

J. DOYLE.
Hair-Picking Machines.

No. 147,111.

Patented Feb. 3, 1874.

Fig. 1.

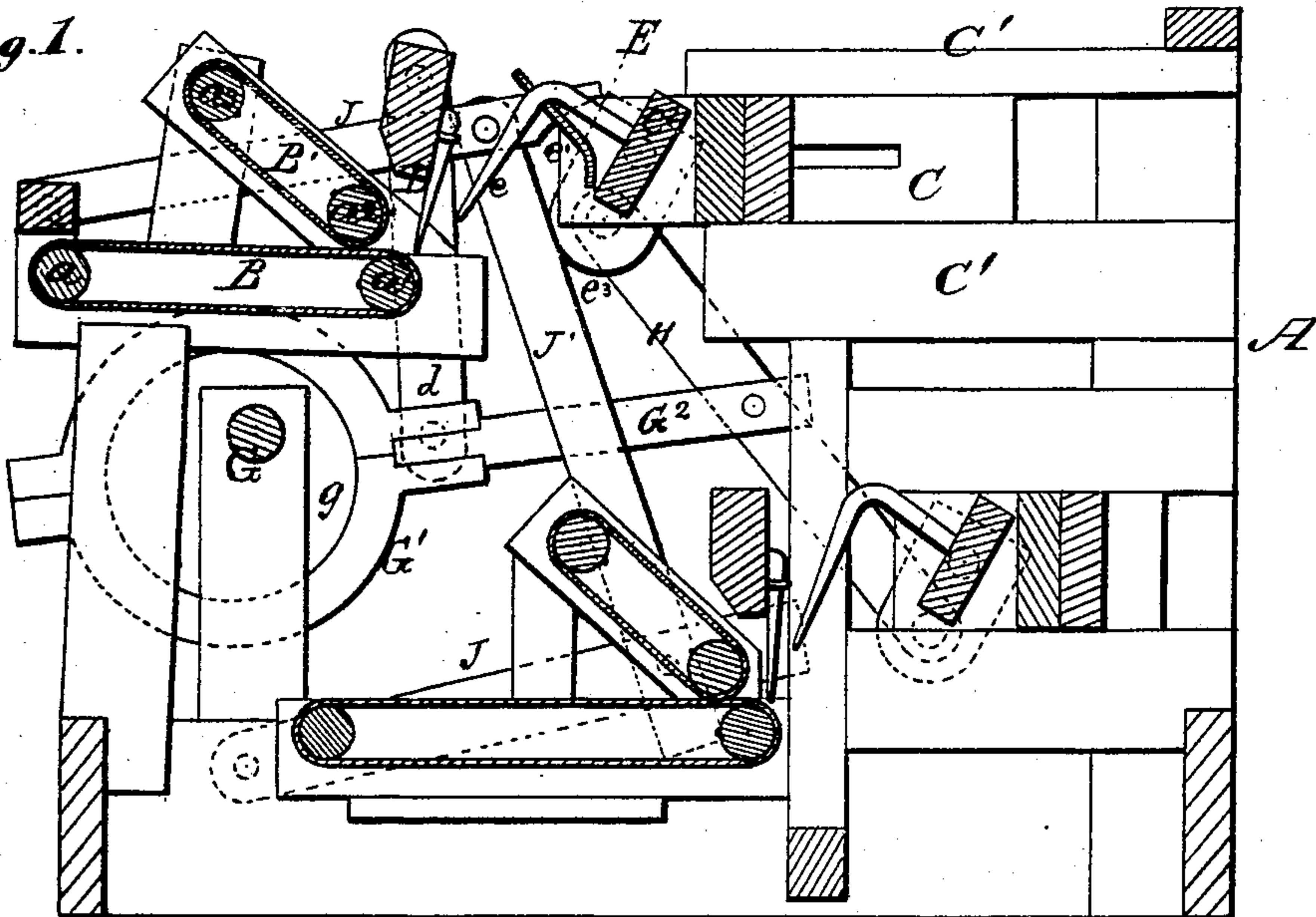
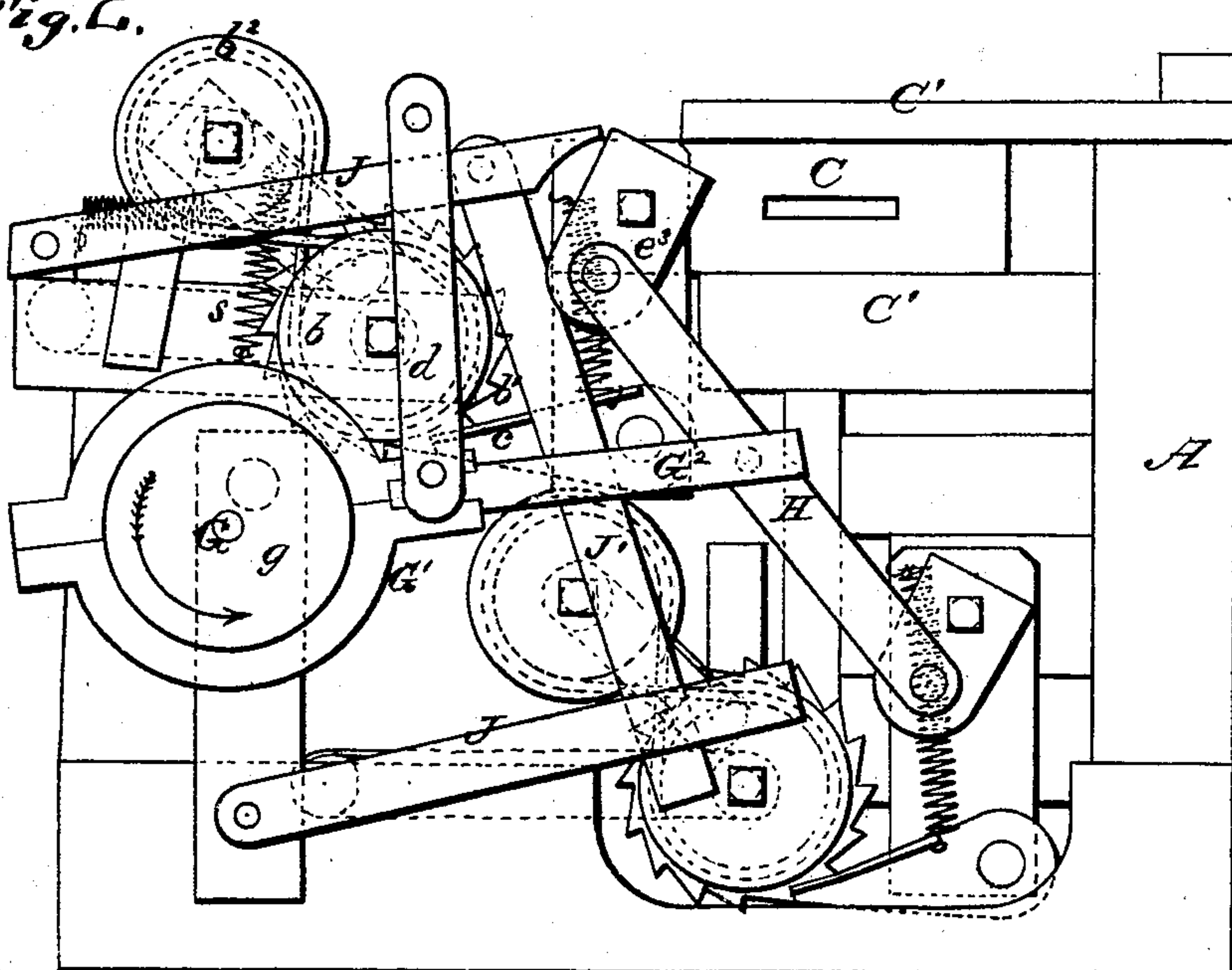


Fig. 2.



Witnesses.

E. A. Bates.

Geo. E. Upham.

Inventor.

John Doyle,
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Atty

UNITED STATES PATENT OFFICE.

JOHN DOYLE, OF HOBOKEN, NEW JERSEY, ASSIGNOR OF ONE-HALF HIS
RIGHT TO CHRISTOPHER CLARK, OF SAME PLACE.

IMPROVEMENT IN HAIR-PICKING MACHINES.

Specification forming part of Letters Patent No. 147,111, dated February 3, 1874; application filed
December 27, 1873.

To all whom it may concern:

Be it known that I, JOHN DOYLE, of Hoboken, in the county of Hudson and State of New Jersey, have invented a new and valuable Improvement in Machines for Picking Hair and other fibrous substances; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a sectional view of my machine. Fig. 2 is a side view of the same.

This invention has relation to machinery for picking hair, wool, and other substances requiring to be crushed and straightened. It consists, essentially, in a novel combination of devices whereby the material to be picked is fed between endless aprons, and temporarily held by a vertically-reciprocating comb, and while thus held it is picked and straightened by means of another comb, which receives a vibrating raking motion and a rectilinear reciprocating motion, as will be hereinafter explained.

The following is a description of my improvement:

In the annexed drawing, A represents the main supporting-frame, and B B' are two belts or aprons, between which the material to be picked is fed to the picking devices. The lower apron B is horizontal, and may be of any desired length. It is applied to two rollers, a a^1 , one of which, a^1 , carries a belt-wheel, b , and a ratchet-wheel, b^1 , on one end. The apron B' is inclined, and is applied to two rollers, a^2 a^3 , one of which, a^2 , is held down upon the roller a^1 by means of springs s s . The other roller, a^3 , has its bearings in standards rising from frame A, and carries on one end a belt-wheel, b^2 . The belt which is applied to the wheels b b^2 is crossed, so that the movements of the two endless aprons will feed the material regularly between the rollers a^1 a^2 , and these movements are derived from a spring-pawl, c , on a reciprocating frame, C. As the material is delivered from the two

aprons, it is penetrated by means of a vertically-reciprocating comb or toothed holder, D, the horizontal transverse head of which is connected, by pitman-rods d , to yokes G^1 G^1 , actuated by cams g g on a driving-shaft, G. While the material is thus held by the comb D, that portion of it which is exposed beyond the apron is acted on by means of a drawing-comb, E, which consists of a row of hooked teeth, e , a webbing or guard, e^1 , and a head, e^2 . The head e^2 has its bearings in the rectilinear reciprocating frame C, and is allowed to oscillate in this frame. The ends of the head e^2 have crank-arms e^3 on them, which are connected to the pitman-rods G^2 of yokes G^1 by means of connecting-rods H. The frame C slides in ways C^1 of frame A, and the comb E receives a bodily reciprocating motion with its frame, and also a vibrating motion about its axis, which two motions combined produce a raking combing action on the material, which action has been found best adapted for straightening out the fibers of the material.

The relative movements of the parts above described are so adjusted and timed that, as the frame C approaches the delivery ends of the feed-aprons B B', the pawl c moves the aprons a proper distance to feed out a quantity of material—say, for instance, hair. The comb D is then brought down far enough for its teeth to pass through the delivered hair, and hold it for the subsequent operation of the drawing and straightening comb E.

It will be seen from the annexed drawings that I have arranged below, and a little to one side of the devices above described, another feeding, holding, and straightening mechanism, which receives its movements from the main shaft G, as will be presently explained, and which differs from the above only in this, that the teeth of the lower combs are arranged to act on the untangled fibers left by the teeth of the upper combs.

If desired, the operations of combing and straightening may be repeated several times, or until the hair is properly straightened, and these operations may be continuous.

The lower aprons B B' receive intermittent rotary motions from a pawl on a frame carry-

ing the lower drawing-comb, and this frame receives its motions from the connecting-rods H H, which are pivoted to crank-arms on the vibrating head of the lower comb. The lower holding-comb, corresponding to the upper comb D, receives its motions from the head of this latter comb by means of vibrating arms J J and connecting-rods J'. The arrangement of the lower aprons is such that the hair is fed directly between them from the delivery end of the upper feed-aprons.

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

1. In a hair-picking machine, the vertically-reciprocating toothed holder or comb D, in

combination with a rectilinear reciprocating and vibrating drawing-comb E and endless feed-aprons B B', substantially as described.

2. In a hair-picking machine, the pawl c on frame C, combined with the ratchet-wheel b¹, the pulleys b b², their belt, the endless feed-aprons B B', and springs S, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN DOYLE.

Witnesses:

GEORGE E. UPHAM,
D. D. KANE.