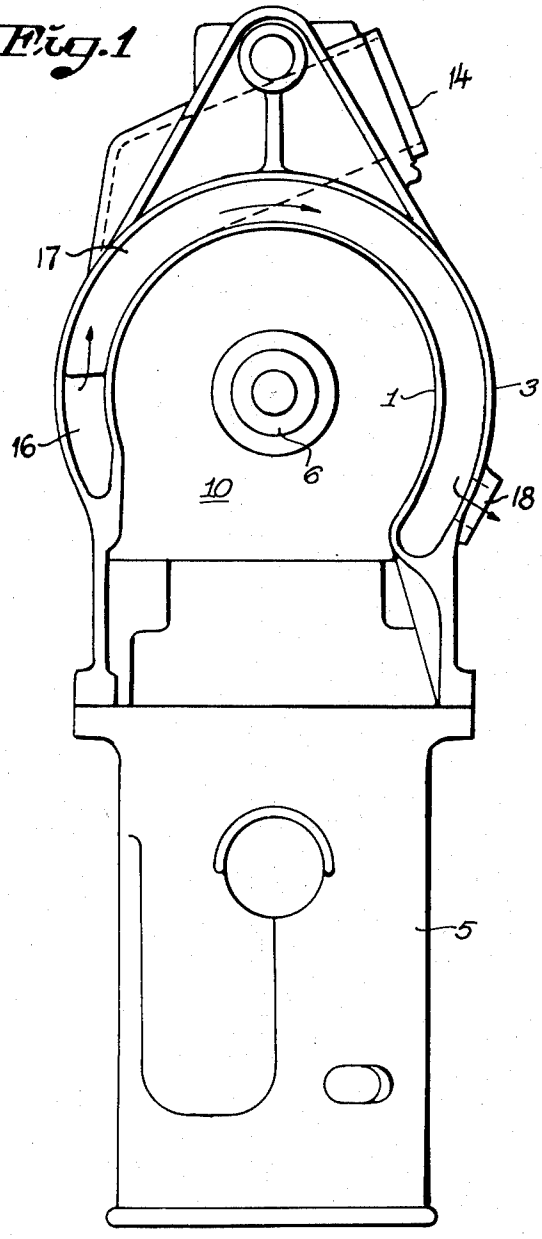
Nov. 20, 1951 G. A. BERGMAN 2,575,859

HOUSING MEANS FOR ROCK DRILLING MACHINES

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Fig. 1



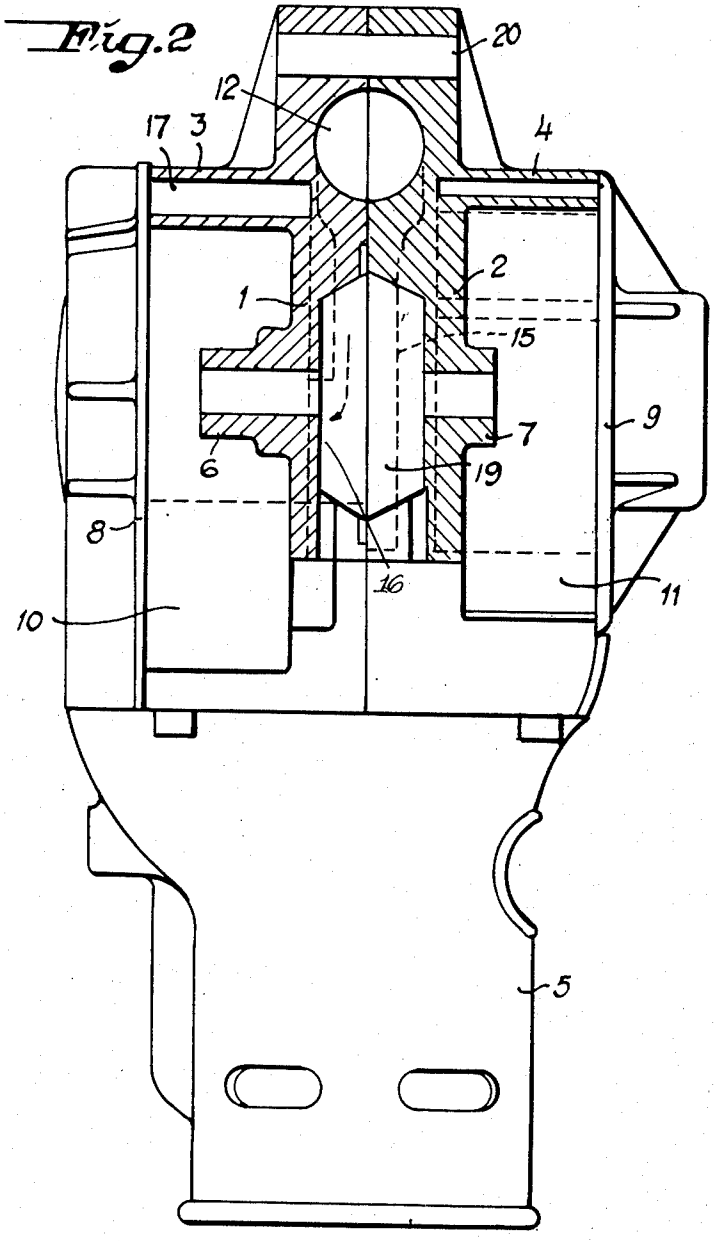
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HOUSING MEANS FOR ROCK DRILLING MACHINES

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Fig. 2



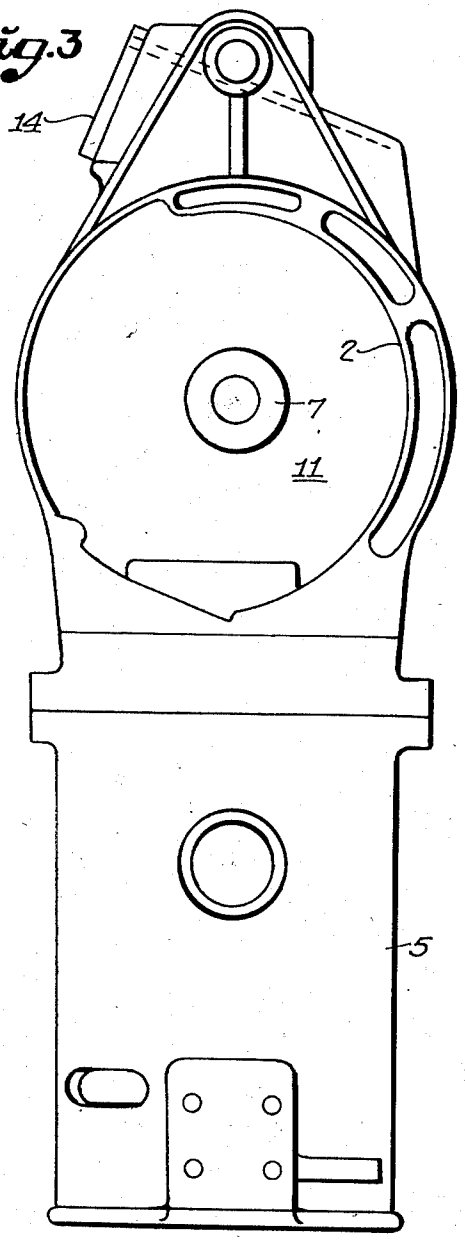
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HOUSING MEANS FOR ROCK DRILLING MACHINES

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Fig. 3



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HOUSING MEANS FOR ROCK DRILLING MACHINES

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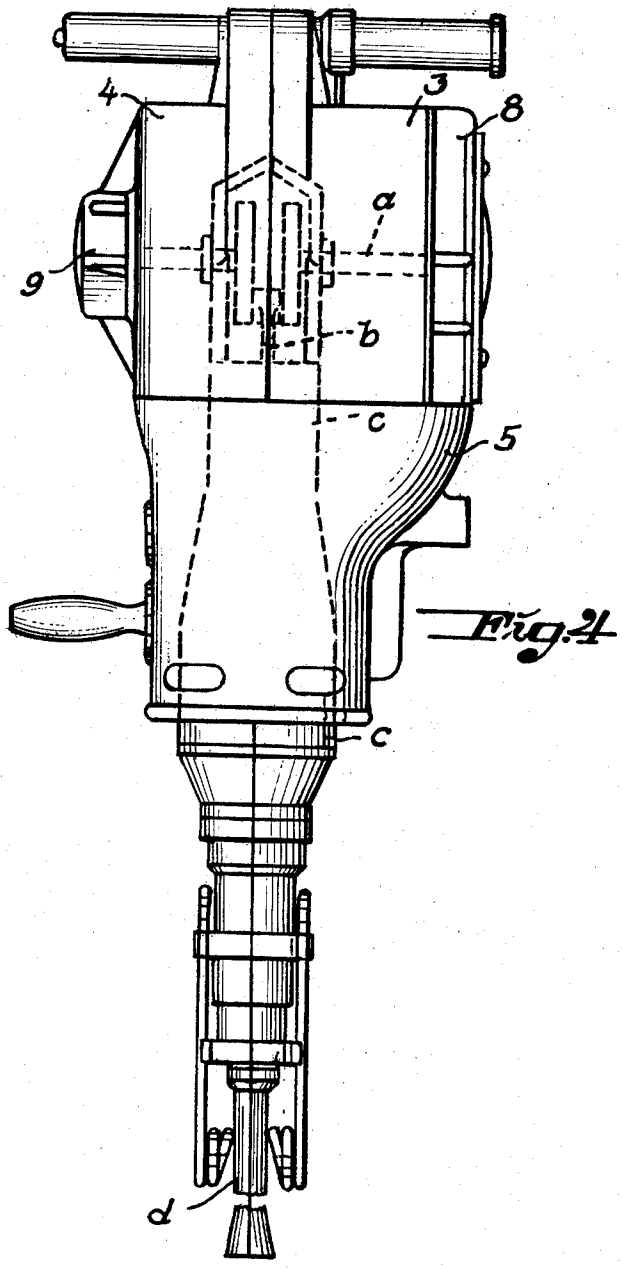


Fig. 4

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UNITED STATES PATENT OFFICE

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HOUSING MEANS FOR ROCK DRILLING MACHINES

Gustav Albert Bergman, Danderyd, Sweden

Application December 19, 1946, Serial No. 717,239
In Sweden April 18, 1946

3 Claims. (Cl. 123—195)

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The present invention refers to motor-driven rock drilling machines having an internal combustion engine joined with the rock drilling machine proper. The invention has for its object to provide such an arrangement, particularly of the crank casing of the engine, that the assembly and the design of the engine part and thus of the whole machine are simplified.

The substantially distinguishing feature of the invention is, above all, that the crank casing of the engine, which is divided into two halves on a central plane substantially at right angles to the crank shaft, has the two halves made integral each with a corresponding half of a jacket surrounding the machine. The arrangement in addition to providing a simplified design results, above all, in the fact that the number of different parts to be assembled is reduced very considerably in comparison with the earlier constructions. By said arrangement it will also be possible to build in an air filter into the jacket in a simple manner.

The invention is elucidated by an example of embodiment in the accompanying drawing, wherein Fig. 1 shows the crank casing, with the side cover thereof removed, viewed from the one side. Fig. 2 is a part section at right angles thereto on the center line of the crank shaft, and Fig. 3 is an elevation viewed from the opposite side of the crank casing, the side cover being removed here, too. Fig. 4 is an elevation showing the entire rock drilling machine.

The rock drilling machine which the invention is applied to in the illustrated embodiment comprises an internal combustion engine having a crank shaft *a*, a piston rod *b* and a cylinder *c* as indicated in Fig. 4, and enclosed in the lower part of cylinder *c* are impact means for actuating the drilling tool *d* to expose it to series of impacts as the engine works. The crank casing is divided into two halves 1 and 2 on a plane at right angles to the center line of the crank shaft *a*. The wall of the crank casing continues at the two halves by a jacket partly made integral therewith, the parts of said jacket coherent with the two halves being designated by 3 and 4, respectively Fig. 2. The jacket parts 3, 4 extend in a lateral direction outside and round about the partly tubular crank casing, and are formed at the bottom to be secured to a jacket part 5, which is cylindrical, on the whole, and enlarged at the top, said jacket part being intended to surround the engine cylinder *c*. Laterally of the walls of the crank casing formed with bearing bosses 6, 7 for the crank shaft, there are spaces 10, 11 between the walls of the crank

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casing and side covers 8, 9 pertaining to the jacket, said spaces being adapted to receive fan wheels secured on the crank shaft, by means of which cooling air is forced over the outer surface of the walls which define the space 19 in which the piston rod *b* and crank shaft *a* operate and downwardly inside the cylindrical jacket part 5.

Provided at the top inside each half of the crank casing is a recess in the casting, said recesses forming a pocket 12 for an air filter in the assembled condition of the crank casing halves. Said pocket has an induction opening 14, and extends from here obliquely downwards, and merges into a central passage 15. This passage communicates through a bottom opening 16 with a space 17 provided in the left hand jacket part 3, said space extending from the opening 16 in an arcuate fashion inside the external wall of the jacket part, from one side thereof to the other, where it may be connected, through an opening 18 formed in the external wall of the jacket, to the air intake of the carburettor of the engine.

In the drawing, 20 are holes for members adapted to keep the halves of the crank casing together, said members taking, if desired, the form of handles or the like. Otherwise, the crank casing halves may be bolted together mutually and with the jacket part 5 in any suitable manner.

What I claim is:

1. Housing means for rock drilling machines adapted to be driven by an internal combustion engine joined with the machine proper, comprising an engine crank casing divided into two halves substantially at right angles to the axis of the crank shaft of the engine, said casing having substantially part-tubular walls embracing spaces at opposite sides of the crank casing and a jacket surrounding said spaces and comprising walls each integral with one crank casing half and extending outside said substantially part-tubular wall to form air passages outside said spaces.

2. Housing means for rock drilling machines adapted to be driven by an internal combustion engine joined with the machine proper, comprising an engine crank casing divided into two halves at right angles to the axis of the crank shaft of the engine, said casing having substantially part-tubular walls embracing spaces at opposite sides of the crank casing, and a jacket surrounding said spaces and comprising walls each integral with one crank casing half and extending outside said substantially part-tubular wall to form air passages, the top of said jacket being formed to receive an air filter for cleaning the suction air to the engine.

3. Housing means for rock drilling machines adapted to be driven by an internal combustion engine joined with the machine proper, comprising an engine crank casing divided into two halves substantially at right angles to the axis of the crank shaft of the engine, the inner confronting end walls of said casing halves each including a first recess defining half of the space housing the crank shaft and connecting rod, a second recess defining half of an air inlet passageway, and a bearing boss for the crank shaft, each said casing half being bounded in a direction radially of the bearing boss by double walls defining an air jacket, and being bounded axially of said boss by an outer end wall to define a space therein

adapted for mounting a fan wheel, a passageway extending through said casing from said air inlet to said jacket, and an air outlet from said jacket.

GUSTAV ALBERT BERGMAN.

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