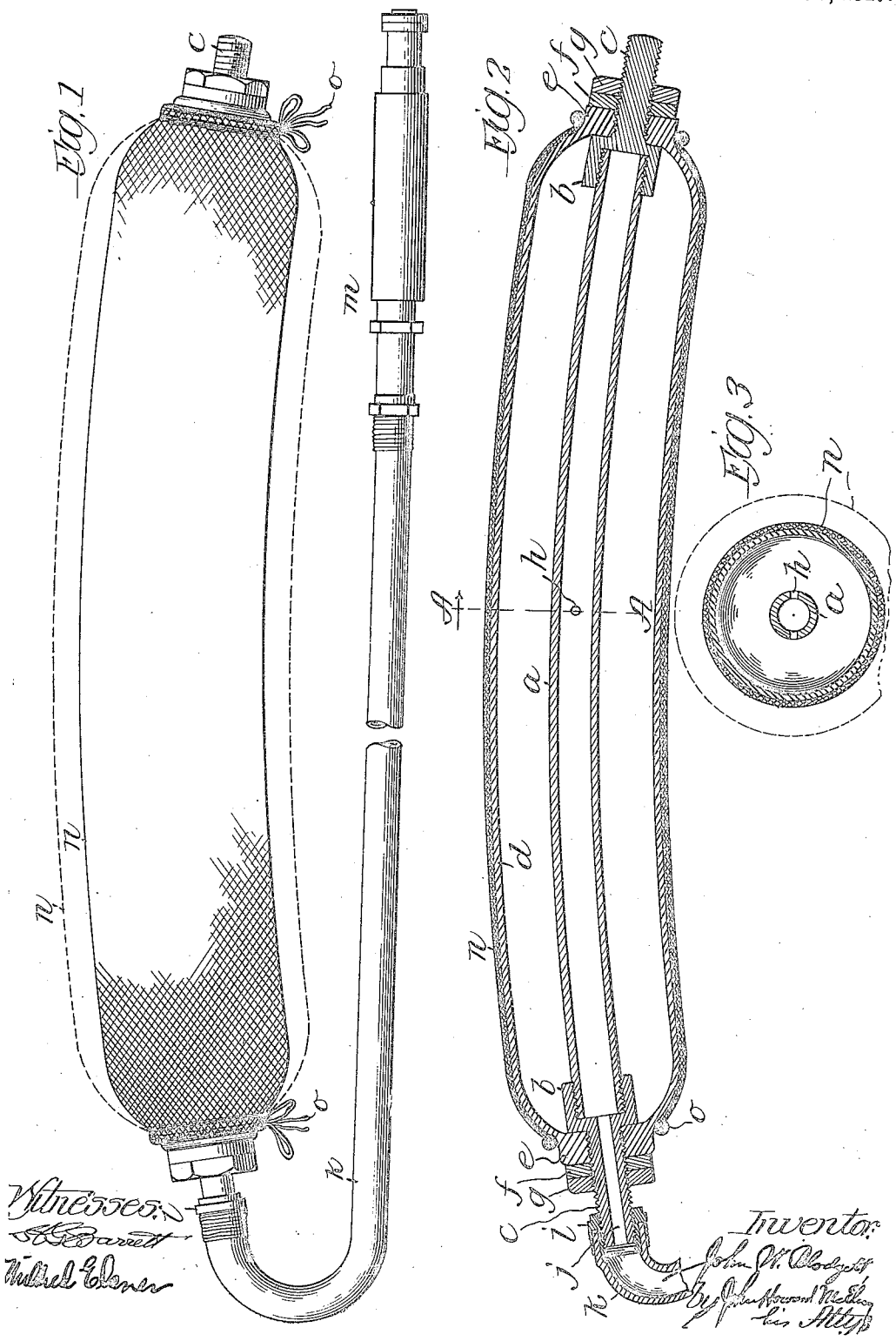
J. W. BLODGETT.

AIR BAG FOR MENDING PNEUMATIC TIRES.

APPLICATION FILED DEC. 18, 1913.

1,214,268.

Patented Jan. 30, 1917.



UNITED STATES PATENT OFFICE.

JOHN W. BLODGETT, OF CHICAGO, ILLINOIS.

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1,214,268. Specification of Letters Patent. Patented Jan. 30, 1917.

Application filed December 18, 1913. Serial No. 807,419.

To all whom it may concern:

Be it known that I, JOHN W. BLODGETT, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Air-Bags for Mending Pneumatic Tires, of which the following is a full, clear, and exact specification.

My invention is concerned with air-bags for mending the casings of detachable pneumatic tires, and is designed to produce a bag of the class described that shall be simple in its construction; that can be cheaply manufactured; that is light; that is durable, and that can be employed for mending two or more sizes of wires.

As these air-bags have been made prior to my invention, it takes one to every size of tire, because the bags heretofore made are practically non-elastic and cannot be expanded or contracted materially without destroying them.

With my novel construction, a one-sized bag is capable of being inflated so as to accommodate itself to, say, three different sized tires, so that only one-third as many bags need be kept in stock as with the old form. Moreover, the bags heretofore used have been made very thick and heavy, having been composed of rubberized canvas, and cannot be successfully mended when a hole is made in one of them, either as the result of a wrinkle because it is too large for the casing, or as the result of its being inflated too much, when it is not large enough to fill the casing.

In carrying out my invention, I employ an elastic air-tight bag or tube, composed of thoroughly cured unreinforced rubber so that it can stretch freely, which is rigidly secured at its ends to a non-stretchable central supporting member, which prevents the bag expanding longitudinally when it is inflated by the valve with which it is provided.

To permit of the desired strong inflation of the rubber bag without the possibility of blowing it out, I cover the same with a preferably detachable tube of elastic, preferably knitted fabric which will expand to the desired extent, but which cannot be expanded sufficiently to permit the air-tight tube or bag to be over-inflated sufficiently to blow it out.

The cured rubber inner tube cannot be vulcanized on to the knitted tube by heat during the repairing operation, and the knitted tube, being free from rubber, can be thoroughly saturated with water every time it is used, thus preventing its being burnt out by the heat so quickly as are the rubberized fabric tubes heretofore employed.

To illustrate my invention, I annex hereto a sheet of drawings, in which the same reference characters are used to designate the same parts in all the figures, of which,—

Figure 1 is a side elevation of a complete bag; Fig. 2 is a central longitudinal section; and Fig. 3 is a transverse section on the line A—A of Fig. 2.

The central supporting member *a*, I preferably form of a tube of metal having threaded ends upon which are screwed heads *b* having reduced threaded necks *c*. The elastic air-tube *d* is made of a good quality of rubber thin enough so that it can be inflated, without injury, to make the resulting tube large enough to be utilized with, say, three different sizes of casings. The tube is formed with heads *e* which rest against shoulders formed between the heads *b* and the necks *c*. These heads *e* are firmly clamped in place by nuts *f* and lock-nuts *g*, which are screwed on the necks *c*. The central supporting member *a* preferably takes the form of a tube, in which case I preferably introduce the air through said tube, which is provided with apertures *h* to permit the air pumped in through the passage *j* in one of the necks *c* to escape into the tube *d*. I preferably secure to the end of this neck having the passage *j*, a long rubber tube *k*, which is fastened thereto by any suitable union *l*, and on the outer end of this tube *k*, I secure a safety valve *m* by which the bag can be inflated. This safety valve may be of any desired type which will blow off when the pressure is too great, but I preferably employ such a valve as is shown in my application No. 758,622, filed April 3, 1913. By the use of this long tube with the safety valve attached to the end, there is no danger of blowing up the air-bag when it becomes hot while mending the tire, as, if the pressure becomes too great in the bag, the air therein is released through the safety valve. This valve, being provided with the long tube *k*, may be laid in a pan of water while it is being used, and the washers in the valve will not be injured or destroyed from the heat, as they are likely to be with

a valve that is near the bag and has no means for immersing the same in water to keep it cool.

To prevent the air-tight bag *d* from being over-inflated, and possibly blowing out, I surround the same by one or more bags *n*, which are preferably knit in a tubular form from a heavy thread, and each of these bags is provided at its ends with drawstrings *o*, so that it can be easily secured upon or removed from the tube *d*, as may be necessary for mending or repairing the same. By the use of these elastic outer tubes *n*, the elastic inner tube can be safely inflated to an extent necessary to make it of the right size to be used to mend two or more different sizes of casings.

The full-line showing of Fig. 1 represents the bag inflated to, say, its smallest size, for use with one size of casing, while the dotted lines surrounding the same in Fig. 1 represent the size of the bag when it is inflated for use in a larger casing.

It will be readily understood that a non-stretchable central member, which may be a rod, wire or string, is necessary, as without this the bag would expand longitudinally, whereas it is necessary to confine the expansion to a radial expansion.

While I have shown and described my invention as embodied in the form which I at present consider best adapted to carry out its purposes, it will be understood that it is capable of modification, and that I do not desire to be limited in the interpretation of the following claims except as may be necessitated by the state of the prior art.

What I claim as new, and desire to secure by Letters Patent of the United States, is:

1. An air bag for inflation in auto tires during certain repairing operations, comprising in combination a central rigid member, means at each end thereof for securing an elastic rubber sack thereto, an elastic rubber sack having its ends permanently secured to said means by air tight joints, a valve associated with one end thereof through which compressed air may be supplied to said sack, a fabric tube surrounding said rubber sack, and capable of expanding with the inflation of the rubber sack, and means independent of the sack-securing means for securing the fabric tube at its ends to the outside of the rubber sack independently of the connections of the latter to the central member so that the fabric tube may be removed and replaced without releasing the air-tight joints.

2. An air bag for the purpose described, comprising in combination a central rigid member, an elastic rubber air tight sack having its ends permanently secured to said member, a valve associated with one end thereof through which compressed air may be supplied to said sack, and a seamless strong elastic fabric casing surrounding said rubber sack and removably secured thereto at its ends independently of the means securing the sack to the central member, whereby said rubber sack and seamless tube are capable of expanding upon inflation of the former to accommodate the device to different sized tires and permitting the removal and replacement of the casing without affecting the air tightness of the sack.

3. An air bag for the purpose described, comprising in combination an air tight elastic rubber sack, a valve associated with the sack for supplying air thereto for inflation, a central rigid member located within said sack, preventing its longitudinal expansion, and a strong elastic knit fabric casing surrounding the outer surface of said rubber sack and detachably fastened thereto at both ends of said rubber sack, so that it can be removed without destroying the air tightness of the sack.

4. In an air bag for mending pneumatic tires, the combination with an inelastic central member, of a highly elastic air-tight tube surrounding the same and secured to the ends thereof, a strong knitted fabric tube of relatively limited elasticity having drawstrings in the ends by which it is removably secured around the air-tight tube to prevent its possible rupture by over-inflation, and a valve for inflating the air-tight tube.

5. In an air bag for mending pneumatic tubes, the combination with a central inelastic member having two outwardly facing shoulders and threaded extensions projecting centrally outward from said shoulders, one of said extensions having a passage therethrough and associated with an air valve, of clamping nuts threaded on said extensions, a tubular integral highly-elastic air-tight rubber sack having its ends clamped directly between said shoulders and nuts, a tubular casing made of strong elastic fabric surrounding the rubber sack to prevent the possible rupture thereof by over-inflation, and means for removably securing the ends of the casing to the ends of the sack so that the casing can be removed and replaced without affecting the air-tightness of the sack.

In witness whereof, I have hereunto set my hand and affixed my seal, this fifteenth day of December, A. D. 1913.

JOHN W. BLODGETT. [L. S.]

Witnesses:
JOHN HOWARD MCELROY,
MILDRED ELSNER.