

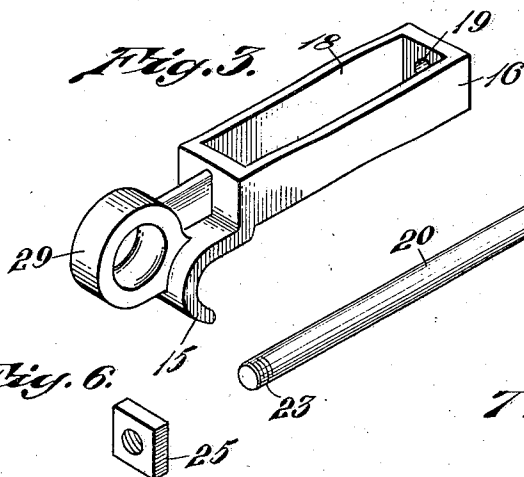
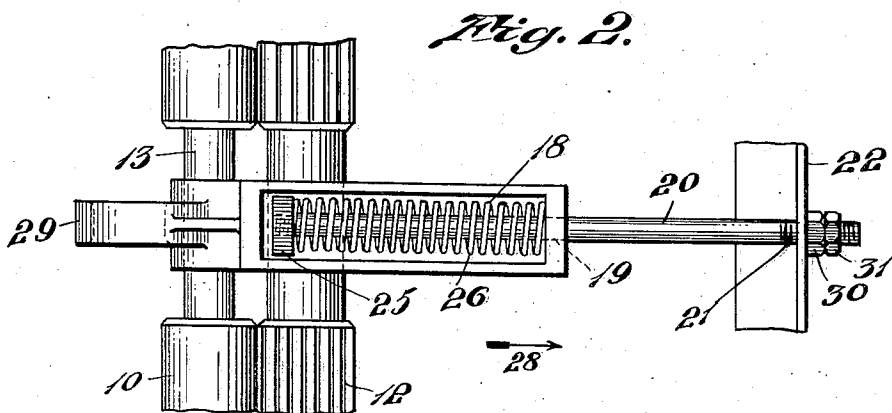
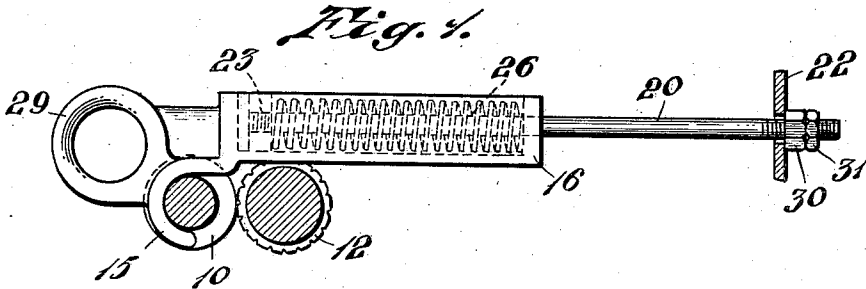
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PRESSURE MECHANISM FOR DRAFTING APPARATUS

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PRESSURE MECHANISM FOR DRAFTING APPARATUS

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4 Claims. (Cl. 19—135)

This application is a division of my co-pending application, Serial No. 34,577, filed August 3, 1935, for a Drafting apparatus.

This invention relates to pressure mechanisms for applying the necessary working pressure on the draft rolls of apparatus used for drawing textile fibers; and has for one of its objects to provide tensioning means for applying tension to the top draft rolls independently of their weight and in a substantially horizontal or any plane.

Another object of the invention is the provision of a tension mechanism of the above character which is so arranged as to act in substantially a single plane and also in the plane of each drafting unit assembly in order for more convenience in storage and the minimizing of space taken up by any one drafting unit enabling the different drafting units to be placed closely together.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a side elevation of one form of tensioning mechanism embodying my invention, the parts being shown in their normal operating position with respect to the draft rolls;

Fig. 2 is a top plan view of the same tension mechanism shown in Fig. 1;

Fig. 3 is a perspective view of the support member of my tension mechanism;

Fig. 4 is a perspective view of the rod member of my tensioning mechanism;

Fig. 5 is a detail perspective view of the spring member of my tensioning mechanism; and

Fig. 6 is a perspective view of the abutment member of the tensioning mechanism.

In the usual drafting apparatus for textile fibers, one common arrangement heretofore employed for applying the necessary working pressure upon the sliver or roving material passing between the pairs of draft rolls has been to load the top rolls by means of weights, each of which exerts its action on the associated top roll by means of a depending connecting arm which acts upon the top roll either directly or by being transmitted thereto through a saddle or pressure bar which is seated on one or more of the top rolls. In such prior pressure mechanisms, the weight is suspended either directly from the connecting strap or from an auxiliary lever which is coupled to the strap, and the weight thus exerts its action on the upper roll in addition to the self-weighting action of the latter to produce the requisite pressure on the textile fibers. However,

the suspended arrangement of the saddles and associated pressure transmitting parts of such former pressure apparatus when in their working position occupy much of the valuable space in the upper part of the machine and are not suitable for use when the rolls are in a horizontal plane or in constructions which have a close arrangement of pairs of draft rolls above one another at different levels; and in order to effect the application of the requisite pressure on the upper rolls which will be free from such objections, I have found it to be of advantage to provide a tensioning mechanism for applying tension to the top draft rolls independently of their weight in which the tension mechanism is arranged substantially in the plane of each drafting unit assembly, and in a single plane which is preferably horizontal; and I have further found it desirable to so tension the draft rolls by applying relative pressures thereto as to cause the requisite tension action to be exerted on the rolls in a direction toward each other; and to this end, I have provided a simple construction of tension mechanism in which a body member is provided with an extension which acts upon the top roll to apply the necessary pressure upon the textile fibers, and this extension is tensioned on the top roll by means of a resilient member, which preferably consists of a coiled spring, positioned within the body member and interposed between the latter and a connecting rod rockably connected to a part of the frame of the machine; and I have also provided a tension mechanism which is so arranged as to enable the adjustment of working pressure or tension applied to the top draft roll whereby it may be varied at will in order that the desired normal working pressure may be obtained on the roving or sliver passing between the draft rolls; and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished:

With reference to the drawing, 10 and 12 designate a pair of draft rolls arranged one in front of the other, the rear roll 12 being of a fluted construction and fixedly mounted on the machine and driven by suitable mechanism, not shown. The top roll 10 is usually provided with an outer covering of leather. The rolls 10 and 12 are shown as having their axes substantially parallel and in the same horizontal plane, and the top roll 10 is provided with reduced intermediate portion 13 between the leather portions, as shown in Fig. 2, the front part of which connecting portion is en-

gaged by a curved finger 15 rigid with and extending downwardly and forwardly from the body portion 16 of the tension mechanism.

As shown in Figs. 2 and 3, the top of the body portion 16 is cut out as indicated at 18 to provide an elongated recess and form a yoke-like structure and is formed with a bore 19 adapted to receive a retractile rod 20 which is slidable therein. The rod 20 is shown as being rockably connected at one end as at 21 to some suitable stationary part of the framework 22 of the machine, while the inner end of the rod which extends within cutout portion 18 is suitably threaded as at 23 and carries an abutment member 25 to provide a suitable tension on a cylindrical helical spring 26 which is located within the cut out portion 18 of the body portion 16 and acts to urge the body 16 in the direction of the arrow 28, as indicated in Fig. 2. An eye 29 provides a suitable finger piece so as to permit a person to manually move the body 16 in a direction opposite to the arrow indicated in Fig. 2, and is formed at the end of the body 16 so that the depending finger 15 may be readily released for removing the top leather draft roll 10 from position. In this manner the tension or pressure exerted on the upper draft roll 10 is provided in a horizontal plane without resort to the weight of the roll as is customary in the prior art constructions. Nuts 30 and 31 threaded on the end portion 21 of the rod 20 enable the position of the rod 20 to be adjusted with respect to the framework 22 and causing graduated increases or reduction in pressure exerted upon the draft rolls by the action of the spring 26.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. In a drafting apparatus having a frame and a pair of draft rolls supported thereon one of which is mounted for movement toward the other, a mechanism comprising a body member having an elongated recess therein, a hook-shaped finger extending downwardly and forwardly from said body member for engaging the movably mounted draft roll, resilient means in said recess for ap-

plying tension to the movably mounted draft roll, and a handle for moving said body member to compress the spring and relieve the roll of pressure.

2. In a drafting apparatus having a frame and a pair of draft rolls supported thereon one of which is mounted for movement toward the other, a mechanism comprising a body member having an elongated recess therein, a finger extending downwardly from said body member for engaging the movably mounted draft roll, means including a coiled spring located in said recess for applying pressure on the movably mounted draft roll, and means for moving said body member to compress the spring and relieve the roll of pressure.

3. In a drafting apparatus having a frame and a pair of draft rolls supported thereon one of which is mounted for movement toward the other, a mechanism comprising a body member having an elongated recess therein, a finger extending downwardly from said body member for engaging the movably mounted draft roll, a rod rockably connected at one end to the frame and having its other end extending within the recess of said body, an abutment within said recess on the end of said rod therein, a coiled spring arranged within said recess and acting between said abutment and the portion of said body member about the part through which the rod extends whereby pressure is applied on said movably mounted roll, and means for moving said body member to compress the spring and relieve the roll of pressure.

4. In a drafting apparatus having a frame and a pair of draft rolls supported thereon one of which is mounted for movement toward the other, a mechanism comprising a body member having an elongated recessed portion, a finger extending downwardly from said body member for engaging the movably mounted draft roll, a rod rockably connected at one end to the frame and having its other end extending through a portion of said body member and within the recess of said body, an abutment carried by said rod, and a coiled spring arranged within said recess and about said rod and acting between said abutment of said rod and the portion of the body about the part through which the rod extends whereby pressure is applied on said movably mounted roll.

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