

March 20, 1928.

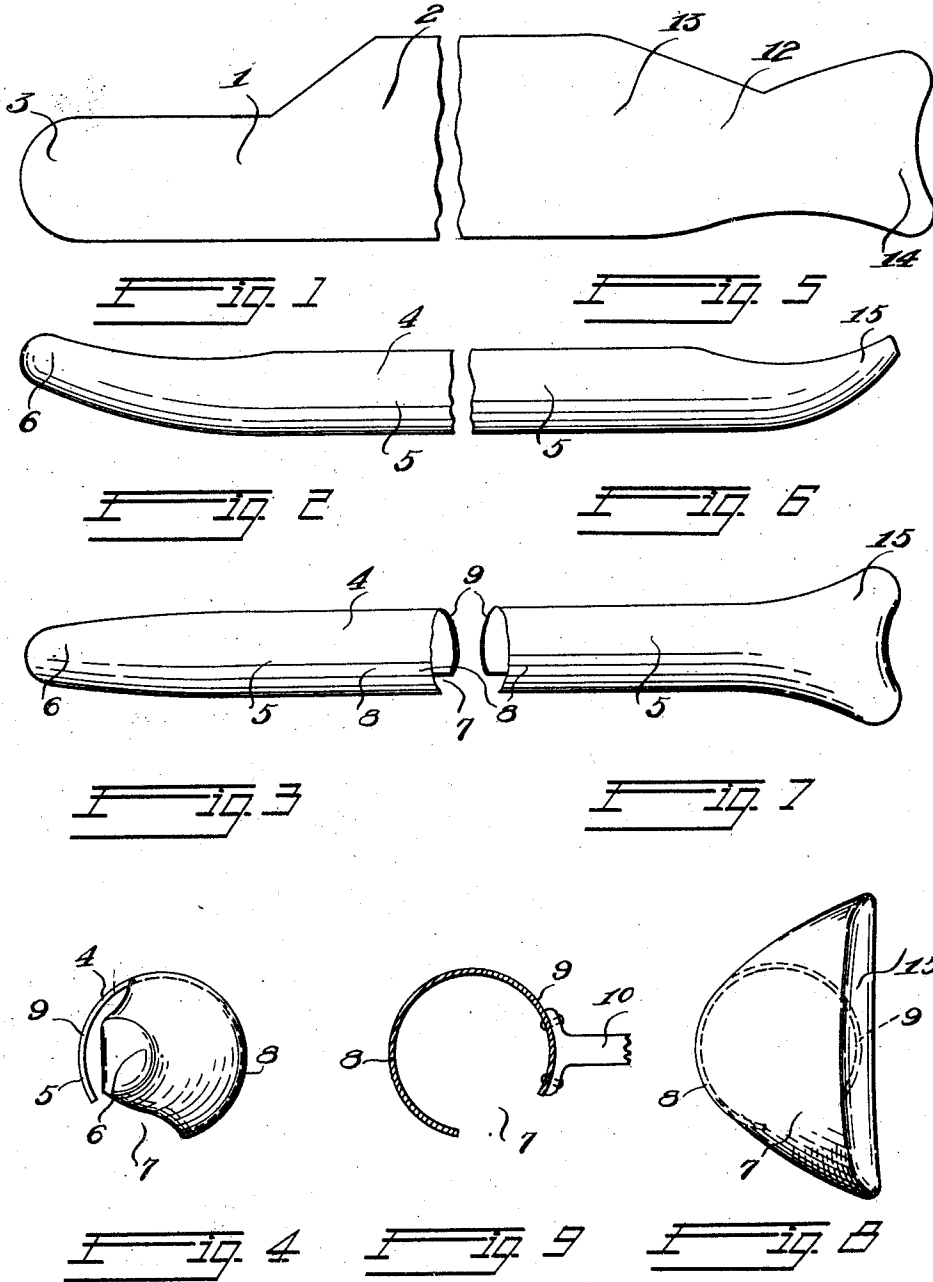
1,663,424

H. TAYLOR

VEHICLE IMPACT BAR

Filed Sept. 30, 1927

2 Sheets-Sheet 1



Inventor
Austin Taylor
William A. Strauch
Attorney

March 20, 1928.

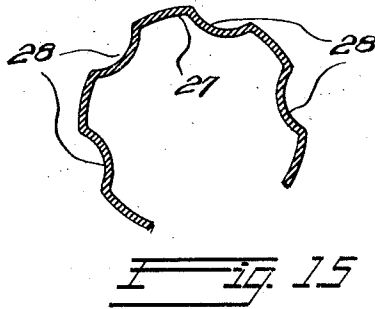
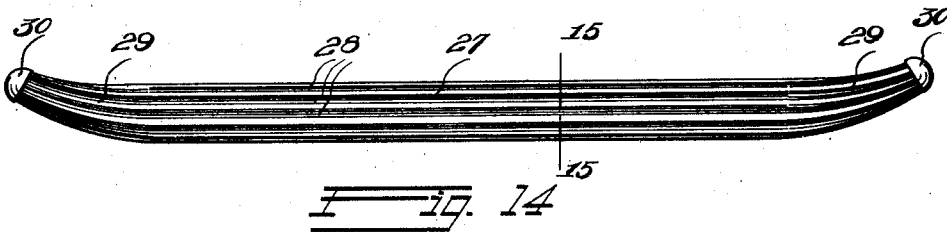
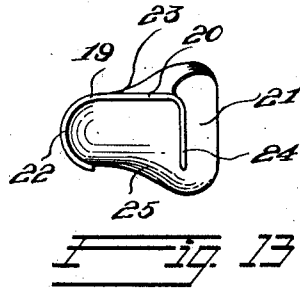
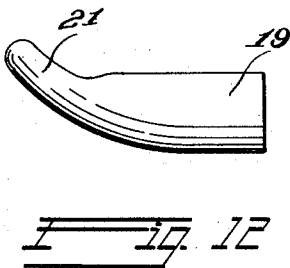
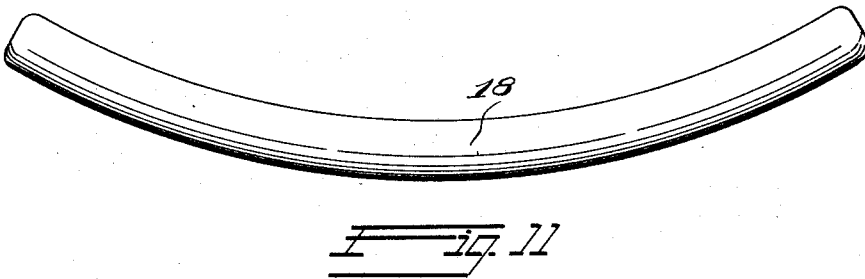
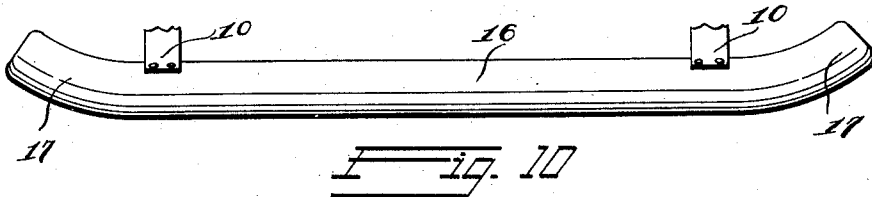
1,663,424

H. TAYLOR

VEHICLE IMPACT BAR

Filed Sept. 30, 1927

2 Sheets-Sheet 2



Inventor
Huston Taylor
William A. Strauch
Attorney

UNITED STATES PATENT OFFICE.

HUSTON TAYLOR, OF DETROIT, MICHIGAN.

VEHICLE IMPACT BAR.

Application filed September 30, 1927. Serial No. 222,979.

The present invention relates to impact bars or bumpers, and more particularly the invention relates to inherently resilient metallic impact bars or bumpers for vehicles, and comprises primarily improvements in impact bars of the type disclosed in my patent numbered 1,639,011 issued August 16, 1927.

In the form of invention shown in my above mentioned prior patent, comparatively heavy gauge sheet metal must be used, and separate end caps and special re-enforcing members are utilized to stiffen the bar constructions and to give a desirable resilience thereto, which result in increased weight and cost of production.

In accordance with the present invention I have discovered that it is feasible to produce my improved impact bar and bumper constructions from a single metal blank of lighter gauge material than is necessary in the forms shown in my above mentioned patent, and at the same time to materially improve the appearance and inherent characteristics of the construction for use as an impact bar or bumper. This improvement is effected in general by suitably shaping or curving the bar constructions to provide reinforcing curved sections in the sheet metal from which the bar is formed, permitting the production of an improved impact bar which is lighter in weight, more attractive in appearance and at substantially reduced cost.

Accordingly the primary object of the invention is a provision of an improved impact bar of the character mentioned, formed from sheet metal of light weight construction and presenting desirable substantial or solid appearance while having inherent qualities of yieldability and resistance to impact, highly desirable in a vehicle bumper.

Another object of the invention is the provision of impact bar constructions comprising a resilient body portion tubular in appearance provided with sections which tend to check the resiliency of and stiffen the body portion permitting the production of efficient impact bars of minimum weight and cost which at the same time are substantial in appearance.

Further objects of the invention are such as may be attained by a utilization of the various combinations, sub-combinations, and principles as more fully hereinafter set forth

and as defined by the terms of the appended claims.

These objects are attained by use of the constructions illustrated in the accompanying drawings in which—

Figure 1 is a plan of one end of a blank from which one form of bar is constructed.

Figure 2 is a top plan view of one end of an impact bar constructed from a blank of resilient metal as shown in Figure 1.

Figure 3 is a front elevational view of the bar illustrated in Figure 2.

Figure 4 is an end view of the form of bar illustrated in Figures 2 and 3.

Figure 5 is a plan of one end of a blank of resilient metal from which a second form of my impact bar is constructed.

Figure 6 is a top plan view of one end of a bar constructed from a blank of resilient metal as illustrated in Figure 5.

Figure 7 is a front elevational view of the bar illustrated in Figure 6.

Figure 8 is an end view of the form of bar illustrated in Figures 6 and 7.

Figure 9 is a cross-sectional view through an intermediate portion of the bar of either of the above described forms showing the split or gap in the tube.

Figure 10 is a top plan view of a complete bar of which the body portion is straight and having curved ends.

Figure 11 is a top plan view of an improved impact bar curved throughout its extent.

Figure 12 is a top plan view of a fender protector embodying my invention.

Figure 13 is an end view of the fender protector illustrated in Figure 12.

Figure 14 is a top plan view of another form of bar embodying my invention, and

Figure 15 is a cross-sectional view on line 15—15 of Figure 14.

Referring to the drawings in which like characters designate like parts in the several views, 1 designates one end of a blank of resilient metal which comprises a body portion 2 and end portions 3. The character 4 designates one form of impact bar which is constructed from the blank 1 and as shown in Figures 2, 3 and 4 comprises a straight partial cylindrical body portion 5 which is formed by bending the portion 2 of the blank into partial cylindrical form and curved end portions 6 which are formed from the end portions 3 of the blank.

The body portion 5 of the impact bar 4 as is clearly shown in Figure 4 is in the form of a split tube having a relatively wide gap 7 which is disposed at the bottom of the bar when in assembled position. It will be noted upon reference to Figures 4 and 9 that gap 7 extends for the greater portion of its width rearwardly of the longitudinal central vertical plane of the bar providing an impact portion 8 of greater width than the supporting portion 9 which is adapted to be secured to a vehicle by means of suitable brackets 10. The body of the bumper while open at the bottom, is of solid tubular appearance as ordinarily viewed when in position on a vehicle. The end portions 6 of the bar 4 are formed by peening the metal to give a closed appearance to the bar when viewed from the end. As shown in Figures 2, 3 and 4, end portions 6 are curved rearwardly and are provided with upper and lower curved portions as shown in Figure 3 forming substantially closed tapered end portions, as viewed in front elevation, being closed at the front of the bar and open rearwardly thereof. It will be seen that the gap 7 in the body portion of the bar provides for a resilient action between the impact and supporting portions and the curved ends, while imparting an attractive appearance, also function to stiffen the body portion and react against the said resilient action, making possible the construction of a resilient bar of attractive tubular appearance from a single blank of lighter gauge material than can be utilized in the production of straight bars of the type shown in my above mentioned patent.

In Figures 6, 7 and 8 is illustrated a second form of my invention which is constructed from a blank of resilient metal 12, one end of which is illustrated in Figure 5, the blank comprising a body portion 13 and end portions 14. The body portion of the bar in this form of the invention is the same as that above described in connection with the first form and consequently the same reference characters have been used to designate the like parts.

In this form of the invention, however, the ends, as shown in Figures 6, 7 and 8 are curved rearwardly similarly to the curved ends of the first form but as viewed in front elevation the ends in this form of the invention are flared outwardly as indicated at 15 and peened over to close the ends toward the front of the bar. As in the form heretofore described this type of invention presents a solid appearance as ordinarily viewed when in position on a vehicle, and may be constructed of suitable resilience from a single blank of comparatively light gauge sheet metal.

In Figure 10 a resilient bar of tubular material is shown formed from a single blank

of sheet metal embodying my invention which comprises a tubular body portion 16, preferably open at the bottom, and curved reinforcing end portions 17. The body portion and end portions have the transverse configuration shown in Figure 9 throughout the extent of the bar in this form of the invention.

In Figure 11, a bar 18 embodying my invention is shown which is of uniform transverse configuration as shown for example in Figure 9, curved throughout its entire length in which the strengthening effect of the curvature and other advantages above set forth are secured.

In Figures 12 and 13, a short resilient sheet metal fender protector 19 embodying my invention is illustrated, which is also formed from a single blank and comprises a body portion 20 and rearwardly curved end portion 21. The body portion in this form of the invention comprises a transversely curved front impact section 22 and substantially straight right angular top and rear sections 23 and 24 respectively, the bottom being open as indicated at 25 to provide for resiliency between the front and rear or impact and supporting portions.

In Figures 14 and 15 is illustrated an impact bar 27 which is formed from a blank of resilient metal corrugated for strength as well as to stiffen the resilient action under impact and to provide a bar attractive in appearance. The corrugations comprise a plurality of longitudinally extending grooves 28 which reinforce the bar and check the resiliency between the impact and supporting portions. While the bar 27 may be straight throughout its length, permitting the use of lighter gauge material while at the same time improving the properties of resilience over the type of bar shown in my above mentioned patent, in the preferred embodiment of this form of invention, bar 27 is provided with curved ends 29 which have the same function as the curved ends above referred to in connection with the other forms but are stiffer due to the fact that the grooves 28 are extended to the ends of the curved end portions, the grooves being preferably deepened as the ends are approached to provide the tapered effect shown in Figure 14 besides rendering the curved ends more rigid. Suitable caps 30 may be secured to the ends of this type of bar.

While I have disclosed several forms of my invention, it is to be noted that the same inventive thought is embodied in each form, namely the provision of a longitudinally split resilient tubular member provided with reinforcing curved sections or portions preferably formed from a single blank, which not only fulfill the well known functions such as protecting the wheels and fenders, but also provide a bumper or impact bar of

more attractive appearance at reduced cost. The curved ends are more rigid than the main body portion and stiffen the body portion as a result of which the yielding between the impact and supporting portions is checked in desirable manner and consequently impact bars embodying my invention may be of lighter material and at the same time are provided with properly shaped ends.

It will be apparent to those skilled in the art that wide variations may be made in the detailed constructions heretofore set forth without departing from the spirit of my invention. Accordingly having set forth certain embodiments of my invention what I desire to secure by Letters Patent and claim as new is:

1. An impact bar comprising a resilient metallic body section tubular in appearance having integral re-inforcing end portions of stiffer resiliency than said body portion.

2. An impact bar for vehicles, comprising an elongated resilient sheet metal body substantially tubular in appearance with a section yieldable relatively under impact and having means formed integrally therewith to stiffen said yieldable section.

3. An impact bar for vehicles comprising an elongated body of resilient metal curved transversely and having relatively resiliently movable longitudinal edges and means integral with said elongated body adapted to stiffen said resilient movement.

4. An impact bar comprising a one piece member of substantially tubular appearance, said member having an elongated resilient body portion and substantially rigid end portions.

5. An impact bar comprising a resilient open sheet metal body portion with a section adapted to yield to impacts, and curved reinforcing end portions integral with said body portion.

6. An impact bar comprising an elongated body of tubular appearance formed from resilient sheet metal, and having a relatively resiliently movable edges, said body being provided with longitudinally curved end portions adapted to stiffen said body against resilient movement.

7. An impact bar comprising a substantially tubular body portion having relatively

yieldably movable longitudinal edges and curved end portions opened at the rear of said body portion.

8. An impact bar comprising an open tubular resilient body portion, and curved reinforcing end portions, said end portions being integral with said body portion and peened over at the ends thereof.

9. An impact bar comprising an elongated sheet of corrugated resilient metal with a section thereof curved transversely and with the longitudinal edges thereof resiliently movable with relation to each other.

10. An impact bar comprising an elongated sheet of resilient sheet metal curved transversely and with the longitudinal edges thereof resiliently movable with relation to each other, said sheet being provided with a plurality of grooves adapted to stiffen said sheet against resilient movement.

11. An impact bar comprising an elongated resilient body of tubular appearance embodying integral reinforcing means throughout the longitudinal extent thereof.

12. An impact bar comprising a resilient body portion, and corrugated end portions adapted to stiffen said body portion.

13. An impact bar comprising a longitudinally grooved resilient open substantially tubular body portion, and end portions adapted to reinforce said tubular body portion.

14. An impact bar comprising a resilient body portion and curved reinforcing end portions, said body portion and end portions embodying reinforcing means coextensive therewith.

15. An impact bar comprising a resilient tubular body portion provided with a longitudinal opening therein and curved end portions provided with reinforcing grooves, said grooves gradually deepening toward the extremities of said end portions whereby the end portions are gradually tapered.

16. An impact bar comprising a resilient body portion and reinforcing curved end portions, said body portion and said end portions provided with a plurality of longitudinally extending grooves co-extensive therewith.

In testimony whereof I affix my signature.

HUSTON TAYLOR.