C. W. STRYKER.

MUFFLER CUT-OUT.

APPLICATION FILED OCT. 20, 1910.

1,027,929. Patented May 28, 1912.

Fig. 1.

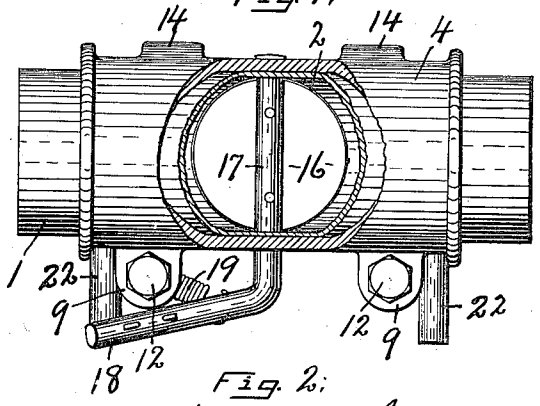


Fig. 2.

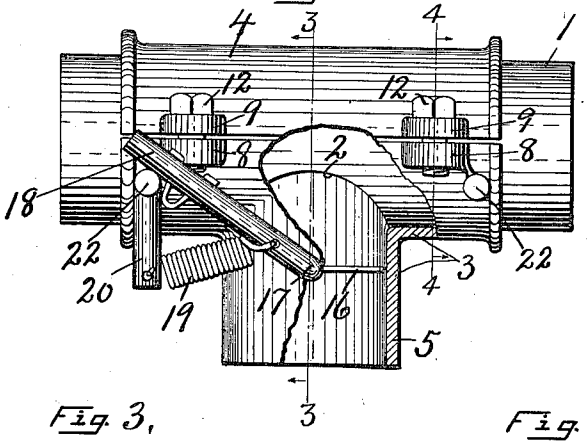


Fig. 3.

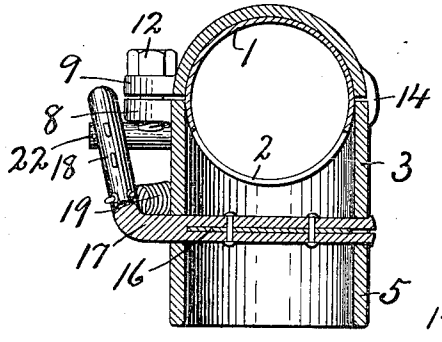


Fig. 4.

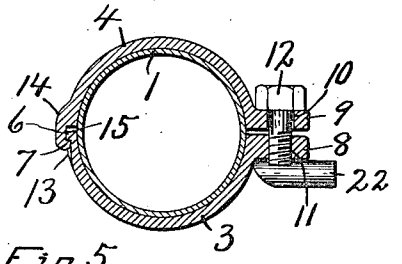
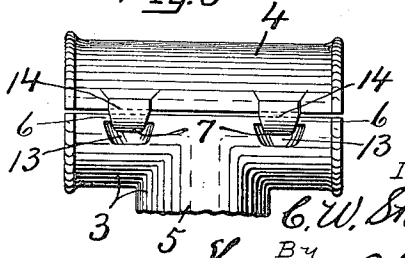


Fig. 5.



Witnesses:
R. W. Bailey.
H. E. Chase

Inventor:
C. W. Stryker
By
Howard P. Denison
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES WORRELL STRYKER, OF SYRACUSE, NEW YORK.

MUFFLER CUT-OUT.

1,027,929. Specification of Letters Patent. Patented May 28, 1912.

Application filed October 20, 1910. Serial No. 588,055.

To all whom it may concern:

Be it known that I, CHARLES WORRELL STRYKER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Muffler Cut-Outs, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in muffler cut-outs adapted to be connected to the exhaust pipe of an internal combustion engine between the engine and a suitable muffler for the purpose of discharging the high pressure exhaust directly to the atmosphere or causing the exhaust products to be diverted through the muffler and thence to the atmosphere under low pressure.

The main object of my invention is to provide a muffler cut-out which may be easily and quickly attached to any exhaust pipe without disconnecting such pipe from the muffler or engine and at the same time to provide such cut-out with a discharge opening of the same cross-section area as or larger than that of the exhaust pipe to which the cut-out is attached.

Another object is to provide for a circumferential adjustment (if necessary) of the coupling relatively to the exhaust pipe upon which it is mounted for the purpose of accurately adjusting the discharge opening in the coupling with that in the pipe and at the same time permitting such opening to be varied or entirely cut off, if desired.

Other objects and uses will be brought out in the following description.

In the drawings: Figures —1— and —2— are respectively a top plan and a side elevation of a portion of an exhaust pipe and my improved coupling mounted thereon, portions of the cut-out and pipe being broken away in Fig. —1—, while portions of the coupling are broken away in Fig. —2—. Figs. —3— and —4— are transverse sectional views taken respectively on lines 3—3 and 4—4 Fig. —2—. Fig. —5— is a rear elevation of the detached coupling on a smaller scale, showing particularly the interlocking members of the sections.

In illustrating the operation of my invention, I have shown a portion of an exhaust pipe —1—, which may serve as a connection between any suitable gas engine and the muffler not shown and is provided in one side with an opening —2— preferably circular in top plan and of nearly the same diameter as the inner diameter of the pipe so as to afford as large an outlet as possible.

The cut-out comprises a sectional pipe T, the head of which is substantially the same interior diameter as the exterior diameter of the exhaust pipe —1— upon which it is adapted to be clamped in a manner hereinafter described and is of greater length than the diameter of the opening —2—, which it is adapted to inclose in such manner as to bring the branch of the T into register therewith. As shown in the drawings, the T-coupling comprises, opposite substantially semi-cylindrical sections —3— and —4—, the section —3— being provided with a branch nipple —5— having its inner diameter substantially equal to that of the opening —2— with which the branch —5— is adapted to register when the cut-out is adjusted for use. In order that these sections —3— and —4— may be quickly and positively secured to the pipe —1—, the meeting edges of one side are provided with interlocking shoulders —6— and —7—, while the opposite meeting edges are formed with registering radial lugs or ears —8— and —9—, spaced apart a sufficient distance to allow the sections —3— and —4— to be clamped tightly upon the pipe. The ears of each co-acting pair are provided with registering apertures —10— and —11— for the reception of clamping bolts or screws —12—, the apertures —10— in ears —8— being threaded for engagement with said screws or bolts. The shoulders —6— are formed by recessing the rear side of the section —3— at —13— a short distance from its upper edge thereby allowing the superposed portions to project slightly beyond the inner walls of the recesses. The shoulders —7— are formed upon the lower ends of the pendant ears or lugs —14—, which are integral with the sections —4— and project some distance below the lower edge of the adjacent side thereof, the inner faces of the lugs being formed with grooves —15— for receiving the shoulders —6—, so that when the parts are adjusted for use, the shoulders —7— enter the recesses —13— and interlock with the lower edges of the shoulders —6— thereby holding the corresponding sides of the sections —3— and —4— against the relative radial displacement and at the same time, permitting the sections —3— and

—4— to be readily spread apart and placed upon or removed from the pipe —1—, by simply removing the clamping screws —12—.

A valve or damper —16— is mounted within the branch —5— directly below the opening —2— and is preferably secured to a rock shaft —17—, which is journaled in the sides of said branch as best shown in Fig. —3—. One end of this rock shaft is provided with a crank arm —18—, which may be connected to any suitable operating mechanism for adjusting the valve —16— with or against the action of a retracting spring —19—. This spring is tensioned to normally hold the valve in its closed position and for this purpose has one end connected to the crank arm —18— and its other end to a pendant stud —20— on the section —3— as best seen in Fig. —2. The movement of the valve —16— from its extreme closed position to its extreme open position is limited by stop shoulders —22— projecting laterally from the section —3— into the path of movement of the crank arm —18— as best seen in Figs. —1— and —2—.

What I claim is:

1. In a muffler cutout, the combination with an exhaust pipe having an opening in one side of a diameter substantially equal to the interior diameter of the pipe, of a T-coupling fitted to the exhaust pipe and extending at both ends beyond the opening, said coupling formed in two substantially semi-cylindrical sections, one of which has a branch-pipe projecting therefrom centrally of its ends and registering with said opening, said branch-carrying section provided adjacent one edge of its open longitudinal side with recesses 13 terminating in shoulders 6 and at its opposite side with lugs 8 having threaded apertures, the other section provided at one side with ears having lugs 7 to fit in the recesses 13 and engage the shoulders 6 and at the other side with apertured lugs 9, clamping screws passed through said lugs 9 and engaging in the threaded apertures of the lugs 8, a rock-shaft journaled in the branch pipe of said coupling, a damper carried by the rock-shaft within the pipe and of a diameter corresponding to the interior diameter of said pipe, said rock-shaft having an angularly-extending arm, stops carried by the T-coupling for engagement by the arm to limit the throw of the latter in both directions, a stud carried by the T-coupling, and a spring connected at one end to the stud and at the other end to said arm for normally holding the damper in closed position.

2. In a muffler cut out, the combination with an exhaust pipe having an opening in one side of a diameter substantially equal to the interior diameter of the pipe, of a T-coupling divided longitudinally to form two substantially semi-cylindrical sections fitted upon the exhaust pipe and projecting at each end beyond the opening in said pipe, means for clamping said sections upon the pipe, a branch pipe carried by one of the sections intermediate its ends and registering with the opening in said pipe, a rock-shaft journaled in the branch pipe and provided at one end with an angularly-extending arm, a damper carried by said rock-shaft within the branch pipe and of a diameter corresponding to the interior diameter of said pipe, stops carried by the T-coupling to limit the throw of the arm in both directions, a stud carried by the T-coupling, and a spring connected at one end to said stud and at its other end to said arm for normally holding the damper in closed position.

In witness whereof I have hereunto set my hand on this 21st day of September 1910.

C. WORRELL STRYKER.

Witnesses:
H. E. CHASE,
E. A. SPEARING.