

H. L. PERRINE.

PUMP.

APPLICATION FILED JUNE 26, 1908.

912,025.

Patented Feb. 9, 1909.

Fig. 1.

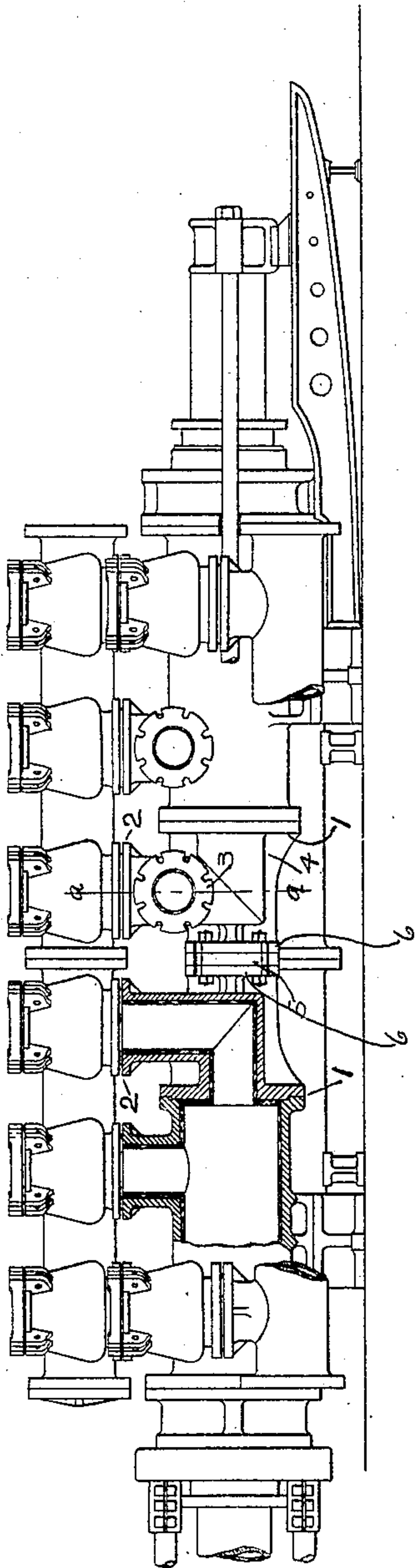


Fig. 3.

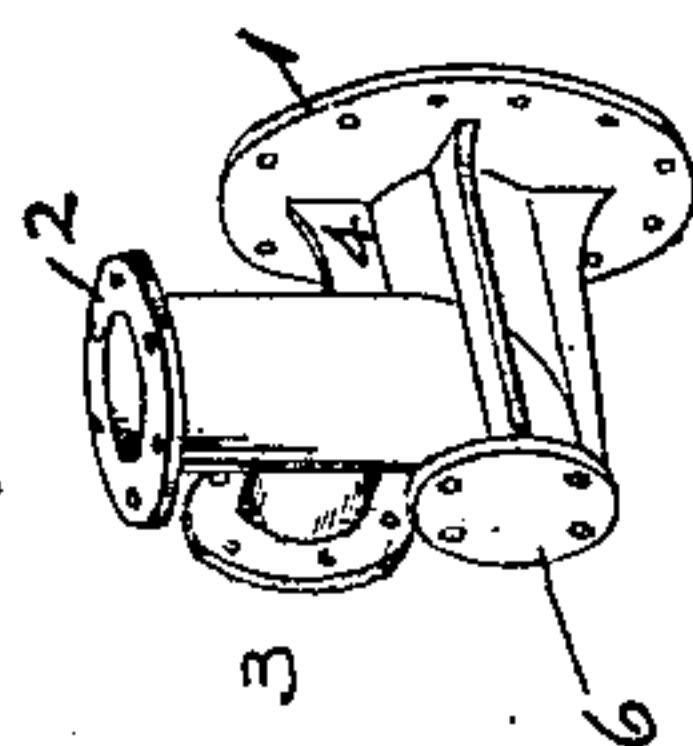


Fig. 2.

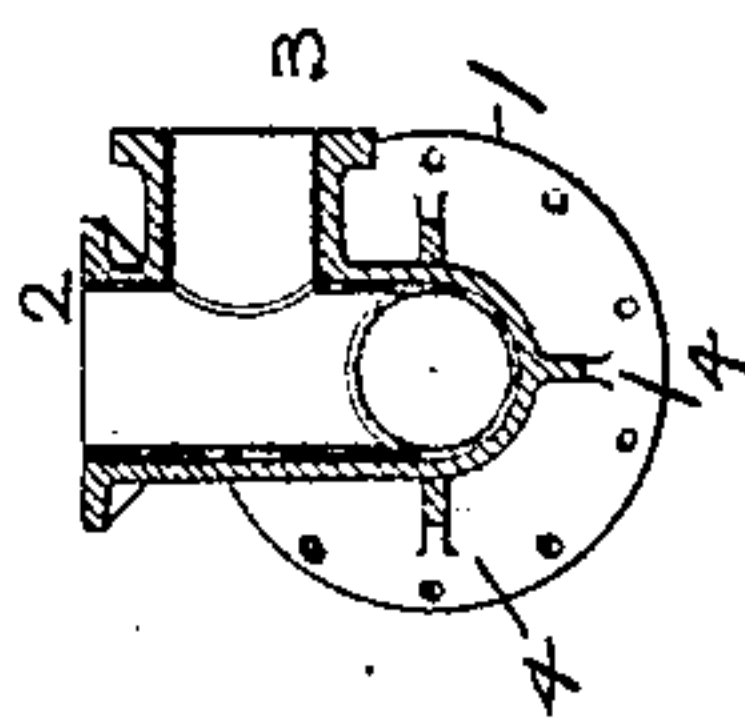
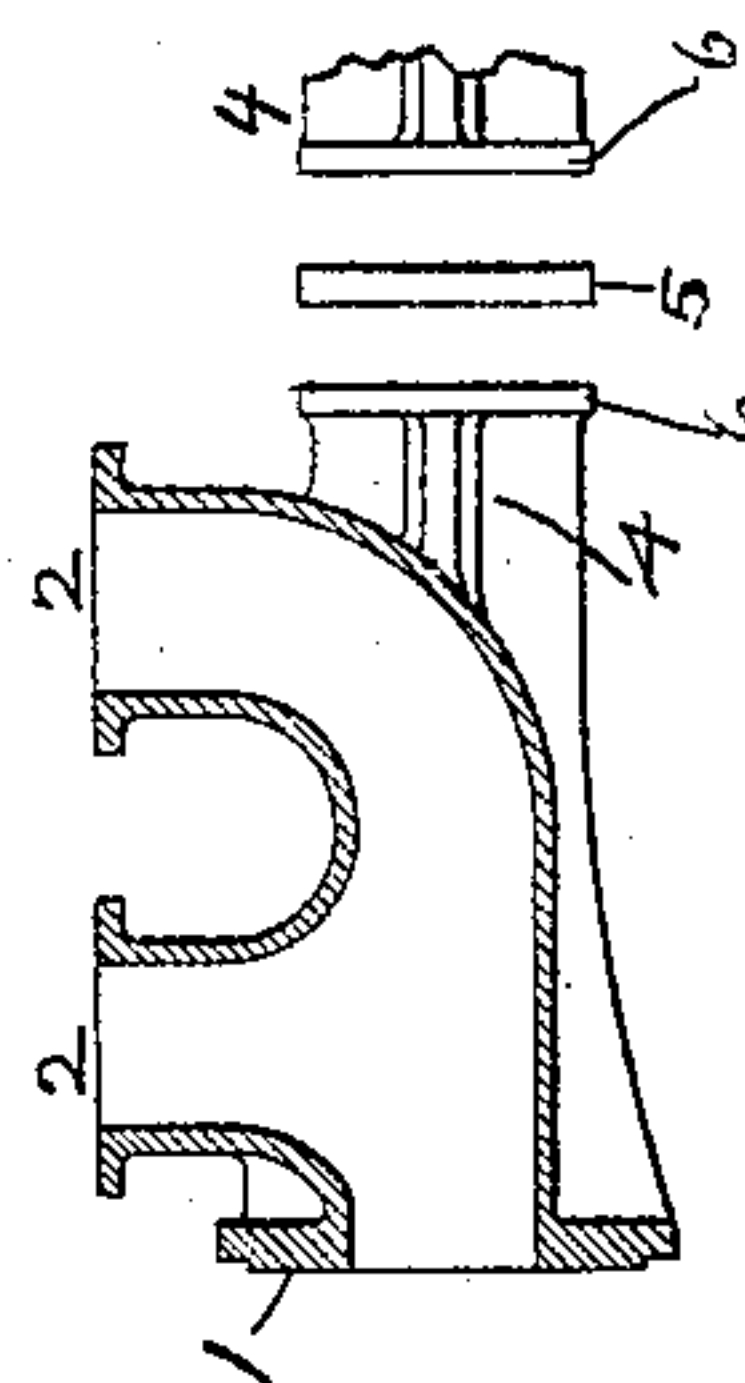


Fig. 4.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

HARMANUS LANSING PERRINE, OF ALLENHURST, NEW JERSEY.

## PUMP.

No. 912,025.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed June 26, 1908. Serial No. 440,451.

*To all whom it may concern:*

Be it known that I, H. LANSING PERRINE, a citizen of the United States, residing at Allenhurst, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

In some classes of pumps, and particularly those used in coal mines, a long water cylinder is required in order to provide for the necessary valve pots; and there is necessarily left in the water cylinder a space in excess of the plunger's stroke, which results in the accumulation of a large volume of dead water. Where these cylinders are wood-lined, frequent repairs are necessary, and these repairs involve an extensive dismemberment of the pump.

It is the object of my invention to increase the valve chamber area of the pump, without lengthening the water cylinder itself, by providing an extension, which may be readily taken out for renewing or repairing the water cylinders or barrels and the extension itself, without disturbing the other parts of the pump.

The invention consists of a casting of suitable size and shape, as hereinafter more particularly described and claimed, which may be bolted to and form the head of the water cylinder, and provided with the necessary valve pot connections.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a partly sectional elevation, showing the invention applied to an end packed plunger pump of the type used in the anthracite and bituminous coal regions where the water ends are usually wood-lined. Fig. 2 is a sectional view drawn on line *a a*, Fig. 1. Fig. 3 is a perspective view of the extension detached. Fig. 4 is a longitudinal section of a modification, applicable to pumps that do not require to be wood-lined, and by which the barrel or body is extended to produce still greater valve area.

Although I have shown the invention as applied to an end-packed plunger pump of a specified type, it is to be understood that the invention is applicable also to center-packed plunger pumps, whether driven direct acting or by crank and fly wheel steam ends.

Since the pump mechanism, valve pots and

other parts herein shown are of the usual construction, I deem it unnecessary to describe them in detail, but as shown, the extension of this invention is applied between and connects the two water cylinders, and it comprises a flange 1 adapted to be bolted to the end of the water cylinder in any suitable way, and a flange 2 adapted to receive the valve pot, and a flange 3 for use in equipping a duplex pump. The barrel or body of the extension preferably is supplied with longitudinal strengthening ribs 4.

In connecting the opposite ends of two water cylinders, I interpose a distance piece 5 between the solid closed ends 6 of the extensions.

As shown in the modification, Fig. 4, where an extension is illustrated that does not need to be wood-lined, there are two valve-pot-receiving nozzles, provided with appropriate flanges 2.

As already sufficiently indicated, it was necessary in the prior constructions to extend the water cylinder a sufficient length to accommodate the required number of valve pots, but by the present invention, it is obvious that the water cylinder may be extended to any desired length by the addition of suitable extensions constructed in accordance with the present invention. Not only so, but in order to obtain access to the water cylinders, it is only necessary to unbolt and remove the extensions, thereby avoiding the necessity of disturbing the other parts of the pump.

What I claim is:—

1. In a pump, the combination with alined water cylinders, of end extensions therefor bolted to said cylinders, and a distance piece interposed between the adjacent ends of said extensions, whereby the extensions may be detached without disturbing the other parts of the pump.

2. In a pump, the combination of alined water cylinders, with end extensions therefor having any number of valve pot connections, and means to detachably connect the extensions with the cylinders and with each other without disturbing the rest of the pump.

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

HARMANUS LANSING PERRINE.

Witnesses:

J. P. HERDEMEICH,  
L. A. KOHL.