

E. B. PETRIE.
 DIVING SUIT ATTACHMENT.
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984,104.

Patented Feb. 14, 1911.

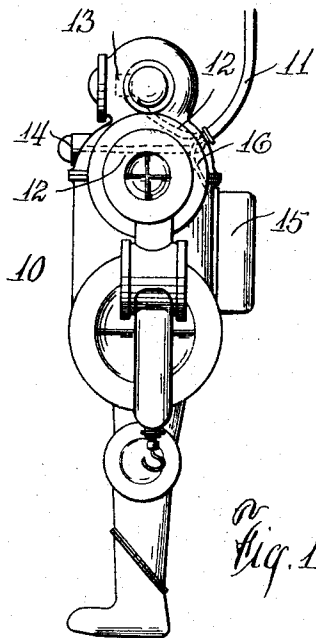


Fig. 1

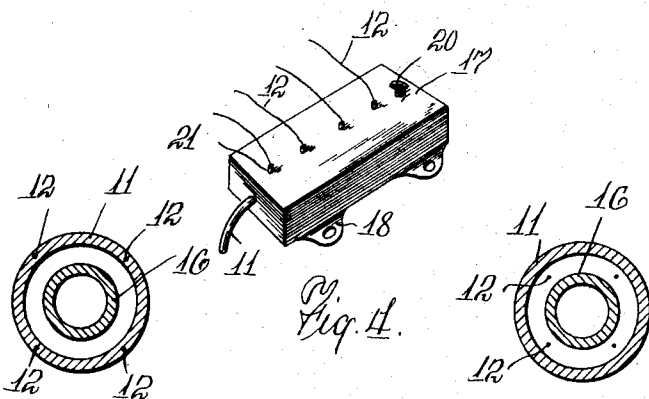


Fig. 4.

Fig. 2.

Fig. 3.

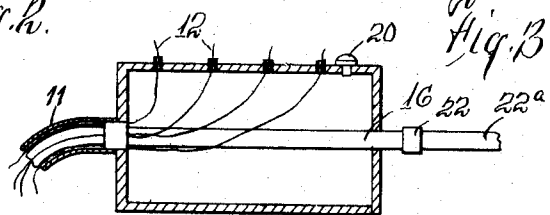


Fig. 5

Witnesses:
 Frank A. Stubbs
 Arthur G. Dammell.

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UNITED STATES PATENT OFFICE.

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DIVING-SUIT ATTACHMENT.

984,104.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ENOS B. PETRIE, of the city of New York, county of Kings, and State of New York, have invented a new and useful Improvement in Diving-Suit Attachments, of which the following is a full, clear, and exact description.

My invention relates to improvements in diving apparatus and more especially to deep sea diving apparatus. In diving suits intended for deep sea operations, the whole body of the diver is incased in a jointed structure which is water-proof or substantially so, and which resists the heavy pressure incident to deep sea work.

In structures of this kind it is necessary to provide a pump for expelling from the suit any water which may be forced in through the joints a telephone so that the diver can signal or converse with the operators above water, and an electric lamp or lamps to enable him to see as he attends to his sub-surface work.

The object of my invention is to produce a simple and convenient attachment to the diving suit comprising in part a hose connected with the suit and with the surface, so that air will flow by gravity into the suit, also to provide means for carrying the air supply pipe to the pump, telephone wires and necessary connections through the hose, in a manner which will not interfere with the work below, to provide means for permitting the air supplied to the pump to exhaust into the suit and then flow out if desired, and in general to produce an attachment which will facilitate the easy working of a deep sea diving suit, the expelling of water and the supplying of air.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a side elevation of a form of diving suit showing my improved attachments. Fig. 2 is a cross section through the main hose showing the arrangement of the connecting wires and air pipe. Fig. 3 shows a slightly modified form of these arrangements. Fig. 4 is a perspective view showing the surface connection with the hose and air supply pipe, and Fig. 5 is a detail sectional view of the air box and connections.

The diving suit 10 as illustrated represents a certain type of deep sea suit made

wholly of metal with jointed connections, but my improvements can be attached or connected with any preferred form of diving suit. The suit is provided with a main hose 11 which is made very strong in any of the usual or preferred ways, and which connects with the suit preferably at the back. This hose is made of large cross section, and extending through it are the wires 12 adapted to connect with the telephone 13 and the electric lamp or lamps 14. I have found that the safest and best way of making this connection and at the same time keeping the hose 11 well open, is to have the wires 12 embedded in the body of the hose or in the walls of the hose, as shown clearly in Fig. 2. The wires, however, can be covered as usual, and run down through the hose direct as shown in Fig. 3, but this arrangement while cheaper is not so desirable as there is a little danger of the wires becoming entangled in some manner. Suits of this kind are provided with a pump which can be operated either in case of emergency or in case of leakage into the suit, and one way is to have the pump carried in a knapsack 15 on the back of the suit, but the pump can be of any kind and arranged on any part of the suit as preferred. Likewise the discharge pipe of the pump can be carried to the surface in any convenient way, or can be made to discharge into the sea direct. In practice the hose 11 is made large, the air under pressure is forced downward through the pipe 16 which connects with the pump 15, and the air has sufficient pressure to operate the pump. The air as it exhausts from the pump is allowed to expand and enter the suit 10, thus providing fresh air for the diver, and the air flows up through the hose 11. Obviously arrangements are used to permit the air to expand and prevent it from issuing in a blast against the diver, but these things have nothing to do with this present invention, which lies in the hose attachment and the means for carrying the air pipe or pipes and the connecting wires therein.

While any suitable means can be used for connecting at the surface with the hose 11 and air pipe 16, I prefer the means illustrated in Figs. 4 and 5. Here the box 17 is provided with lugs 18 so that it can be fastened to the deck of a boat, and the pipe 11 is connected with the box and opens into it. The pipe 16 leads directly from the box 17

and connects by means of a coupling 22 with a pipe 22^a leading to the air compressor. The box is provided with a pop valve 20 of the ordinary construction so that the desired pressure in the box can be maintained, and when the pressure is above a certain point the air which is exhausted from the diving suit will pass out through the valve. This arrangement of the box and its connections enables the air pressure in the suit to be nicely regulated and affords a stable connection between the suit and the surface.

It will be seen from the foregoing description that I have provided a simple and convenient means for supplying air and for carrying the necessary connections to the diving suit, and that the air can be supplied either from the exhaust of the pump 15 or direct through the pipe 11.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent:—

1. The combination with a diving suit, of a relatively large hose connected at its upper end with a pop valve, and a smaller air

supply pipe extending through the hose and into the suit.

2. The combination with a diving suit, of an air box having a pop valve, an exhaust pipe connecting the diving suit and the box, and an air supply pipe leading to the box and connected to the diving suit and contained within the exhaust pipe, and wires for signaling and other purposes extending from the diving suit through the exhaust pipe to the air box.

3. The combination with a diving suit, of a hose connected with the suit, and wires for signaling or other purposes embedded in the hose.

4. The combination with a diving suit of the air box having a controllable exhaust, an exhaust pipe connecting the diving suit and box, and an air supply pipe leading through the box and through the exhaust pipe to the diving suit.

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Witnesses:

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