

**No. 672,786.**

**Patented Apr. 23, 1901.**

W. E. LAYLAND & J. H. WHITEHEAD.

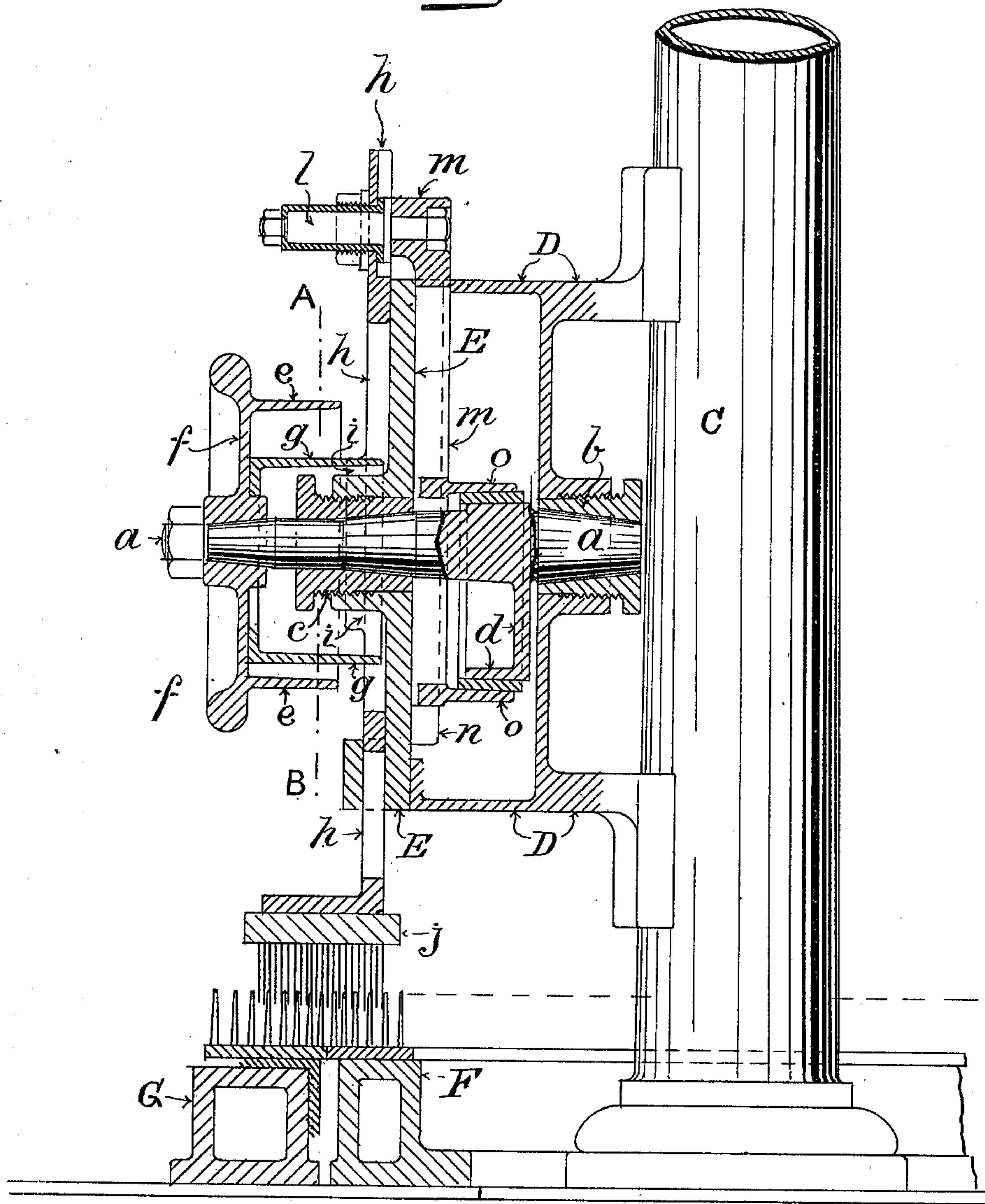
# DABBING BRUSH MECHANISM FOR COMBING MACHINES.

(No Model.)

(Application filed Aug. 3, 1900.)

**4 Sheets—Sheet 1.**

*Fig. 1.*



J. Clark Jefferson.  
Jno, A. Sinker.

Witnesses.

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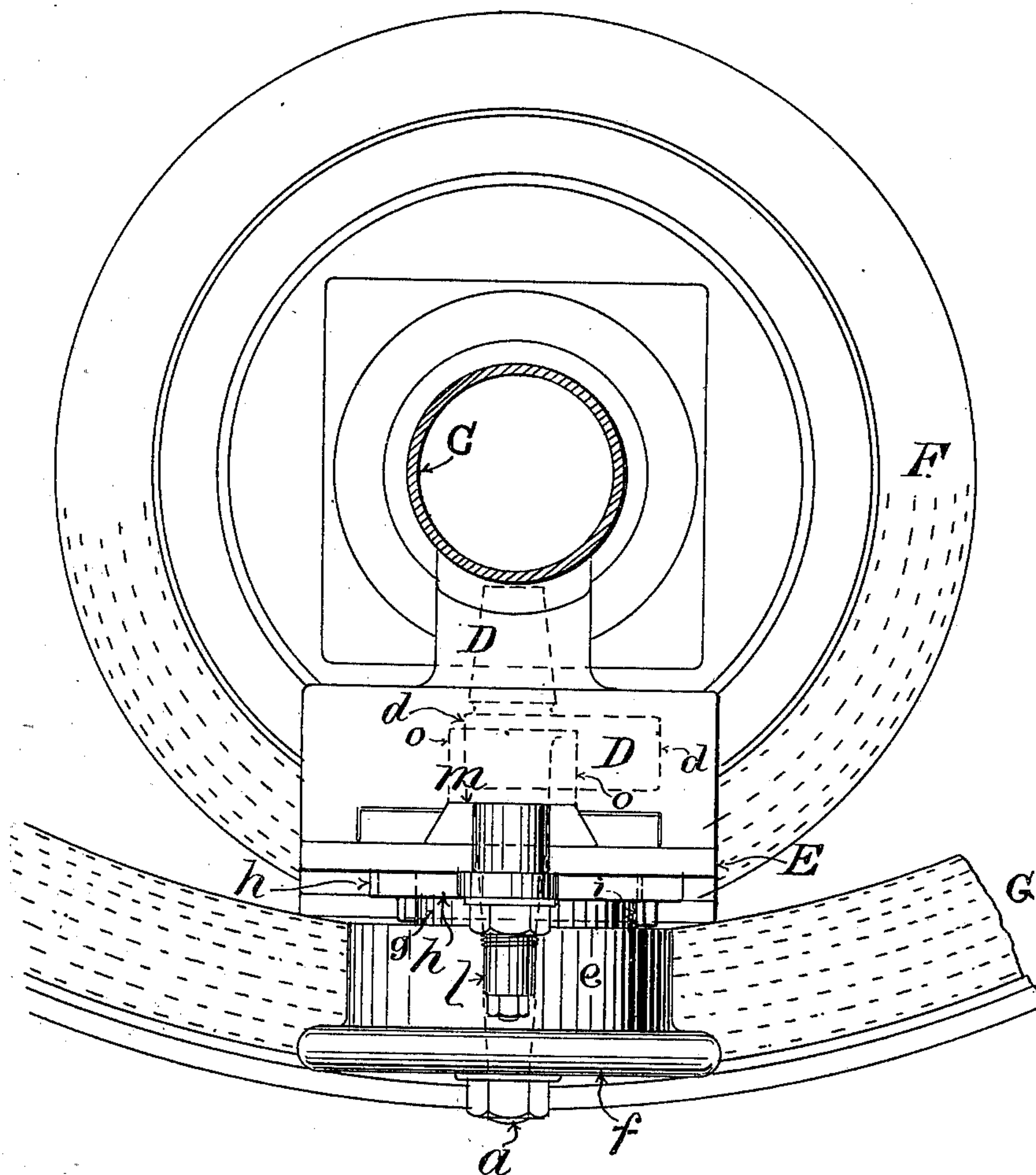
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4 Sheets—Sheet 2.

*Fig. 2.*



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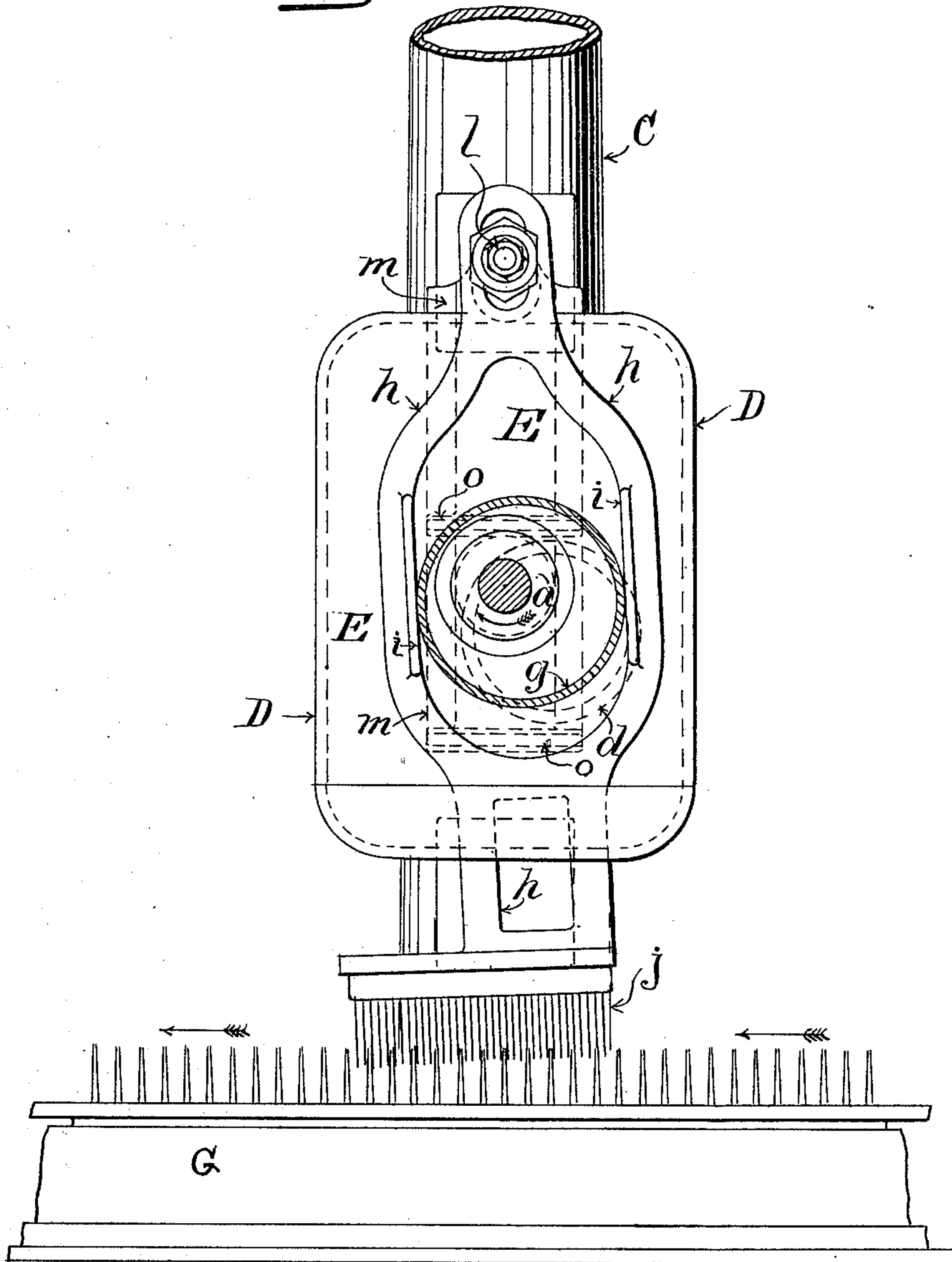
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4 Sheets—Sheet 3.

*Fig.* 3.



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4 Sheets—Sheet 4.

Fig. 4.

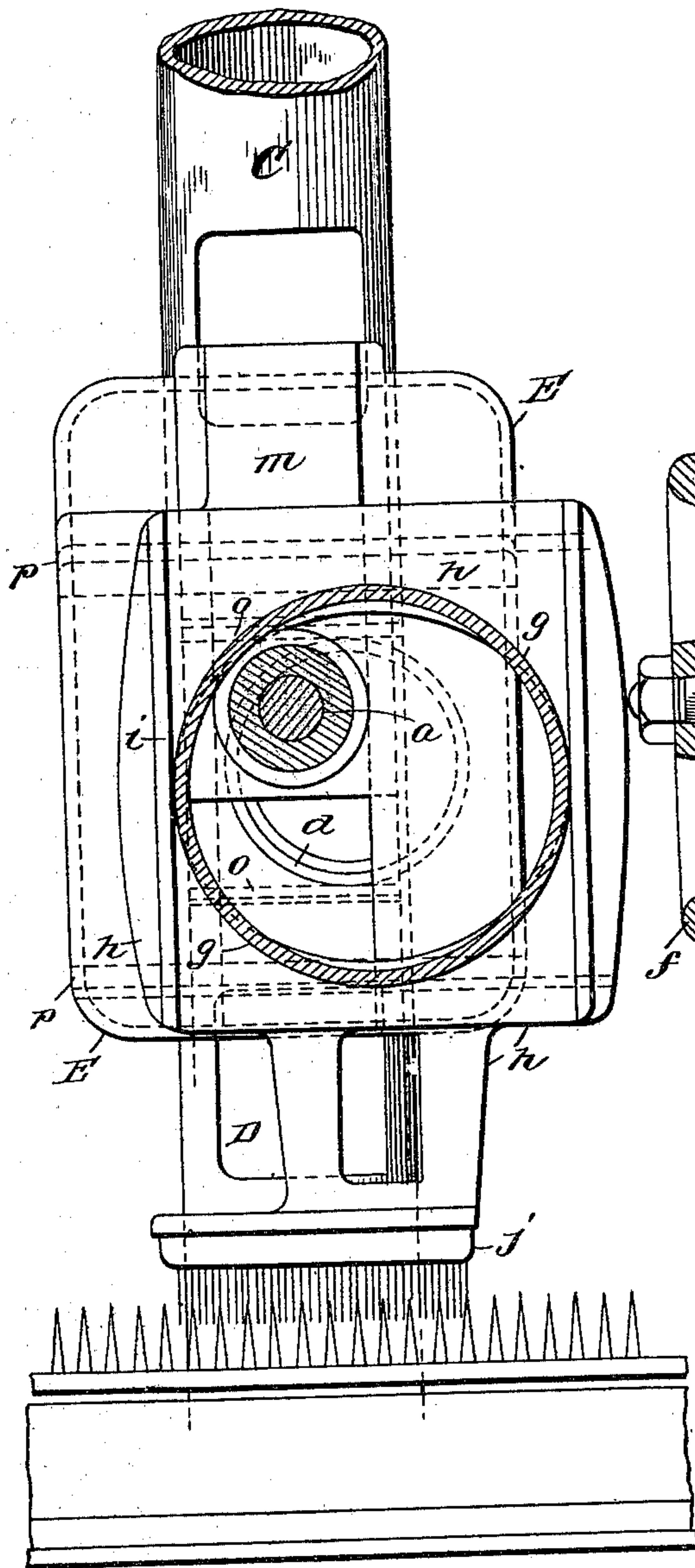
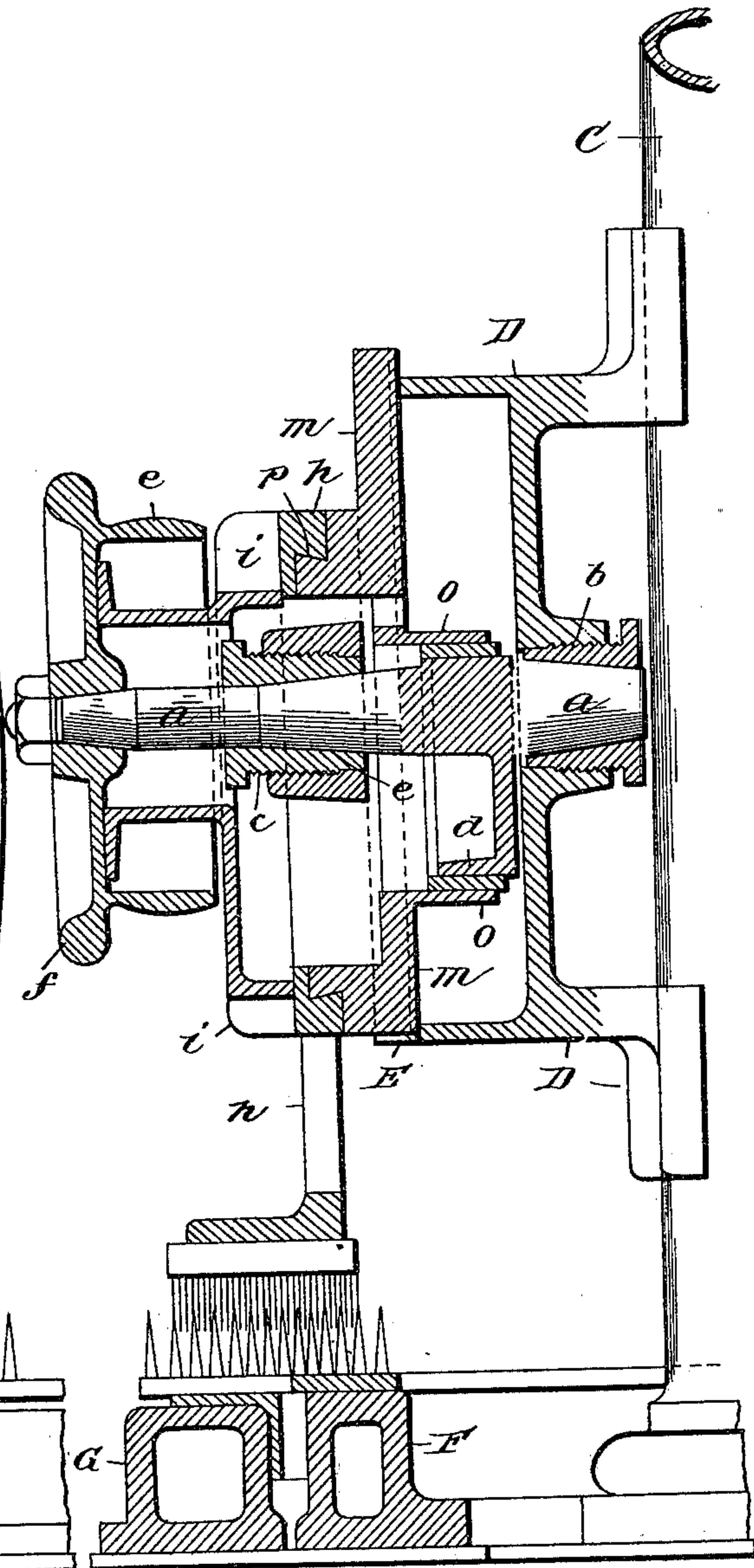


Fig. 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM EDWARD LAYLAND AND JOHN HENRY WHITEHEAD, OF LEEDS,  
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## DABBING-BRUSH MECHANISM FOR COMBING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 672,786, dated April 23, 1901.

Application filed August 3, 1900. Serial No. 25,817. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM EDWARD LAYLAND and JOHN HENRY WHITEHEAD, subjects of the Queen of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented a certain new and useful Improvement in Dabbing-Brush Mechanisms for Combing-Machines, of which the following is a specification.

10 The object of our invention is to lessen the wear of the dabbing-brushes of combing-machines. The excessive wear which such brushes experience seems to us to be due chiefly to the dragging action of the pins of the combs against the bristles of the brush, since the comb-pins move an appreciable distance during the time that the bristles of the brush are moving inward and outward in contact with the comb-pins and since as at present  
15 constructed the dabbing-brush has no horizontal movement whatever.

Briefly our invention consists in giving to the dabbing-brush for the time that the bristles are moving among the pins of the comb  
25 a horizontal movement in the same direction and at the same or approximately the same speed as the horizontal movement of the comb. This we effect by means of the mechanism illustrated in the accompanying drawings.

30 In the drawings, Figure 1 is a vertical section of one of the dabbing-brush arrangements of a combing-machine constructed in accordance with our invention. Fig. 2 is a plan of the same, and Fig. 3 is an end elevation on line A B of Fig. 1. Figs. 4 and 5 are views, partly in elevation and partly in vertical section, taken at right angles to each other, of a modified form of our machine.

40 In all the figures the same reference-letter is used to indicate the same or corresponding part.

45 C is the vertical pillar to which the box or bracket D, carrying the dabbing-brush mechanism, is attached, and E is the cover of the box.

F is the inner, and G is the outer, comb-circle.

50  $a$  is a horizontal shaft mounted in adjustable conical bearings  $b$  and  $c$ , formed in the back of the box D and in the front E. The horizontal shaft  $a$  is provided with an eccen-

tric  $d$  and carries at the opposite end, keyed to it, the driving-pulley  $e$  and the light fly-wheel  $f$ . A second eccentric  $g$  is provided and most conveniently secured to the driving-pulley  $e$  by means of two or more screws and projects back beyond the pulley  $e$  close up to the box-front E.

60  $h$  is a slotted bar provided with a wide vertical slot having flange working faces  $i$ , between which fits the eccentric  $g$ . The dabbing-brush  $j$  is attached to the lower end of the slotted bar  $h$ . The upper end of the slotted bar  $h$  is hinged on a pin  $l$ , secured to the upper end of the eccentric-rod or sliding piece  
65  $m$ , which is reciprocated vertically by the eccentric  $d$  between the guides  $n$ , cast on the box-front E, the eccentric  $d$  working between horizontal slide-ribs O, cast on the eccentric-rod or sliding piece  $m$ . The eccentric  $g$  gives  
70 a horizontal reciprocation, or rather a swinging motion, to the slotted bar  $h$  about the pin  $l$ . The dabbing-brush thus receives a motion compounded of the vertical and horizontal motions given to it by the two eccentrics  $e$   
75 and  $g$ , respectively. This motion is elliptical, slightly distorted, owing to the upper end of the slotted bar  $h$  being hinged about the pin  $l$ . For the sake of clearness in the drawings the throw of the eccentric  $g$  is shown much ex-  
80 aggerated. It should only be about one-fourth that shown in the drawings.

The pulley  $e$  is driven in such a direction, or the center of the eccentric  $g$  so placed with respect to the centers of the shaft  $a$  and the  
85 eccentric  $d$ , that the horizontal component of the movement of the brush during the lower half of its vertical movement—that is, while the bristles of the brush are moving in and out among the comb-teeth—is in the same di-  
90 rection as the movement of the comb-teeth with which the bristles are in contact. Hence the centers of the two eccentrics will be in the same radius or radial plane from the shaft-center when the under side of shaft  $a$   
95 and the adjoining part of the comb move in the same direction, as indicated by the arrows in Fig. 3, while if the driving arrangement is such that the under side of the shaft  $a$  and the adjoining part of the comb move  
100 in opposite directions then the centers of the two eccentrics will be situated in diametric-



ally opposite radial lines or planes from the shaft-center.

The throw of the eccentric  $g$  is made such that taking into account the speed of rotation, the length of the slotted bar  $h$ , and the distance of the mid-stroke of the pin  $l$  from the center of the shaft  $a$  the average horizontal velocity of the brush during the lower part of its vertical movement—that is, while the bristles of the brush are in contact with the comb-pins—is the same as the horizontal speed of the comb. In other words, the above-described arrangement secures that for the time the bristles of the brush are moving in contact with the teeth of the comb the former move horizontally in the same direction and at the same or approximately the same speed as the comb-teeth with which they are in contact.

It will be evident that our invention is not essentially altered if the slotted bar  $h$ , as illustrated in the drawings, instead of being hinged at  $l$  to the eccentric-rod or sliding piece  $m$  is fitted to the same with a horizontal slide, so that the whole of the slotted bar  $h$  partakes equally of the horizontal movement; but such arrangement of our invention has the disadvantage of doubling the horizontal inertia of the slotted bar  $h$ .

Having now described our invention, we declare that what we claim, and desire to secure by Letters Patent, is—

1. In combing-machines the combination of a comb  $F$  or combs  $F$  and  $G$  with a dabbing-brush device consisting of a vertically-slotted bar  $h$  carrying the dabbing-brush  $j$  at its lower end, a horizontal shaft  $a$  with two eccentrics  $d$  and  $g$  thereon, the eccentric  $d$  giving

the vertical reciprocation being attached to the upper end of the slotted bar  $h$  and the eccentric  $g$  giving the horizontal reciprocation being embraced by the slot of the bar  $h$ , the centers of the two eccentrics being in the same radial line or plane from the center of the shaft  $a$  when the under side of the shaft and the adjoining part of the comb  $F$  or combs  $F$  and  $G$  move in the same direction, and in diametrically opposite radial lines or planes from the center of the shaft  $a$ , when the under side of the shaft and the adjoining part of the comb or combs move in opposite directions substantially as set forth.

2. In dabbing-brush mechanism for combing-machines the combination of a box-bracket  $D E$  having two bearings  $b$  and  $c$ , a horizontal shaft  $a$  carried in said bearings, two eccentrics  $d$  and  $g$  mounted on the said horizontal shaft and a vertically-slotted bar  $h$  attached at its upper end by a connecting-rod or sliding piece  $m$  to the eccentric  $d$  and carrying a dabbing-brush  $j$  at its lower end and embracing in its vertical slot the other eccentric  $g$ , substantially as set forth.

3. In dabbing-brush mechanism for combing-machines, the combination of a vertically-slotted bar  $h$  carrying the dabbing-brush  $j$  at its lower end, a horizontal shaft  $a$  with two eccentrics  $d$  and  $g$  mounted thereon, the one eccentric  $d$  being connected to the slotted bar  $h$  and the other eccentric  $g$  being embraced by the slotted bar  $h$  substantially as set forth.

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