July 27, 1926. 1,593,865

L. J. CARON

EXPANDER FOR EYEGLASS RIMS OR THE LIKE

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Fig. 1.

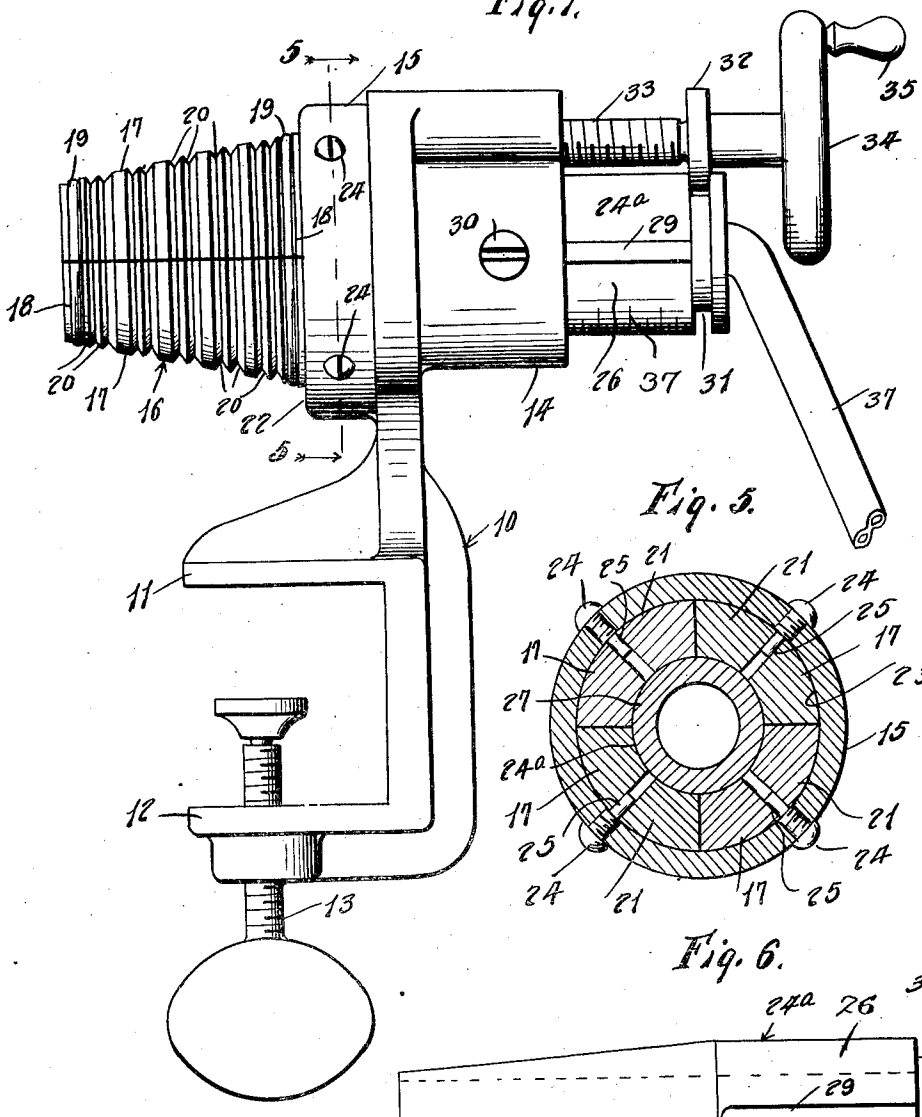


Fig. 5.

Fig. 6.

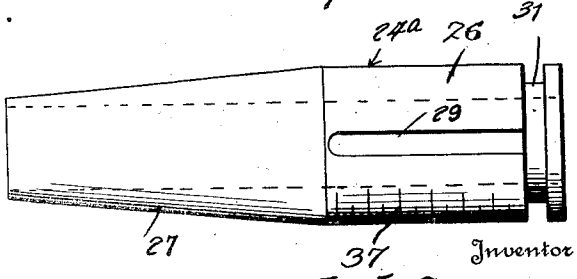
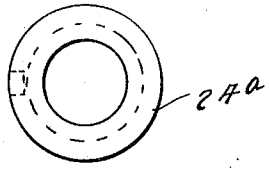


Fig. 7.



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Fig. 2.

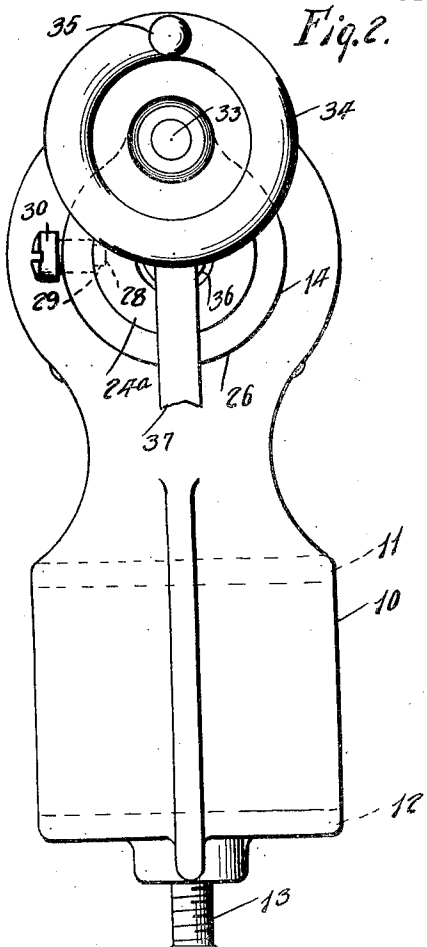


Fig. 4.

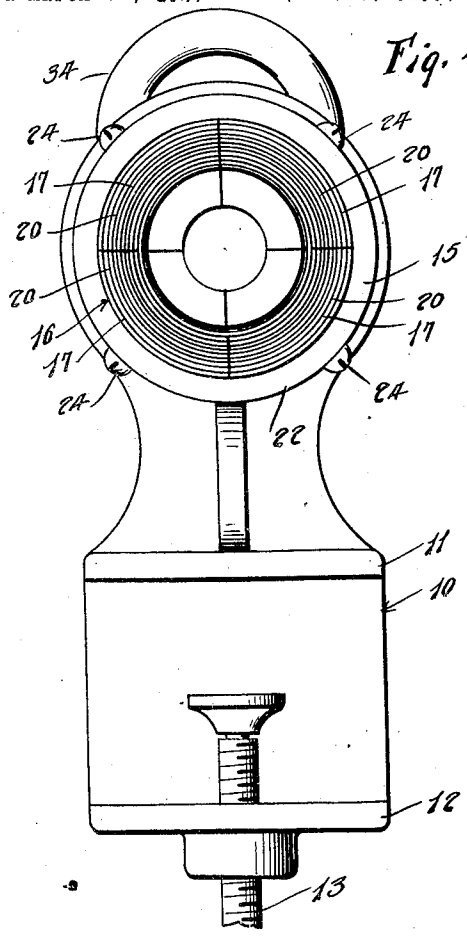
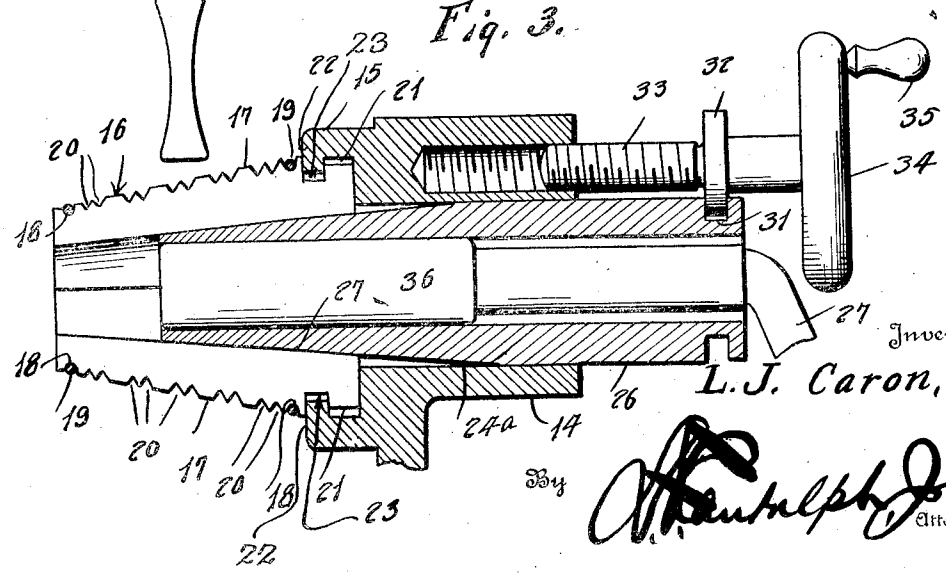


Fig. 3.



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UNITED STATES PATENT OFFICE.

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EXPANDER FOR EYEGLASS RIMS OR THE LIKE.

Application filed March 24, 1925. Serial No. 18,040.

This invention relates to an expander primarily adapted for use in connection with celluloid eyeglass rims although its principles are applicable to expanders in a broader sense as will be apparent.

One important object is to provide a construction having a novel expander for engagement with the eyeglass rims, in connection with a heating means for the expander to place the rims at the proper tension for expanding or stretching.

Another object is to provide a novel construction of means for causing the expansion of the expander proper.

Still another object is to provide a construction wherein a sleeve or holder is used to control the operation of the expander, to house the heating element, and which may be used as a gage to determine the extent of expansion of the expander.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings:—

Figure 1 is a view of the apparatus in side elevation;

Figure 2 is a rear end elevation;

Figure 3 is a central longitudinal section taken through the main portion of the device;

Figure 4 is a front elevation of the expander proper;

Figure 5 is a perspective view of one of the expander segments;

Figure 6 is an elevation of the wedge sleeve and

Figure 7 is an end view of said sleeve.

Referring specifically to the drawings, the operating parts are adapted to be carried by a standard or base 10, preferably metallic and having spaced jaws 11 and 12 integral with it. The jaw 12 has a binding screw 13 threaded thereto. As a result of said jaws and screw, a clamp is provided whereby the device may be conveniently connected to a bench or other support.

At the top of standard 10, the same is provided with a laterally extending bearing or head 14 integral therewith and in line therewith at the opposite side of the standard is provided a retainer ring 15 integral with the standard, for an expander generally designated 16.

Said expander is composed of individual relatively movable segments 17 of any desired number, shape or size, which are preferably collectively primarily of conical shape. Adjacent each end the segments 17 have grooves as at 18 in which contractile rings 19 are disposed designed to urge contraction of the segments to minimum size. Pheripherally of the segments, various grooves 20 are provided which due to the conical shape of the expander are different in size. These grooves are adapted to hold the frames of eyeglasses, particularly celluloid frames, for expansion. The inner ends of the segments 17 have flanges 21 which are overlapped by a flange 22 of the retainer 15, the latter extending into grooves 23 of the segments. This inter-engaging feature prevents longitudinal displacement of the segments. In addition, screws 24 are threaded into the retainer and carry reduced pins 25, smooth on the exterior, and along which the segments may move in radial directions.

A wedge tube 24ª is provided which is slidably disposed axially of the bearing 14 and sleeve 15, having a rear portion 26 cylindrical and a front portion 27 exteriorly tapered. Likewise the bore of the bearing 14 has a straight portion and a tapered portion corresponding to those at 26 and 27, respectively, to accommodate portions thereof when the sleeve is in position for maximum expansion of expander 16. The wedge tube 24 is held against rotation by a pin 28 extending into a longitudinally disposed groove 29 of the portion 26 and which is carried by a set screw 30 threaded into the bearing 14 as shown.

At the rear end of the wedge sleeve 24ª an annular groove 31 is provided into which a flange 32 extends. Said flange forms part of a screw 33 which is adjustably threaded in the bearing 14. Screw 33 has an adjusting wheel 34 rigid therewith preferably provided with a grip or crank at 35. Through operation of the crank 35 and accordingly wheel 34 and screw 33, the flange 32 will move closer to the expander and will thus correspondingly slide the wedge sleeve 24.

The wedge sleeve 24ª constitutes a holder for a heater conventionally shown at 36.

This heater is designed to heat the celluloid rims which may be in place on the expander so as to avoid liability of breaking or cracking such rims and particularly of spoiling the grooves therein which are made to receive the lenses of glasses. Said heater 36 is preferably of an electrical type and the feed wires 27 therefor preferably enter through the rear end of said sleeve or holder 24a. The control switch for the conductors 27 is preferably of a type whereby the heater 36 may be regulated to produce heat at varying temperatures.

In order that the feed of the sleeve or holder 24a may be accurately determined and accordingly the expansion of a work likewise accurately determined, suitable gage marks 37 may be provided on the periphery of portion 26 to coact with the adjacent end of the bearing 14.

In use, the rims or work to be expanded is arranged within the appropriate grooves 20 and the electric circuit thereupon completed through the heater 36 so as to heat the rims to the proper temperature to avoid breaking or distortion thereof. The grip 35 is then turned so as to turn wheel 34, screw 33 and flange 32. A sliding movement is thus imparted to flange 32 which correspondingly imparts the same movement to the holder or sleeve 24a causing the conical surface 27 to engage the inner conical surface of the expander or segment and move the latter outwardly, accordingly expanding and stretching the celluloid rims or work. The reverse movement of the parts will of course result in drawing the said sleeve or holder 24a and permitting contraction of springs 18 so as to contract the expander and permit release of the stretched rims.

The elements 18 are preferably endless coil springs.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

What is claimed is:—

1. A device of the class described having an expander comprising relatively movable segments, a wedge sleeve to expand said segments, a bearing slidably mounting said sleeve, a screw mounted on said bearing, a flange on said screw, and said sleeve having a groove into which said flange extends to slide the sleeve through turning of the screw.

2. A device of the class described comprising a standard, a bearing extending from one side thereof, a retainer extending from the other side thereof and having a flange, an expander comprising segments having grooves entered by said flange, a slidable sleeve mounted by said bearing engageable with the innner surfaces of the segments to expand the latter, said sleeve having a longitudinally extending groove, a pin on said bearing disposed in said groove to prevent turning of the sleeve, said sleeve having an endless groove adjacent its outer end, an operating screw mounted in said bearing, and said operating screw having a flange extending into said endless groove to slide the sleeve.

In testimony whereof I affix my signature.

LUDGER J. CARON.