

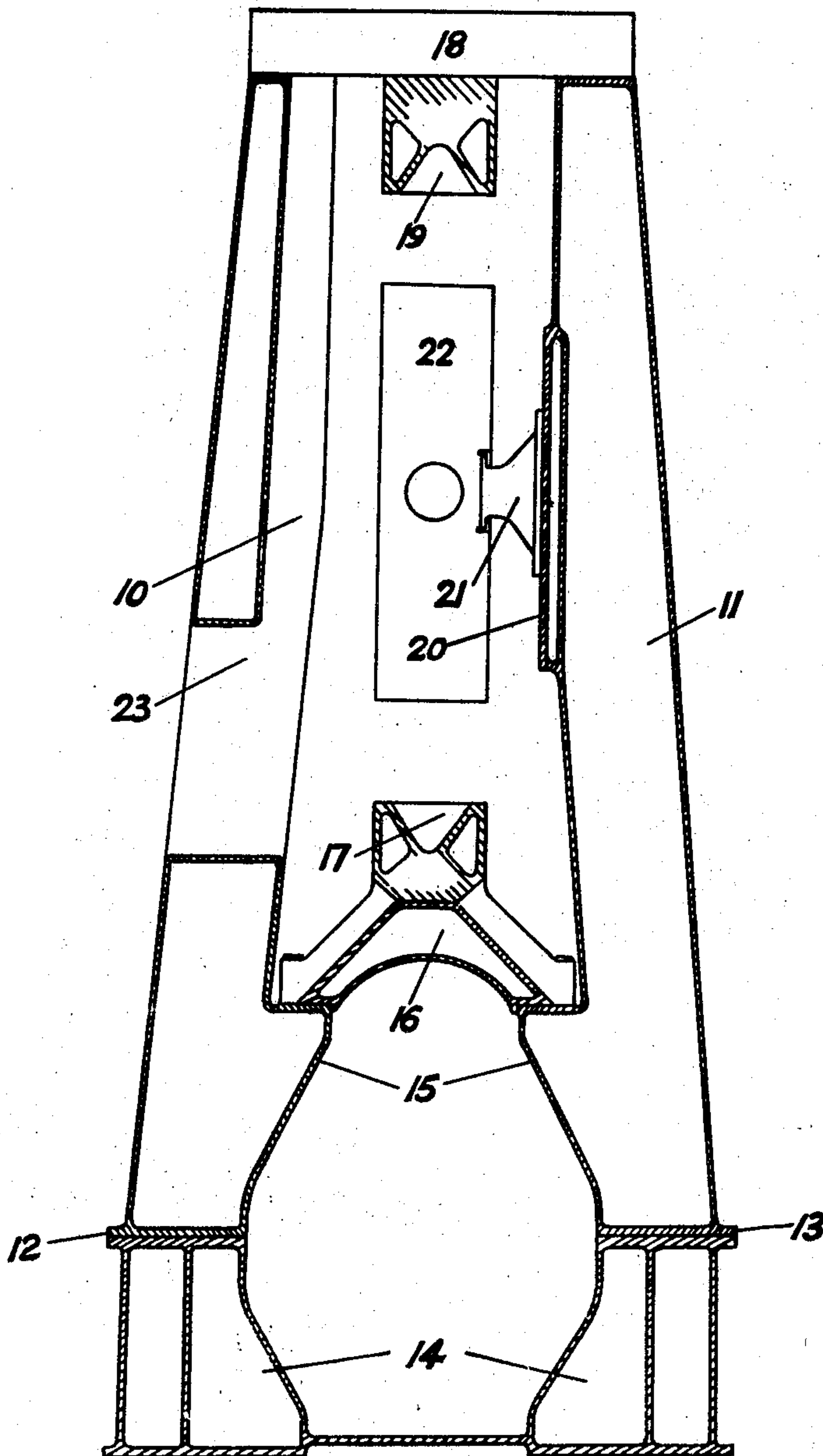
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1,516,445

TWO-STROKE CYCLE INTERNAL COMBUSTION ENGINE

Filed March 28, 1923



INVENTOR

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# UNITED STATES PATENT OFFICE.

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## TWO-STROKE CYCLE INTERNAL-COMBUSTION ENGINE.

Application filed March 28, 1923. Serial No. 628,229.

*To all whom it may concern:*

Be it known that I, JOHN CAMPBELL MACCALL MACLAGAN, a subject of the King of Great Britain and Ireland, and a resident of Drumchapel, Scotland, have invented certain new and useful Improvements in Connection with Two-Stroke Cycle Internal-Combustion Engines, of which the following is the specification.

This invention relates to double acting two-stroke cycle internal combustion engines of the type described in the earlier patent specification No. 1,436,596, of November 21, 1922, in which the cylinder moves on two fixed heads; and has for its object to provide an improved and compact structure carrying the upper and lower covers and combustion heads for the cylinder ends, and means to resist lateral force due to connecting rod obliquity.

A structure made according to the invention comprises essentially a framing consisting of two rectangular or box-section columns in the same lateral plane as the piston and cylinder of the engine. These columns are attached at their lower ends to a bed plate by flanges, and towards the lower part of the columns they are so shaped as to form a bracket or support for the lower entablature carrying the lower combustion head. An overhead entablature carrying the combustion head on which the upper end of the cylinder works is bolted to the top of the two columns and a flat guide surface is provided on the innerside of one of the columns. On this surface there slides a guide slipper attached direct to the piston of the engine and passing out through openings between the upper and lower parts of the moving cylinder so that the column will resist the lateral force imparted to the piston owing to connecting rod obliquity.

Part of a double acting engine unit of the type referred to, sufficient to show an example of the present invention is illustrated in sectional elevation on an accompanying sheet of explanatory drawing.

As shown in the drawing, there is provided a framing consisting of two substantially rectangular columns 10, and 11 in the same lateral plane as the engine unit. These

columns are attached by flanges 12, and 13 at their lower ends to a bed plate 14 and towards the lower part of the column they are so shaped as to form a bracket-like support 15 for an entablature 16 carrying the combustion head 17 on which the lower end of the cylinder (not shown) moves. An overhead entablature 18 carrying the combustion head 19 on which the upper end of the cylinder works, is bolted to the top of the two columns 10, and 11. A flat guide surface 20 is provided on the inner side of one of the columns. On this surface 20 there slides a guide slipper 21 attached to the engine piston 22, and passing out through openings between the upper and lower parts of the cylinder. The column thus resists any lateral force imparted to the piston due to connecting rod obliquity.

An opening 23 is formed through the column 10 through which the exhaust pipe (not shown) may be led.

What I claim is:

1. In a two-stroke cycle internal combustion engine unit in which the cylinder moves in two fixed heads, two columns in the same lateral plane as the piston, a bracket-like support towards the lower part of the columns, a lower combustion head, an entablature carrying said lower combustion head and supported on the column support, an upper combustion head, an overhead entablature carrying said upper combustion head and bolted on the top of the columns.

2. In a two-stroke cycle internal combustion engine unit in which the cylinder moves on two fixed heads, two columns in the same lateral plane as the piston, a bracket-like support towards the lower part of the columns, a lower combustion head, an entablature carrying said lower combustion head and supported on the column support, an upper combustion head, an overhead entablature carrying said upper combustion head and bolted on the top of the columns, a guide surface on the inner side of one of said columns, and a slipper attached to the piston and bearing on the said guide surface.

In testimony whereof I have signed my name to this specification.

JOHN CAMPBELL MACCALL MACLAGAN.