

(No Model.)

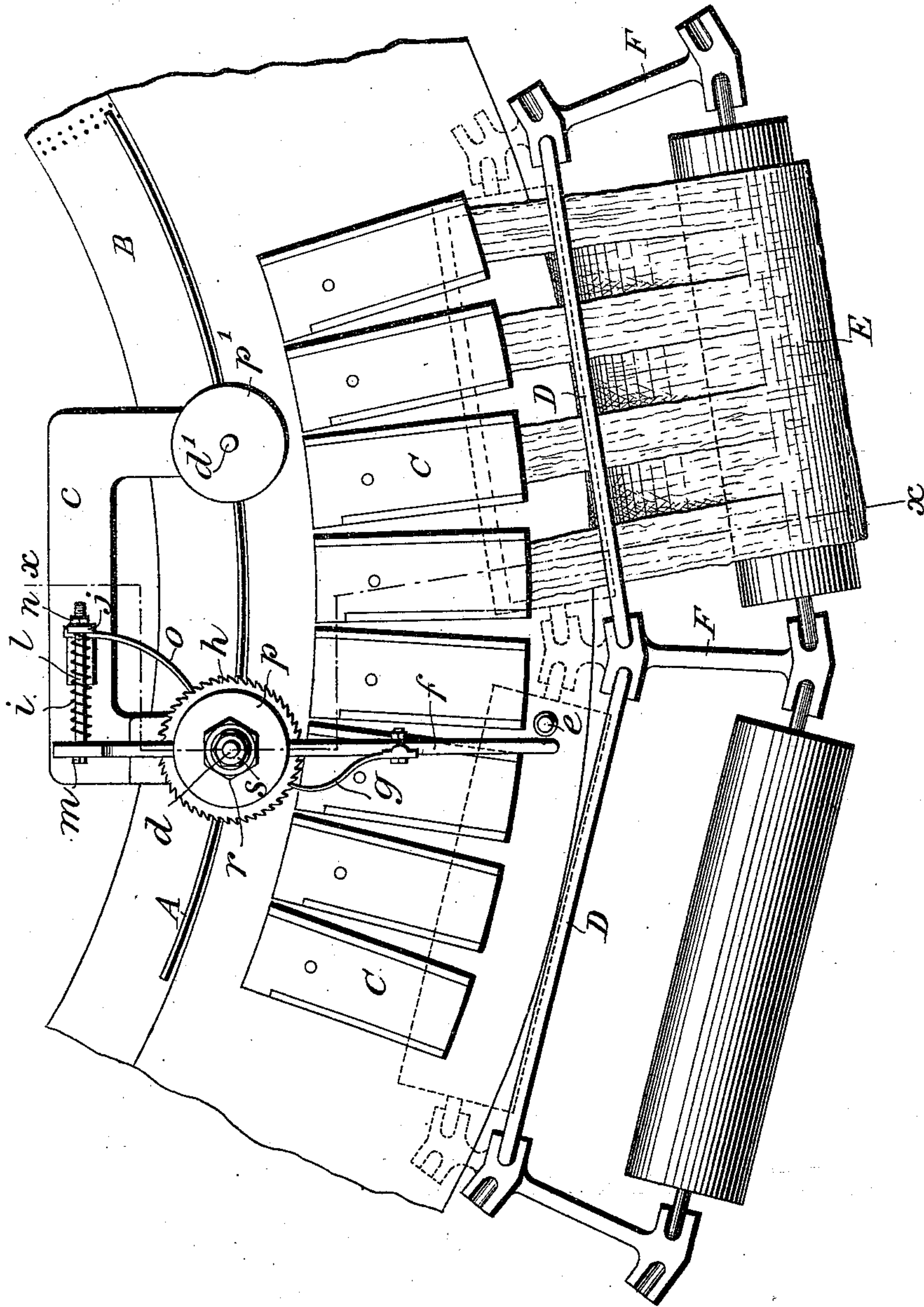
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A. N. SHARP & S. METCALFE.
COMBING MACHINE.

No. 546,600.

Patented Sept. 17, 1895.

Fig. 1.



WITNESSES.

William. Bairstow
John Patrick

INVENTORS.

Alexander Dorman Sharp
Samuel Metcalfe

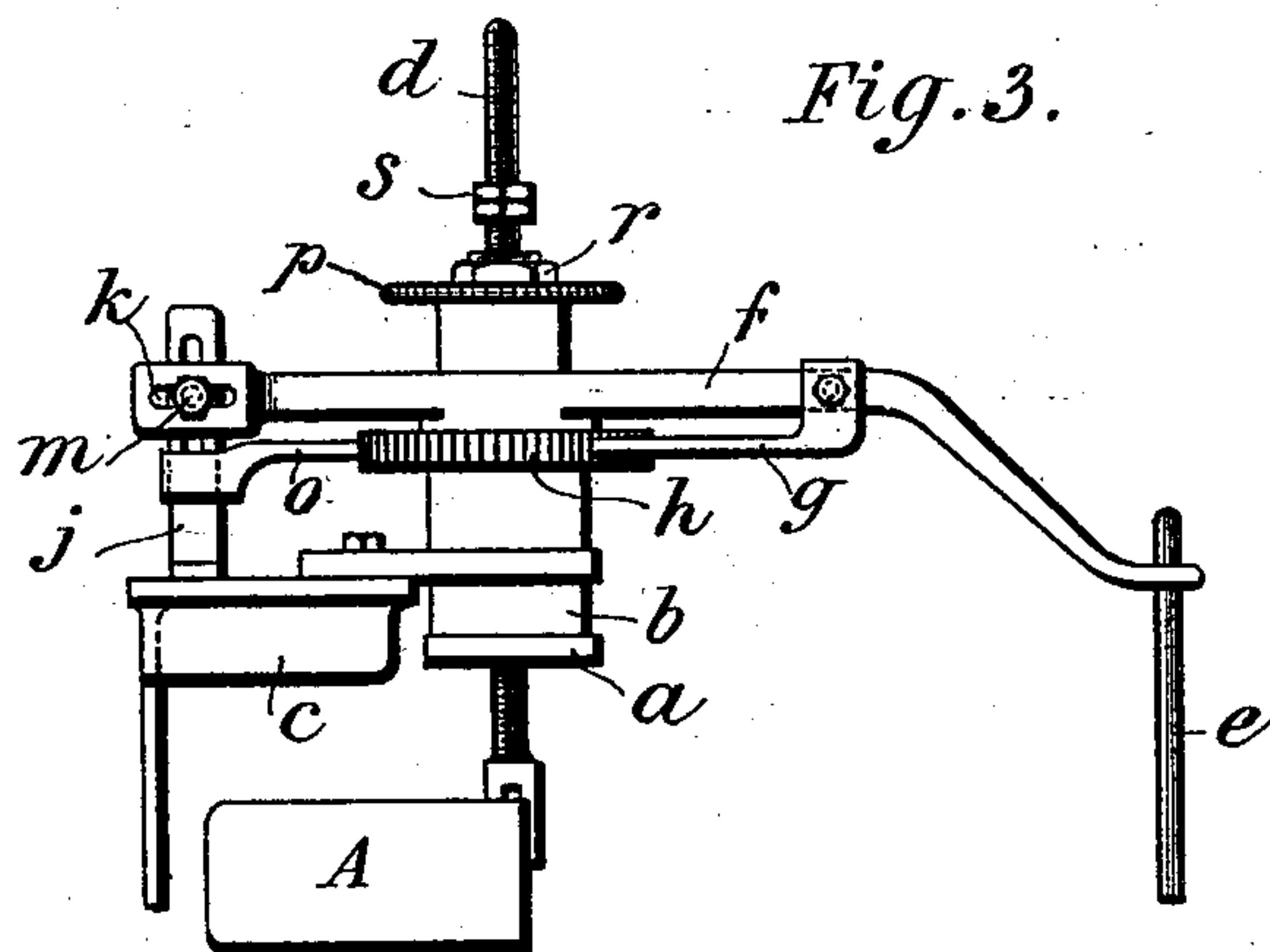
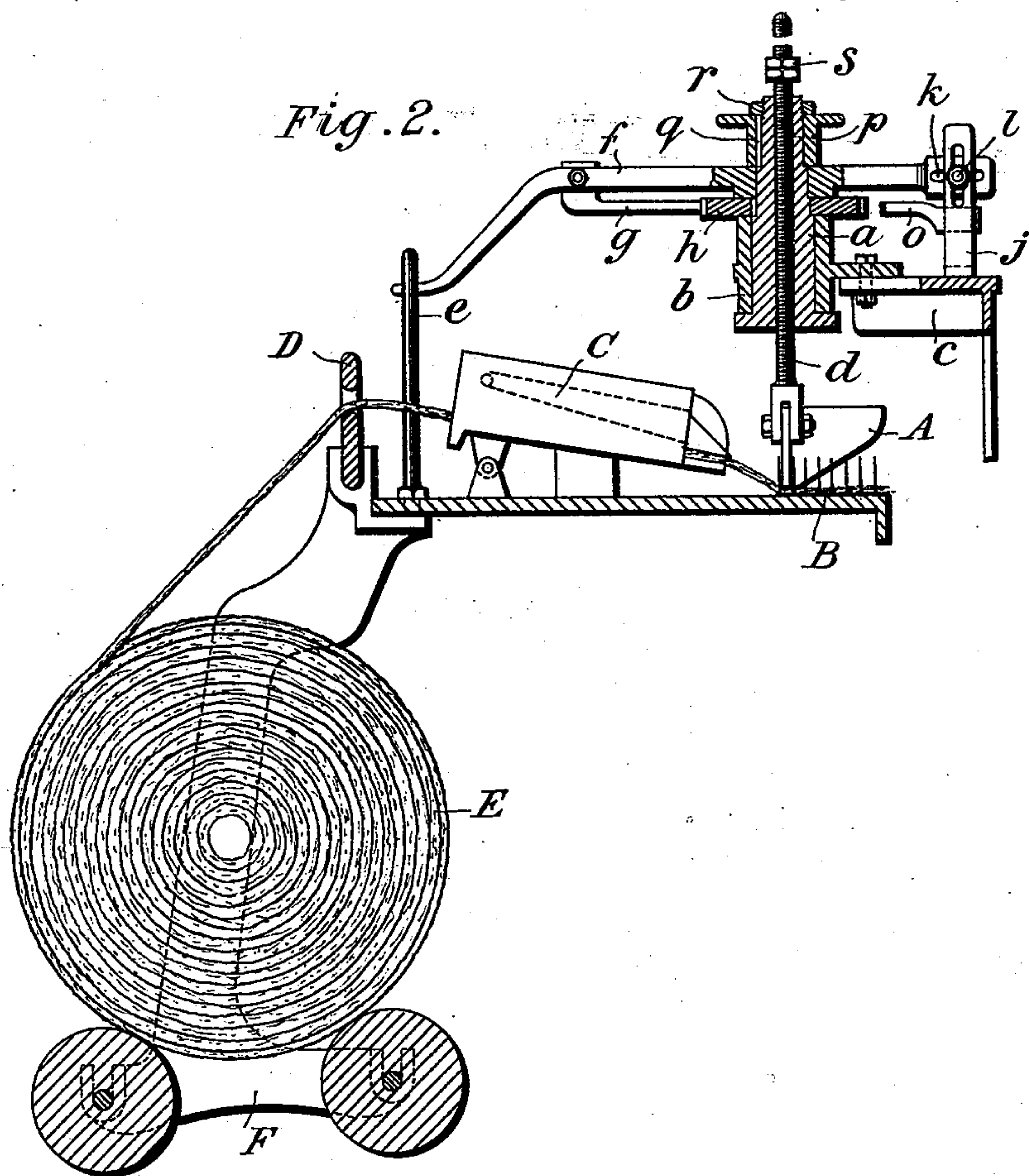
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A. N. SHARP & S. METCALFE.
COMBING MACHINE.

No. 546,600.

Patented Sept. 17, 1895.



WITNESSES.

William Barstow
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INVENTORS.

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(No Model.)

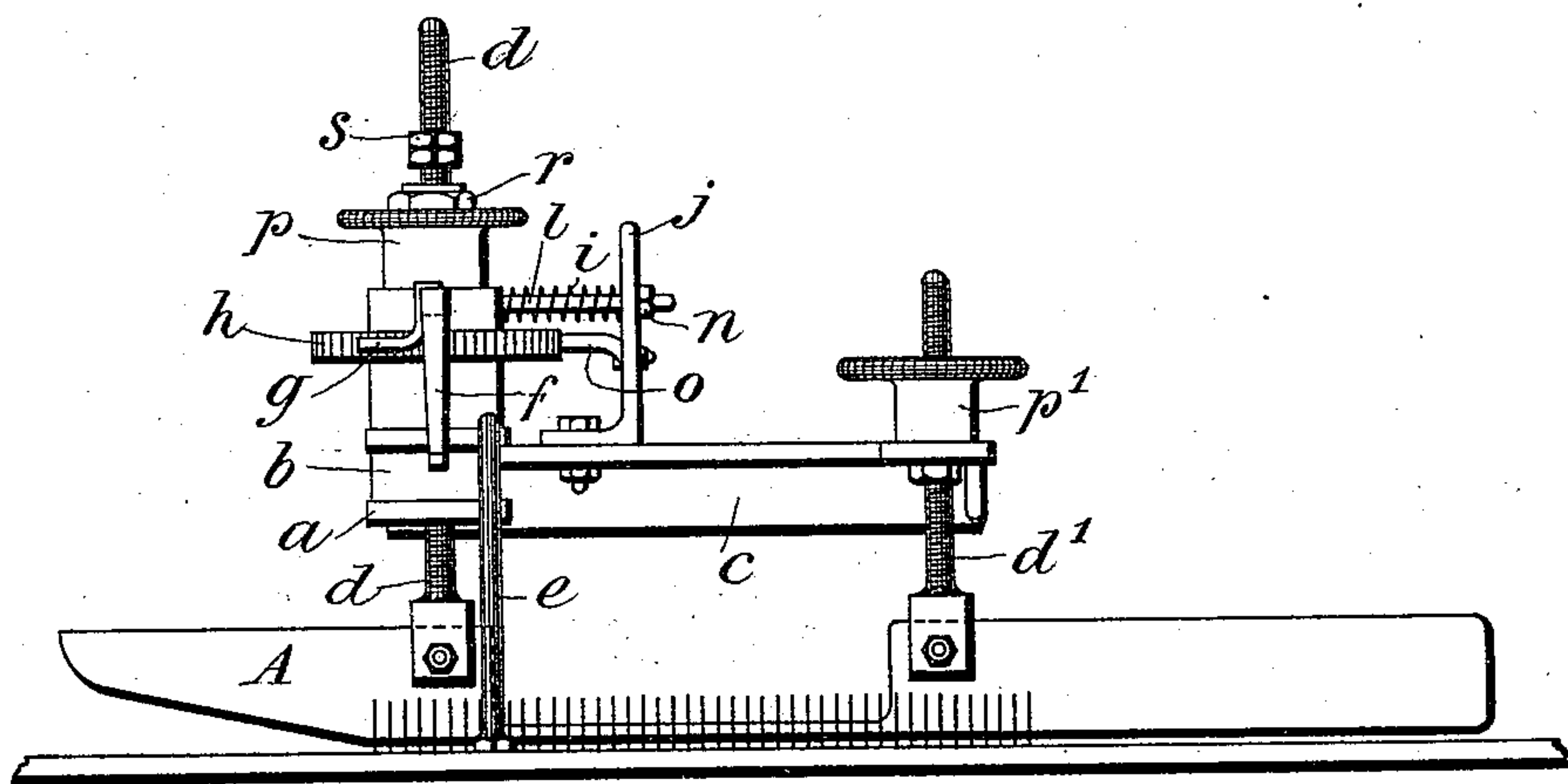
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COMBING MACHINE.

No. 546,600.

Patented Sept. 17, 1895.

Fig. 4.



WITNESSES.

William Baird
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INVENTORS.

Alexander Herman Sharp
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UNITED STATES PATENT OFFICE.

ALEXANDER NORMAN SHARP AND SAMUEL METCALFE, OF BINGLEY,
ENGLAND.

COMBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,600, dated September 17, 1895.

Application filed April 5, 1895. Serial No. 544,613. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER NORMAN SHARP and SAMUEL METCALFE, subjects of Her Majesty the Queen of Great Britain, residing at Bingley, in the county of York, England, have invented a certain new and useful Improvement in Combing-Machines, of which the following is a specification.

This invention relates to a new or improved appliance for the even feeding of the material in a combing-machine, and has for its object the producing of a perfectly even sliver and noil from the commencement of a full set of balls unto the finish thereof. The balls at the commencement, being large, require the feed-knife to be in its lowest position, (to draw through the conductors sufficient wool or other fibrous material necessary to feed the comb,) and therefore at its greatest friction on the wool or other fibrous material, and as said balls are reduced in size and weight the friction of the feed-knife, according to our invention, is proportionately reduced by being gradually raised, thus causing it to feed perfectly even. For this purpose we provide an appliance or apparatus for gradually raising the knife, which apparatus is illustrated in the accompanying drawings, in which—

Figure 1 represents a plan view of a portion of a Noble's combing-machine containing the feed-knife and our improved appliance in position. Fig. 2 is a cross-section on line $x x$, Fig. 1, showing the feed-knife, comb-circle B, conductor C, guide D, and a ball of wool or other fibrous material E in position on the creel F. Fig. 3 is an elevation of our appliance, looking at it from the other side. Fig. 4 is a front elevation.

Our improved appliance is fitted in the same manner to both sides of the comb; but in the following description we have only described it in connection with one side of the machine. The feed-knife A is attached at one end to the screwed spindle d and at the other to a similar spindle d' , adjustable by an ordinary nut p' . The screwed spindle d works in a nut a , having three shoulders or reduced portions, which nut is capable of revolving in the bored casting b , fixed to the feed-bracket c . The screwed spindle d and feed-knife A are

gradually raised by means of a vertical tappet e , carried by the outer comb-circle B, coming in contact on every revolution of the outer circle with the lever f , (which works loose on the second shoulder of the nut a ,) to which is attached the spring-pawl g , which moves the ratchet-wheel h , which is keyed onto the first shoulder of the nut a , causing it to revolve slightly, and consequently gradually raising the spindle d and feed-knife A at the end nearest to where the wool re-enters the combs. To bring the lever f back after being moved by the vertical tappet e , we employ a spiral spring i , which bears against the lever f and a small upright j , mounted on the feed-bracket c . The spiral spring i and the lever f (by means of the slot k) work loosely on a stud l , having a head m , said stud being secured by a nut n to the upright j . The lever f , with the slot-hole k , is always forced back against the head m on the stud l by the spiral spring i immediately the tappet e has passed and is ready for the next revolution of the tappet. To prevent any backward movement of the nut a , we employ a small spring pawl or catch o , secured to the upright j and engaging with the ratchet-wheel h . At the commencement of each set of balls the feed-knife A is lowered into position by the hand-wheel p , which is fastened onto the third shoulder of the nut a by means of a key q and a nut r . The two lock-nuts s act as stops to limit the movement of the feed-knife A.

It is obvious that other mechanical arrangements may be used to raise the feed-knife A; but we prefer the one herein described.

What we claim is—

1. In a combing machine of the character described, the combination with a feed-knife, of a screwed spindle connected thereto; a nut on said spindle; a spring pawl for holding the nut against backward movement; a ratchet carried by the nut, a rocking lever; means for supporting same; a pawl carried by said lever and engaging with the ratchet; and a tappet carried by a moving part of the combing machine for operating the lever to rotate the ratchet and nut, and thus gradually raise the feed knife, substantially as and for the purposes described.

2. In a combing machine of the character described, the combination with the feed knife, of a screwed spindle connected thereto; a nut on said spindle; a spring pawl for holding the nut against turning backward; a ratchet carried by the nut; a rocking lever; means for supporting the same; a spring for replacing same, means for supporting the spring; a pawl carried by the lever and engaging with the ratchet; a wheel secured to the nut for rotating the latter by hand; stops for limiting the movement of the nut; and a tappet carried by a moving part of the combing machine for operating the lever to rotate the ratchet and nut, and thus gradually raise the feed knife, substantially as described.

3. In a combing machine of the character described the feed knife, a screwed spindle connected thereto, a nut on said spindle, means for holding the nut, a ratchet carried by the nut, a rocking lever, means for supporting same, a pawl carried by said lever and engaging with the ratchet, and a tappet carried by a moving part of the combing machine for operating the lever to rotate the ratchet and nut, and thus gradually raise the

feed knife substantially as and for the purpose described.

4. In a combing machine of the character described, the feed knife, a screwed spindle connected thereto, a nut on said spindle, means for holding the nut, a ratchet carried by the nut, a rocking lever, means for supporting the same, a spring for replacing same, means for supporting the spring, a pawl carried by the lever and engaging with the ratchet, a wheel secured to the nut for rotating the latter by hand, stops for limiting the movement of the nut, and a tappet carried by a moving part of the combing machine for operating the lever to rotate the ratchet and nut, and thus gradually raise the feed knife, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

ALEXANDER NORMAN SHARP.
SAMUEL METCALFE.

Witnesses:

WILLIAM BAIRSTOW,
JOHN PATRICK.