Nov. 28, 1939. J. A. ASBELLE 2,181,777

SPLIT DRAWING

Filed July 26, 1937 3 Sheets-Sheet 1

Fig. 1.

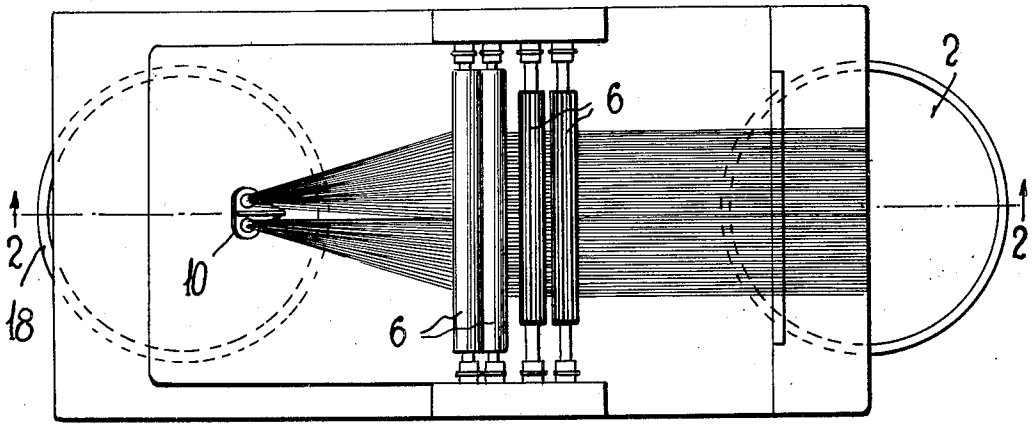
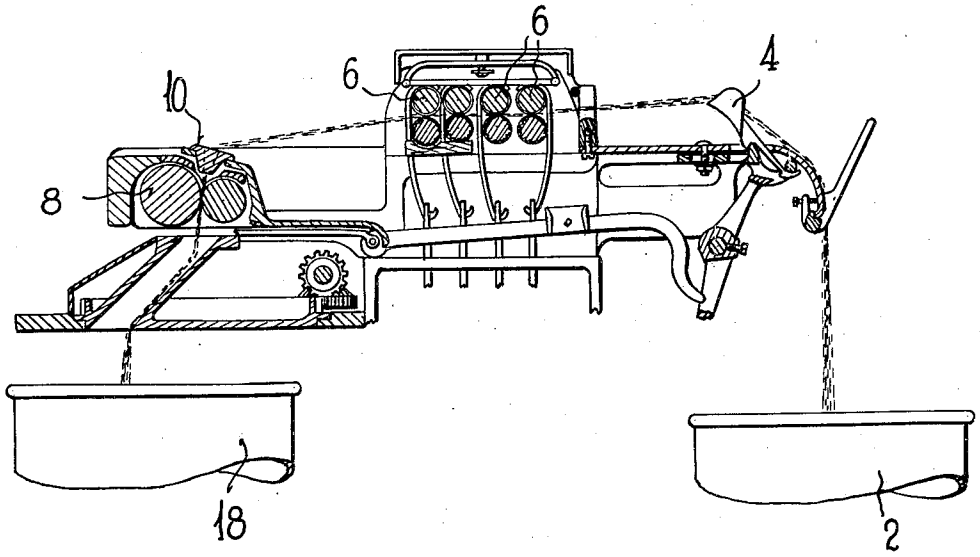


Fig. 2.



INVENTOR.
Julius Arthur Asbelle,
BY
Bailey & Carson
ATTORNEYS.

Nov. 28, 1939. J. A. ASBELLE 2,181,777

SPLIT DRAWING

Filed July 26, 1937 3 Sheets-Sheet 2

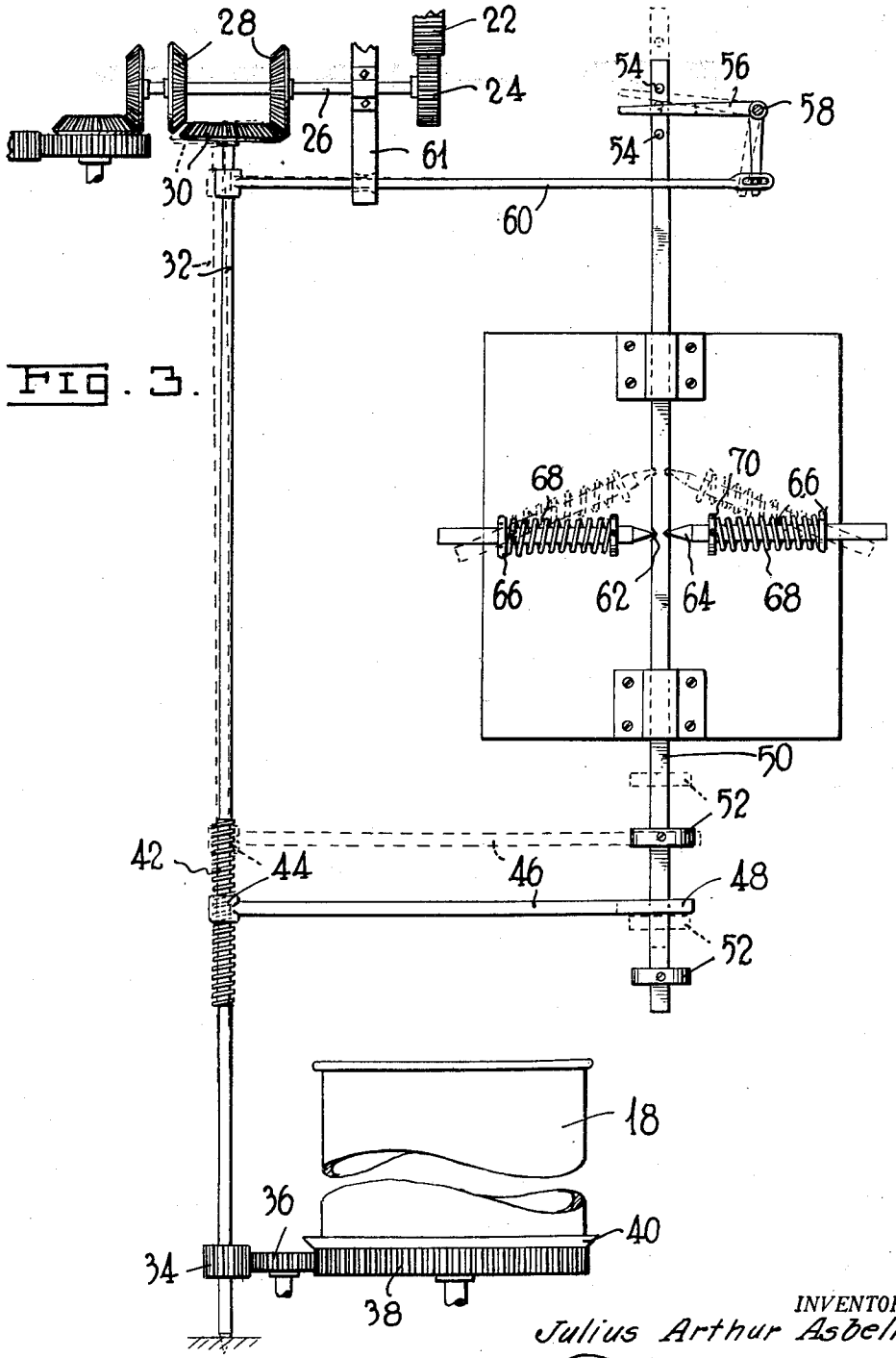


Fig. 3.

INVENTOR.
Julius Arthur Asbelle,
BY
Bailey & Carson
ATTORNEYS.

Nov. 28, 1939. J. A. ASBELLE 2,181,777

SPLIT DRAWING

Filed July 26, 1937 3 Sheets-Sheet 3

Fig. 4

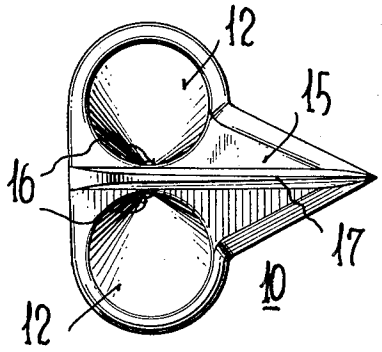


Fig. 5.

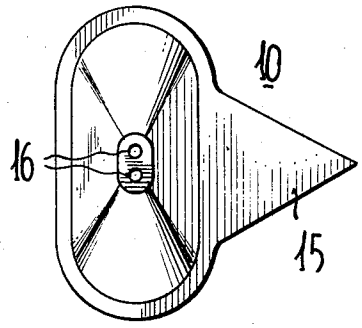


Fig. 6.

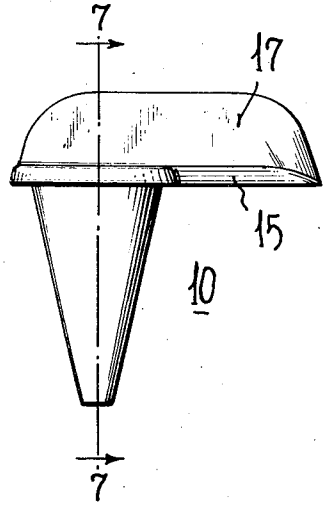
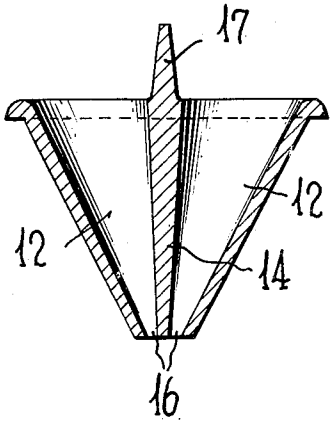


Fig. 7.



INVENTOR.

Julius Arthur Asbelle,

BY

Bailey & Carson

ATTORNEYS.

Patented Nov. 28, 1939 2,181,777

UNITED STATES PATENT OFFICE

2,181,777

SPLIT DRAWING

Julius Arthur Asbelle, Commerce, Ga.

Application July 26, 1937, Serial No. 155,799

4 Claims. (Cl. 19—157)

The invention relates to a method and apparatus for drawing textiles. More particularly, it relates to a process for splitting the drawing slivers on a railway head, sliver lap machine, comber or drawing frame.

A particular object of the invention is to provide a process and mechanism of this type which makes the use of long draft mechanisms unnecessary.

A further object of the invention is to provide a process and mechanism which reduces the number of cans needed for slubbers and thereby saves the amount of floor space required for the cans.

Still another object of the invention is to reduce the piecings or splicings in the roving.

Another object of the invention is to eliminate one or more roving processes, by reducing and equalizing the size of the slivers.

A further object of the invention is to produce a roving which can be run with less twist so that a stronger and evener yarn will be produced.

Broadly the invention contemplates the division of the regular web into two or more small slivers, these slivers coiling in a roving can which is turned alternately in opposite directions. For carrying out this process a specially constructed trumpet is used which is provided with two or more holes for the separate smaller slivers.

Further objects and advantages of the invention will appear more fully from the following description, particularly when taken in conjunction with the accompanying drawings which form a part thereof.

In the drawings:

Fig. 1 is a top plan view of a drawing frame embodying my invention;

Fig. 2 is a cross section on the line 2—2 of Fig. 1;

Fig. 3 is a detail view of the can drive;

Fig. 4 is a top plan view of the new trumpet;

Fig. 5 is a bottom plan view of the same;

Fig. 6 is a side elevation of the same;

Fig. 7 is a cross section on the line 7—7 of Fig. 6.

The use of the invention is shown in connection with a conventional drawing frame. This drawing frame includes a plurality of cans 2 behind the drawing frame, a conventional spoon 4, the four sets of drawing rolls 6 and the calender rolls 8.

Assuming that six of the cans 2 are provided, the drawing rolls will form a web by the rolling together of the six slivers from these cans. The prior practice has been to feed this web into a single trumpet. According to the present invention, on the other hand, the web is divided into a plurality of parts. In the form of the invention shown in the drawings, the web is divided into two parts which are fed into opposite sides of the trumpet 10 of a novel type which is shown in detail in Figs. 4 to 7.

The trumpet comprises a member having two separate passages 12 divided by a central wall 14 and each terminating in a hole 16 at the lower end of the trumpet. The passages are wider at their upper ends and taper down to the holes 16 which are located close together at the lower end of the trumpet. On the upper part of the trumpet is a lateral projection 15, and a dividing wall 17 extending thereabove and between the passages 12 which divides the web into a plurality of parts.

It is obvious that by this arrangement the drawing frame instead of forming one sliver at the calender rolls 8, will form two slivers each smaller than the sliver formed by the conventional machine. This formation of two slivers has a number of advantages. It permits the elimination of one or more roving processes. The multiple sliver runs between the calender rolls on the drawing frame, and if the thickness of either sliver increases, such sliver will receive more traction than the other one. This increased traction or friction will increase the draft on the thicker sliver and pull the larger sliver through the trumpet faster than the other, thereby making it smaller and equalizing the size of the two slivers. The result of this is to obtain improved equalization of the size of the slivers produced.

As the slivers pass through into the roving can 18, it is desirable to coil them in the can in such a manner as to prevent undesirable twisting, so that the two slivers may be withdrawn readily from the can. For this purpose, I provide means for rotating the can alternately in opposite directions, preferably through an angle of about 360°.

The mechanism for causing the rotation of the can may be of any suitable type. As shown in Fig. 3 of the drawings, it is driven from a gear which drives one of the calender rolls 8. This gear through an intermediate gear 22 drives a gear 24 mounted on a shaft 26. Fixed on the shaft 26 are two spaced oppositely disposed bevel gears 28, between which is shiftable a bevel gear

30 mounted on a shaft 32 in such a manner as to engage alternately with the two bevel gears 28.

The shaft 32 at its lower end carries a gear 34, which through gear 36 drives a gear 38 rigid with the base 40 on which the roving can 18 is mounted. It is thus evident that when gear 30 meshes with the gears 28 the roving can may be driven in two opposite directions.

In order to cause automatic reversal of the rotation of the roving can, the shaft 32 carries a worm section 42 with which is engaged a nut 44 on the end of an arm 46. Arm 46 has at its other end a fork or ring 48 slidably engaging a vertically arranged rod 50 and moving thereon between two stops or shoulders 52. At its upper end rod 50 is provided with two pins 54 between which is arranged one arm of a bell crank lever 56 pivoted at 58. To the other arm of the bell crank lever is secured a link 60 connected at its other end to the shaft 32 and passing through a member 61 mounted on the shaft 26 so as to guide the movement of the link or rod 60.

The rod 50 is also provided with two opposed notches 62 in which are engageable snap action members comprising bars 64 which are slidably and rockably mounted in frame members 66. Coil springs 68 engaging stops or shoulders 70 on the rods 64 normally urge the inner ends of these rods into engagement with the notches 62. This arrangement thus constitutes a snap action mechanism, since when the rods are moved beyond the central position shown in Fig. 3 in either direction the springs 68 will then push the rod 50 on to one or the other of its end positions.

The operation of the above described portion of the mechanism is as follows: Assuming that the gear 30 is in engagement with the left hand gear 28, the roving can will be turned by rotation of shaft 32. The rods 64 will be in the upper broken line position shown in Fig. 3. This rotation will shift the nut 44 downwardly until its end 48 strikes the lower collar 52. As the shaft 32 continues to turn it will shift the rod 50 downwardly until the upper pin 54 engages the bell crank lever 56 and turns it in a counterclockwise direction. At this time, the rods 64 will have moved to and slightly past the central solid line position shown in Fig. 3, and will then throw the rod 50 through their spring action to its lowermost position. As this occurs, upper pin 54 will move downwardly and will shift shaft 32 to the right so that gear 30 will engage the right hand gear 28. The roving can will then obviously be driven in the opposite direction, moving nut 44 gradually upwardly until the reverse operation occurs.

Thus the double sliver will be laid in alternate turns in opposite directions in the roving can.

While I have described herein one embodiment of my invention, I wish it to be understood that I do not intend to limit myself thereby except within the scope of the appended claims.

I claim:

1. In a machine for drawing textiles, drawing rolls for forming a plurality of slivers into a web, calender rolls, a trumpet having a plurality of passages therein located between said drawing rolls and said calender rolls for dividing said web into a plurality of slivers, and means for coiling said slivers in a single can.

2. In a device as claimed in claim 1, means for imparting intermittent rotation in opposite directions to the can.

3. A process which comprises combining a plurality of slivers into a smaller number at least equal to two, drawing said combined slivers through openings individual to each, and feeding said combined slivers into a single can while intermittently reversing the direction in which the slivers are laid in the can.

4. In a mechanism of the class described, means for imparting intermittent rotation in opposite directions to a can, means for combining a plurality of slivers into a web, means having a plurality of openings for dividing said web to form a smaller number of slivers at least equal to two, and means for drawing said last slivers individually through said openings and feeding such drawn slivers into the can.

JULIUS ARTHUR ASBELLE.