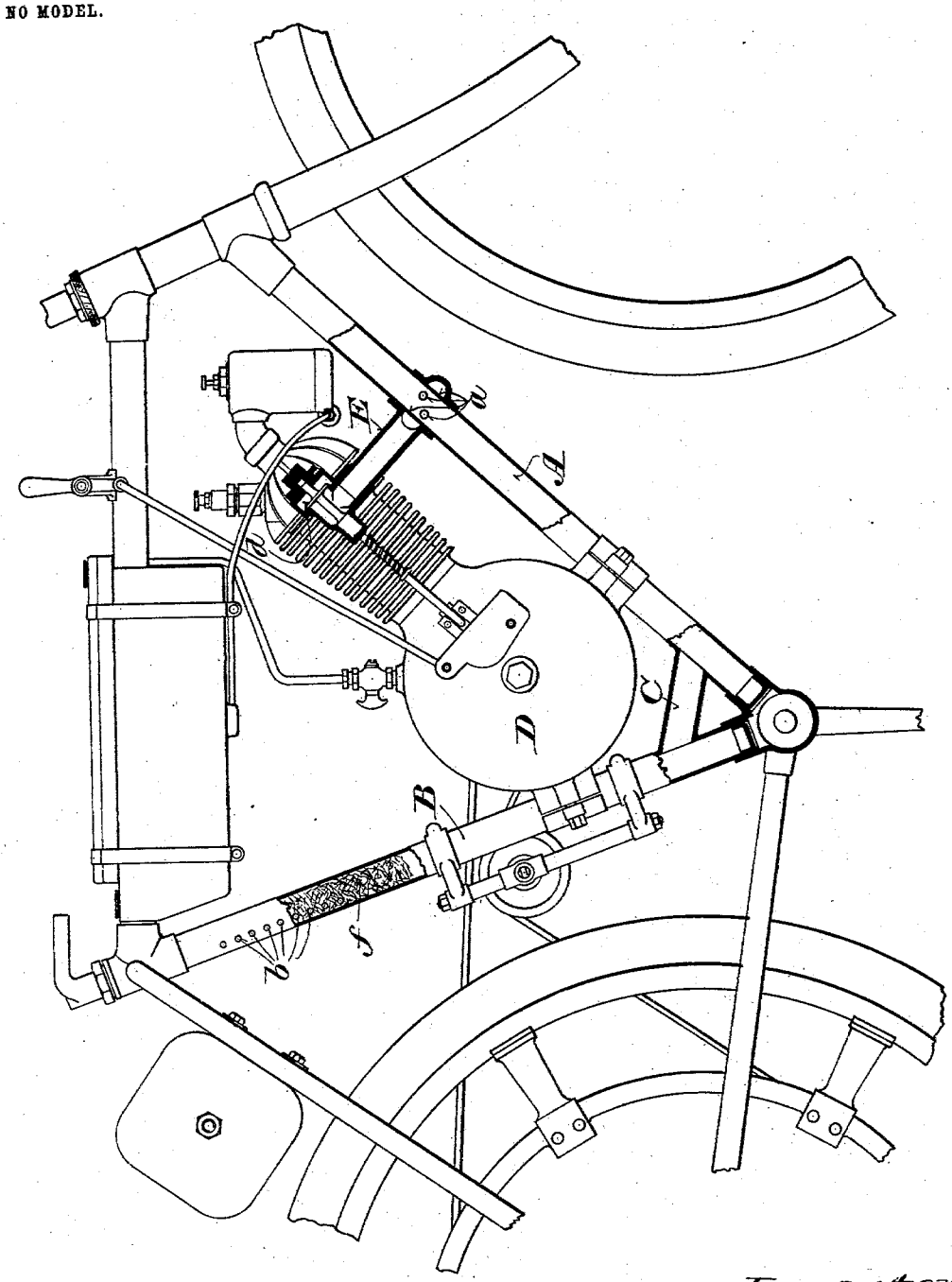
No. 740,676. PATENTED OCT. 6, 1903.

J. F. MERKEL.

MOTOR CYCLE.

APPLICATION FILED FEB. 8, 1902.

NO MODEL.



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 740,676. Patented October 6, 1903.

UNITED STATES PATENT OFFICE.

JOSEPH F. MERKEL, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE MERKEL MANUFACTURING COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

MOTOR-CYCLE.

SPECIFICATION forming part of Letters Patent No. 740,676, dated October 6, 1903.

Application filed February 8, 1902. Serial No. 93,149. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH F. MERKEL, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Motor-Cycles, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

This invention relates particularly to the exhaust of engines applied to motor-cycles. Its main objects are to deaden the sound produced by the exhaust and to conduct the exhaust to a suitable or convenient point of discharge.

It consists, essentially, in the construction of the frame of a motor-cycle and in connecting the exhaust-port of the engine therewith in such a way as to muffle the sound of the exhaust and to conduct the exhaust away from the engine to a point where its escape will be unobjectionable.

The accompanying drawing shows, partly in side elevation and partly in vertical longitudinal section, a portion of a motor-cycle embodying my invention.

The frame, which is like or similar to that of a bicycle, has a tubular reach A and a tubular upright B, which are closed by plugs at their lower ends and are connected by and communicate with each other through a tubular brace C near their junction with the crank-hanger. These tubular members of the frame are also closed at or near their opposite ends by plugs or other suitable means. (Not shown.)

The reach A is provided between its ends at the proper point with one or preferably a number of openings *a*, and the upright B is provided near its upper end with a series of openings *b*.

D designates a motor, in the present instance a four-cycle explosive gas or oil engine. It is mounted upon the frame between the lower reach A and the upright B, to which it is secured by suitable fastenings.

d is the exhaust-valve controlling the exhaust-port of the engine, which is connected by a tubular arm E with the openings *a* in the reach A. This arm serves not only to conduct the exhaust from the engine into the hollow frame, but also to support or brace the upper part of the engine from the reach.

The upright B is preferably provided adjacent to or below the escape-openings *b* therein with a porous or reticulated body or substance *f*—as, for example, crumpled wire-gauze—which assists in breaking the force of the exhaust and in preventing or deadening the noise that would be produced by its unobstructed escape into the atmosphere.

When the engine is working and the exhaust-valve *d* is opened, the exhaust is conducted through the tubular arm E into the reach A, thence through the brace C into the upright B, from which it escapes, after passing through the wire-gauze or other porous or reticulated body, into the atmosphere through the openings *b*. These openings are preferably presented rearwardly and are distributed so as to direct the exhaust away from the rider and to dissipate and still further reduce its force. The tubular frame upon which the engine is mounted is thus made to serve as a muffle to receive and condense the exhaust from the engine and discharge the same with little or no noise into the atmosphere at a point where it will be unobjectionable.

Various changes in minor details of construction may be made within the spirit and intended scope of the invention.

I claim—

1. In a motor-cycle the combination of a frame having a tubular lower reach and a tubular upright communicating with each other at their lower ends and provided, one with an exhaust-inlet opening and the other with an escape-opening, an engine mounted upon said frame between said reach and upright, and a tubular supporting-arm connecting the exhaust-port of the engine with the inlet-opening in said reach, substantially as described.

2. In a motor-cycle the combination of a frame having a tubular reach and a tubular upright connected and communicating with each other by a hollow brace near their lower ends and closed at their opposite ends, the reach having lateral exhaust-inlet openings and the upright a series of rearwardly-directed escape-openings, an engine mounted

upon said frame between said reach and upright and a tubular supporting-arm connecting the exhaust-port of the engine with the inlet-openings in said reach and provided at its lower end with an internally-recessed sleeve surrounding the perforated part of said reach, substantially as described.

3. In a motor-cycle the combination of a frame having a tubular lower reach provided with a lateral exhaust-inlet opening, and a tubular upright connected and communicating at its lower end with the lower end of said reach and provided near its upper end with a lateral escape-opening and between said escape-opening and reach with crumpled wire-gauze, an engine mounted upon said frame between said reach and upright, and a tubular supporting-arm connecting the exhaust-port of the engine with the inlet-opening in said reach, substantially as described.

In witness whereof I hereto affix my signature in presence of two witnesses.

JOSEPH F. MERKEL.

Witnesses:
CHAS. L. GOSS,
ALICE E. GOSS.