

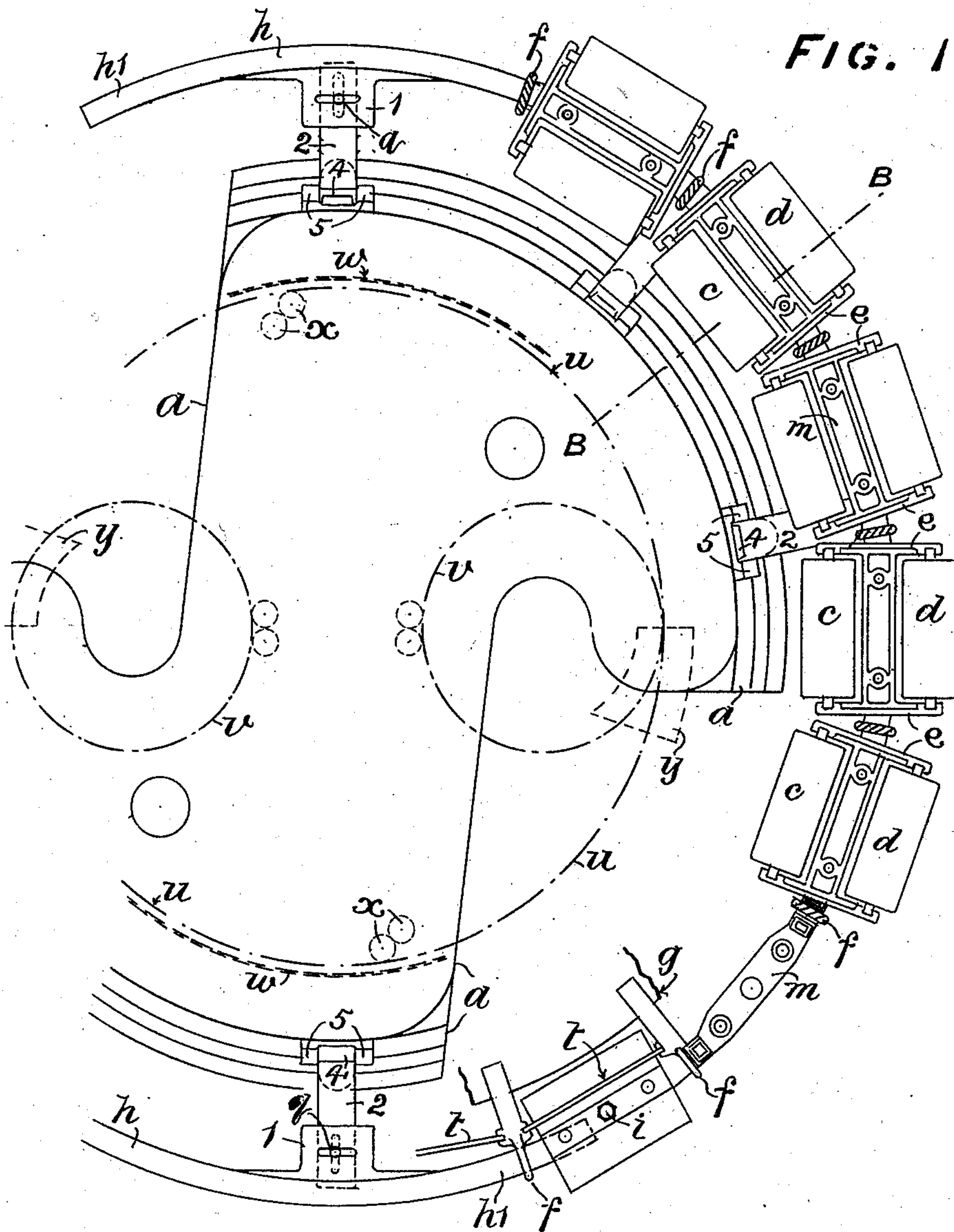
J. H. WHITEHEAD & G. GALLOWAY.
CIRCLE COMBING MACHINE.

APPLICATION FILED APR. 25, 1910.

986,616.

Patented Mar. 14, 1911.

2 SHEETS—SHEET 1.



John Clark Jefferson }
William Lester Edmondson } Witnesses.

John Henry Whitehead }
George Galloway } Inventors.

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FIG. 2.

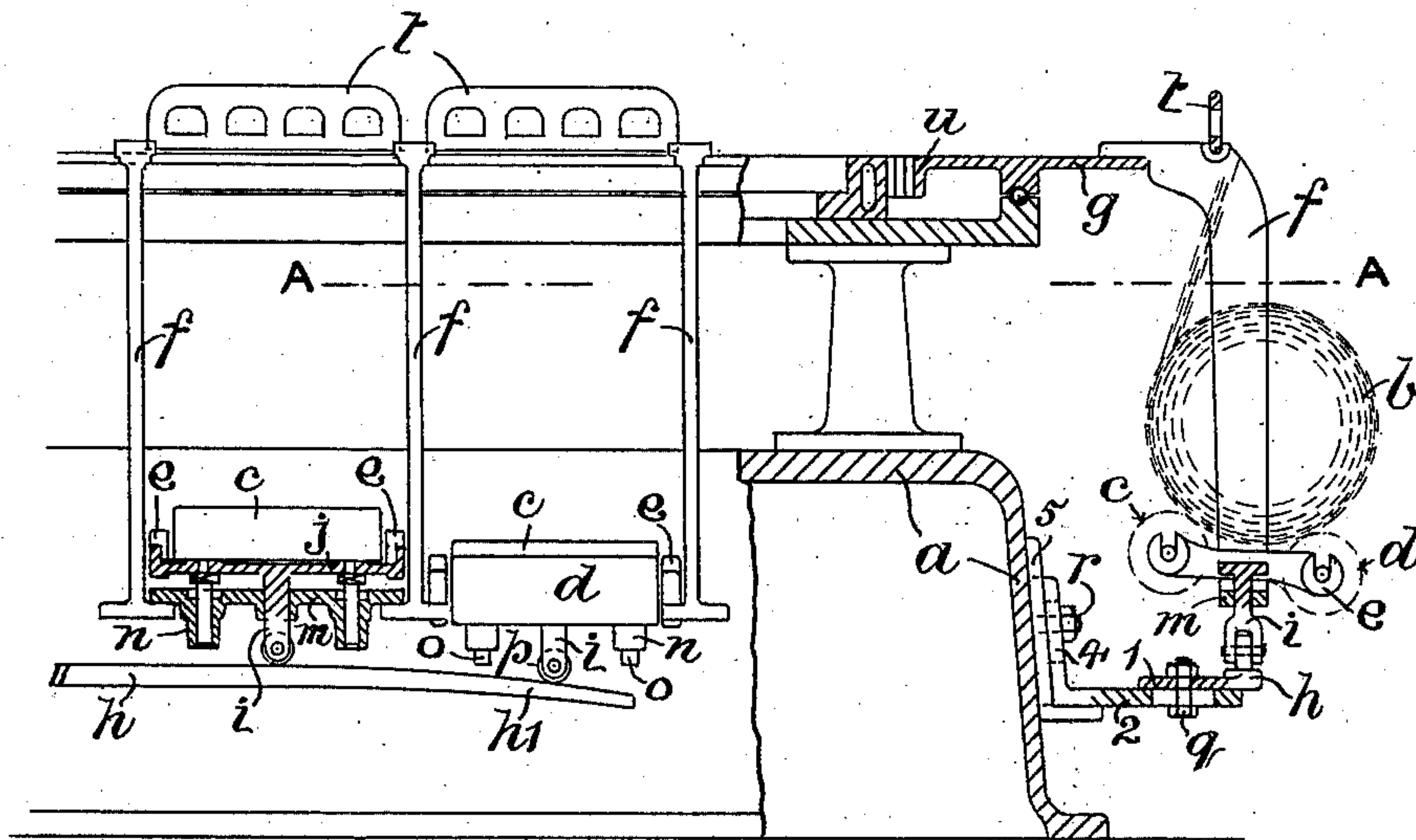


FIG. 4.

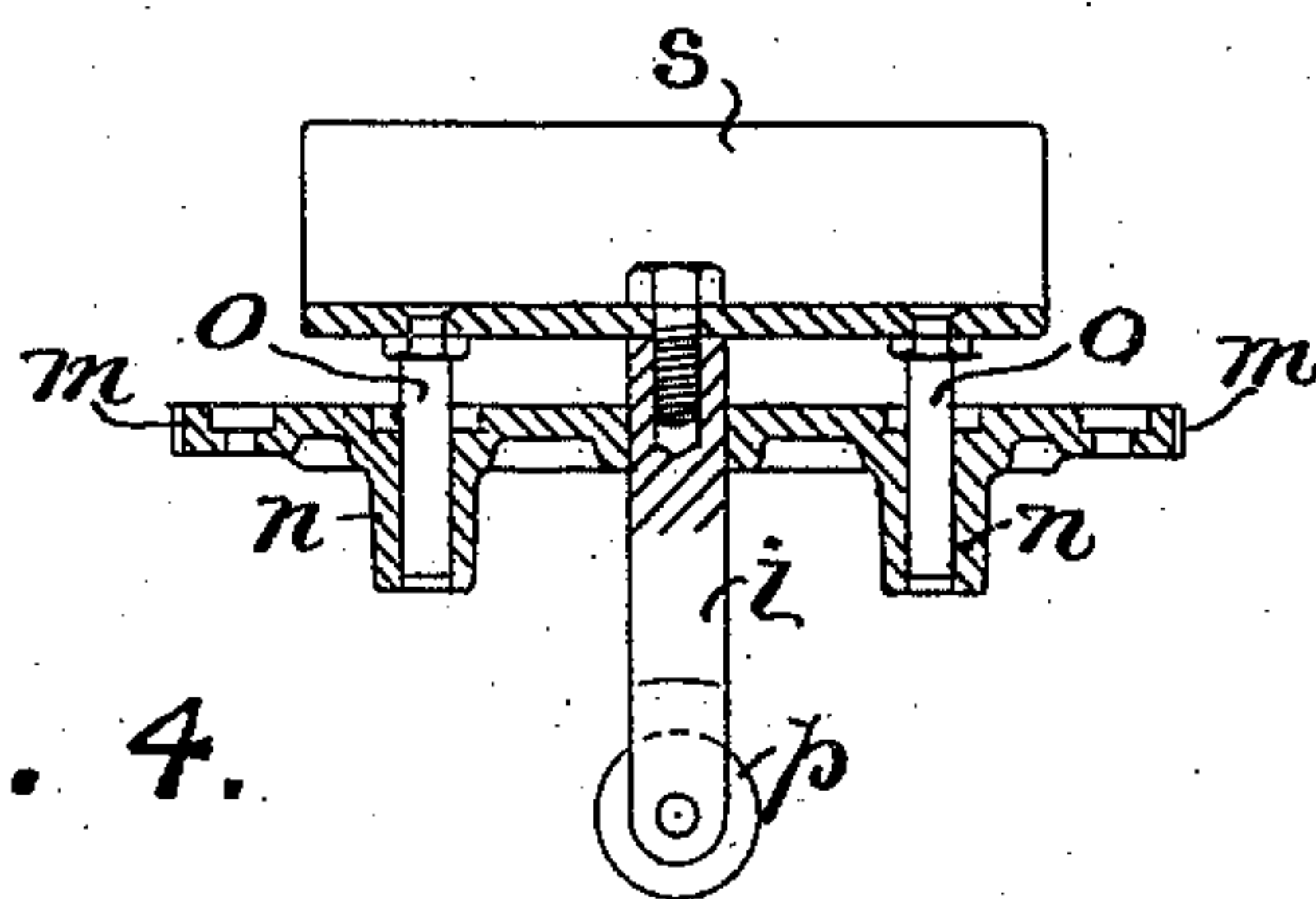


FIG. 5.

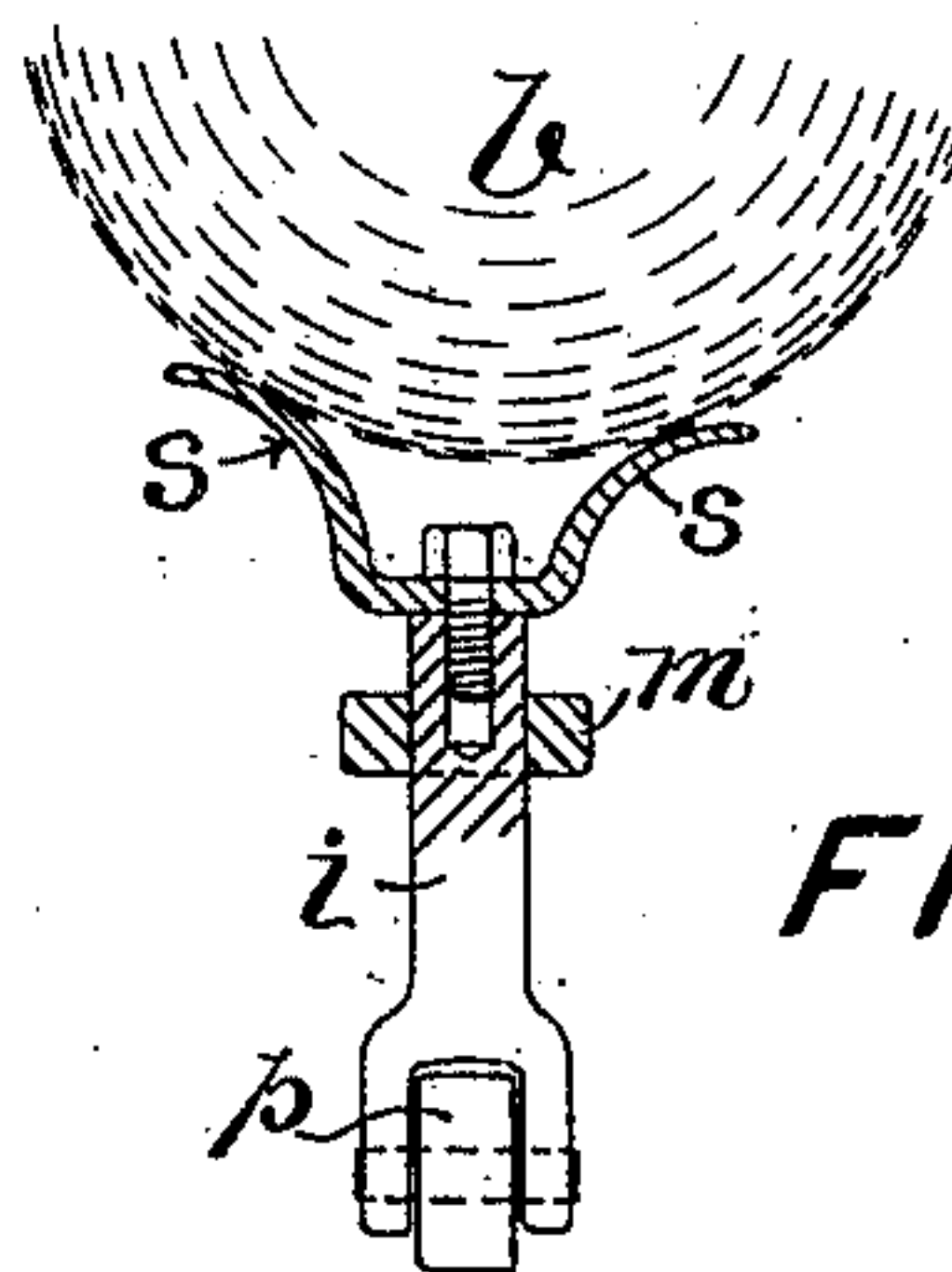


FIG. 6.

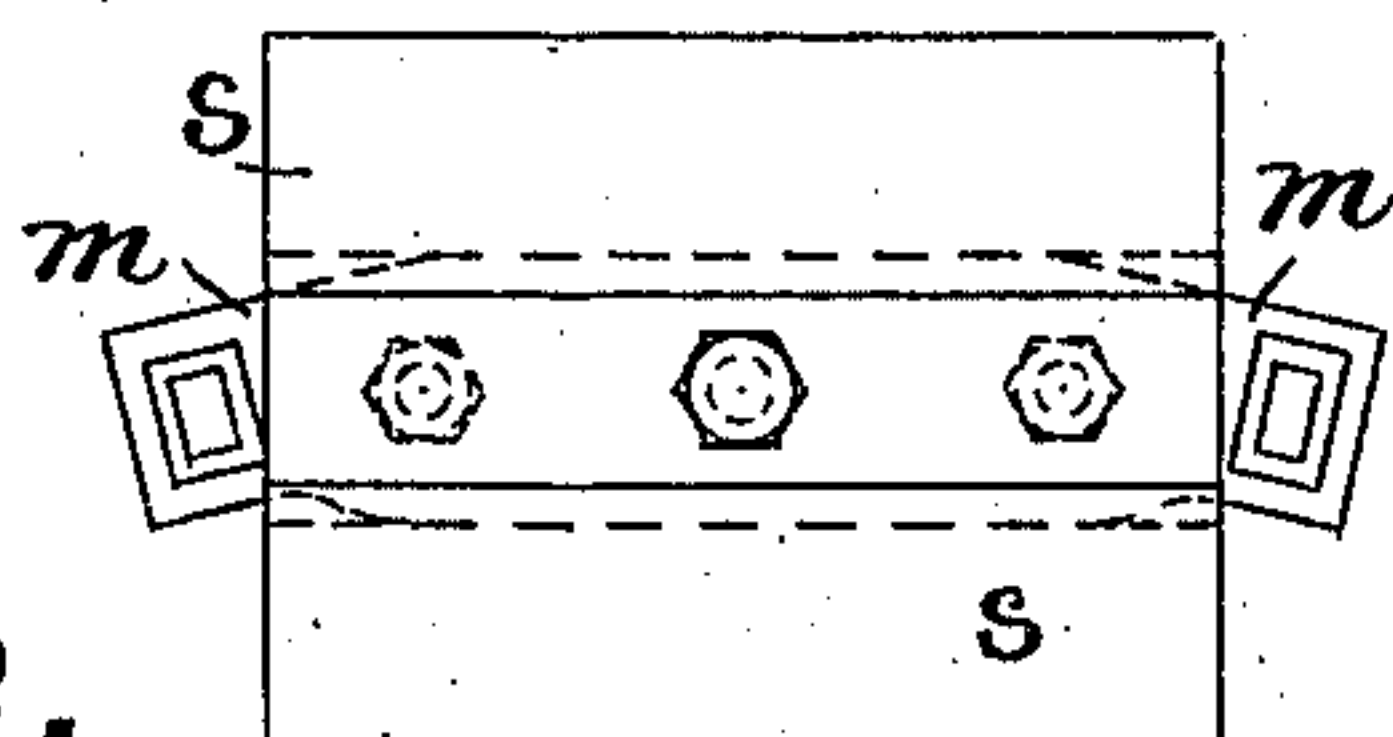
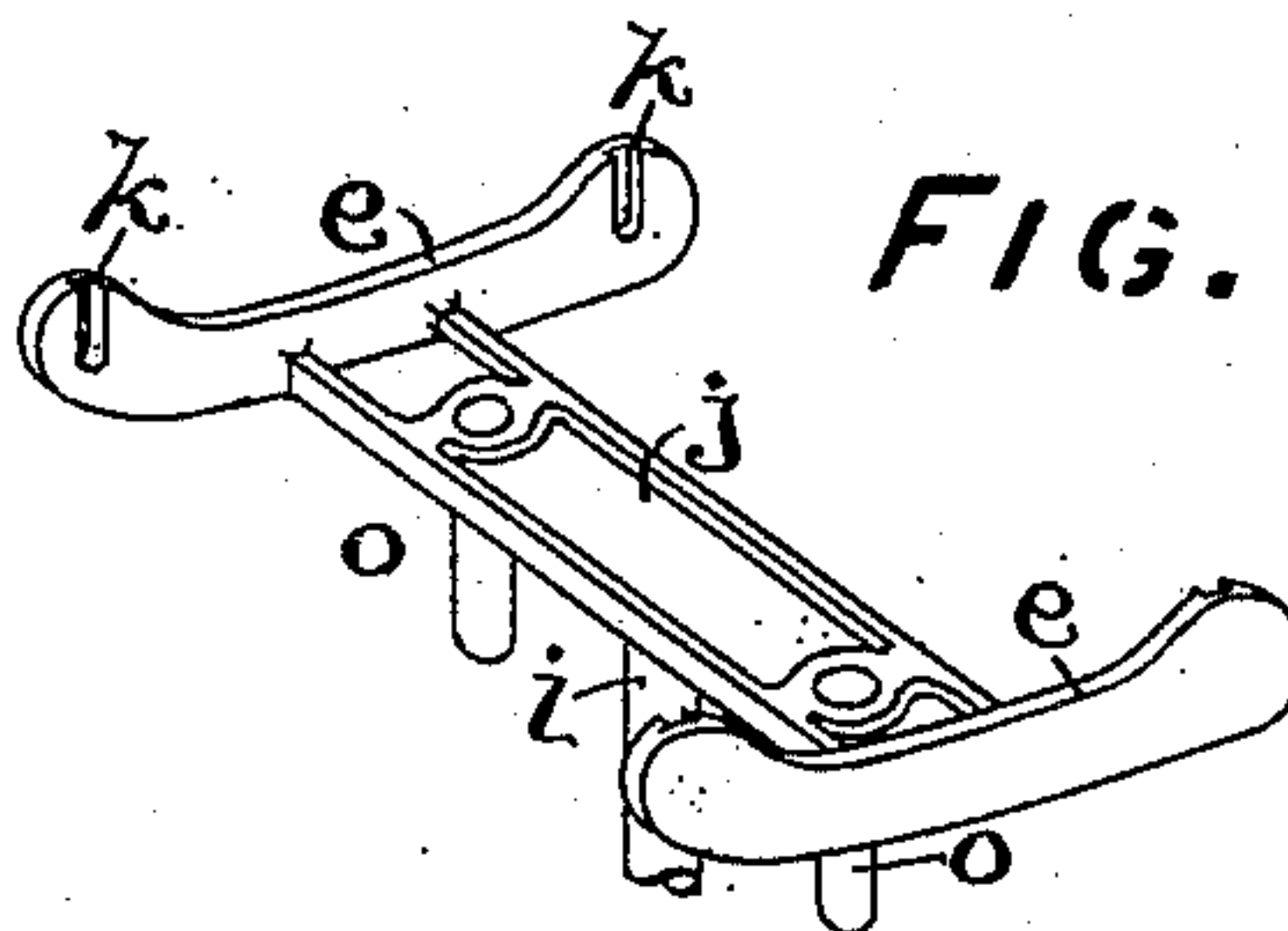


FIG. 3.



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JOHN HENRY WHITEHEAD AND GEORGE GALLOWAY, OF LEEDS, ENGLAND.

CIRCLE COMBING-MACHINE.

986,616.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed April 25, 1910. Serial No. 557,455.

To all whom it may concern:

Be it known that we, JOHN HENRY WHITEHEAD and GEORGE GALLOWAY, subjects of the King of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented certain new and useful Improvements in or in Connection with Circle Combing-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in connection with the feed of balled wool or other fiber in circle combing machines, with the object of obtaining greater uniformity in the tension on the wool as the balls are unwound, and therefore greater uniformity in the feed and in the threads afterward produced from the wool.

For the sake of brevity and clearness of description we have annexed hereto the accompanying two sheets of drawings, of so much of a circle combing machine as is necessary to illustrate our invention.

In these Figure 1 is a plan on line A A of Fig. 2. Fig. 2 is a part side elevation and a part section on line B B of Fig. 1. Fig. 3 is a perspective view of the plate carrying the supporting rollers. Fig. 4 is a longitudinal section, Fig. 5 a cross section, and Fig. 6 a plan to a larger scale illustrating the essential part of our invention, in which a so-called "pan" is used to support the wool balls in place of the usual supporting rollers.

a indicates the bed or frame of the machine.

b are the balls of wool or silver, each of which is usually supported loose on a pair of supporting rollers *c* and *d*, carried in slot bearings in the ends of horizontal bearers *e*; the latter being carried by hangers *f* suspended from the large comb circle *g*. Since the balls *b* gradually decrease in size and weight as the wool is fed from them, the tension or pull on the wool passing from the ball to the feed boxes varies, and this causes a want of uniformity in the feed. To avoid this defect it has been proposed to lift the rollers *c* and *d* a sufficient distance to produce a slackness in the sliver between the balls and the feed boxes, immediately

preceding and during the time of the feed. This has been effected in some instances by carrying the rollers at the ends of two armed or bent levers, the opposite arms of the levers bearing against the vertical face of a pair of cams, extending partly around the outside of the bed or frame of the machine. In other instances rollers carrying above them the supporting plates or frames of the balls are arranged to run on a plate having a downwardly inclined end by contact with which they are successively lifted to slacken the sliver. Now this invention consists in improved and simplified means for effecting this temporary lift of the sliver balls. For this purpose we form the fixed cams *h* as parts of a circle, concentric in plan with the large comb circle, so that the upper surface is the operating part of the cams. Each cam is bent downward at both its ends, as shown at *h*¹ Fig. 2, so that the lower end of a projection or rider *i* formed on or attached to the under side of the supporting plate *j*, rides up one end of the cam and remains supported until reaching the other end of the cam; when it rides down to its original position.

h Fig. 3 are slot recesses in the cross pieces or bearers *e* of the supporting plate *j* forming the bearings for the supporting rollers *c* and *d*.

m are tie bars bolted to the horizontal flanges at the lower ends of the hangers *f*, which according to this invention are provided with guide sockets *n* to receive the guide pins *o*, attached to underside of the supporting plate *j*; and with a central hole to permit of the passage of the beforementioned projection or rider *i*, by means of which the plate *j* is lifted. To lessen the friction in riding over the cams *h*, rollers *p* are fitted to the lower ends of the rider *i*. The cams *h* are carried from the bed or frame *a*, so that they can be readily adjusted in position; horizontally by means of slot and bolt connection *q*, and vertically by means of a similar slot and bolt connection *r*.

Figs. 4 to 6 show the invention applied to the case where an open ended trough *s*, with curved sides, technically termed a "pan", is used for supporting the sliver ball *b*; instead of the rollers *c* and *d*. The same reference letters are used in Figs. 4 to 6 as in

Figs. 1 to 3 to indicate the same or corresponding parts. A single pan is shown in Fig. 1.

t are the bridge pieces, through which the
5 sliver passes to the feed boxes.

u Fig. 1 indicates the inner side of the large comb circle, and v the small comb circles.

w indicates the feed knives, x the drawing-off rollers, and y the positions of the
10 dabbing brushes.

The cams h are provided with inwardly projecting lug pieces 1, which rest on the horizontal member 2 of L shaped brackets,
15 having bolt slots, through which the connecting bolts q are passed. By these means the cams can be adjusted horizontally so as to be truly concentric with the large comb circle. The vertical limbs 4 of said L
20 shaped brackets fit between vertical ribs 5 cast on the frame a , and are connected to the frame by a similar slot hole and bolt connection r , so that the height of the cams
25 h can be adjusted, whereby the lift given to the balls of wool can be adjusted as desired.

The invention operates as follows:—Just before the ball of wool comes opposite the feed knife w and the drawing off rollers x , the lower end of the rider i comes against
30 the inclined part h^1 of the cam, and rides up the same; lifting the supporting rollers, or the "pan" as the case may be, and causing the portion of the sliver between the ball and the feed boxes to become slack before coming opposite the feed knife w . The
35 ball of sliver is kept in the raised position until it comes opposite the next dabbing brush, where the cam h inclines downward, allowing the ball to drop to its original
40 level.

It will be seen that this invention has the advantage that the cams can be readily made and adjusted truly circular in position, and that as the upper surface is the
45 operative one, a direct lift and fall are obtained without intermediate mechanism, and therefore with less friction and at less cost.

Having fully described our invention, what we claim and desire to secure by Letters Patent is:—
50

1. In a circle combing machine in which each ball of wool is raised immediately prior to and kept raised during the feed, the combination of a pair of horizontal partly circular cams, concentric in plan
55 with the large comb circle and bent downward at both ends, supports or carriers for the balls of wool, a pair of guide pins and a depending projection or rider attached to each of said supports or carriers, fixed
60 tie bars between the lower ends of the hangers from the large comb circle, provided with guide sockets for said guide pins and an aperture for said projection or rider; all substantially as shown and for the purposes specified. 65

2. In a circular combing machine in which each ball is raised immediately prior to the feed and kept raised during the same, the combination of a pair of horizontal
70 partly circular cams, concentric in plan with the large comb circle and bent downward at both ends, means for adjusting the said cam plates horizontally and vertically, a pair of ball-supporting rollers, a supporting
75 plate in which said rollers are journaled, a rider depending from this plate and arranged to ride on said cam plates and fixed guides for the said supporting plate as it rises and falls. 80

3. In a circular combing machine in which each ball is raised immediately prior to the feed and kept raised during the same, the combination of a pair of horizontal partly circular cams concentric in plan
85 with the large comb circle and bent downward at both ends, a pair of ball supporting rollers, a supporting plate in which said rollers are journaled, a rider depending from this plate and arranged to ride on said
90 cams and fixed guides for the said supporting plate as it rises and falls.

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

JOHN HENRY WHITEHEAD.
GEORGE GALLOWAY.

Witnesses:

JOHN CLARK JEFFERSON,
WILLIAM LESTON EDMONDSON.