N. Y. MOMITSA.

VULCANIZING APPARATUS.

APPLICATION FILED NOV. 19, 1919.

1,362,729. **Patented Dec. 21, 1920.**

Fig. 1

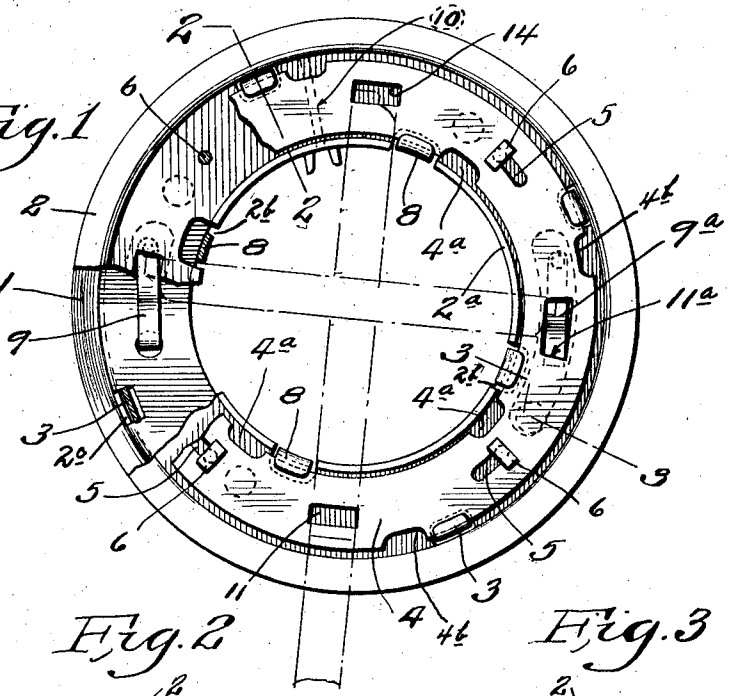


Fig. 2

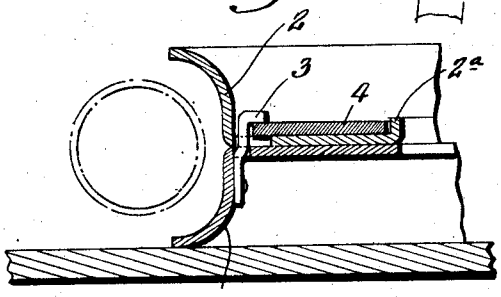


Fig. 3

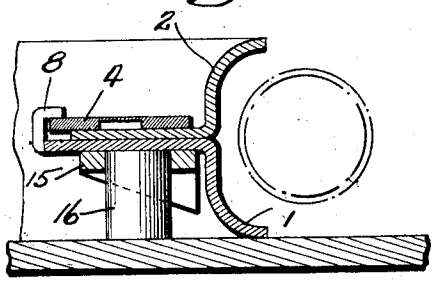


Fig. 4

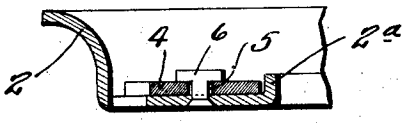


Fig. 5

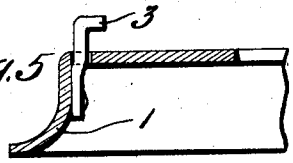


Fig. 6

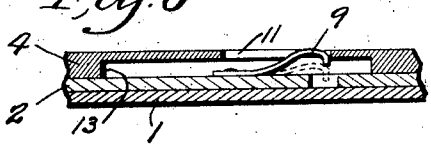
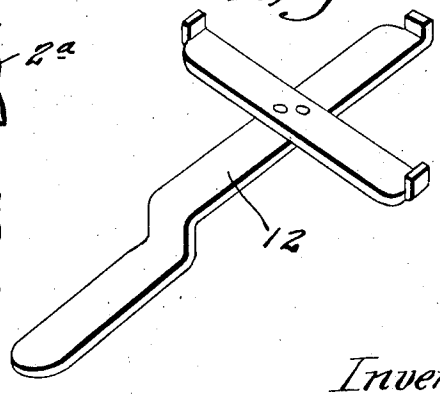


Fig. 7



Inventor

Nicholas Yoriff Momitsa

By Ralph Kerr Atty.

UNITED STATES PATENT OFFICE.

NICHOLA YOSIFF MOMITSA, OF GRANITE CITY, ILLINOIS.

VULCANIZING APPARATUS.

1,362,729. Specification of Letters Patent. Patented Dec. 21, 1920.

Application filed November 19, 1919. Serial No. 339,036.

To all whom it may concern:

Be it known that I, NICHOLA YOSIFF MOMITSA, a Macedonian, residing at Granite City, county of Madison, and State of Illinois, have invented a certain new and useful Improvement in Vulcanizing Apparatus, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates generally to vulcanizing apparatus and, more particularly, to a certain new and useful improvement in apparatus designed and adapted especially for use in connection with the vulcanization of the inner tubes and outer casings of pneumatic tires, the principal object of my present invention being to provide an efficient device or apparatus especially designed for the purpose stated which is readily separable to permit with convenience and facility the mounting thereupon, and the dismounting or removal therefrom, of a tube, casing, or the like.

With the above and other objects in view, my present invention resides in the novel features of form, construction, arrangement, and combination of parts hereinafter described and afterward pointed out in the claims.

In the accompanying drawing,

Figure 1 is a plan view, partly broken away, of a device or apparatus embodying my invention;

Figs. 2 and 3 are transverse sectional views thereof on approximately the lines 2—2 and 3—3, respectively, Fig. 1;

Figs. 4, 5, and 6 are detail views in section; and

Fig. 7 is a perspective view of the tool or spanner by which the tube or casing-engaging members of the device or apparatus are locked to retain the tube or casing and unlocked to permit removal of the same.

Referring now more in detail to the said drawing, in which like reference characters refer to like parts throughout the several views, 1 indicates the base-member, which is preferably in the form of a flanged ring, this member 1, which may be pressed, cast, or otherwise suitably constructed, being the element on which the tube, casing, or the like to be vulcanized is first arranged or mounted. I have omitted showing the soapstone and the details of the core and tube devices, as they are generally well known.

At what might be designated its outer peripheral margin, the body of ring 1 is formed or provided with an annular series of spaced upstanding inwardly-presented hook-members or projections 3; and at its so-called inner peripheral margin, the ring 1 is formed or provided with a substantially similar series of spaced hook-members or projections 8, the hooks 8, however, being outwardly or oppositely disposed, and preferably staggered, relatively to the hooks 3.

2 indicates the complementing top ring or companion member, which is flanged as shown and which is adapted to fit upon and coöperate with base-ring 1 as illustrated particularly in Figs. 2 and 3, the rings 1 and 2, when operatively assembled, being designed to partially embrace and thereby hold the tube, casing, or the like being, or to be, vulcanized. Ring 2 is formed or provided at its inner peripheral margin with an upwardly extending flange 2^a, which is recessed or cut away, as at 2^b, to accommodate the hook-members 3 of ring 1. At its similarly so-called outer peripheral margin, the body of ring 2 is cut away or apertured, as at 2^c, to accommodate the hook-members 3 of ring 1, the hooks 3 and 8 of ring 1, engaging or interlocking as described with ring 2, serving to perform the function, in addition to the function hereinafter appearing, of firmly or rigidly holding the rings 1 and 2 from relative rotatory movement.

Disposed flatwise for rotatory movement upon the body of ring 2 and intermediate the opposite series of hooks 3 and 8, is a locking-member or ring 4 preferably provided within its area with arcual slots 5. Upstanding from ring 2 and having their shanks disposed in the slots 5, are T-headed bolts or the like 6 for holding the ring 4 operatively in position upon the ring 2. For purposes shortly appearing, it will be noted particularly in Fig. 1 that the ring 4 is formed or provided at its inner and outer peripheries with series of recesses or cut-outs 4^a and 4^b, respectively, which recesses or cut-outs are spaced equidistantly with the series of hooks 3 and 8. It may be here stated that the ring 4, when in normal or ring-unlocking position, occupies such position upon and relatively to the ring 2 that its cut-outs 4^a and 4^b register, respectively, with the apertures or cut-outs 2^b and 2^c of the ring 2.

Disposed upon, and fixed at an end to,

the upper face of the ring 2, and having preferably the form or shape seen particularly in Fig. 6, are springs 9—9ª; and for coöperation with said springs, respectively, the ring 4 is suitably formed or provided with openings or slots 11—11ª. The springs 9—9ª and their coöperating slots 11—11ª are so relatively located that, when the ring 4 is in its said normal position, one of said springs, as, for instance, spring 9, is adapted to yieldingly engage at its free end with an end-wall of its coöperating slot 11 to releasably retain the ring 4 in said normal position, the other spring 9ª being then compressed or depressed between the rings 2 and 4, and that, when the ring 4 is in abnormal or ring-locking position, the spring 9ª is similarly adapted to releasably engage at its free end with an end-wall of its coöperating slot 11ª to likewise releasably retain the ring 4 in said abnormal or locking position, the spring 9 being then correspondingly compressed or depressed between the rings 2 and 4. For conveniently accommodating the interposition of the springs 9 and 9ª between the rings 2 and 4, the locking-ring 4 is preferably grooved or cut-away on its undersurface, as at 13.

Intermediate the openings or slots 11—11ª, the ring 4 is provided, as seen in Fig. 1, with an additional opening or slot 14, the openings or slots 11—11ª—14 being adapted to receive the bent or flanged ends of a suitable spanner-wrench or other tool 12, shown in Fig. 7, whereby the ring 4 may be conveniently rotatorily actuated to and from ring-locking position.

In use or operation, the tire, tube, casing, or other article to be vulcanized together with the core upon which the same is usually formed is first arranged or mounted upon the base-member or ring 1, after which the upper or top ring 2 is placed in article-engaging position as described upon ring 1, the ring 4 being in described normal position and the hook-members 3 and 8 of ring 1 being freely accommodated by the openings or cut-outs 2ᶜ and 2ᵇ of ring 2 and the registering cut-outs 4ᵇ and 4ª of ring 4. By means of the wrench or other tool 12, then applied upon the ring 4, the spring 9 is depressed out of engagement with its coöperating slot 11 and ring 4 rotarily moved on ring 2, its cut-outs 4ª and 4ᵇ being moved out of registration with the then protruding hooks 8 and 3 and ring 4 rigidly engaged and locked at its peripheral inner and outer margins with the hooks 8 and 3. The ring 4 is so actuated until opposite spring 9ª, engages as described with its coöperating slot 11ª, when the wrench or other tool is removed. The ring 4 is then, as will be evident, releasably locked in abnormal position and rings 1 and 2 firmly and securely locked together in assembled or article-engaging relation. The casing or tube is then, as is usual, packed in soap-stone or the like, and is then suitably moved into the vulcanizing oven, my new apparatus serving to rigidly and firmly supportingly hold the article to be vulcanized in position during the vulcanizing operation, which usually is carried out in an oven especially designed for that purpose. After vulcanization, the locking-ring 4 is similarly, but reversely to normal position, actuated by means of the wrench or tool 12, when, as will be evident, the top ring 2 may be readily separated and disassembled from base-ring 1, and the vulcanized article then, with convenience and facility, removed from the device.

In arranging or mounting the casing, tube, or other article to be vulcanized upon the base-ring 1, such ring is usually placed flatwise upon a table or other support, as will be understood; to maintain the device relatively fixed or rigid during, and thereby facilitate, such operation, the ring 1 is provided upon its under side with an annular series of sockets or recessed members 15 adapted to seat upon and removably engage with holding-posts 16 upstanding from the table or support, as seen particularly in Fig. 3.

It will be noted in Fig. 1 that a passage 10 is formed by and between the members or rings 1 and 2, through which a steam or vapor pipe may be conveniently passed to the vulcanizing core or chamber.

I am aware that changes in the form, construction, arrangement, and combination of the several parts of my device or apparatus may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. An apparatus comprising, in combination, a pair of separable complementing flanged ring-members adapted for coöperation to engage the article and being adapted for engagement one with the other to prevent relative rotation thereof, and means for releasably locking the rings against separation.

2. An apparatus comprising, in combination, a pair of separable complementing flanged ring-members adapted for coöperation to engage the article, hooks on one of the ring members adapted to engage the other ring-member to lock the ring-members against relative rotation, and a locking-member secured for movement upon the second ring-member to engage the hooks for releasably locking the ring-members against separation.

3. An apparatus comprising, in combination a pair of separable complementing

flanged ring-members adapted for coöperation to engage the article, the ring-members being provided with interengaging hooks and apertures for locking the ring-members against relative rotation, and a locking-ring secured for rotation upon one of the ring-members to engage the hooks for releasably locking the ring-members against separation.

4. An apparatus comprising, in combination, two separable ring-members adapted for coöperation to engage the article and means for separably locking said members together, said means including locking-projections upon one of said ring-members and a locking-ring mounted for rotatory movement upon the other of said ring-members to engage said projections.

5. An apparatus comprising, in combination, an article-engaging ring-member provided with locking-projections, a second ring-member adapted for placement upon and coöperation with the first ring-member to engage the article, said second-member having openings for accommodating said locking-projections, and a locking-ring mounted for rotatory movement upon the second ring-member to engage the protruding projections to separably lock said ring-members together.

6. An apparatus comprising, in combination, an article-engaging ring-member provided at its inner and outer peripheries with series of spaced locking-projections, a second ring-member adapted for placement upon and coöperation with the first-ring-member to engage the article, said second ring-member having openings for accommodating the locking-projections of the first ring-member, and a locking-ring mounted for rotatory movement on the second ring-member to engage at its outer and inner peripheries with the protruding projections to separably lock the first and second ring-members together.

7. An apparatus comprising, in combination, an article-engaging ring-member provided at its inner and outer peripheries with series of spaced locking-projections, a second ring-member adapted for placement upon and coöperation with the first ring-member to engage the article, said second ring-member having openings for accommodating the locking projections of the first ring-member, a locking-ring mounted for rotatory movement on the second ring-member to engage at its outer and inner peripheries with the protruding projections to separably lock the first and second ring-members together, and means for releasably retaining the locking-ring in ring-locking and in ring-unlocking positions.

8. An apparatus comprising two separable ring-members having hook-projections, said members being adapted for coöperation to engage the articles, in combination with a locking-member mounted for movement upon one of the ring-members to engage said projections to separably lock the ring-members together.

9. An apparatus comprising two separable ring-members having hook-projections at their outer and inner peripheries, said members being adapted for coöperation to engage the article, in combination with a locking-member adapted to engage said projections at its outer and inner peripheries to separably lock the ring-members together.

10. An apparatus including an article-engaging ring-member, a locking-ring mounted for rotatory movement on the ring-member, and means for releasably holding the locking-ring from rotatory movement on the ring-member.

11. An apparatus involving an article-engaging ring-member, a slotted locking-ring mounted for rotatory movement on the ring-member, and a spring on the ring-member adapted to engage a wall of said slot to releasably hold the locking-ring from rotatory movement on the ring-member.

12. An apparatus including an article-engaging ring-member having a slot and an annular series of cut-outs, a locking-member also having an annular series of cut-outs, and a spring on the ring-member adapted for engagement with a wall of the slot for releasably holding the locking-member from movement on the ring-member when said cut-outs are in registration.

13. An apparatus including a pair of separable ring-members having registering cut-outs and protruding projections, said members being adapted for coöperation to engage the article, in combination with a locking-member adapted to engage said projections to lock the ring-members together, the locking-member being secured for rotatory movement upon one of the ring-members and having cut-outs normally registering with said projections.

14. An apparatus including a pair of separable ring-members having registering cut-outs and protruding projections, said members being adapted for coöperation to engage the article, in combination with a locking-member adapted for rotary movement to engage said projections to lock the ring-members together, the locking-member having cut-outs normally registering with said projections, and means for releasably holding the locking-member against rotary movement when in engagement with said projections.

15. An apparatus including a pair of separable ring-members having registering cut-outs and protruding projections, said

members being adapted for coöperation to engage the article, in combination with a slotted locking-member adapted for rotary movement to engage said projections to lock the ring-members together, the locking-member having cut-outs normally registering with said projections, and a spring on the ring-members adapted to engage a wall of said slot for releasably holding the locking member against rotary movement when in engagement with said projections.

16. An apparatus including a pair of separable ring-members having hook-projections, said member being adapted for cooperation to engage the article, and a locking-member adapted for rotary movement to engage said projections to separably lock the ring-members together, in combination with means for rotarily actuating the locking-member to and from the ring-locking position.

17. An apparatus for the purpose described, including, in combination with a support having upstanding posts, a base ring-member having sockets adapted to seat upon said posts to hold the base-member from movement relatively to the support.

18. An apparatus comprising two separable ring-members having hook-projections, said members being adapted for cooperation to engage the article, in combination with a locking-member adapted to engage said projections to separably lock the ring-members together, and means for releasably retaining the locking-member in ring-member locking position.

19. An apparatus comprising two separable ring-members having hook-projections, said members being adapted for cooperation to engage the article, in combination with a slotted locking-ring adapted for rotary movement to engage said projections to separably lock the ring-members together, and a spring on the ring-members adapted to engage a wall of said slot to releasably hold the locking-ring in ring-member locking position.

In testimony whereof, I have signed my name to this specification.

NICHOLA YOSIFF MOMITSA.