

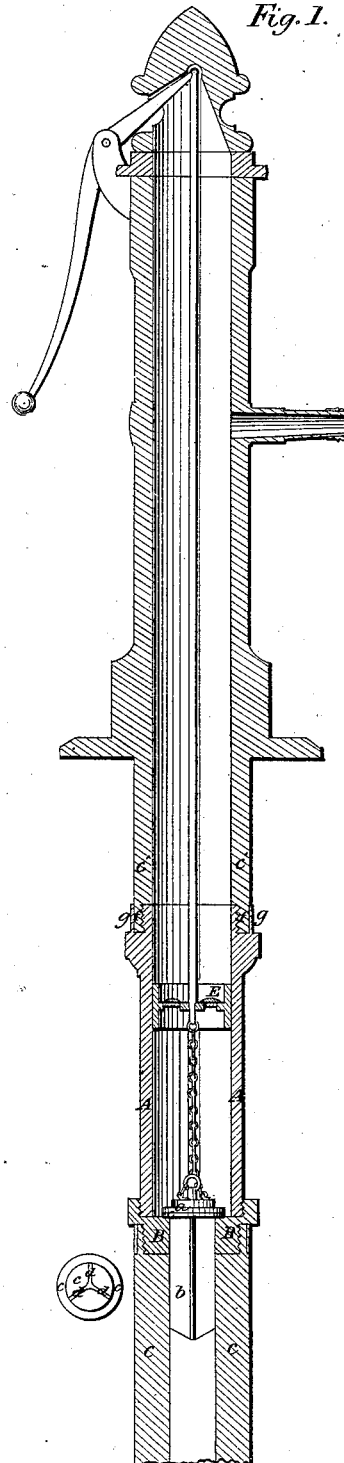
*C. I. Van Allen,*

*Pump Lift.*

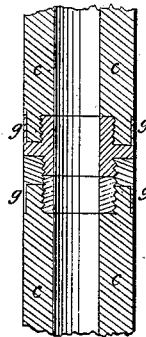
*N<sup>o</sup> 2,160.*

*Patented July 8, 1841.*

*Fig. 1.*



*Fig. 2.*



# UNITED STATES PATENT OFFICE.

C. D. VAN ALLEN, OF PETERSBURG, VIRGINIA.

PUMP, RELATING TO THE METHOD OF CONSTRUCTING THE LOWER VALVE AND CONNECTING THE WOODEN LENGTHS WHERE SECTIONS OF THE PUMP ARE FORMED OF WOOD.

Specification of Letters Patent No. 2,160, dated July 8, 1841.

*To all whom it may concern:*

Be it known that I, C. D. VAN ALLEN, of the city of Petersburg, in the county of Dinwiddie and State of Virginia, have invented certain improvements in the manner of constructing the common pump for the raising of water from wells, the holds of vessels, or other places from which it is required to be discharged; and I do hereby declare that the following is a full and exact description thereof.

I construct my pump, in general, in part of metal, and in part of wood; for pumps in ordinary wells, I make the metallic part principally of cast iron, but for ships' use I employ brass, or such compound metal as will not readily corrode by the action of salt water. Where the metal and the wood are to be united together, I effect this object by cutting a female screw in the latter, and by casting, or cutting, a male screw on the former. For the convenience of transportation, I usually make the wooden part of my pumps in short lengths, say of six or seven feet, and these I connect together by cutting a male screw on one section, and a female screw in the corresponding section; when these sections have been once screwed together, and subjected to the action of water, they become permanently fixed in place, so that they cannot be again separated. Where it is desired to be able to separate the parts, I connect them together in lengths of twelve or fourteen feet, more or less, by means of metallic coupling screws, or boxes, which are, themselves, screwed into the wood. I thus not only facilitate the transportation of the pump, but am enabled also to employ timber, with great advantage, that would be entirely unfit for pump trees, as ordinarily made.

The most important improvement made by me is in the manner of constructing the lower valve and its seat, and of connecting it with the piston, or upper box. The lower valve is not hinged to its seat, but its leathered part rests upon the seat, which has a

flat, or plane, surface, and the valve is guided up and down by rods, or by a guide piece, which enter the bore of the pump, below the valve seat. This lower valve is connected to the piston by means of a chain, or cord, of such length as to allow the piston to rise and play to the full extent of its stroke without straining upon the chain, or cord, which is to hang loosely between the piston and the lower valve; the object of this device is fixed, and does not require to be removed.

The wood which I employ in making my pump trees, I saturate with a resinous cement, properly heated, which preserves the wood from decay, and also from the action of the water upon it, so that should it remain dry for any length of time there is not any danger of its cracking. When the coupling boxes are first screwed into the wood, they should be warmed, and a portion of the cement put round them; although they may be made perfectly tight without this precaution. At the junction of the two metallic boxes, a collar of leather, or other suitable material, is to be interposed, in the ordinary way.

Having thus fully described the manner in which I construct, combine, and arrange the respective parts of my pump, what I claim therein as constituting my invention, an desire to secure by Letters Patent, is—

1. The combining and connecting together of the wooden and metallic parts thereof by means of cast metal coupling screws, or boxes, screwed into the wood, for the purpose, and in the manner, set forth.

2. And I, also, claim the manner of constructing the lower valve, the whole being constructed, and operating, substantially as described.

In testimony whereof I hereunto set my name this ninth day of May 1841.

C. D. VAN ALLEN.

Witnesses:

THOS. P. JONES,  
JAMES WILSON.