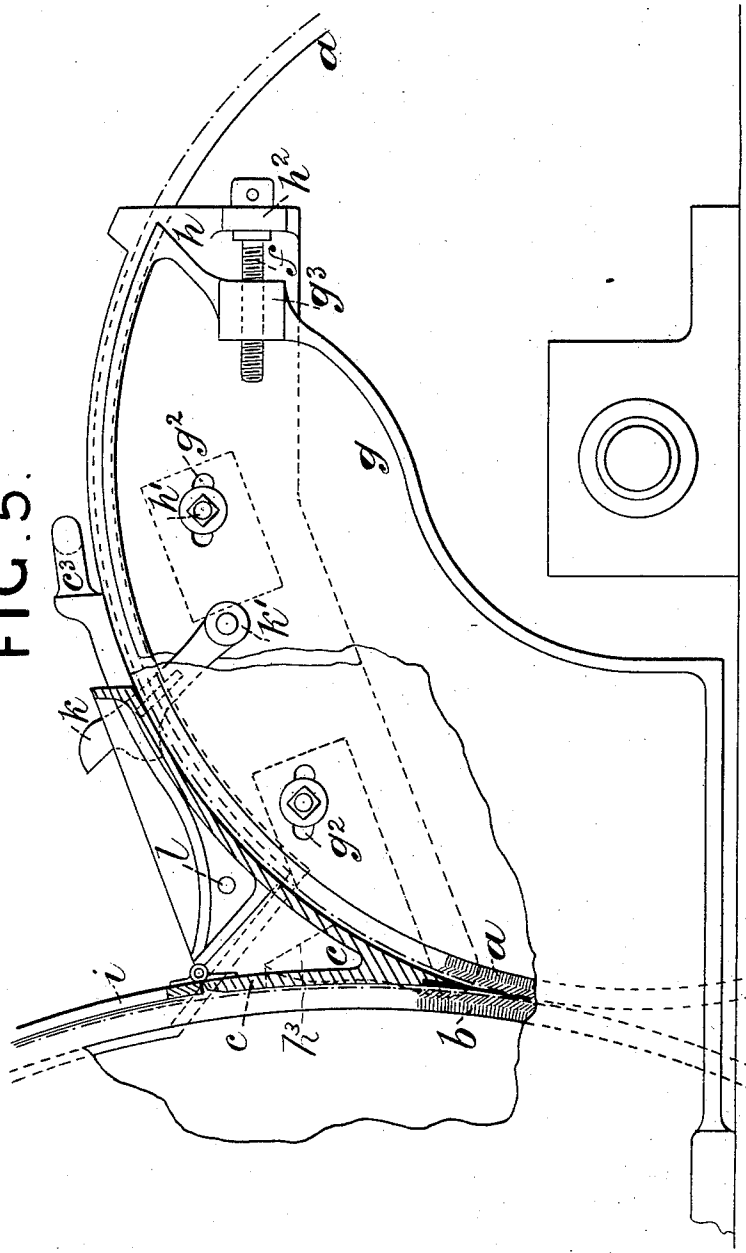
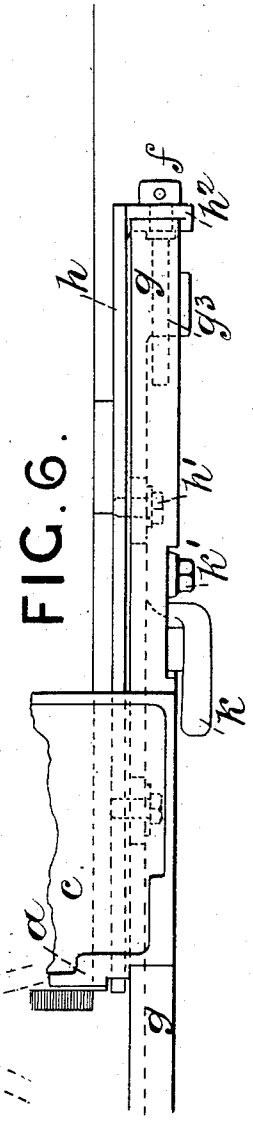


FIG. 6.



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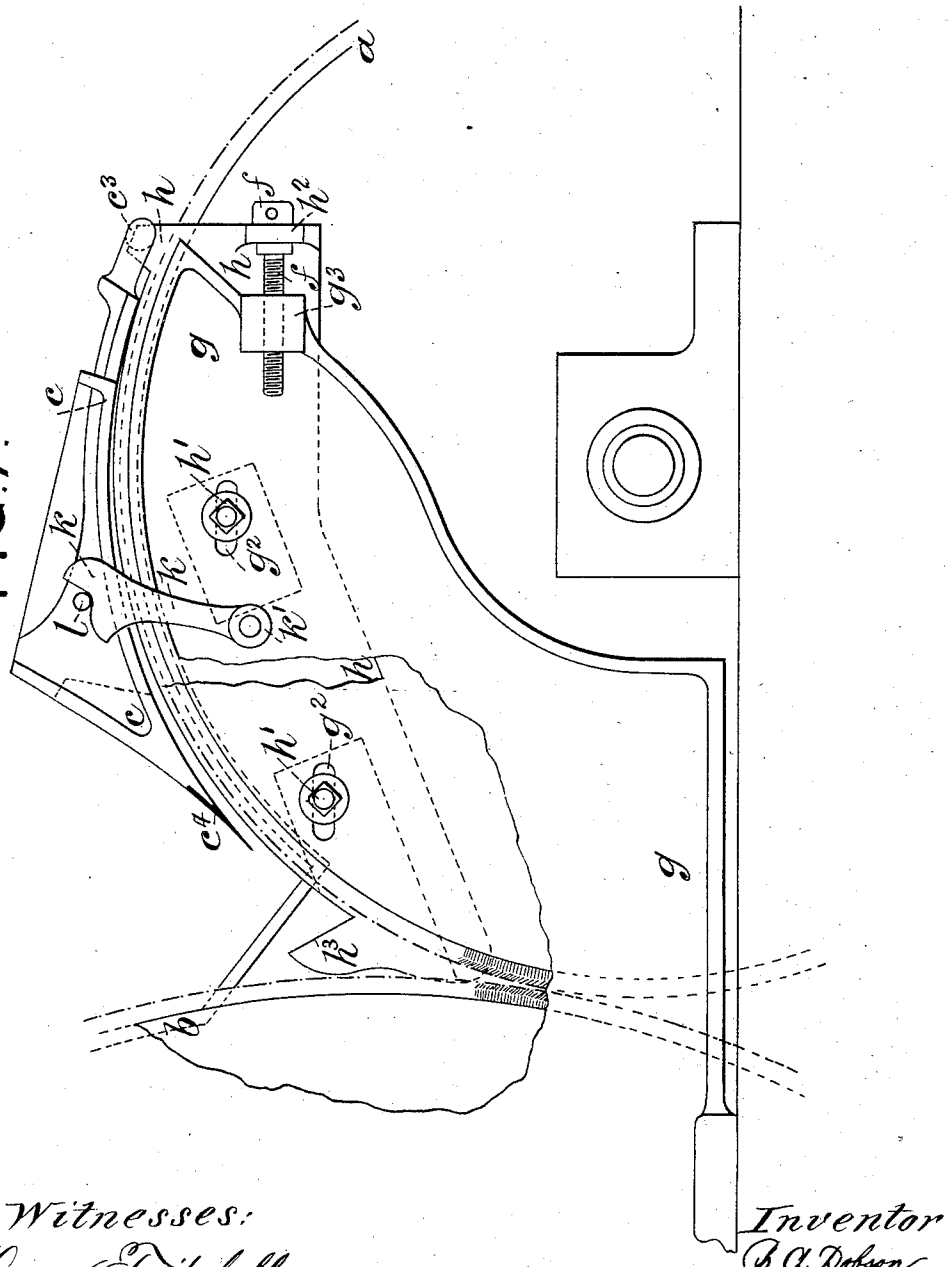
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B. A. DOBSON & W. I. BROMILEY.

CARDING ENGINE.

No. 363,732. Patented May 24, 1887.

FIG. 7.



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UNITED STATES PATENT OFFICE.

BENJAMIN ALFRED DOBSON AND WILLIAM ISHERWOOD BROMILEY, OF BOLTON, COUNTY OF LANCASTER, ENGLAND, ASSIGNORS TO DOBSON & BARLOW, OF SAME PLACE.

CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 363,732, dated May 24, 1887.

Application filed October 23, 1886. Serial No. 216,990. (No model.) Patented in England November 3, 1883, No. 5,230.

To all whom it may concern:

Be it known that we, BENJAMIN ALFRED DOBSON and WILLIAM ISHERWOOD BROMILEY, both subjects of the Queen of Great Britain, residing at Bolton, in the county of Lancaster, England, have invented certain new and useful Improvements in Carding-Engines, (for which we have obtained a patent in Great Britain, No. 5,230, bearing date November 3, 1883,) of which the following is a full, clear, and exact description.

Our invention relates to an improved arrangement for casing in or covering the space between the cover of the doffer-cylinder and the adjacent portion of the main cylinder of the carding-engine, the chief object being to dispense with the ordinary wooden or tin mold or any other loose filling-up or making-up piece or pieces, the use of which necessitates separate adjustments of the parts—namely, an adjustment for the doffer-cover and an independent adjustment for the loose piece or pieces.

The invention consists in the construction, combination, and arrangement of parts and details, as hereinafter fully described, and pointed out particularly in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters refer to similar parts throughout the several views.

Figure 1 is a side elevation of so much of a carding-engine to which our improved arrangement is applied as is sufficient for the proper illustration of our invention, parts of the framing being broken out. Fig. 2 is a plan of part of the same. Fig. 3 is a side elevation, and Fig. 4 a part plan, of an alternative arrangement. Figs. 5 and 7 are side elevations of a modification of the arrangement illustrated by Figs. 1 and 2, and Fig. 6 is a plan of part of Fig. 5.

Referring, first, to the arrangement illustrated by Figs. 1 and 2, *a* designates the doffer-cylinder, *b* part of the main cylinder of a carding-engine, and *c* a casing consisting of the doffer-cover and making-up piece, made together in one piece or combined as one piece. This casing *c*, which we prefer to make of cast-iron, but which may be of any other suitable material, is peculiarly shaped to fill up the space between the doffer *a* and cylinder *b*, and is left hollow on its upper surface to leave more room for "strip" and "fly." On each pedestal of the doffer *a* is a turned boss, *d*, upon which is fitted a strong radial arm, *e*. These radial arms *e* support the casing *c*, to which they are secured by screws c' c', so that the whole arrangement works radially round the center of the doffer *a*, and is adjusted and set to the wire of the cylinder *b* by means of adjusting-screws *f*, of which there is one on either side of the engine passing through a projection, g', on the bend-nose or framing *g*, and bearing against a projecting ledge, c^2, on the casing *c*. After the adjustment of the casing *c* has been effected the adjusting-screws *f* are secured in position by lock-nuts f'. At the front of the casing *c* there is a handle or handles, c^3, by means of which the operative can pull forward the whole arrangement, and thereby lay clear the space between the cylinder and the doffer for setting the doffer or for other purposes, such as grinding the card-wire on the main cylinder.

To separate the air-current between the cylinder and doffer we fix a thin blade, c^4, preferably of steel, at the extremity of the casing *c*, which blade c^4 descends almost to the point of contact of the teeth on the cylinder and doffer.

It will be readily seen that an almost indefinite number of modifications might be made in the arrangement of an adjustable casing or combined doffer-cover and making-up piece, and that instead of mounting the radial arms *e* on bearings concentric with the doffer-cylinder, as described and shown, the arms for the casing *c* might be mounted upon bearings cast with or separately fixed to or upon the bend-nose *g* or upon the lower framing of the machine. Such bearings would obviously be eccentric with the doffer-axis, and, if separately fixed either to the bend-nose or upon the lower framing, would necessarily be provided with an adjustment to and from the main cylinder; or the casing might be movable and adjustable on flat or horizontal surfaces or bearings.

In order to make our meaning clear, we have shown and described two such modifications or alternative arrangements of a combined doffer-cover and making-up piece, movable and adjustable as one piece, according to this invention.

The first of these modifications is illustrated by Figs. 3 and 4. In this arrangement there is on each side of the doffer *a* a metal plate, *h*, which is supported by two bolts or screws, *h'*, which pass through horizontal slots g^2, formed in the bend-nose *g*, and are screwed into the plate *h*. There is a boss or projection, h^2, formed on each plate *h*, and a projection, g^3, formed on each bend-nose *g* for the adjusting-screw *f* on each side of the doffer. The casing or combined doffer-cover and making-up piece *c* is fitted so as to slide when moved on the edges of the plates *h*. Stops h^3 on the inner ends of the plates *h* keep the casing *c* from sliding too far. After the wire on the cylinder has been ground, the bolts are slackened to allow the plates *h*, guided by the bolts *h'* in the horizontal slots g^2, to be moved nearer to the cylinder *b* by operating the adjusting-screws *f*, and the casing *c* slides nearer to the cylinder *b*. To the casing *c* we attach a hinged cover, *i*, (shown open in dotted lines, Fig. 3,) which, when open, admits of the cylinder *b* being ground by the grinding-roller *j*. There is also, as in the previous arrangement, a handle or handles, c^3, which enable the operative to pull forward the casing *c*.

The second of our modifications is illustrated by Figs. 5 to 7. The new features in this arrangement are two arms, *k*, pivoted at *k'* to the bend-nose *g*, one arm, *k*, on either side of the machine, and two studs or projections, *l*, fixed one on each side of the casing or combined doffer-cover and making-up piece *c*, so that when the said casing *c* is drawn back into the position shown on Fig. 7 the studs *l* rest on the arms *k* and the point of the casing *c* is raised away from the wire on the doffer *a*. The remaining letters relate to corresponding parts already described with reference to the preceding figures. Both the radial arms *e* and the curved plates *h* serve as bearings to guide the combined doffer-cover and making-up piece to its seat between the converging surfaces of the carding-cylinder and doffer, and they approach said seat on a line tangent to a concentric circle of the main cylinder, so that the combined piece can be moved into adjustment with respect to the cylinder, or swung back out of the way at one operation without interfering with the doffer.

Having stated the nature of our invention and described the manner of performing the same, we declare that what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a carding-engine, the combination, with the main cylinder and the doffer, of a combined doffer-cover and making-up piece and the bearings for guiding the same to its seat, which bearings approach said seat on a line tangent to a concentric circle of the main cylinder, substantially as shown and described.

2. In a carding-engine, the combination, with the main cylinder, the doffer, the combined doffer-cover and making-up piece, and the bearings, which approach the seat of the same on a line tangent to a concentric circle of the main cylinder, of an adjustable stop at the forward limit of the bearings for checking the movement of the combined piece, substantially as shown and described.

The foregoing specification of our improvements in carding-engines signed by us this 1st day of October, 1886.

BENJAMIN ALFRED DOBSON.
WILLIAM ISHERWOOD BROMILEY.

Witnesses:
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Notary Public, Bolton, Lancashire, England.
R. CECIL WINDER,
Solicitor, Bolton, Lancashire, England.