

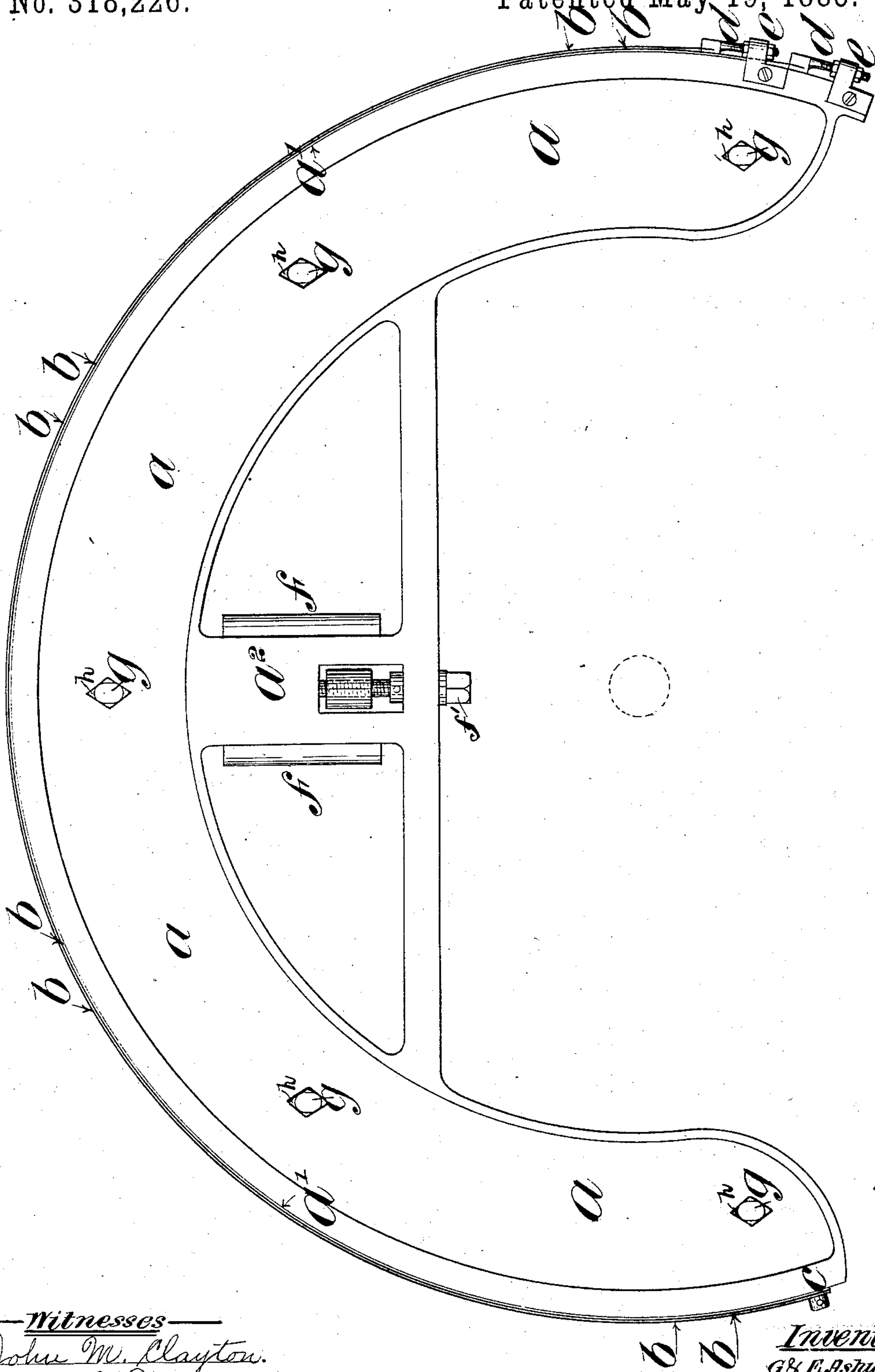
(No Model.)

G. & E. ASHWORTH.

CURVED GUIDE FOR THE TRAVELING FLATS OF CARDING ENGINES.

No. 318,226.

Patented May 19, 1885.



— Witnesses —
John M. Clayton.
John E. Barker.

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UNITED STATES PATENT OFFICE.

GEORGE ASHWORTH AND ELIJAH ASHWORTH, OF MANCHESTER, COUNTY OF LANCASTER, ENGLAND.

CURVED GUIDE FOR THE TRAVELING FLATS OF CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 318,226, dated May 19, 1885.

Application filed October 29, 1883. (No model.) Patented in England May 15, 1883, No. 2,432; in France November 20, 1883, No. 158,678, and in Belgium December 27, 1883, No. 63,671.

To all whom it may concern:

Be it known that we, GEORGE ASHWORTH and ELIJAH ASHWORTH, residing at Manchester, county of Lancaster, England, and subjects of the Queen of Great Britain and Ireland, have invented an Improvement in the Curved Guides for the Traveling Flats of Carding-Engines, (for which we have obtained a patent in Great Britain, No. 2,432, dated May 15, 1883,) of which the following is a specification.

Our invention relates to the curved guides or paths upon which the ends of the traveling flats of carding-engines rest and travel. These parts as hitherto made are termed "flexible bends," and are adjusted in form by means of setting-screws, so that when it is necessary to set the flats to run close to the main cylinder the flexible bends are lowered and the ends are bent in a little more. It is very important that the surface upon which the flats travel on each side of the engine shall be part of a true circle; but in the flexible bends this surface is only made to approximate to the true circular form. As the bend is bent into the required form by means of setting-screws, everything depends upon the skill of the operator, and if the adjustment has not been skillfully effected the engine works badly. To remedy these defects we employ a rigid rail, which is turned on its periphery to a segment of a true circle, and we increase the radius of this circle by applying to the said periphery one, two, or more ribbons or strips of steel or other suitable metal or material, and we decrease the said radius as the cards wear by removing one of these ribbons or by exchanging the ribbons, or one of them, for a ribbon of less thickness.

In the accompanying drawing, which represents a side view of the rail and its ribbons and appliances, *a* is the rigid curved rail, and *b b* are two ribbons of steel. The rail *a* is turned or faced on its periphery *a'*, so that the periphery shall be a segment of a true circle. The rail is bolted or fixed to the upper side frame of the carding-engine in such a position as that the axis of the main cylinder shall be exactly in the center of the circle of which the periphery of the rail forms a segment.

The ribbons *b b* are made of steel which has been rolled or prepared to a uniform thickness throughout its length. We may use phosphor-bronze or other suitable metal or alloy in place of steel. Each ribbon is secured at one end by means of a screw, *c*, which passes through the two ribbons into the rail *a*. The other ends of the ribbons are separately fixed to the ends of two screws, *d d*, which are carried by brackets *e e*, which are fixed to the rail. The screws are provided with nuts *d'*, whereby the two ribbons can be separately drawn tight, so as to fit close to the periphery of the rail. We do not confine ourselves to any particular method of securing the ends of the ribbons or of drawing them tight. The ends of the flats travel on the outer ribbon, which acts as a guide in place of the ordinary flexible bend, and as this ribbon is of necessity bent into a true circular form the flats are caused to travel in a true circular path around the main carding-cylinder. When it is necessary to set the flats to travel closer to the cylinder, the outer ribbon is removed, so that the flats shall travel on the other ribbon; or a thinner ribbon is substituted for the outer ribbon or for the inner ribbon.

We may apply only one ribbon or more than two. When using more than one ribbon, the inner ribbon may be of a different material to the outer ribbon, and need not necessarily be of metal, so long as it is sufficiently hard and pliable and is of uniform thickness.

The rail or part *a* may be of any suitable form so long as it is turned or faced upon its periphery, as set forth.

In the drawing the rail is cast with a vertical part, *a''*, which is planed to slide between two cheeks, *f f*, which form part of the frame of the engine, and are also planed, so that the rail, when being adjusted, can only move in a straight line which is a radial from the axis of the carding-cylinder.

The rail can be accurately adjusted to be concentric with the said axis by turning an adjusting-screw, *f'*, and be then secured by means of bolts at *g g*. This adjustment is rendered necessary by the wear of the bearings of the main-cylinder axles.

We have not illustrated the details of the

carding-engine, as these may be of any usual construction, the invention being applicable to the various forms of "traveling-flat" carding-engines—as, for instance, the carding-engine illustrated in our British Patent No. 2,916 of 1879.

We are aware of the devices set forth in British Patent No. 1,029 of 1881; but in that machine the wear is compensated for by screwing up a cone on which the ring rests—a comparatively expensive construction, affording an inaccurate bearing-surface, even with careful adjustment.

In our machine any unskilled person can adjust the flats by simply removing a strip when the carding-surfaces become worn, and the engine is at once ready for work again.

We claim as our invention—

1. As a segmental circular guide for the traveling flats of a carding-engine, the turned rail having one or more ribbons or strips, *b*,

resting directly on the turned periphery thereof and detachably secured thereto, whereby wear may be compensated for by the removal of a ribbon or strip, substantially as set forth. 25

2. The turned-up rail provided with one or more detachable strips, *b*, securing-screws *c*, bracket *e*, screws *d*, and nuts therefor, substantially as described.

3. The combination of the frame of a carding-engine with a turned rail, *a*, adjusting-screw therefor, and one or more detachable ribbons, *b*, on the rail, substantially as set forth. 30

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses. 35

GEO. ASHWORTH.

ELIJAH ASHWORTH.

Witnesses:

D. FULTON,

A. LEDGER.