Sept. 26, 1933. J. E. ROBERTS 1,927,849

CLOTH EXPANDER AND GUIDE

Filed June 29, 1932

Fig. 1.

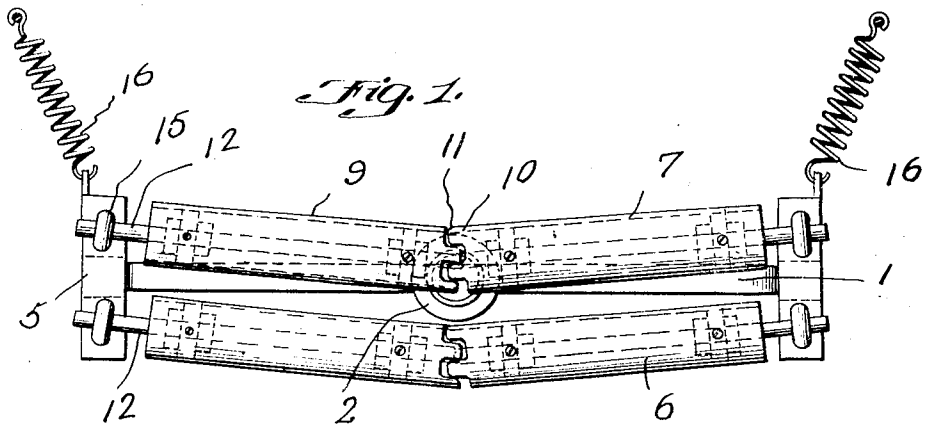


Fig. 2.

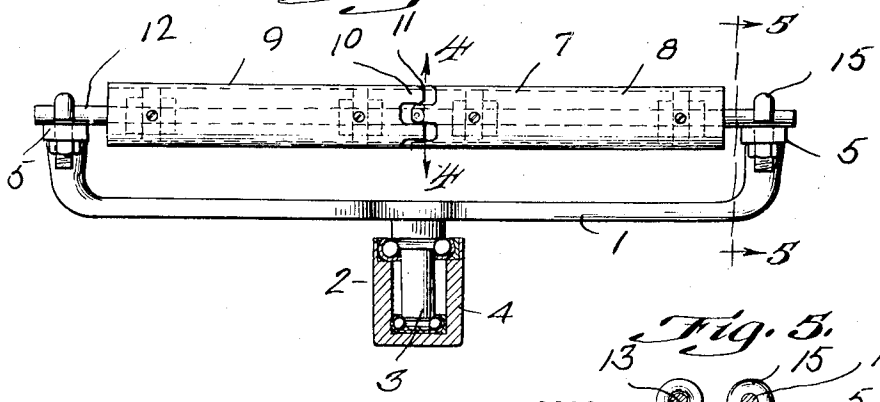


Fig. 5.

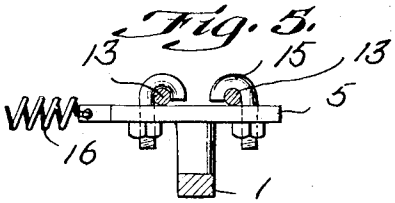


Fig. 3.

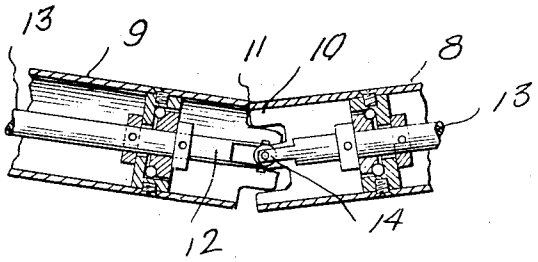
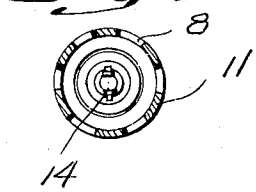


Fig. 4.



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Patented Sept. 26, 1933 1,927,849

UNITED STATES PATENT OFFICE

1,927,849

CLOTH EXPANDER AND GUIDE

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Application June 29, 1932. Serial No. 620,049

2 Claims. (Cl. 26—63)

This invention relates to a guide for traveling strip material and more particularly to a cloth expander and guide whereby the traveling strip of cloth will not only be guided in its travel but will also be expanded.

The primary object of the invention is to provide a simple type of apparatus that is self centering and which will more efficiently guide and expand a traveling strip of cloth.

An object of the invention resides in the novel construction, association and mounting of the sets of rollers so that a centre support is dispensed with.

Another object of the invention resides in the pivotal mounting of the support in conjunction with centering springs so that the device will be self centered and further capable of being displaced for creating a self centering action on the travel strip of cloth.

A feature of my invention resides in providing companion shafts having a pivotal connection with each other and arranged in a novel relation with companion rollers that have interlocking connection with each other at their associated ends so that the use of a center support is dispensed with.

With these and other objects in view the invention will be better understood from the following detail description taken in connection with the accompanying drawing, wherein:

Figure 1 is a top plan view of the apparatus.

Figure 2 is a front elevation.

Figure 3 is an enlarged sectional view through the rollers.

Figure 4 is a sectional view on the line 4—4, Figure 2.

Figure 5 is a sectional view on the line 5—5, Figure 2.

Again referring to the drawing illustrating one of the many constructions of my invention, the numeral 1 designates a bracket provided with a centrally arranged pivotal bearing 2, consisting of the stub shaft 3 projecting from the bracket and mounted in a ball bearing member 4. This bracket 1 is of the required length and has arranged at the opposite ends thereof supports 5 for supporting the companion sets of rollers 6 and 7.

Each companion set of rollers consists of a "right" roller 8 and a "left" roller 9 that have their engaging end portions 10 provided with interlocking teeth 11 so that the rollers will travel in unison and provide a connection between the ends of the rollers to eliminate the necessity of a center support, and further preventing the traveling strip of cloth from working in between the ends of the rollers.

The companion sets of rollers are mounted on companion shaft devices 12 so that the sets of rollers will be spaced the required distance to enable a strip of cloth to pass therebetween and over one set of rollers and under the other set of rollers.

Each shaft device consists of companion adjustable shafts 13 angularly related with their associated ends connected together by the universal joint 14 that has a definite relation with the interlocking teeth 11. The other ends of the shafts 13 are clamped to the supports 5 by the clamps 15 which are adjustably mounted in the supports to enable the angular relation of the companion shafts to be changed.

To complete the invention I provide centering devices illustrated as centering springs 16, one for each support 5 and each having one end fixed and the other end connected to the support. The springs 16 are so arranged that their resiliencies are in opposition to each other so that the expander will be centered if the latter is forced out of its neutral position when unequal pressures are brought to bear on either the "right" roller 8 or the "left" roller 9.

In the use of the apparatus a strip of cloth is passed over one set of rollers, then between the two sets of rollers and then under the remaining set of rollers with the result that the traveling strip of cloth is given a V shape formation in cross section which tends to expand the same.

Should this strip of cloth tend to move to the right or left, it will create an additional pressure upon either the "right" or "left" roller to swing the support about its center thereby bringing about a state of conditions that will automatically move the cloth laterally the required distance to properly center the same upon the apparatus.

It will be appreciated that due to the interconnection between the various shafts, the various rollers and the shafts with the supports, the angular relation of the rollers may be changed at will. Due to the interlocking engagement between the ends of the rollers it is possible to change the angular relation of the rollers without the use of a center support. The interlocking engagement between the teeth of the rollers prevents the traveling cloth from wedging in between the ends of the rollers.

It is, of course, to be understood that the design and construction of the companion parts of the apparatus may be changed and assembled in many ways and therefore I do not desire to be

limited in protection in any manner whatsoever except as set forth in the following claims.

What I claim is:

1. A cloth expander and guide comprising a bracket including spaced supports and a centrally arranged pivotal bearing, companion sets of shaft devices, each shaft device comprising companion shafts angularly related with their inner ends pivotally connected, clamps adjustably mounted on said supports and adapted to clamp said shafts in an adjusted angular relation and companion sets of rollers mounted on said shaft.

2. A cloth expander and guide comprising a bracket including spaced supports and a centrally arranged pivotal bearing, companion sets of shaft devices, each shaft device comprising companion shafts angularly related with their inner ends pivotally connected, clamps adjustably mounted on said supports and adapted to clamp said shafts in an adjusted angular relation and companion sets of rollers mounted on said shaft, each companion set of rollers including a "right" roller and a "left" roller each provided with teeth interlocking with each other and coil springs, one associated with each support having one end fixed and its other end connected to the support.

JOHN E. ROBERTS.