ABSTRACT

A rain cap for a vertical exhaust of an internal combustion engine is formed of an open-ended cylindrical body larger than the exhaust pipe and having a pivotally mounted cover opened by exhaust gases and closed by gravity. Portions struck from the body support it from the exhaust pipe.

1 Claim, 3 Drawing Figures
RAIN CAP FOR EXHAUST PIPE

This invention relates to rain caps for vertical, upwardly directed exhaust pipes for internal combustion engines.

Vertical exhausts usually are provided with rain caps to prevent the entrance of rain and foreign matter at times when the engine is not being operated. These rain caps are usually gravity-biased to closed position, the stream of exhaust gas during operation of the engine opening the cap against its bias and holding it open.

In the cap of the present invention, a cap or cover is pivotally mounted in a cylindrical body which is of somewhat larger diameter than the exhaust pipe to leave an annular space for rain dripping from the edge of the cover to drain downwardly along the outside of the exhaust pipe. The body is formed as an open-ended sheet metal cylinder having diametrically opposite slits portions displaced inwardly at the bottom of the body to engage the exhaust pipe and support the body.

Among the objects of the present invention are to provide an improved rain cap for vertical exhausts which is simple, easy and economical to manufacture, which may easily be attached to a vertical exhaust and which is rugged and dependable in operation.

Other objects, and objects relating to details of construction and use will be more apparent from the detailed description to follow.

This invention is clearly defined in the appended claims. In the claims, as well as in the description, parts may at times be identified by specific names for clarity and convenience, but such nomenclature is to be understood as having the broadest meaning consistent with the context and with the concept of this invention as distinguished from the pertinent prior art. The best form in which has been contemplated applying this invention is illustrated in the accompanying drawings forming part of this specification in which:

FIG. 1 is a perspective view of the rain cap of the present invention applied to an exhaust pipe, a portion of the body being broken away;

FIG. 2 is a vertical section through cap and exhaust pipe end; and

FIG. 3 is a horizontal section taken on the line 3—3 of FIG. 2.

Referring now to the drawings, the rain cap assembly of the present invention comprises a cylindrical body 10 which is made of sheet metal and has open top and bottom ends. The diameter of the body 10 is somewhat larger than the diameter of the vertically upwardly extending exhaust pipe 11 to leave an annular space 12 between the body and the outside wall of the exhaust pipe. A circular cover 14 of diameter somewhat larger than the diameter of the exhaust pipe is mounted in the upper portion of the body on a horizontal pivot 15 extending from side to side of and supported by the body 10. The pivot 15 is offset a short distance from the center of the cover 14 so that the cover will be gravity-biased in a direction to close the exhaust pipe 11 when the vehicle engine is not in use.

A tab 16 is struck inwardly from the wall of the body 10 to form a stop limiting rotation of the cover 14 to a generally horizontal position at which time it overlies the open end of the exhaust pipe 11. A second tab 17 struck inwardly from the body 10 limits opening movement of the cover 14. The tab 17 is positioned to permit the cover 14 to rotate most of the way towards the open position, as shown in the drawings.

The body 10 is mounted concentric to the upper end of the exhaust pipe 11 by a pipe of inwardly displaced portions 19 struck from the lower edge of the body 10. These portions are formed by slitting body 10 at 21 on diametrically opposite sides of the body and then forming the portions 19 into arcuate confronting portions adapted to engage the outside of the exhaust pipe 11 a short distance below its upper end. If desired, a self tapping bolt 24 may be engaged with each of the portions 19 and the exhaust pipe to clamp the body 10 in position on the exhaust pipe.

In operation, immediately upon starting the internal combustion engine, the current of exhaust gases exiting from the exhaust pipe 11 will press against the underside of the cover 14 to rotate it to open position against the tab 17. The cover will remain in open position until the engine is shut off, at which time under the force of gravity the cover will rotate to closed position against the tab 16.

In closed position, the cover 14, which is somewhat larger in diameter than the exhaust pipe 11, will prevent direct entrance of rain into the exhaust pipe. Water dripping from the edges of the cover 14 will pass downwardly through the annular space 12 between the body and the outside of the exhaust pipe and thus will not enter into the exhaust pipe and into the engine. The body 10 will protect the cover 14 and its pivot 15 from damage.

I claim:

1. A rain cap for a vertical upwardly directed internal combustion engine exhaust pipe, said cap comprising a cylindrical body having both ends open and having a diameter somewhat larger than the diameter of the exhaust pipe, a lower edge portion of said cylindrical body being split at opposite sides parallel to said lower edge portion and displaced inwardly and formed to provide two confronting arcuate portions adapted to engage the outside of the exhaust pipe a short distance below its upper end to support said cylindrical body generally concentrically on the upper end of the exhaust pipe with the upper end of said cap projecting beyond the end of the exhaust pipe with the space between said cylindrical body and the exhaust pipe being substantially unobstructed, a circular cover pivotally mounted on a horizontal axis within said cylindrical body in spaced relation above the end of the exhaust pipe, said circular cover having a diameter greater than the diameter of the exhaust pipe and being biased towards horizontal position to block entrance of rain into the exhaust pipe, the mounting of said cylindrical cover permitting it to be swung towards vertical position against its bias by gas issuing from the exhaust pipe.

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