July 12, 1932. B. BROTHERMAN ET AL 1,867,248

TUBE REPAIRING CLAMP

Filed Dec. 11, 1930

Fig. 1.

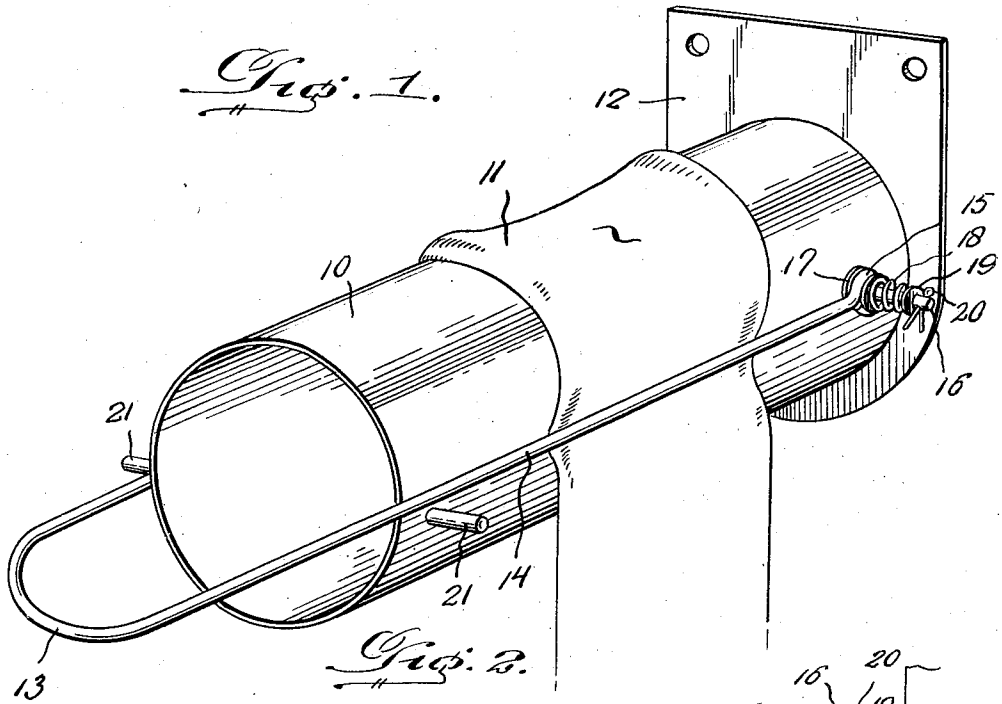


Fig. 2.

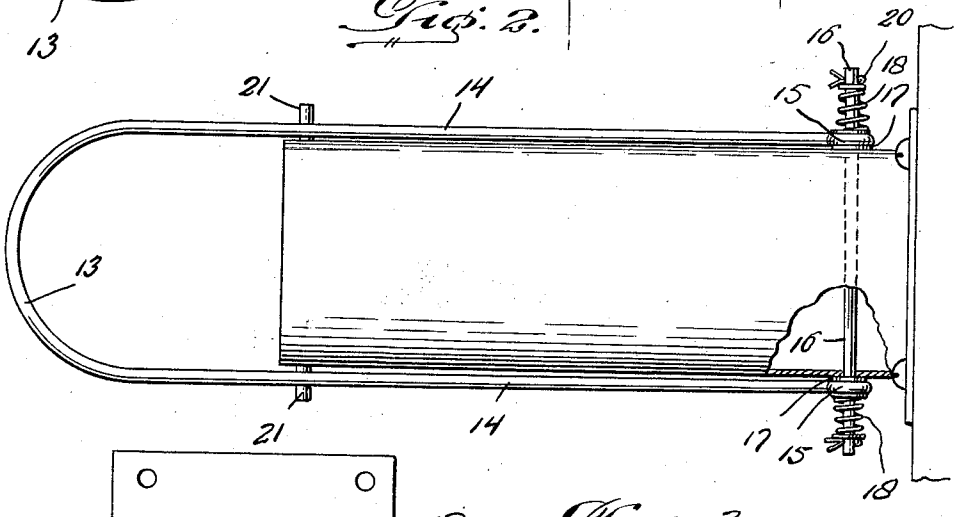
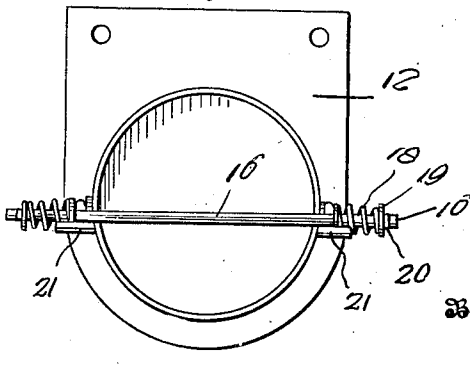


Fig. 3



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UNITED STATES PATENT OFFICE

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TUBE REPAIRING CLAMP

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The present invention comprehends the provision of a novel construction of means for firmly supporting a pneumatic inner tube for repair, thereby eliminating the necessity of holding the tube by hand, or stretching the tube downwardly by the foot for such purpose, so that the user is afforded freedom to perform the necessary work on the tube to better advantage and in a minimum of time.

One of the chief characteristics of the present invention resides in the provision of means for the above mentioned purpose, whereby the tube is both simultaneously stretched and clamped about the support in a manner to hold that portion of the tube requiring attention, in a taut condition necessary for the proper repair of the tube.

In carrying out the invention we provide a device of the above mentioned character which is not only simple in construction, but one with which the tube can be very quickly associated or removed therefrom as the occasion may require.

Another important object or advantage resides in the provision of a hollow supporting member for the tube, which is also utilized to hold material and tools most frequently employed in work of this character, so that such elements are always at the command of the user.

Other objects and advantages will appear when the following detailed description is read in connection with the accompanying drawing, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawing forming part of this application like numerals of reference indicate similar parts in the several views wherein:

Figure 1 is a perspective view of the invention showing the manner of using the same.

Figure 2 is a top plan view partly broken away.

Figure 3 is an end elevation.

Referring to the drawing in detail, 10 indicates the supporting member for a pneumatic inner tube 11, the supporting member at 10 having associating with one end thereof a bracket plate 12 adapted to be attached to any vertical support, such as a wall, workbench or the like with the member 10 projecting horizontally therefrom. The supporting member 10 is preferably of hollow cylindrical contour, but it is of course to be understood that it may be varied in size and shape, and also formed from any suitable material without departing from the inventive idea. By reason of the hollow construction of the member 10, the latter in addition to its primary use as an inner tube support, serves as a holder for material and tools most frequently employed in the repair of inner tubes, so that all of such elements are always within convenient reach of and at the command of the user.

In conjunction with the supporting member 10, the invention provides a novel construction of means for simultaneously stretching and clamping about the member 10, the particular portion of the tube to be dealt with. Consequently that portion of the tube to be repaired is held in a taut condition which is most necessary to the proper repair of the tube.

While the clamping means just referred to may vary, we preferably employ a pivotally mounted yoke as illustrated in the specific embodiment of the invention herein disclosed. This yoke is longer than the supporting member 10 on which it is pivotally mounted, so that the closed end 13 of the yoke can be conveniently clamped to quickly manipulate the latter. The free ends of the opposed limbs 14 terminate in eyes 15 which receive a pivot 16 passed through the member 10 adjacent the bracket plate 11, the pivot projecting an appreciable distance beyond both sides of the member 10 as illustrated. Interposed between each eye 15 and the member 10 is a washer 17 while surrounding each end of the pivot is a coil spring 18. These springs bear against the eyes 15 and washers 19 held associated with the pivot by cotter pins or the like 20. Consequently these springs not only exert an inward pressure against the limbs 14 of the yoke, but permit the latter to automatically adjust themselves into clamping relation with the member 10, when the yoke is swung down-

wardly over the inner tube 11 as shown in Figure 1. And this is true irrespective of the size and thickness of the particular tube supported on the member 10. When the yoke is lowered to the position illustrated in Figure 1, that portion of the tube 11 to be dealt with is stretched taut about the member 10 and clamped in this condition. Due to the relative yielding movement of the limbs 14 of the yoke, any tube, irrespective of its size or thickness can be effectively stretched and clamped about the member 10, without any possibility of the limbs 14 chaffing or otherwise injuring that portion of the tube with which they come in contact.

The downward movement of the yoke is limited by stop pins 21 projecting laterally from opposite sides of the member 10, but located to cause the limbs 14 to grip the tube 11 at a point slightly below the horizontal diameter of the member 10 in the final active position of the yoke.

In practice, the tube to be repaired is passed over the supporting member 10, with the yoke in an elevated position. The latter is then swung downwardly to the position illustrated in Figure 1, simultaneously stretching the tube about the member and clamping it with relation thereto. As the final position of the yoke is slightly below the transverse center of the member 10, it will effectively maintain that portion of the tube to be repaired in a taut condition. Manifestly, the tube can be very quickly and conveniently associated with or removed from the supporting member 10 as the occasion may require, and when the tube is once clamped about the member 10, the operator is permitted the use of both hands to perform the necessary work on the tube, as the tube will be effectively held associated with the member without any further attention on the part of the operator. Furthermore under such circumstances the work can be not only performed to better advantage but in a minimum of time.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily apparent, we desire to have it understood that we do not limit ourselves to what is herein illustrated and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What is claimed is:

1. In a device of the character described, a cylindrical tubular member for supporting a pneumatic inner tube for repair, a yoke including spaced limbs pivoted on said member and utilized for stretching a portion of the tube circumferentially about said member, and means on said member for limiting the movement of the yoke in one direction, whereby said limbs clamp the stretched portion of the tube to said member at points beneath the transverse central plane thereof.

2. In a device of the character described, a cylindrical tubular member for supporting a pneumatic inner tube for repair, a yoke pivoted on said member and including yieldably supported limbs for movement toward and away from each other and utilized to stretch a portion of the tube circumferentially about said member, and stop pins projecting laterally from said member in the path of said limbs and located to cause the limbs to frictionally clamp said portion of the tube to said member beneath the central plane thereof.

3. In a device of the character described, a member for supporting a pneumatic inner tube for repair, a pivot projecting from the opposite sides of the member adjacent one end thereof, a yoke including spaced limbs both pivotally and slidably mounted on said pivot, yieldable means mounted on said pivot for exerting inward pressure against said limbs, and permitting said limbs yielding movement toward and away from each other to stretch and clamp a portion of the tube on said member.

In testimony whereof we affix our signatures.

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