

W. J. BARNETT.
 SPRAYING DEVICE FOR ROCK DRILLS.
 APPLICATION FILED JUNE 13, 1907.

956,026.

Patented Apr. 26, 1910.

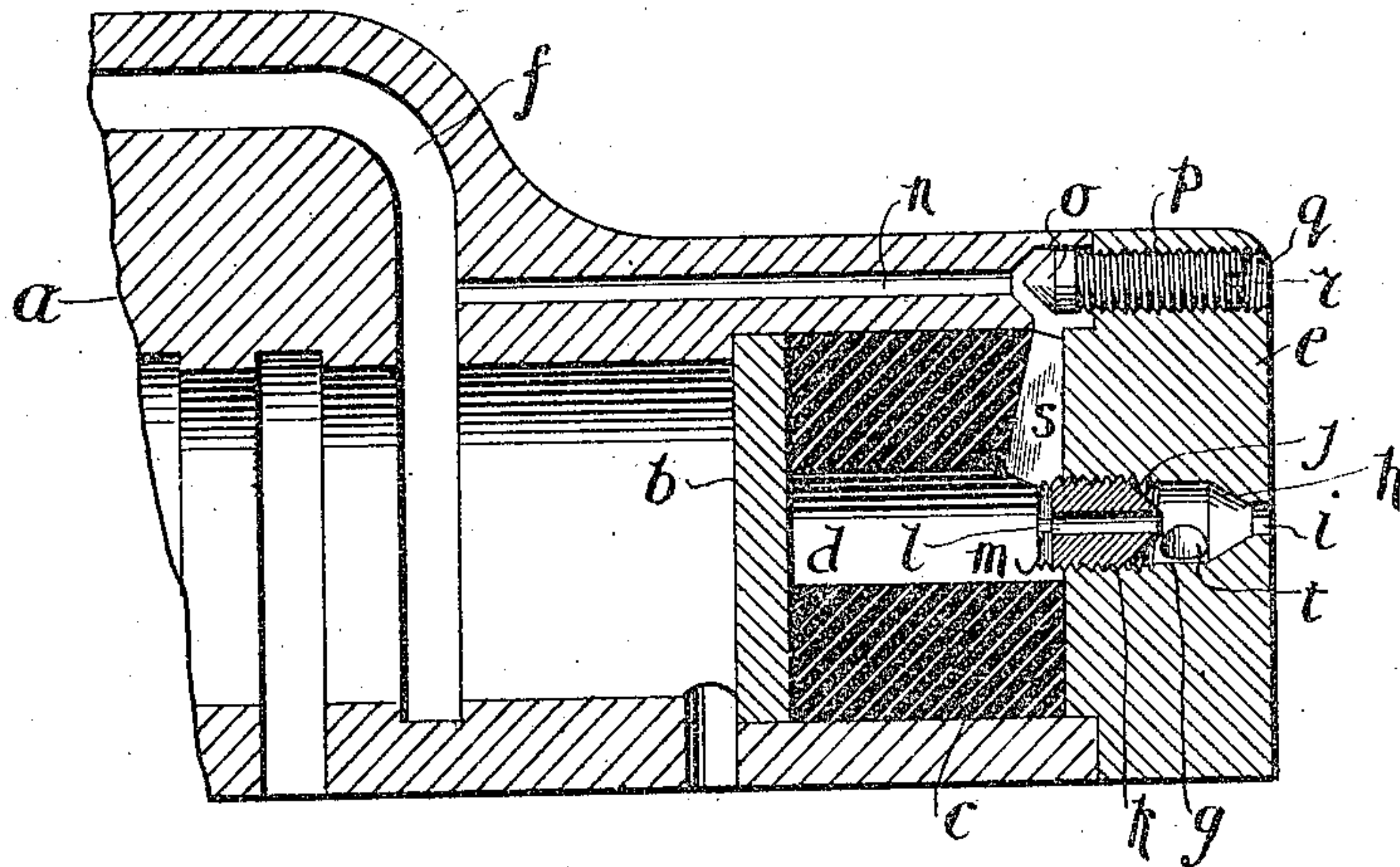


Fig. I

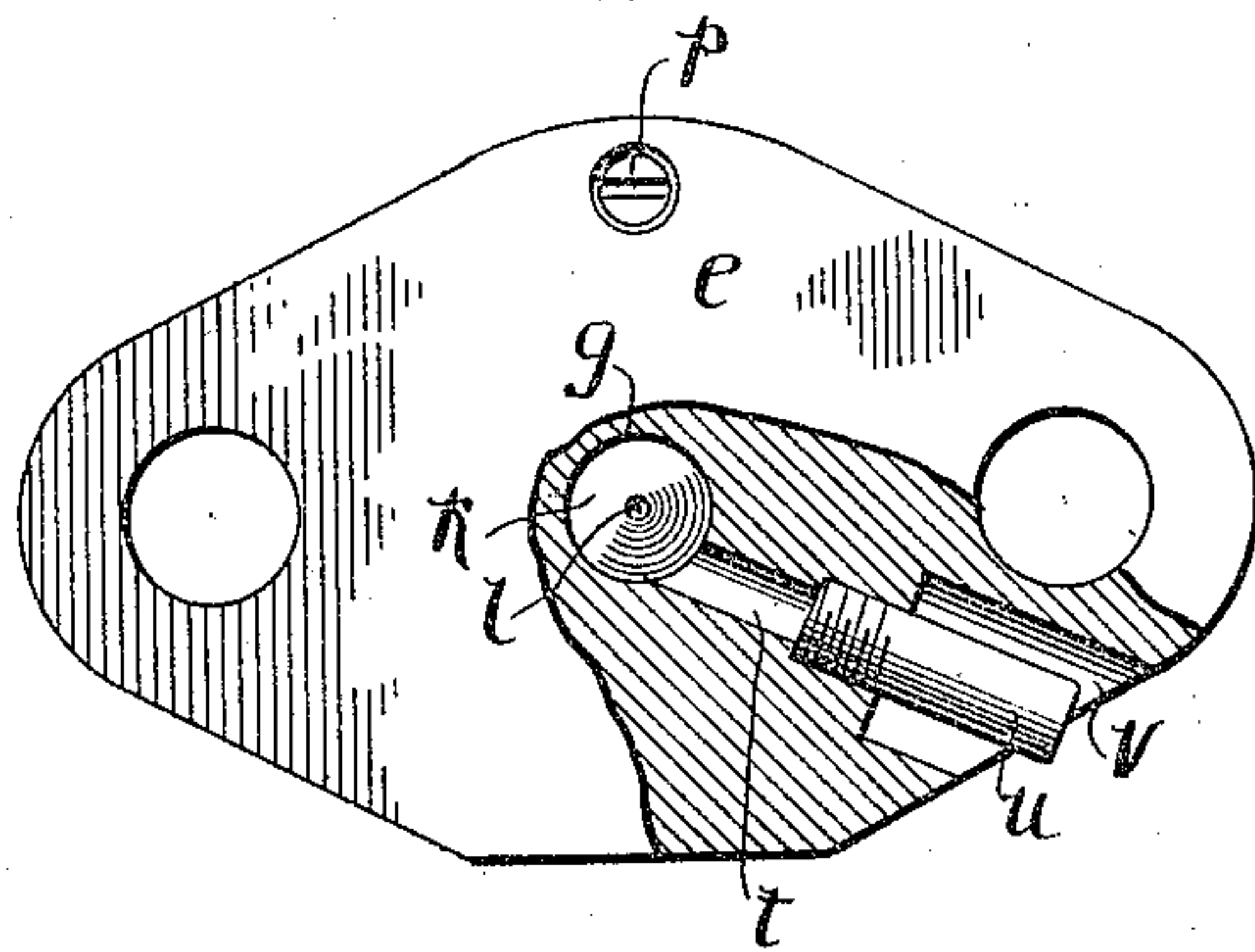


Fig. II

Witnesses:-

C. M. Crawford
 Prof. Morganthal

Inventor:-

William James Barnett

by P. Singer

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM JAMES BARNETT, OF GERMISTON, TRANSVAAL.

SPRAYING DEVICE FOR ROCK-DRILLS.

956,026.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed June 13, 1907. Serial No. 378,779.

To all whom it may concern:

Be it known that I, WILLIAM JAMES BARNETT, a subject of the King of Great Britain, residing at the Jupiter Gold Mining Company, Germiston, in the Colony of the Transvaal, have invented certain new and useful Improvements in Spraying Devices for Rock-Drills, of which the following is a specification.

10 The present invention relates to that class of devices which are used in conjunction with rock-drilling machines to discharge a jet of spray for the purpose of allaying the dust produced in drilling.

15 Such devices have hitherto either been entirely dissociated from the drilling machine or they have been distinct entities which have been screwed to or otherwise merely attached to the machine.

20 The device is liable in the former case to be lost, and in the latter case to be damaged during handling of the machine, constituting as it does an inconvenient projection upon the latter.

25 It is the object of the present invention to overcome these defects by embodying the device in an essential part of the machine, and at the same time to provide a spray producer of cheap and simple construction.

30 A convenient form of the invention is shown in the accompanying drawing in which—

35 Figure I is a longitudinal section through the front part of the valve-chest of a well-known type of drilling machine, and Fig. II is a face view of the front cover of such chest partly in section.

In the machine here illustrated the front end of the valve-chest *a* is occupied by a metal plate *b* supported by a rubber buffer *c*, and consequently such end is cut off from the air in the valve-chest. Moreover the buffer *c* is perforated with an axial hole *d*.

45 *e* indicates the front cover of the air chest and *f* an air supply port to the valve-chest.

In adapting such existing structure to conform with this invention, the front cover *e* of the valve-chest is bored out centrally to form a chamber *g* of conical shape at the front part *h*, and terminating in a relatively small aperture *i*. The rear part *j* of such chamber *g* is tapped and into it is screwed an air nozzle *k*. Such air nozzle is bored axially at *l* and has a notch *m* to enable it to be manipulated by means of a screw-driver.

n is an air port drilled in from the front of the chest to connect with the main air supply port *f*. Such port *n* is controlled by a valve *o* having a screwed shank *p* which works in a tapped hole *q* in the cover *e*. Said shank is of such length that it does not project beyond the front face of the cover; and it is formed with a notch *r* or other convenient means by which it may be rotated by a suitable instrument inserted into the hole *q*. The valve proper is made slightly larger than the screwed shank *p* to obviate shaking out and possible loss of the part. A passage *s* is cut through the buffer *c* to conduct air from the valve to the bore *d* and so to the nozzle *k*.

For supplying water to the chamber *g* a hole is bored into the same from the side of the cover, and is fitted with a nipple *u* to which to attach a hose. Such nipple is sunk in a recess *v* in order that it may receive the hose without itself projecting substantially from the cover.

Upon commencing to drill a dry hole, the valve *o* is opened and the air issuing from the nozzle *k* creates a partial vacuum in the chamber *g*. Water being thereby drawn from a convenient supply through the hose attached to the nipple *u* and into the chamber *g*, is ejected therefrom through the aperture *i* in the form of spray and impinges at and around the mouth of the hole being bored, thereby preventing the diffusion of rocky particles into the air.

By adjusting the position of the nozzle *k* in the chamber *g*, the character of the spray produced may be regulated as desired.

It is to be remarked that while the invention has only been described as applied to existing drilling machines of a particular type, the actual details of construction may be considerably varied, more particularly when applying it to existing machines of a different type or when designing new machines to embody it.

I claim as my invention:—

1. In a rock drilling machine, a valve chest, a front cover for said valve chest having formed in it a chamber, said chamber having an opening for affording a passage to the outer surface of the cover, a nozzle located axially in said chamber, means lying wholly within said valve chest and communicating with said nozzle for supplying air to said chamber, means adjustable in said front

cover for regulating the air supply to said chamber, and means for supplying water to such chamber, substantially as described.

2. In a rock-drilling machine and in combination, a valve-chest having a main air supply port formed therein, a cover for the front of the valve-chest having formed in it a chamber, said chamber having a conical front portion and having also a relatively small opening to the front face of the cover, an adjustable air nozzle located axially in said chamber, means for conveying air from the main air port to the air nozzle, means shielded by the cover for regulating the air supply to the nozzle, and means for supplying water to the chamber.

3. In a rock-drilling machine and in combination, a valve-chest having a main air supply port formed therein, a cover for the front of the valve-chest having formed in it a chamber, said chamber having a conical front portion and having also a relatively small opening to the front face of the cover, an adjustable air nozzle located axially in said chamber, means for conveying air from the main air port to the air nozzle, means shielded by the cover for regulating the air supply to the nozzle, a water supply passage leading to the chamber and a hose nipple associated therewith, such nipple being sunk in a recess formed in the cover.

4. In a rock drilling machine, the combination with the valve chest having a main air supply port formed therein, of a cover

for the front of the valve chest having formed in it a chamber, said chamber having an opening to the front face of the cover, a plate closing said valve chest adjacent said cover, a buffer arranged between said plate and said cover said buffer having an air duct formed therein and communicating with the chamber in said cover, an air supply passage communicating between said main air supply port and said air duct in the buffer, and means for supplying water to the chamber, substantially as described.

5. In a rock drilling machine, a valve chest, a front cover therefor having formed in it a chamber said chamber having an opening for affording a passage to the outer surface of the cover, said front cover being further provided with a recess at its outer surface and a passage of smaller diameter than said recess connecting the latter with said chamber, an air nozzle located axially in said chamber, an air supply passage lying wholly within said valve chest and connecting with said air nozzle, an adjustable valve for controlling the air supply to said air nozzle, and means adapted for insertion into said recess for supplying water to said chamber, substantially as described.

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

WILLIAM JAMES BARNETT.

Witnesses:

ALFRED L. SPOOR,

J. WARREN DENNING