H. M. RAMSAY & A. McGARY.

TIRE ARMOR.

APPLICATION FILED OCT. 27, 1910.

985,935.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

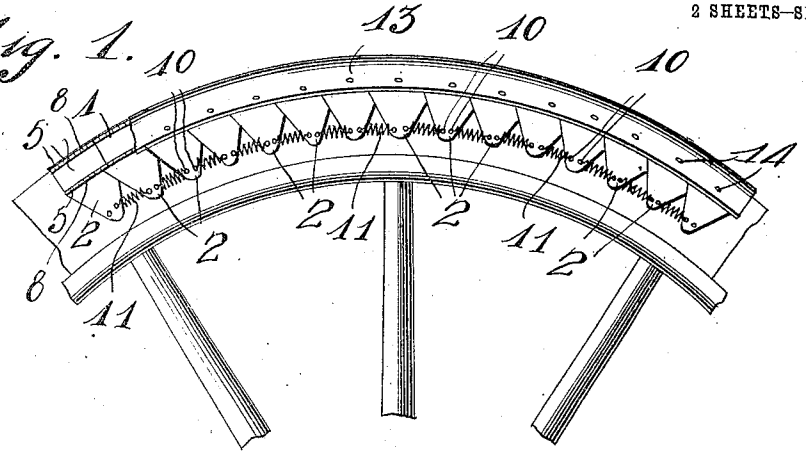


Fig. 2.

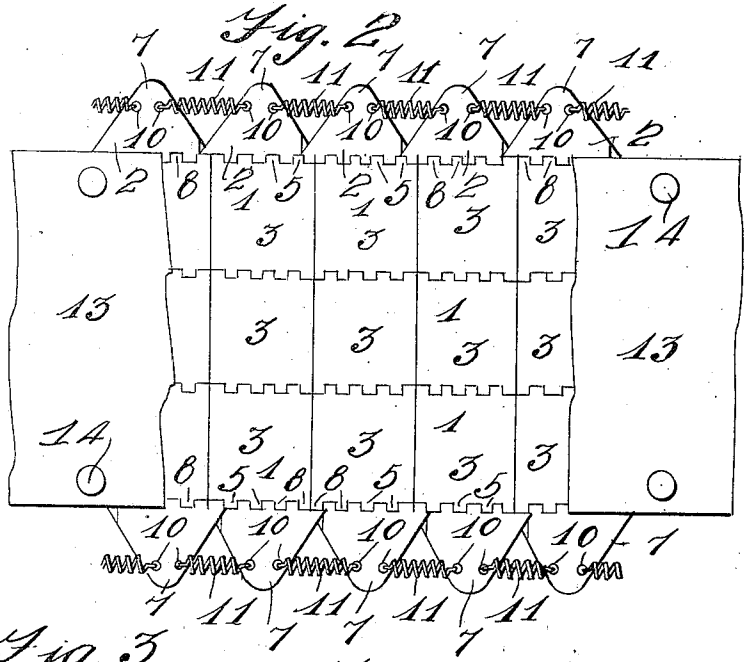
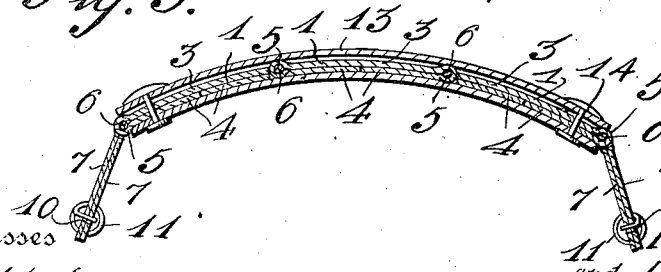


Fig. 3.



Witnesses

C. P. Hardy

O. B. Hopkins

Inventors

H. M. Ramsay

and A. McGary

by H. B. Wilson & Co.

Attorneys

H. M. RAMSAY & A. McGARY.

TIRE ARMOR.

APPLICATION FILED OCT. 27, 1910.

985,935.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 2.

Fig. 4

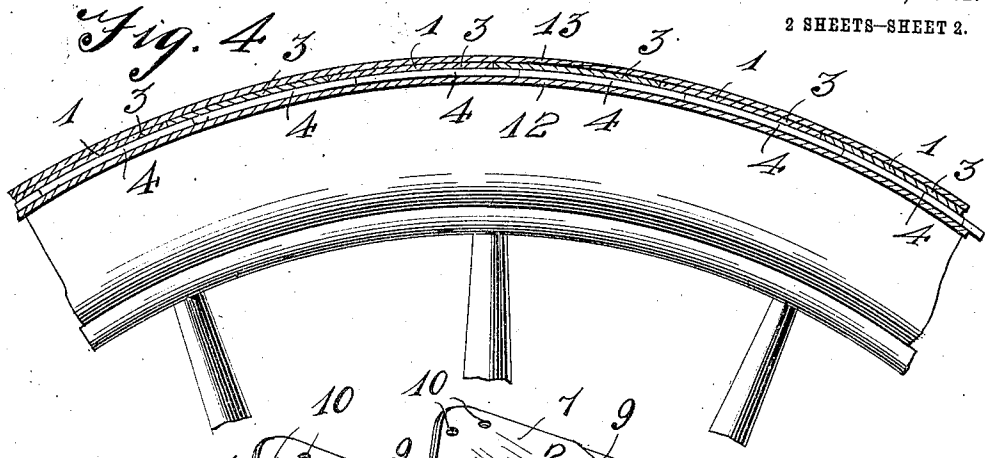


Fig. 5

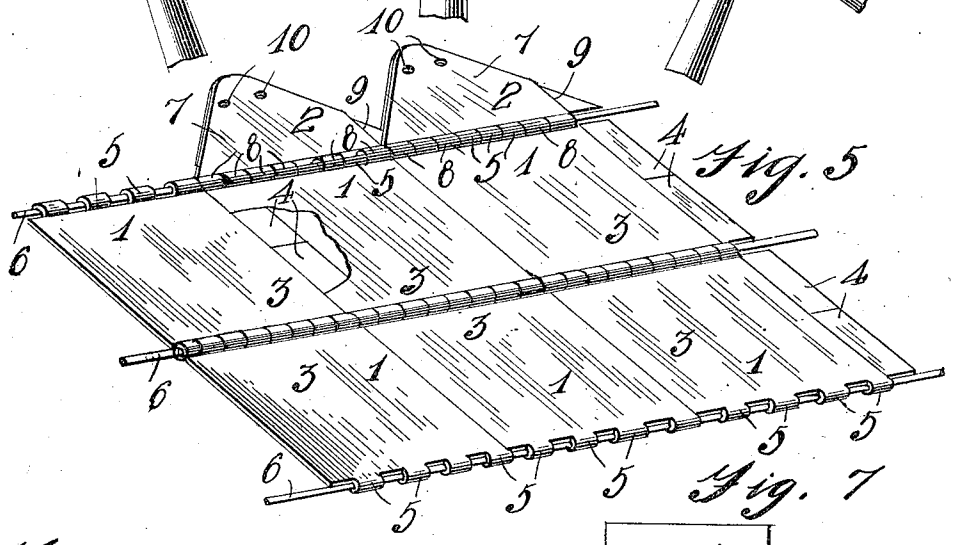


Fig. 6.

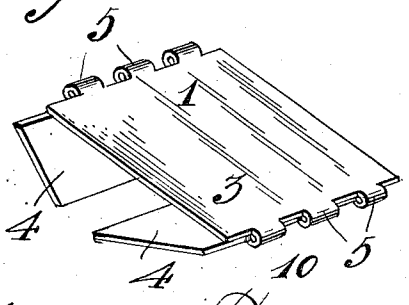


Fig. 7

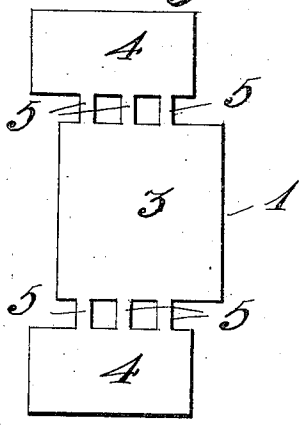
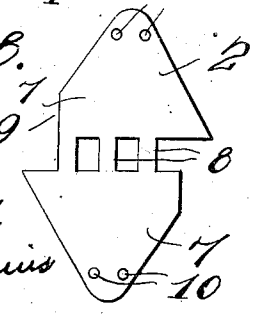


Fig. 8.



Witnesses

C. P. Hardy

O. B. Hopkins

Inventors

H. M. Ramsay

and

A. McGary.

by H. B. Williamson & Co.

Attorneys

UNITED STATES PATENT OFFICE.

HENRY M. RAMSAY AND AUSTIN McGARY, OF HOUSTON, TEXAS, ASSIGNORS OF ONE-THIRD TO JOHN W. CAMPBELL, OF HOUSTON, TEXAS.

TIRE-ARMOR.

985,935. Specification of Letters Patent. Patented Mar. 7, 1911.

Application filed October 27, 1910. Serial No. 589,340.

To all whom it may concern:

Be it known that we, HENRY M. RAMSAY and AUSTIN MCGARY, citizens of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Tire-Armors; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in armor or protectors for pneumatic tires.

One object of the invention is to provide a tire protector having an improved construction and arrangement of armor plates whereby the tire will be entirely protected from puncture without interfering with the cushioning or resilient qualities of the same.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a side view of a portion of a wheel showing the application of our improved armor or protector; Fig. 2 is a plan view of a portion of the protector with parts broken away; Fig. 3 is a longitudinal sectional view thereof; Fig. 4 is a cross sectional view of the same; Fig. 5 is an enlarged perspective view of a portion of the armor plates; Fig. 6 is a similar view of one of the plates showing more clearly the construction of the same; Fig. 7 is a plan view of the blank from which one of the tread plates of the armor is formed; Fig. 8 is a similar view of the blank from which one of the side plates of the armor is formed.

Our improved armor comprises a series of sheet metal plates 1 and 2 which are hingedly connected together in longitudinal rows and are engaged in such manner as to break joint so that no spaces or openings are formed between the adjoining edges of the plates. The blanks from which are formed the plates of the intermediate series of rows comprise a central rectangular portion 3 and side portions 4, said side portions 4 being spaced apart from the central portion 3 and connected thereby by a series of integral tongues 5, which when the side portions are bent over onto the main central portion of the plate form hinge loops which will be hereinafter more fully described. The side portions 4 of the plates are formed to terminate at one end short of the adjacent end of the central portion of the plate and to project at their opposite ends beyond the adjacent end of the central portion 3 of the plate whereby when said side portions are bent down upon the main portion the ends of said side portion will project beyond the adjacent edge of the central portion and will overlap the edge of the adjoining plate thereby closing the spaces which would otherwise occur between the adjoining edges of the plates.

In assembling the plates they are arranged in longitudinal rows with the projecting ends of the inner portions 4 of the plates lapping under the adjacent ends of the upper portions 3 of the adjoining plates as shown. The hinge loops formed by the tongues 5, in bending the inner sections of the plate onto the inner sides of the outer sections of one row of plates will be engaged with the space between the hinge loops of the next adjoining row. Through the engaging loops of said rows of plates are inserted hinge rods 6 whereby the longitudinal rows of plates are hingedly connected together to form a continuous armor.

The outer side or edge plates 2 of the armor are formed from two triangular plates 7 which are connected together at their inner ends by a series of integral hinge loops 8 which are adapted to be engaged with the hinge loops on the outer edge of the intermediate or tread portion of the armor and through said loops are inserted hinge rods whereby the side plates are hingedly connected to the tread plates of the armor. The outer member of the side plates 2 is cut away at one end as shown at 9 and the projecting portion of the inner plate at this end is adapted to project between the next adjoining plates thus forming an overlapping or interlocking connection between the edges of the inner portions of the side plates.

In the inner ends of the plates 2 are formed apertures 10 with which are connected the ends of short coiled springs 11, one of which is arranged between each of the side plates whereby a resilient or elastic connection is provided which will draw the inner ends of the side plates toward each

other and thus hold the armor in engagement with the tire.

In order to protect the tires from wear by the plates of the armor, we preferably provide a lining 12 which may be formed of any suitable material such as rubber, leather or fabric. On the outer surface of the armor is also preferably arranged a covering 13 consisting of a sheet of rubber, leather or suitable fabric whereby the tread portion of the armor will be prevented from coming into engagement with the ground and any noise which might be occasioned by the contact of the armor with the ground will be obviated. The covering 13 and lining 12 are preferably secured in place on the outer and inner sides of the armor by rivets or similar fastening devices 14 which are inserted through the covering and lining and through the outer rows of the tread plates.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended claims.

Having thus described our invention, what we claim is:

1. In a tire armor, longitudinal series of plates adapted to be hingedly connected together, said plates comprising an outer portion, inner portions arranged on the opposite sides of said outer portions and folded into engagement with the outer portions, a series of integral tongues connecting said inner and outer portions of the plates together, said tongues forming hinge loops when the inner portions of the plates are bent over onto the outer portion, said inner portions of the plates terminating short of one end of the outer portion and projecting beyond the opposite end of said outer portion whereby when the plates are assembled, said projecting ends of the outer portions of the plates will overlap the adjacent ends of the adjoining plates and hinge rods adapted to be engaged with the hinge loops of the plates whereby the latter are hingedly connected together.

2. In a tire armor, longitudinal series of plates hingedly connected together, said plates having their adjoining ends overlapping, a series of side plates hingedly connected to the outer edge of the outer rows of the plates, said side plates being bent upon themselves midway between their ends and having formed in their folded inner edge a series of hinge loops and having formed in their outer ends apertures, a series of coiled springs arranged between the outer ends of the side plates, said springs having their opposite ends engaged with the apertures in said plates whereby the armor is held in position on the tire.

3. In a tire armor, longitudinal series of plates hingedly connected together, said plates having their opposite side edges bent or folded over upon the central portions thereof, said folded edges projecting beyond the central portion of the plates at one end and terminating short of the opposite end of said central portion whereby an overlapping break joint construction is formed between the meeting edges of the plates, hinge rods adapted to hingedly connect said plates together in longitudinal rows, a series of side plates hingedly connected to the outer edges of the outer row of the said plates, a series of springs to yieldingly connect the outer ends of said side plates together, an inner protective lining arranged between the inner side of the armor and the tire, an outer covering arranged over the outer side of the armor whereby the same is rendered noiseless, and means to secure said lining and covering to the plates.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

HENRY M. RAMSAY.
AUSTIN McGARY.

Witnesses:
LOUIS SWEARINGEN,
JOHN McCARTY.