

April 18, 1944.

B. WALKER

2,346,713

CALTROP

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Fig. 1.

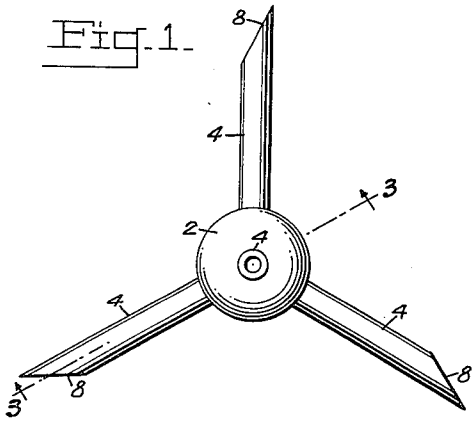


Fig. 4.

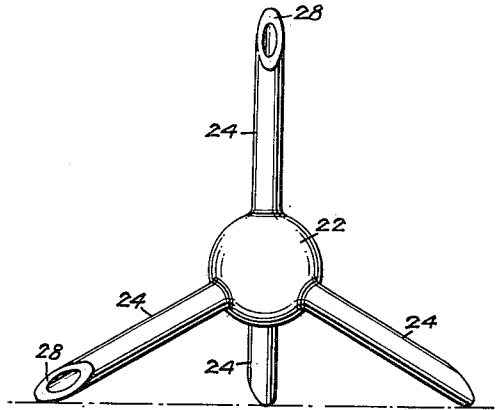


Fig. 2.

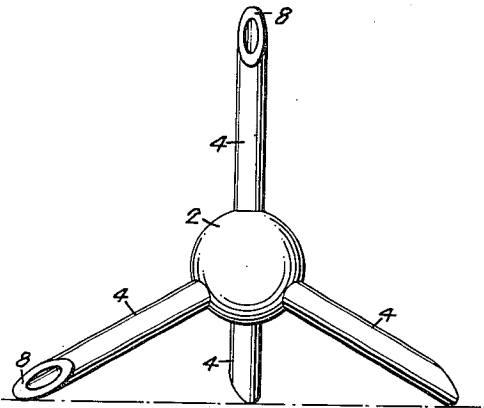


Fig. 5.

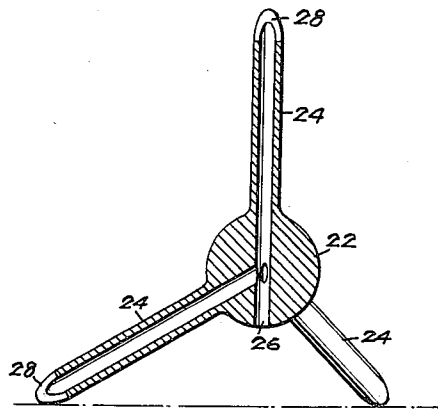
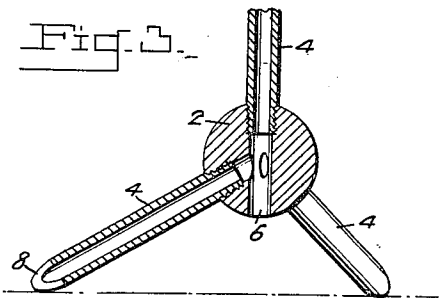


Fig. 3.



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UNITED STATES PATENT OFFICE

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CALDROP

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9 Claims. (Cl. 256-1)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to an improved caltrop, to be used against enemy vehicles mounted on pneumatic tires.

Webster's Dictionary shows a caltrop or caltrap as a four-pointed body, the points being so arranged that, when any three of them are on the ground, the fourth sticks straight up from the ground surface; the dictionary points out that the device was used against enemy cavalry.

The "cavalry" of modern war is much less easily affected by the old style caltrop for, even though a pointed instrument pierce a tire wall, it will not necessarily stop the progress of the vehicle, nor will it even materially impede that progress. The reason is that self-sealing tires may substantially eliminate the effectiveness of simple punctures. It therefore becomes necessary to not only puncture the tire, but also to let the air out. Clearly, the ancient form of caltrop was called on for no such purposes.

It is therefore the object of this invention to provide a caltrop which will be effective in retarding the advance of military vehicles which run on pneumatic pressure tires. This is accomplished by a caltrop having hollow arms.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawing in which:

Fig. 1 of the drawing shows a plan view of a caltrop made according to the invention.

Fig. 2 is an elevational view of the device of Fig. 1.

Fig. 3 is a view in section on line 3-3 of Fig. 1.

Fig. 4 is an elevational view of a modified form of caltrop.

Fig. 5 is a view in section similar to Fig. 3, but showing the modification of Fig. 4.

Referring to the drawing in detail, the caltrop is shown as comprising a central body 2 having four hollow arms 4 equally spaced about the body. The spacing of the four arms is a relatively simple problem when it is remembered that these arms could be centered in the faces of an equilateral pyramid. The arms are thus spaced approximately 109.5° apart. As can be seen in Fig. 3, the arms are hollow throughout their length, and the hollows of the various arms are interconnected by means of passages in the body 2. One of these passages is a straight-through bore 6, which serves to communicate the inner ends of all the hollow arms to atmosphere. In this first embodiment shown in Figs. 1 to 3, arms 4 are shown as screwed into body 2.

In the embodiment shown in Figs. 4 and 5, the central body 22 is made integral with the spaced

arms 24. Arms 24 interconnect, as shown in Fig. 5, and body 22 is vented to atmosphere directly through passage 26.

The arms 4 and 24 are preferably pointed, as shown by the oblique cut-off indicated by 8 and 28.

In use, caltrops according to the invention can be scattered in large quantities from low-flying aircraft in areas which are likely to be traversed by enemy vehicles. So used, one of the devices in only one tire could stop or slow down a vehicle by completely deflating that one tire.

The device with screwed arms is especially useful in that it may be carried in quantities in the disassembled form and put together prior to use by scattering or deliberate planting. Thus, it may be readily carried in the pockets of members of a raiding party.

While the preferred caltrop shown is of the classical form with four symmetric arms, it will be understood that the particular configuration is not a limiting factor and other forms of the device may be used that carry out the novel concept of providing hollow members for passage of air or other fluid.

I claim:

1. A caltrop comprising a central body, hollow arms extending therefrom, and an opening communicating the hollows with the atmosphere.

2. In a caltrop, a hollow central body, and a plurality of hollow arms secured to the central body and open to the atmosphere, each arm being pointed at its outer end.

3. The invention as in claim 2, in which the hollows of the various arms are interconnected through the central body.

4. A puncturing object for ground sowing comprising interconnected hollow arms and open to the atmosphere diverging in spacial configuration.

5. A puncturing object for ground sowing comprising interconnected hollow arms and open to the atmosphere diverging in spacial configuration and pointed outer ends on said arms.

6. A caltrop comprising a plurality of hollow open end connected arms extending in different directions from their point of connection, the hollows in said arms being interconnected and open to the atmosphere.

7. Invention of claim 6 characterized in that arms have chamfered outer ends to facilitate entry into the air space of an inflated body.

8. A caltrop comprising a connector portion having intercommunicating openings there-through extending in different directions, and hollow open end tubes with their ends retained in said openings.

9. The invention of claim 8, characterized in that the tubes are threaded into the openings in the connector.

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