

No. 618,402.

Patented Jan. 31, 1899.

J. EDGE.

FLAT STRIPPING MOTION FOR CARDING ENGINES.

(Application filed Dec. 27, 1897.)

(No Model.)

2 Sheets—Sheet 1.

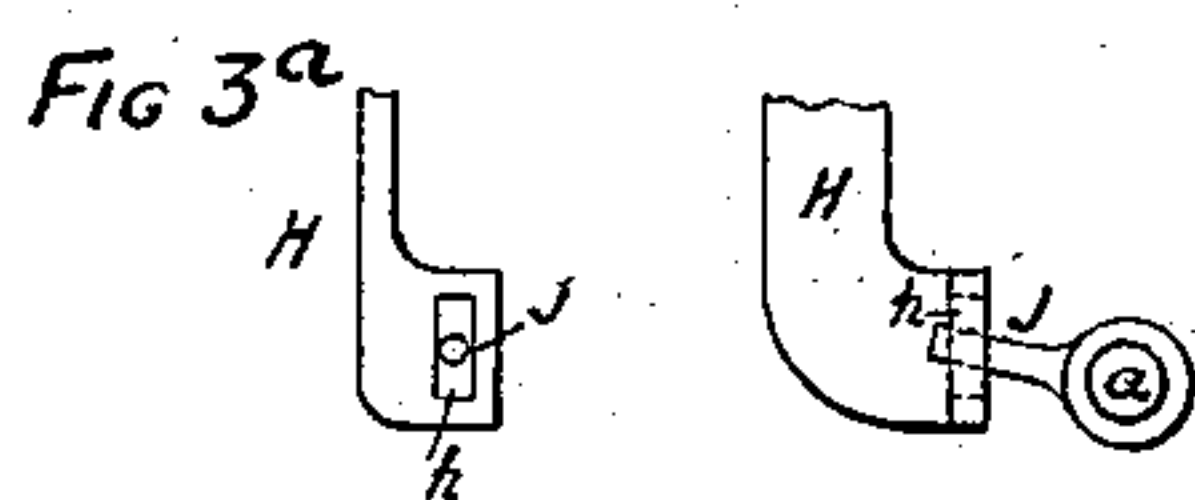
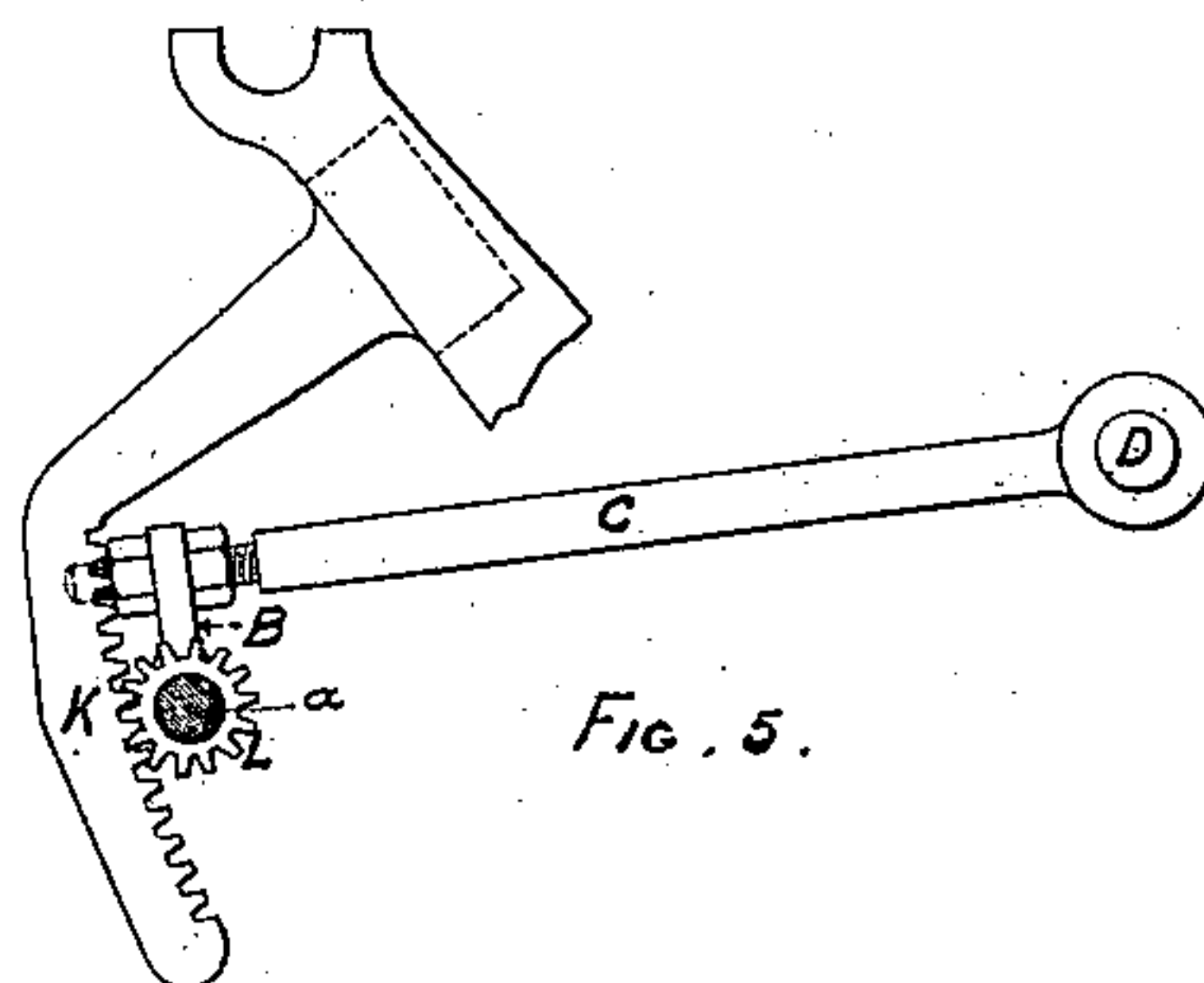
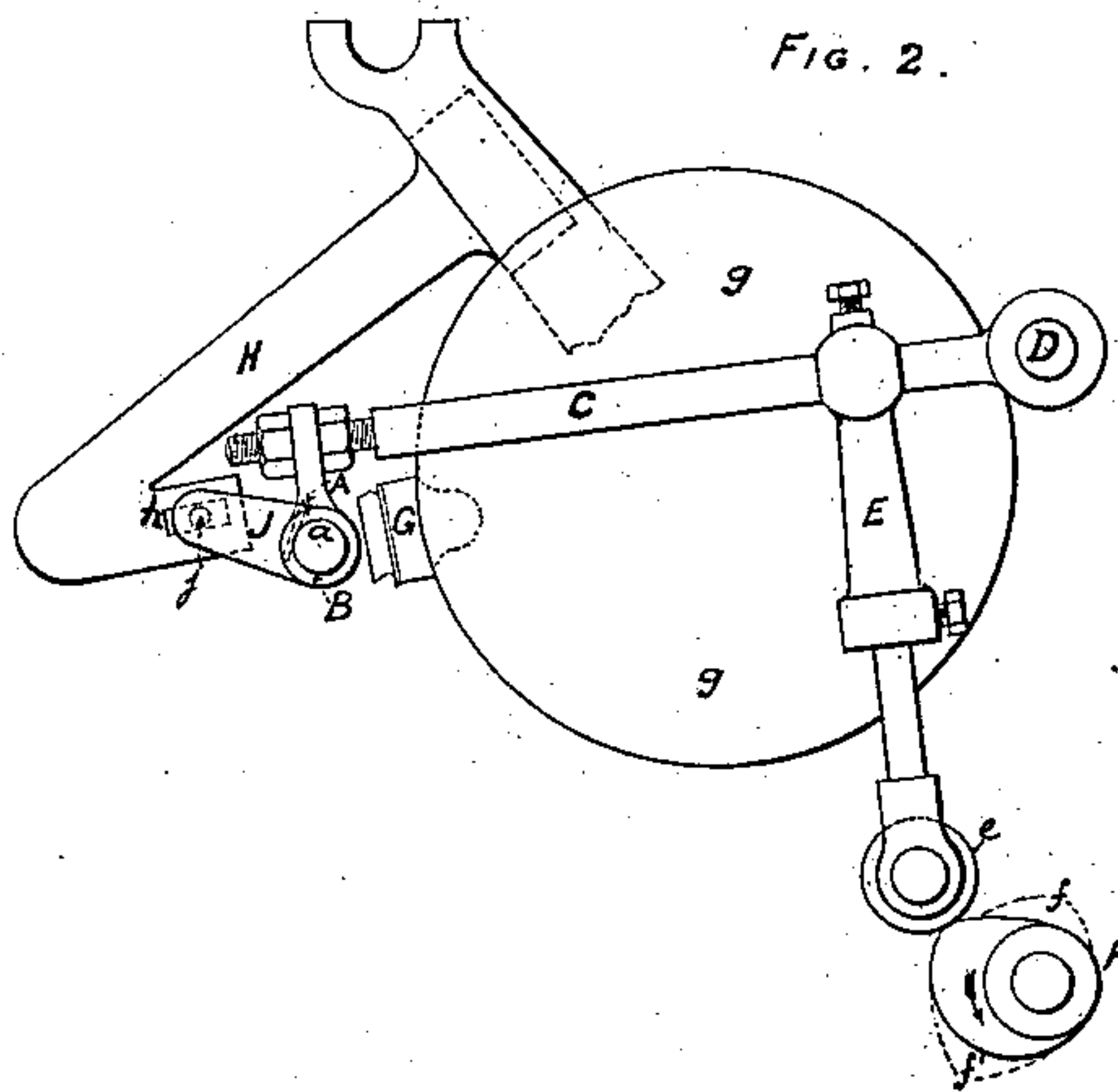
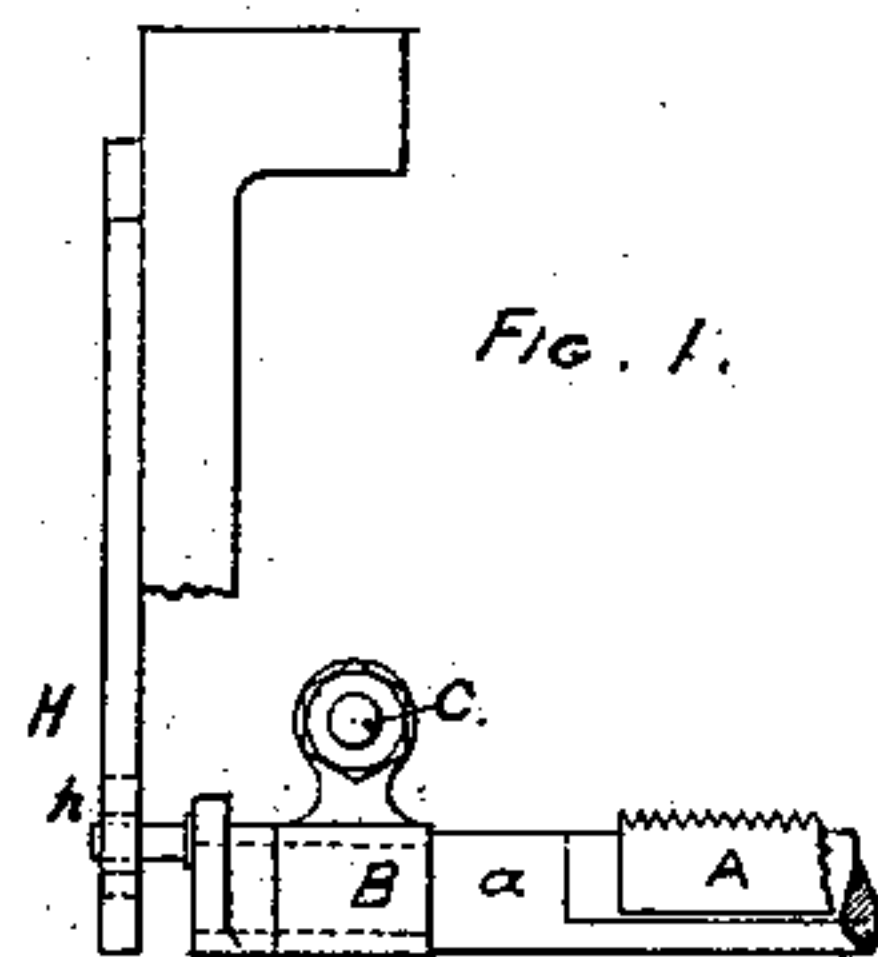


Fig. 3.

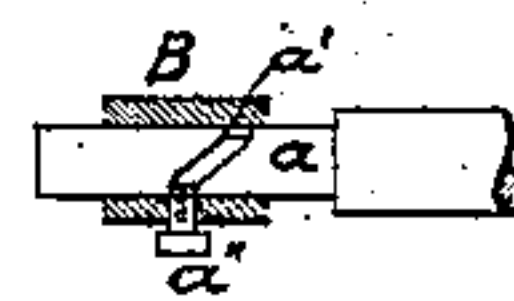


Fig. 6.

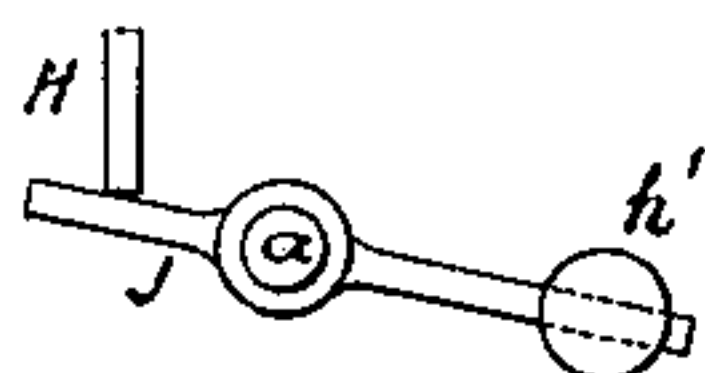


Fig. 4.

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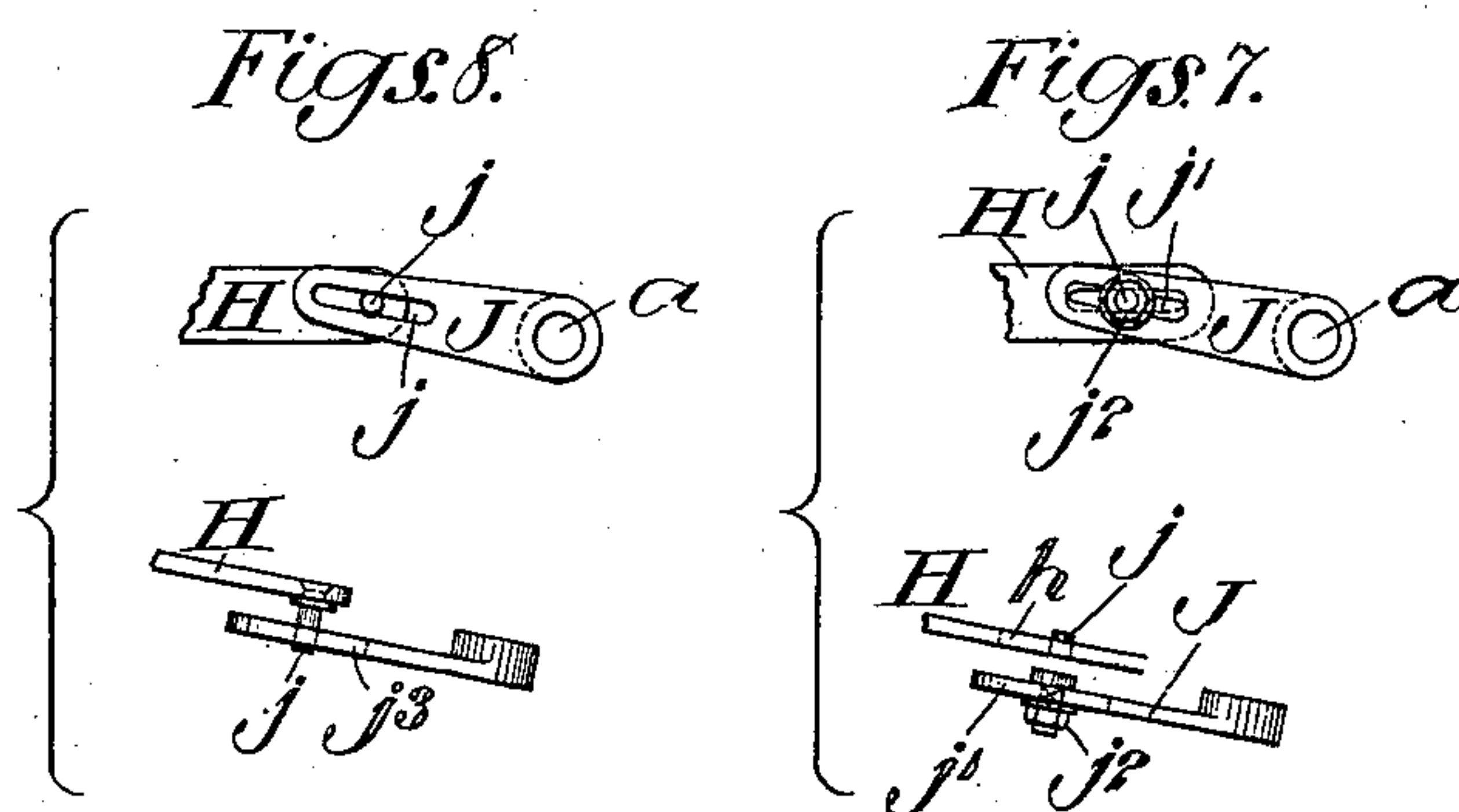
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(Application filed Dec. 27, 1897.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

JAMES EDGE, OF GORTON, ENGLAND.

## FLAT-STRIPPING MOTION FOR CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 618,402, dated January 31, 1899.

Application filed December 27, 1897. Serial No. 663,541. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES EDGE, mill manager, of High street, Gorton, in the county of Lancaster, England, have invented certain  
5 Improvements in Flat-Stripping Motions for Carding-Engines, (for which I have obtained Letters Patent of the United Kingdom of Great Britain and Ireland, numbered 18,115, dated August 15, 1896,) of which the follow-  
10 ing is a specification.

My invention relates to improvements in flat-stripping motions for carding-engines; and the object of my invention is to provide  
15 mechanism capable of stripping the short fibers from the flats more efficiently than the mechanism hitherto provided.

My invention consists, essentially, in means for giving to the stripping-comb an oscillating motion about an axis in conjunction with  
20 a rapid downward movement.

In the accompanying drawings, in all the views of which the same letters of reference are employed to indicate corresponding parts, Figure 1 is a partial front elevation, and Fig.  
25 2 is an end elevation, of apparatus constructed according to my invention. Fig. 3 is an end elevation, and Fig. 3<sup>a</sup> a partial front elevation, of a part of a slightly-different arrangement of apparatus constructed according to  
30 my invention. Figs. 4 and 5 are end elevations of parts of other slightly-different arrangements of apparatus constructed according to my invention; and Fig. 6 is a front elevation,  
35 partly in vertical section, of arrangements employed according to my invention to move the stripping-comb lengthwise. Fig. 7 represents a side view and a plan of a modification of devices for turning the stripping-comb shaft. Fig. 8 represents a side view and a  
40 plan of another modification of such parts. Figs. 9, 10, and 11 represent a modification of the devices for producing a longitudinal movement of the stripping-comb shaft.

It is obvious that parts similar to some of  
45 those illustrated in the accompanying drawings as applied to one side of the carding-engines, of which portions are illustrated in the said drawings, are necessarily employed at the other side of such carding-engines.

50 The stripping-comb A, which is employed according to my invention, may be of any

suitable form and may be supported in any suitable manner, being in the accompanying drawings illustrated as secured to a rod, bar, or shaft *a*, but must be mounted and capable  
55 of being oscillated in bearings carried by arms C, which are placed one at each side of the carding-engine and are arranged to be oscillated about the axis of a shaft D, fast upon which they mounted. The shaft D  
60 passes over the top of the carding-engine in the ordinary way and receives an oscillating movement, being provided with an arm which projects from it and carries at its lower end a bowl *e*, resting upon a cam F, which is re-  
65 volved in any suitable manner, such as by being fixed upon or connected with some suitable revolving part of the carding-engine. The arrangement described insures that the oscillating movement imparted to the shaft  
70 D will be conveyed through the arms C to the stripping-comb A. According to my invention I cause the downward movements of the stripping-comb, in which the short fibers are stripped from the flats, to be quicker than  
75 the upward movements of such stripping-comb, and I do this by forming that part *f'* of the cam F which by its action on the bowl *e* brings about the upward movement of the comb with a very gradual progression in a  
80 direction outward from the axis of said cam and forming the part *f*, which, allowing the arms C to descend, brings about the downward movement of the comb, with a more abrupt retrogression toward the said axis.  
85 By forming the cam F in this manner I cause the comb A to move more rapidly while stripping the flats than when ascending between one downward stroke and the next, and by so doing I render the action of the comb more  
90 effective than it would otherwise be. It is obvious that the cam F may be so formed that two or more downward and two or more upward strokes shall be performed by the comb A during each revolution of the cam F.  
95 In Figs. 1 and 2 the parts are shown in the positions which they occupy when the comb A is at the highest point of its stroke and quite clear of the flats, of which only one is indicated at G, *g* indicating one of the disks or  
100 bowls around which the flats are made to pass. Besides imparting to the stripping-comb A



an oscillating movement of the kind already described I impart to it during such movement an additional movement—that is to say, an oscillating movement about its axis or the axis of the shaft, bar, or rod *a*, on which it is mounted—and this additional oscillating movement may be obtained in several ways, of which I will proceed to describe some by way of instances. In one method of imparting the said additional movement I fix on one side of the carding-engine, in a suitable position, a bracket H, formed with a hole or slot *h*, and on the comb or the part supporting it I fix an arm, finger, lever, or the like J, carrying a stud or pin *j*, which enters into the hole *h*. The stud *j* may be arranged to be adjustable, as is indicated in Fig. 7, which shows the stud *j* as passing through a slot *j'*, formed in the arm J, and as provided with a nut *j<sup>2</sup>*, by means of which it may be secured in said arm. In this arrangement while the cam F imparts to the comb A the oscillation hereinbefore described the movement of the comb A in relation to the bracket H causes such comb A to also oscillate about its axis. Instead of the stud *j* being fixed in the arm J it may be fixed in the bracket H, and the hole or slot *j<sup>3</sup>*, to receive such stud *j*, may be made in the arm J, as illustrated by Fig. 8, and although it is preferable to employ one arm J and one bracket H an arm J and bracket H may be provided at each side of the carding-engine. In another method of imparting the said additional movement to the stripping-comb the stud *j* is dispensed with altogether, the arm J being formed in the manner indicated in Figs. 3 and 3<sup>a</sup> and made to project through a hole or slot *h* in the bracket H, the length of the hole or slot determining the amount of the additional movement imparted to the comb, and in yet another arrangement for the said purpose an arm J projects on both sides of the stripping-comb, one part of the arm J bearing with one side against the bracket H, a spring or a weight *h'* upon the other part of the arm J, as indicated in Fig. 4, serving to keep such arm J in contact with the bracket H. Further, instead of using an arm and a slotted bracket I may form on the bracket a rack K, as shown in Fig. 5, and fix on the comb or the shaft, rod, or bar on which it is mounted a pinion or sector L, which gears into or engages with the rack K, and so causes the comb to oscillate. From what I have said it is obvious that the additional oscillation of the stripping-comb can be obtained in many ways without departure from the nature of my invention.

In addition to giving the movements above described to the stripping-comb my invention also consists in imparting to such stripping-comb a longitudinal movement, so as to enable it to still more effectually strip the flats, and to obtain this movement I form in the comb-shaft *a*, as shown in Fig. 6, a spiral or helical groove, into which a stationary peg, pin, or the like *a''* passes, or I form, as shown in Figs. 9

and 10, in a stationary part a spiral or helical groove, into which a peg or pin *a''\** (see Figs. 9 and 11) or the like on the comb-shaft *a* is made to project, in either of which arrangements the oscillation of the comb-shaft will cause such comb-shaft to move lengthwise both in the upward stroke of the comb and the downward stroke thereof.

Set-screws, lock-nuts, and other requisite and suitable means for enabling the various parts of the mechanism to be adjusted relatively to each other are provided.

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

1. In a revolving-flat carding-engine, the combination of a stripping-comb for stripping the flats, a comb-bar to carry such comb, arms to support such comb-bar, a shaft whereon such arms are fixed, and means whereby one of such arms may engage a cam, a cam to engage therewith and oscillate the said arms and so raise and lower the said comb-bar, and means secured upon the said comb-bar and in engagement with a fixed part, for the purpose hereinbefore described.

2. In a revolving-flat carding-engine the combination of a stripping-comb for stripping the flats, a comb-bar to carry such comb, arms to support such comb-bar, a shaft whereon such arms are fixed, means whereby the said comb-bar is caused to engage with one of the arms in which it is mounted and receive a longitudinal movement when oscillated therein, means whereby one of such arms may engage a cam, a cam to engage therewith and oscillate the said arms and so raise and lower the said comb-bar, and means secured upon the said comb-bar and in engagement with a fixed part for the purpose hereinbefore described.

3. In a revolving-flat carding-engine, the combination of a stripping-comb for stripping the flats, a comb-bar to carry such comb, arms to support it, a shaft whereon such arms are fixed, means whereby one of such arms may engage a cam, a cam F to raise and lower the said stripping-comb and formed with a part *f'* having a gradual progression in a direction from its axis and a part *f* having a more abrupt retrogression in the reverse direction, and means secured upon the said comb-bar and in engagement with a fixed part for the purpose hereinbefore described.

4. In a revolving-flat carding-engine, the combination of a stripping-comb for stripping the flats, a comb-bar to carry such comb, arms to support such comb-bar, a shaft whereon such arms are fixed, means whereby one of such arms may engage a cam, a cam F to raise and lower the said stripping-comb and formed with a part *f'* having a gradual progression in a direction from its axis and a part *f* having a more abrupt retrogression in the reverse direction, means whereby the said comb-bar is caused to engage with one of the arms in which it is mounted and receive a longitudinal movement when oscillated there-

