HENRY E. MADDEN, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO INDIAN MOTORCYCLE COMPANY, OF SPRINGFIELD, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

COMPRESSION-RELIEVING MECHANISM FOR MOTOR CYCLES.

Application filed August 13, 1923. Serial No. 657,249.

The invention relates to new and useful improvements in devices for relieving the compression of the engine in a motorcycle to aid in starting.

An object of the invention is to provide a compression relieving mechanism which is accessible to the operator and which may be actuated by a grip hold of the operator.

A further object of the invention is to provide a compression relieving mechanism of the above character, wherein the valve is lifted by devices actuated from a longitudinal movable rod, and wherein the said rod is provided with a knob and the knob is so associated with a stationary member that the operator may use the same as a grip hold for moving the rod.

These and other objects will in part be obvious and will in part be hereinafter more fully disclosed.

In the drawings, which show by way of illustration one embodiment of the invention—

Figure 1 is a view, partly in side elevation and partly in section, of a portion of a motorcycle having the improvements applied thereto; and

Fig. 2 is a detail view showing the combined guide and grip plate in end elevation.

It is very desirable in a motorcycle to have means which can be actuated by the operator for raising the exhaust valve in the engine to relieve the compression to aid in starting. The present invention is directed to a pressure relieving mechanism and includes, broadly, a movable rod which operates upon suitable devices for lifting the exhaust valve, and this movable rod extends to a point adjacent the operator and is provided with a knob or other suitable device at its upper end which is adapted to be grasped by the hand of the operator, so that the operator may readily move the rod to raise the valve. In the preferred form of the invention, the rod passes through a guide plate adjacent the upper end of the rod, which guide plate is shaped so that the operator's fingers may engage beneath the same when the palm is on the knob and by a grip of the hand the rod may be depressed and thus the valve raised.

Referring more in detail to the drawings, the improvement is shown as applied to a motorcycle of the usual type provided with a frame structure including upper frame members 1 and 2, between which is located a gasoline tank 3. I have shown in the drawings more or less diagrammatically a two cylinder hydrocarbon engine, one of the cylinders being indicated at 4 and the other at 5.

Associated with each cylinder is an exhaust valve 6 carried by an exhaust valve stem 7. The exhaust valves are raised by means of levers 8 and 9, respectively. Cams 10 and 11, respectively, operate upon these exhaust valves. These parts are all of the usual construction, and further description thereof is not thought necessary.

The lever 8 is formed with an extension 12, and when the outer end of this lever is depressed, it will lift the valve rod 7. The lever 9 is provided with an extension 13, and when this extension is depressed, the valve rod 7 is raised. Adjacent the end of the levers 12 and 13 is a shaft 14 carrying a cam 16, which is adapted to engage the levers 12 and 13 respectively, for depressing the outer ends thereof. The shaft 14 is oscillated by means of an arm 17 which is attached to a rod 18. This rod extends up along side the gasoline tank and is provided with a knob 19 on the upper end thereof, which is shaped so as to fit nicely in the palm of the operator.

The rod 18 extends through a bracket 20 which is secured by bolts 21—21 to the gasoline tank 3. A spring 22 surrounds the rod between the knob 19 and the bracket and normally tends to raise the rod, the upward movement of the rod being limited by a pin 23. The purpose of this spring is to hold the cam 16 out of engagement with the levers 12 and 13. The bracket 20 is curved as at 24, and is thus shaped so that the fingers of the operator can extend underneath the bracket and obtain a firm grip thereon. The downwardly inclined parts 25—25 of the bracket form a grip hold for the fingers. When the cam 16 is turned to the position indicated at 15, the levers 12 and 13 will be moved to the dotted line position and the valves raised.

The operator, when it is desired to relieve the compression in the engine, places the palm of his hand on the knob 19, and his fingers under the inclined parts 25—25, and
by a grip pressure of the hand, the knob is depressed, and thus the rod is moved downwardly until the valves lift.

While in the preferred form of the invention the rod is depressed for depressing the levers 12 and 13, it will be understood that by a different placing of the cam 16, the rod 18 may be raised instead of depressed for accomplishing the same result. In this case, the stationary member would be placed above the knob and the knob lifted by the grip of the operator's hand.

It is obvious that minor changes in the details of construction may be made without departing from the spirit of the invention as set forth in the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a motorcycle or the like having a hydrocarbon engine provided with valves, of means for relieving the compression of the engine for starting including a device for lifting the exhaust valve, a depressible rod for actuating said device to lift the valve, and a bracket carried by the machine through which the depressible rod extends and is guided, said bracket being shaped so as to form a gripping hold for the fingers when the palm of the operator rests on the upper end of the rod.

2. The combination with a motorcycle or the like having a hydrocarbon engine provided with valves, of means for relieving the compression of the engine for starting including a device for lifting the exhaust valve, a depressible rod for actuating said device to lift the valve, and a bracket carried by the machine through which the depressible rod extends and is guided, said bracket being shaped and disposed so as to form a gripping hold for the fingers of the operator.

3. The combination with a motorcycle or the like having a hydrocarbon engine provided with valves, of means for relieving the compression of the engine for starting including a device for lifting the exhaust valve, a depressible rod for actuating said device to lift the valve, and a bracket carried by the machine adjacent the rod, said bracket having an opening therethrough for the rod, and a spring between the rod and the bracket operating normally to raise the rod, said bracket being shaped so as to form a gripping hold for the fingers of the operator when the knob is in the palm of the operator's hand.

In testimony whereof I affix my signature.

HENRY E. MADDEN.
Certificate of Correction.

It is hereby certified that the name of the assignee in Letters Patent No. 1,604,704, granted October 26, 1926, upon the application of Henry E. Madden, of Springfield, Massachusetts, for an improvement in “Compression-Relieving Mechanism for Motor Cycles,” was erroneously written and printed as “Indian Motorcycle Company,” whereas said name should have been written and printed as Indian Motorcycle Company, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 16th day of November, A. D. 1926.

[seal.]

M. J. MOORE,
Acting Commissioner of Patents.