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2,524,588

SPARK ARRESTER

Filed May 4, 1949

Fig. 1.

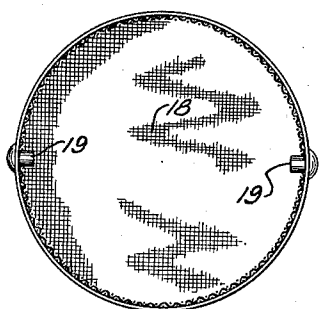


Fig. 2.

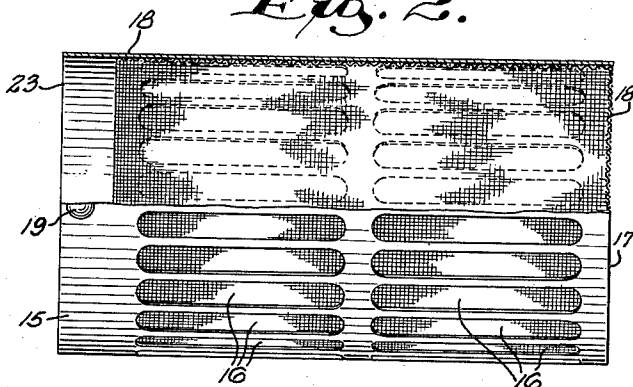
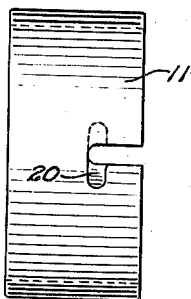


Fig. 3.

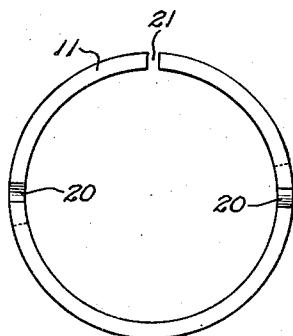


Fig. 4.

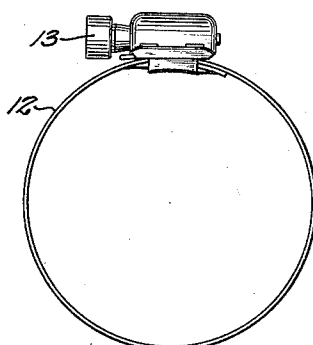


Fig. 5.

Fig. 6.

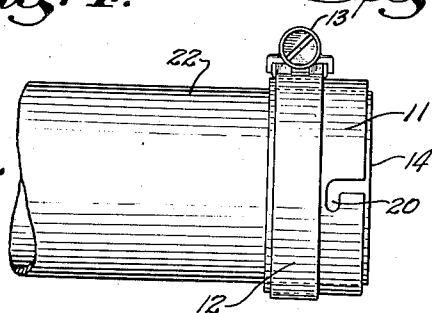
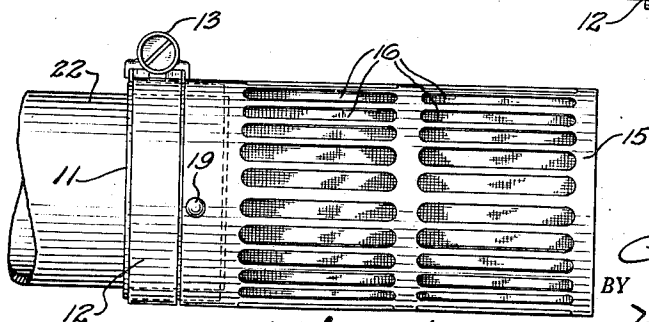


Fig. 7.

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UNITED STATES PATENT OFFICE

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SPARK ARRESTER

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Application May 4, 1949, Serial No. 91,406

1 Claim. (Cl. 183-73)

1

This invention relates to improvements in spark arresters, and more particularly to spark arresters adapted to be connected to the exhaust pipe of an internal combustion engine.

It is commonly known that exhaust gases of an internal combustion engine contain particles of live carbon or extremely hot pieces of carbon and there is a great danger that combustible material may become ignited by contact with such particles. These particles escape under pressure and frequently are projected some distance from the exhaust pipe.

Heretofore the farmer has been restricted in his use of a tractor to places removed from the location of combustible material. It has been particularly dangerous for a farmer to use his tractor in the barn, because of the great danger of hay or the like catching fire. In addition, in many cases this danger has made it necessary for the farmer to build a separate barn or shed within which to house tractors and other implements having internal combustion engines.

It is, therefore, a general object of the present invention to provide a spark arrester which is so constructed as to overcome the above mentioned danger resulting from sparks and which is constructed to allow free use of a tractor or internal combustion engine in the proximity of combustible material.

When a spark arrester of this type is used, the partial blocking of the exhaust pipe opening is somewhat objectionable and brings about a decrease in efficiency as well. Therefore the use of the spark arrester should be restricted to only those times when it is actually needed.

It is therefore a more specific object of the invention to provide a spark arrester which is readily detachable from the exhaust pipe so that it may be used only when necessary, and which can be quickly and securely connected to the open end of the exhaust pipe when desired.

A still further object of the invention is to provide a spark arrester having a separate metal collar formed with a gap in its periphery and having means permitting contraction of the collar so as to securely fasten the collar to the exterior surface of the exhaust pipe near its open end, the said collar being formed with quick connection means cooperable with complementary connection means on the device proper.

With the above and other objects in view, the invention consists of the improved spark arrester, and all of its parts and combinations, as set forth in the claim, and all equivalents thereof.

In the accompanying drawings, illustrating one

2

complete embodiment of the preferred form of the invention, in which the same reference numerals designate the same parts in all the views:

Fig. 1 is a view of the open end of said cover section;

Fig. 2 is a side view of the cover section with part broken away and shown in section;

Fig. 3 is a side view of the metal collar;

Fig. 4 is an end view of the connecting collar;

Fig. 5 is an end view of the band used to fasten the collar to an exhaust pipe;

Fig. 6 is a side view showing the collar attached to an exhaust pipe with the cover removed; and

Fig. 7 is a side view of the complete spark arrester assembled and ready for use.

Referring more particularly to the drawings, the assembly includes a collar 11 formed of brass or other suitable material; a split metal band 12 having a screw means 13 by which the ends of the band can be drawn together when the band is placed over the collar 11 to securely fasten the collar to the exterior of an exhaust pipe 22 near its open end 14, as shown by Fig. 6; and a metal cylindrical casing 15 which has apertures 16 in its periphery and which is open at one end as at 23 and closed at its other end 17 by the end of a cup-shaped fine gauge wire screening 18. This screening is fitted within the casing 15 so as to cover all of the openings 16 from within. Thus the only portion of the casing section which is not covered by screening is the open end 23. The combination of the screening 18 and cylindrical casing 15 constitutes a cover.

Adjacent the open end and projecting inwardly of the cover are pins 19. These pins are adapted to coact with bayonet slots 20 located in the collar 11. In addition, these pins 19 are made to fit snugly in the bayonet slots 20 so as to securely and yet detachably connect the cover to the collar 11 as shown in Fig. 7.

The collar 11 is preferably made of a resilient metal and has a gap 21 in its periphery. Thus, the collar 11 can be easily slipped onto the exhaust pipe 22 and the metal band 12 thereafter slipped over the collar. Tightening of the screw 13 will securely fasten the collar 11 and band 12 to the exhaust pipe 22. As thus secured these two parts may remain permanently in place on the exhaust pipe.

Whenever it is necessary to use the spark arrester the cover shown in Fig. 2 can be quickly attached by sliding the open end over the exhaust pipe opening 14 so as to engage the pins 19 in the bayonet slots 20. Then by turning the

3

cover counterclockwise as far as it will go, a secure connection may be affected.

If desired, the collar 11 may be made to hold itself in position so that the use of metal band 12 is eliminated. However, the combination of parts shown is preferred.

Various changes and modifications may be made without departing from the spirit of the invention and all of such changes are contemplated as may come within the scope of the claim.

What I claim is:

A spark arrester for connection with an exhaust pipe comprising a cylindrical collar formed with a gap therein which extends the full length of said collar, said collar having a plurality of bayonet slots extending inwardly from one end thereof; a band surrounding said collar adjacent the other end and located between said end and said bayonet slots to maintain the latter exposed; adjustable means for tightening said band to constrict said collar for frictionally connecting said collar on a conventional exhaust pipe adjacent the exhaust opening thereof; and a cup-shaped cover formed with a cylindrical open end portion having an inner diameter which is of

4

a size to fit over said collar, said cover being positioned with said open end portion surrounding said collar and having pins projecting radially inwardly at said open end portion into the bayonet slots of said collar for detachably maintaining said cover in position, said cover being formed with openings of a size to permit the escape of exhaust gases and to prevent the escape of solid material.

CHARLES E. BECHTEL.

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