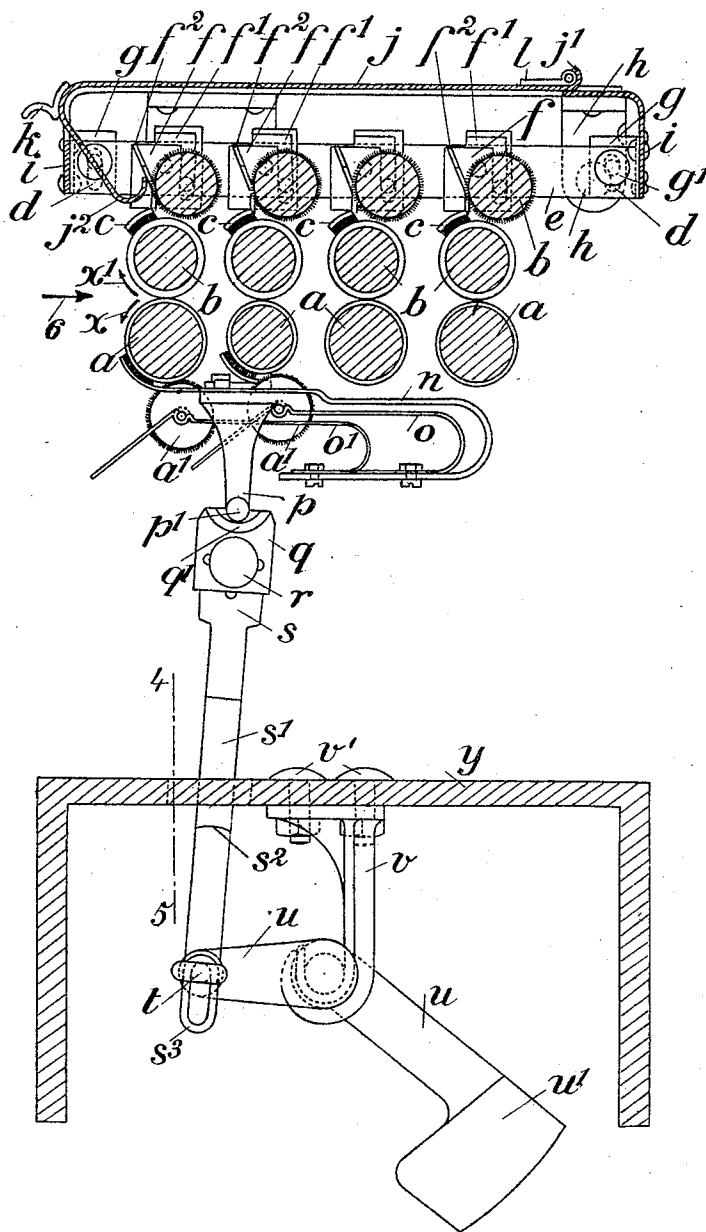


932,977.

2 SHEETS—SHEET 1.

Fig. 1.



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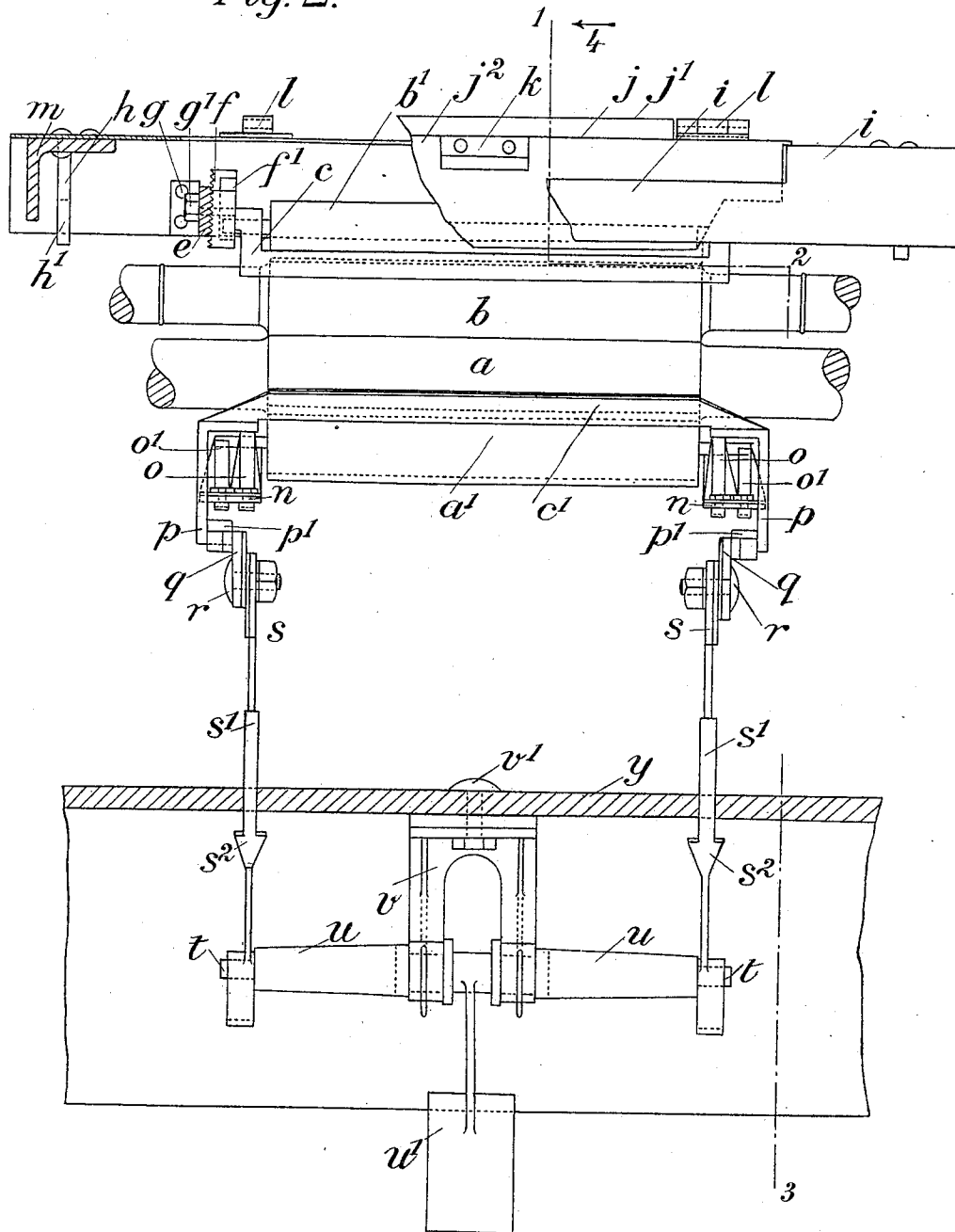
By William, John Witherspoon
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A. P. ESCUBOS.
 MEANS FOR CLEANING THE DRAWING ROLLS OF ROVING FRAMES, &c.
 APPLICATION FILED JULY 28, 1908.

932,977.

Patented Aug. 31, 1909.
 2 SHEETS—SHEET 2.

Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALBERTO PLANAS ESCUBOS, OF BARCELONA, SPAIN.

MEANS FOR CLEANING THE DRAWING-ROLLS OF ROVING-FRAMES, &c.

932,977.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed July 28, 1908. Serial No. 445,847.

To all whom it may concern:

Be it known that I, ALBERTO PLANAS ESCUBOS, a subject of the King of Spain, residing at Barcelona, in the Province of Barcelona, Spain, have invented certain new and useful Improvements in Means for Cleansing the Drawing-Rollers of Roving-Frames, Drawing-Frames, Combing-Machines, and the Like; and I 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 means for cleansing the drawing rollers of roving frames, drawing frames, combing machines and like cotton spinning machines and has for its object to maintain said rollers in a perfectly clean condition, so as to prevent the soiling of the threads under treatment. To this end, namely to remove the waste from the drawing rollers of the spinning machines above referred to, brushes have been hitherto employed arranged in various ways, either cylindrical and revolving brushes, or moving or fixed brushes of the surface plate type, or fixed brushes formed with a concave surface; but in all cases, one brush has been applied to each of the drawing rollers. In practice it has been found that the devices above referred to may be applied to the upper or pressure rollers of the cotton spinning machines, but as regards the lower or fluted metal rollers, it has been found that only fixed brushes formed with a concave surface are suitable, though the great deal of waste which they pick up is one of the principal causes, or perhaps the chief cause of the soiling of the threads.

My invention consists in fitting the upper drawing rollers as well as the lower drawing rollers with concave brushes adapted to retain the waste of the rollers and followed by cylindrical revolving brushes adapted to pick up the waste from the concave brushes. The latter are independent of the circular brushes which are covered with suitable material and work by gravity on or against the upper rollers and by springs or weights on the lower ones.

In carrying out my improved system or combination of brushes, *i. e.* concave fixed brushes and circular revolving brushes, I provide a mechanism composed of two parts, one which corresponds to the upper rollers

and the other to the lower rollers. As regards the upper rollers, said mechanism consists substantially of two parallel beams located above the upper rollers and at right angles to their axes, which are fitted with as many bearings as brushes have been provided for, and each bearing is fitted with a groove to freely hold the concave brush and with another groove to hold the circular brush, so that the brushes are always in contact, by gravity, with the corresponding roller, and may be raised and lowered again to the operative position. The beams and bearings are so disposed that their position may be regulated at will, according to the predetermined distance to be left between the drawing rollers.

As regards the lower rollers, the mechanism is composed substantially of two supports or platforms, one at each side adapted to hold the concave brushes, and they are fitted with springs whereby the circular brushes are also held in proper position. Each support is connected to a rod adapted to be held in position by means of a weight or spring, so that the whole does not constitute a rigid system, but it enables the brushes to accurately adapt themselves to the working surfaces of contact. The concave brushes in contact with the rollers receive a pressure independent from that imparted to the revolving brushes, whereby suitable elasticity is given to the whole system.

This invention retains the advantages incidental to concave brushes and to circular brushes, without their inconveniences which are neutralized by the peculiar form and arrangement of parts of the mechanism.

In the accompanying drawings, Figures 1 and 2 represent a part of a drawing frame with my new or improved mechanism having concave and revolving brushes applied to the four upper rollers; the improved mechanism is applied only to two of the lower rollers, as in practice a greater number thereof will not be necessary. Fig. 1 is a sectional view taken on line 1, 2, 3, of Fig. 2 in direction of the arrow —4— and Fig. 2, is a front view, part in section on line —4—5— in direction of the arrow —6— showing the top-plate and cover partially broken away.

—a— are the lower fluted rollers and —b— are the upper pressure rollers which are usually covered with skin. Above each of the upper pressure rollers —b— is a con-

cave brush —*c*— and behind it there is a circular brush —*b*¹—. Below each of the two last fluted rollers —*a*— is a concave brush —*c*¹— and behind it there is a circular revolving brush —*a*¹—. The contact surface of all these rollers is covered with velvet or other suitable material and said contact surface may be larger or smaller according to the kind of work to be performed.

10 The brushes are so disposed that when the machine is at work, the rollers —*a*—*b*— revolve in direction of the arrows —*x*—*x*¹—.

The operation of the device is as follows: When the machine is at work, the rollers —*a*—*b*— carry along the waste and transfer it to the concave fixed brushes —*c*—*c*¹—; but the revolving brushes —*a*¹—*b*¹—, being placed adjacent thereto, take up all the waste as it emerges from the brushes —*c*—*c*¹— and roll it over in the form of a lap or fleece.

At each end of the circular brushes *b*¹ is a beam *e* which is rigidly secured to the cover *i*, adapted to cover all the mechanism. The upper part of the cover —*i*— is formed with a suitable opening covered by a top plate —*j*—, the object being to facilitate the adjustment of parts and to control the operation of the brushes. The front end of the plate —*j*— forms a pocket —*j*²— to receive the short fiber waste which sometimes is thrown away from the first and second rollers and is carried along in the air between the cover and the brushes, thus preventing such waste from being mixed with the wrought lap. The top plate —*j*— has its edge —*j*¹— bent upward so as to be held in place when raised. On the opposite end the top plate —*j*— is provided with a catch —*k*— whereby it may be raised and lowered.

40 The cover —*i*— is fitted with angle bars —*m*— at the front part and with angle bars —*h*— at the rear part thereof, the latter having a hole —*h*¹— for the pivot of the swinging cover —*i*— to pass through.

45 The beams —*e*— are adjustably arranged on the cover —*i*— and to this effect vertical openings —*d*— are formed at both ends, so that by means of suitable bolts —*g*¹— and angle bars —*g*— bolted to the cover —*i*—, the position of said beams —*e*— may be vertically regulated. The beams —*e*— carry the bearings —*f*— adapted to hold and guide the concave brushes —*c*— and the circular brushes —*b*¹—. The position of the bearings —*f*— on beams —*e*— may be regulated by means of horizontal openings and bolts not shown in the drawings; and at the same time one face of the beams —*e*— and one face of the bearings —*f*— are finely toothed in order that said bearings may be run horizontally while keeping always their vertical position.

Each bearing —*f*— is formed with a groove —*f*¹— which is open at the upper horizontal part and closed at the lower end

of the vertical part thereof; said grooves being adapted to guide and receive the trunnions of the brushes —*b*¹— and to sustain them when the framework —*e*—*e*— is lifted. The angular shape given to these grooves 70 has for its object to prevent the circular brushes from dropping out when the beams —*e*— take a vertical position, subsequent to the swinging of the cover —*i*— on the pivot —*h*¹—. Each of the bearings —*f*— is also 75 formed with an inclined groove —*f*²— intended to guide the concave brushes; the upper end of said grooves is open and the lower end is closed, so that when raising the beams —*e*— the brushes are carried along 80 therewith. The inclination of the grooves —*f*²— must be constructed to facilitate the adaptation of the concave surface of the brushes to the convex surface of the rollers —*b*—.

At each end of the fluted rollers —*a*— is arranged a brush-holder, composed of a support —*p*— to which is fixed a metal plate —*n*— carrying the concave brushes —*c*¹—. The plate —*n*— is bent downward in U 90 shape and the lower part of it carries two springs —*o*—*o*¹— adapted to hold the revolving brushes —*a*¹—.

The lower end of the supports —*p*— is formed with a pin —*p*¹— which rests in the 95 concave bearing —*q*¹— of the head —*q*— rigidly connected to the upper end of a socket —*s*—: the lower end of the socket —*s*— is pivotally connected, by means of a pin —*t*— passing through a hole —*s*³—, to one 100 end of the angular lever —*u*— carrying a weight —*u*¹— at its other end. The socket —*s*— is formed at its upper end with a vertical slot, while the head —*q*— is formed also with a horizontal slot, in order to connect 105 both parts to one another and secure them together in proper position, by means of a bolt —*r*—. The contact surfaces of head —*q*— and socket —*s*— are longitudinally toothed to facilitate the adjustment 110 of the head. The socket —*s*— Fig. 2, presents an enlarged or thicker part —*s*¹— having lateral teeth —*s*²— and passing through a suitable opening in the table —*y*—: this opening is formed with two portions, one 115 which corresponds to the part —*s*¹— to guide it when the mechanism is at work, and another portion which corresponds to the size of —*s*— into which the socket is thrown when the brush-holder must be taken out, 120 in which case the socket is retained by the tooth formed by —*s*¹—. By means of the lateral teeth —*s*²— when the brush-holders are taken out there is no risk of the heads —*q*— rubbing against the drawing rollers. 125

Lever —*u*— oscillates upon the support —*v*— to be fixed on the table —*y*— by means of bolts —*v*¹—.

I claim:

1. In a device of the character described, 130

the combination of a series of rollers, a concave brush and a cylindrical revolving brush for each roller, and means for supporting said brushes, including a cover, parallel
5 beams with vertical holes in their ends secured to said cover, said beams being provided with right-angled holes for the reception of the bearings of the circular brushes and with inclined holes for the reception of
10 the bearings of the concave brushes, substantially as described.

2. In a device of the character described, the combination of a plurality of rollers, a concave brush and a cylindrical revolving brush
15 for each roller, two parallel beams provided with suitable bearings to hold said brushes, a cover connected to said beams and covering the whole mechanism, said cover being provided with a cut away portion and a top
20 plate normally closing said cut away portion, one end of which is bent downwardly,

forming a pocket to receive the fine waste carried along between the rollers and the cover, substantially as described.

3. In a device of the character described, 25 the combination of a series of rollers, a concave brush and a cylindrical revolving brush for each roller, a pivotally mounted support in which said concave brushes are mounted, springs supporting the cylindrical brushes 30 in contact with said rollers, a socket in which the lower end of said support rests, an arm extending downwardly from said socket, and a weighted lever pivotally connected to the lower end of said arm, substantially as de- 35 scribed.

In testimony whereof I affix my signature, in presence of two witnesses.

ALBERTO PLANAS ESCUBOS.

Witnesses:

CONSTANTINO HENR. CRIDO,
STANLEY A. HARRIS.