

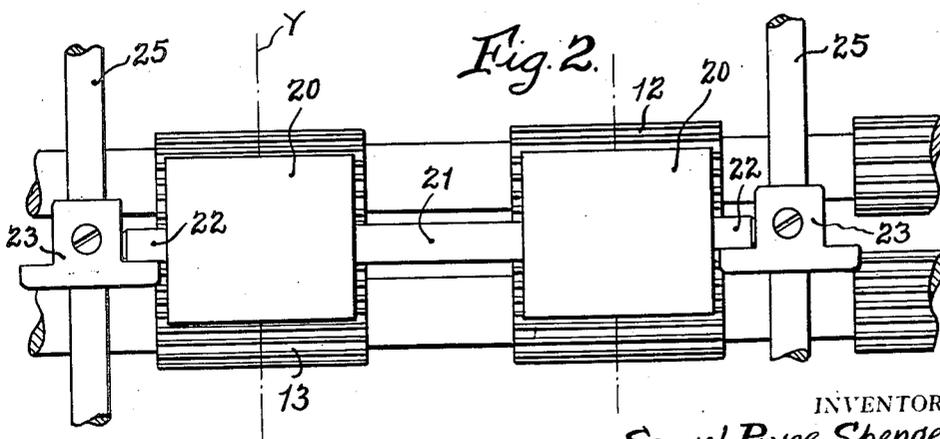
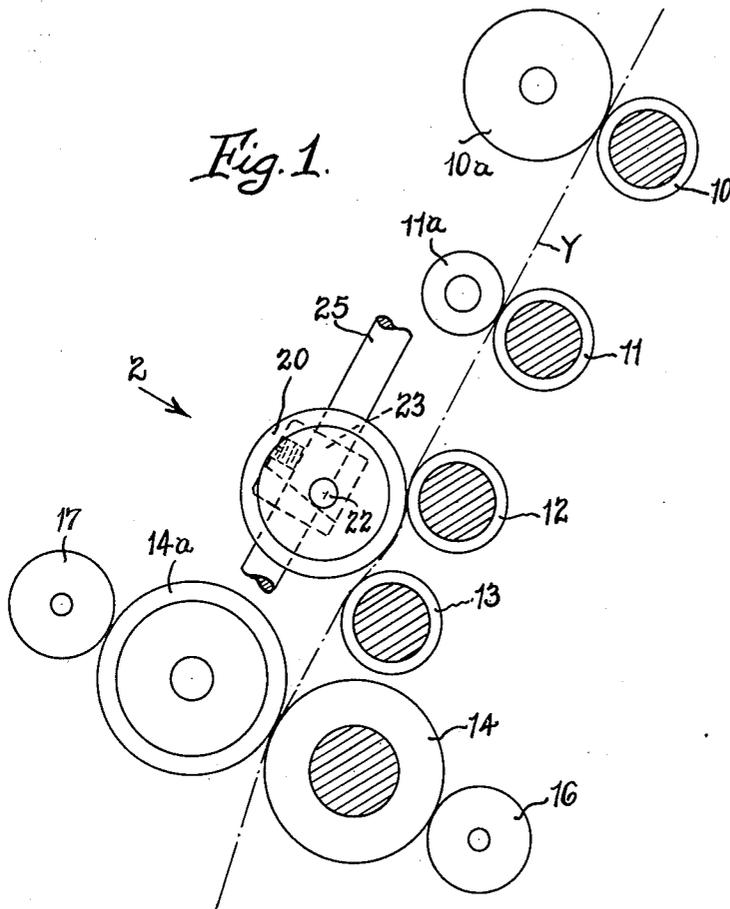
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S. P. SPENCER

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MEANS TO PREVENT THE ACCUMULATION OF WASTE IN DRAFTING SYSTEMS

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INVENTOR.

Samuel Pryce Spencer.
BY *Chas. T. Hawley*

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MEANS TO PREVENT THE ACCUMULATION OF WASTE IN DRAFTING SYSTEMS

Samuel Pryce Spencer, Whitinsville, Mass., as-
signor to Whitin Machine Works, Whitinsville,
Mass., a corporation of Massachusetts

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2 Claims. (Cl. 19—130)

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This invention relates to the drafting of relatively long textile fibers, such as wool or synthetics or a mixture thereof. Such fibers are commonly passed through several pairs of parallel drafting rollers, and it is found difficult to prevent fly or waste from accumulating in front of the successive pairs of rollers and particularly in front of the last or delivery pair.

If a bunch of fly or waste passes into the yarn from the delivery rollers, a defective product will result. Clearer devices of different sorts have been tried but with only partial success. They all act on the principle of picking-out and bodily removing the accumulated waste material.

It is the general object of my present invention to provide means to continuously consolidate the fly or waste with the yarn fibers as the sliver approaches the front or delivery rolls, rather than trying to remove the waste material after it has been allowed to accumulate.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings, in which

Fig. 1 is a sectional side elevation of a set of drawing rolls with my invention applied thereto; and

Fig. 2 is a partial plan view, looking in the direction of the arrow 2 in Fig. 1.

Referring to the drawings, I have shown lower drafting rolls 10, 11, 12, 13 and 14 and corresponding upper rolls 10a, 11a, 14a and 20. The lower rolls 10, 11, 12, 13 and 14 are long metal rolls, commonly fluted, and are positively rotated. The rolls 10, 11, 12 and 14 are rotated at progressively increased speed.

The back or feeding rolls 10—10a and the front or drawing rolls 14—14a are weighted in any known manner. The top rolls 11a and 20 are self-weighted to permit the strand Y to slip between the rolls 11—11a and 12—20.

The upper roll 14a may be rubber-covered, and small clearer rolls 16 and 17 may be held in yielding engagement therewith, or may be omitted if preferred.

My improved construction relates particularly to the provision of the upper roll 20, preferably rubber covered, and located as indicated in Fig. 1.

The rolls 20 are commonly provided in pairs, with a connecting shaft 21 and having bearing portions 22 positioned by bearing blocks 23 adjustably secured on transverse fixed rods 25 which form parts of the usual drafting equipment.

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The center of each roll 20 is so positioned that the yarn Y is displaced from its normal straight travel between the rolls 12 and 13, and the roll 20 also substantially clears the roll 13, commonly by about $\frac{3}{8}$ ". The distance between the rolls 13 and 20 may be adjusted by shifting the blocks 23 on the rods 25.

The lower roll 13 is rotated at a somewhat slower surface speed than the adjacent rolls 12 and 20, so that the yarn Y will have a slight forward slip motion relative to the surface of the roll 13.

With this construction, the yarn Y is in contact with adjacent portions of the rolls 12 and 20 over substantial areas, and there is a definite wiping action relative to the more slowly rotated roll 13. This has a pronounced tendency to consolidate the yarn and to press any loose elements of fiber, lint or fly into the yarn before it can accumulate and form a bunch. This wiping action is continuous and the yarn delivered to the front rolls 14 and 14a is found to be substantially free from any accumulation of lint or fly.

While this change in construction is relatively simple, a very marked improvement in the quality of the product is produced thereby.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. In a drafting mechanism, a pair of upper and lower back rolls, a pair of upper and lower front rolls, first and second intermediate lower rolls designated in the direction of yarn travel, all of said lower rolls having their top surfaces substantially tangent to a single straight line, said lower rolls being continuously rotated at such speeds that the surface speeds of the first intermediate lower roll and of the front lower roll are increased progressively over the speed of the back lower roll but that the surface speed of the second intermediate lower roll is less than the surface speed of either the first intermediate lower roll or the front lower roll, a top roll for said first intermediate lower roll, and means to position said top roll to slightly clear the second intermediate lower roll and to substantially displace the yarn fiber toward and between said first and second intermediate lower rolls.

2. In a drafting mechanism, a pair of upper and lower back rolls, a pair of upper and lower front rolls, first and second intermediate lower rolls designated in the direction of yarn travel, all of said lower rolls having their top surfaces substantially tangent to a single straight line,

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said lower rolls being continuously rotated at such speeds that the surface speeds of the first intermediate lower roll and of the front lower roll are increased progressively over the speed of the back lower roll but that the surface speed of the second intermediate lower roll is less than the surface speed of either the first intermediate lower roll or the front lower roll, a top roll for said first intermediate lower roll, means to position said top roll to be substantially displaced relative to said first intermediate lower roll in the direction of yarn travel and to entirely clear the second intermediate lower roll, and with the yarn-engaging surface of said top roll projecting definitely beyond the straight line of yarn travel over said lower rolls, and means to vary the

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clearance between said top roll and said second intermediate roll.

SAMUEL PRYCE SPENCER.

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