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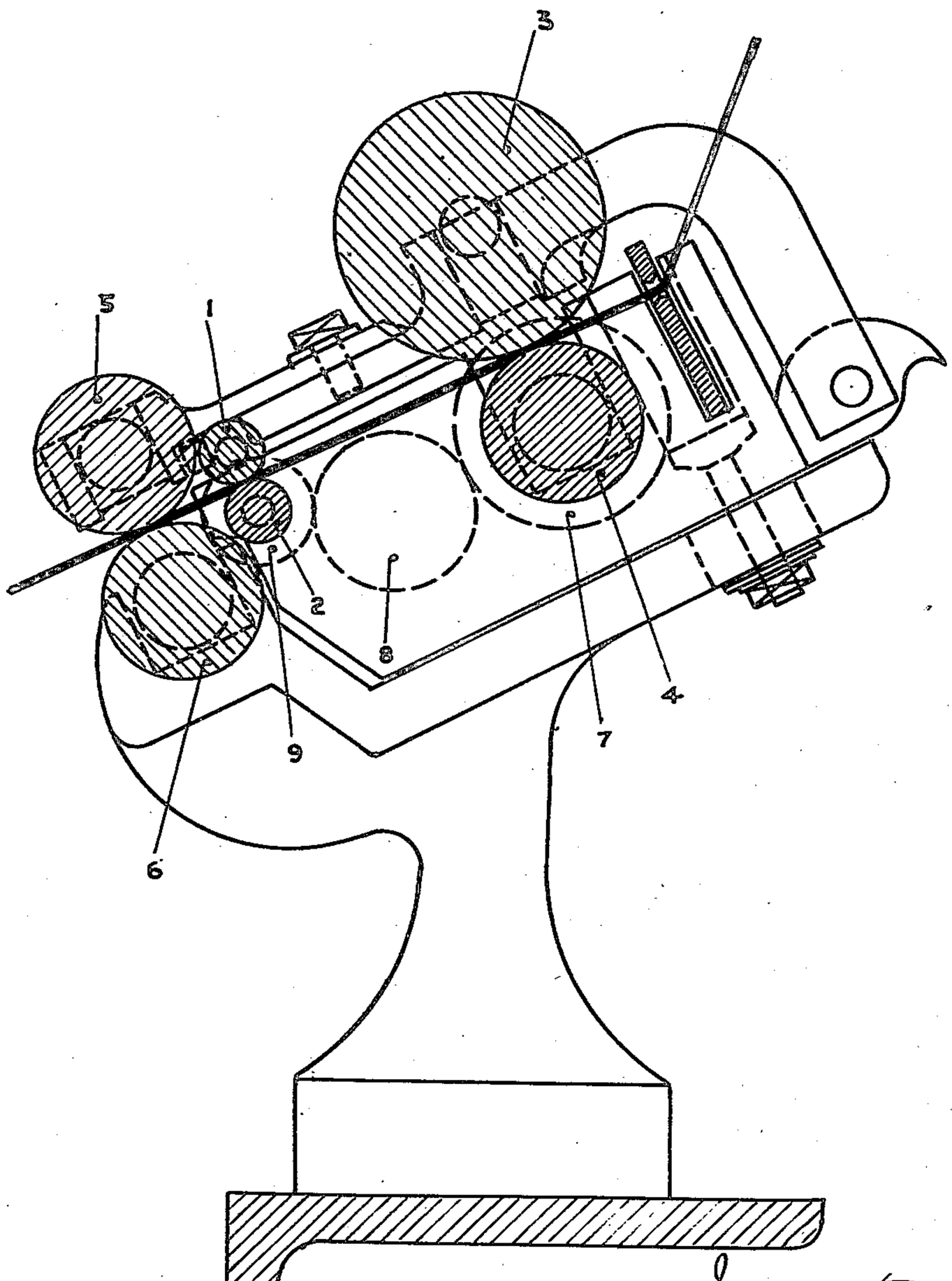
F. CESONI ET AL

ARRANGEMENT FOR DRAWING FRAMES IN SPINNING MACHINES

Filed July 9, 1920



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UNITED STATES PATENT OFFICE.

FRANCESCO CESONI AND ARTURO LIRUSSI, OF VIGEVANO, ITALY.

ARRANGEMENT FOR DRAWING FRAMES IN SPINNING MACHINES.

Application filed July 9, 1920. Serial No. 395,064.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

To all whom it may concern:

Be it known that FRANCESCO CESONI and ARTURO LIRUSSI, subjects of the King of Italy, residing at Vigevano, Italy (whose post-office address is Via Principe Amedeo 4), have invented certain new Arrangements for Drawing Frames in Spinning Machines (for which I have filed application in Italy, N. 426/50, Patent No. 140,502 dated 12th February, 1914), of which the following is a specification.

The drawing of the fibrous material in spinning machines is ordinarily effected by two or more pairs of rollers which are so arranged that the circumferential velocity of the one pair of rollers is as much greater than that of the directly preceding pair of rollers as the degree of the pull is intended to be, which it is desired to obtain between the particular two pairs of rollers.

The distance between the tangential lines of two pairs of rollers in a spinning machine can always be so regulated that it is approximately the length of fibre of the yarn to be prepared, as otherwise the fibres which are firmly attached at the point of contact of the cylinders of each pair of rollers would tear in consequence of the different circumferential velocities of the cylinders if the distance were shorter than the length of fibre or would divide in an irregular manner if the distance between the pair of rollers were greater than the said length of fibre so that in both cases an uneven yarn would result.

The improvement in connection with the drawing frame, which forms the object of the present invention, is based on the principle of not making the fibres fast at the place of contact of the intermediate cylinders of an ordinary drawing frame, whereby it is made possible for the fibres to move to a certain extent one over the other.

According to this principle other arrangements have already been suggested and employed; but the solution was only obtained with complicated mechanism, as for example guide-leathers or the like, which, however were too expensive and accompanied by considerable practical difficulties particularly in slubbing machines in consequence of the large number of short fibres and the amount of dust which is set free from the fibre material band in the drawing operations.

One form of the improved drawing frame is illustrated in the accompanying drawing.

The intermediate pair of rollers consists in this case of two cylinders 1 and 2 of small diameter, the lower of which 2 is driven by means of tooth-wheels, whilst the other 1, which is loosely mounted and lies directly on the lower cylinder is set in rotation by friction with this latter, the axes of the two rollers of course always remaining parallel; 3 and 4 in the drawing are the two drawing-in cylinders, which form the pair of feed rollers and deliver the fibrous material to the intermediate pair of rollers 1, 2. The actual drawing cylinders are indicated in the drawing as 5 and 6.

The feed roller 4 as well as the drawing cylinders 6 are driven at the head end of the spinning machine, whilst the roller 2 which has a smaller diameter is set in rotation at its intermediate bearing places by the cylinder 4 through a tooth-wheel gear which consists, in addition to the tooth-wheel 7 attached to the cylinder 4, of the transmission or gear wheel 8 and the tooth-wheel 9 mounted on the cylinder 2.

The driving of the thin roller 2 by the drawing-in cylinder 4 may however, be effected by any other mechanical means, for example by chains, belts, rollers, ropes and the like.

With the above described device a drawing of the fibrous material is obtained in a spinning machine, that is much greater than that obtained with an ordinary drawing frame, so that if the same be employed for example in cotton spinning, the bobbins of the slubbing frame or of the intermediate frame can be brought direct on the spinning machine according to the number of the yarn to be prepared,

We claim:

A drawing frame for spinning machines, comprising a first pair of rollers for feeding the fibres, a second pair of rollers for guiding the fibres, a third pair of rollers for drawing the fibres, the second pair of rollers being intermediate the first and third pair of rollers, the diameters of the second pair of rollers in respect to the diameters of the third pair being so related that the

second pair of rollers may be brought closely to the third pair of rollers and within the gap thereof, and the distance between the pressure lines of the second and third pairs of rollers is less than the normal fibre lengths of the material to be treated, and the weight of the upper roller of the second pair of rollers is such as not to hold the fibres but to permit a slippage of the fibres therethrough without tearing the same, whereby a greater drawing is obtained than heretofore possible in the standard drawing frame.

In testimony whereof they have affixed their signatures in presence of two witnesses.

ING. FRANCESCO CESONI.
ARTURO LIRUSSI.

Witnesses:
R. CHAS. PRIMPELL,
CHAS. SHWARTZ.