

*W. Peters,*  
*Shaft Coupling.*

*N<sup>o</sup> 26,290.*

*Patented Nov. 29, 1859.*

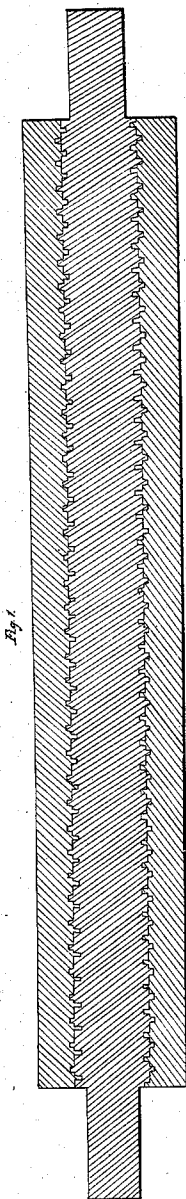


*Fig. 1.*

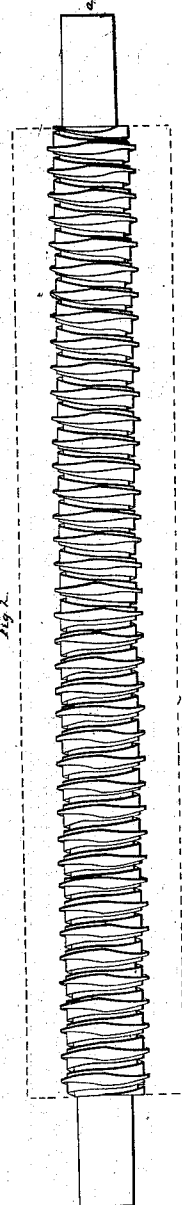


*Fig. 2.*

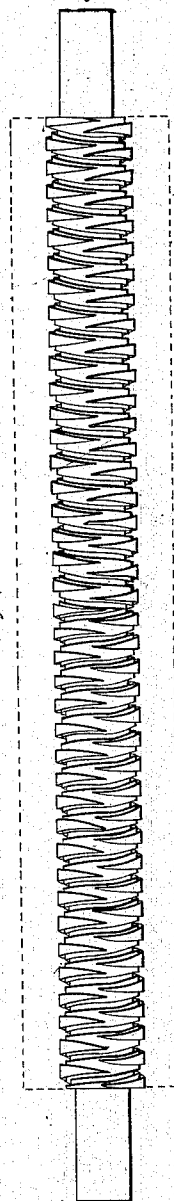


*Fig. 3.*

*Witnesses:*  
*Thos. Creamer*  
*J. J. Everett*

*Inventor:*  
*W. Peters*

# UNITED STATES PATENT OFFICE.

WILLIAM PETERS, OF BALTIMORE, MARYLAND.

## PROPELLER AND PADDLE-WHEEL SHAFT.

Specification of Letters Patent No. 26,290, dated November 29, 1859.

*To all whom it may concern:*

Be it known that I, WILLIAM PETERS, of the city of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Constructing Propeller and Paddle-Wheel Shafts; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters and marks thereon.

The object of my invention is to construct a shaft for propellers and paddle-wheels which in case of sudden and violent strain, such as the shafts of ocean steamers are subject to, will not be liable to cross or direct fracture and the entire separation of the fractured ends from each other, as it is well known has often occurred when the shaft was made entirely either of wrought or cast metal. The evil sought to be overcome by my invention has been essayed in constructing compound shafts in which wrought iron rods or bars, placed longitudinally or otherwise, have been surrounded with cast iron. The efforts in this direction have not, however, been successful, and in violent strains such shafts have usually yielded in the line of direct fracture.

The principle upon which my shaft is constructed, as will readily be seen, is opposed to direct fracture, as the strain is necessarily distributed and removed from the line of its force, *i. e.*, from the line of direct fracture at right angles to the line of the shaft.

The drawings forming part of this specification show how I carry out my invention.

Of these drawings Figure 1 is a longitudinal section of a complete shaft with the bearing ends for the molds attached; Fig. 2, being a side view of the shaft showing the broadest surface of one of the threads formed upon the periphery of the inner part or portion of the shaft, and Fig. 3 showing the interrupted or broken condition of the same thread by forming of other threads.

This improved shaft is made up of wrought and cast metal, or it may be made entirely of cast metal. When made of cast metal I prefer that the metal of the exterior portion of the shaft shall be different from that forming the interior part. Having selected the material of which to make the interior of the shaft, which is designated in the different figures of the drawings by the

letter (a), I have cut upon it, as shown by the drawings, four screw threads, which threads in case this interior part be of cast metal can be formed when this part is cast by the process known as "casting screw threads." In turning these threads upon the wrought metal interior the first thread is made continuous from right to left the entire length of the interior shaft, the second thread likewise continuous from left to right, while the third and fourth are made in the character of right and left handed threads, each commencing at one end of the shaft and terminating at the center or half the length. The two first named threads, by the drawings are shown by the yellow coloring and the two latter by the blue coloring. Having this portion of the shaft thus prepared it is placed in the mold for the casting around it the exterior portion. The ends of the shaft beyond the yellow colored part of Fig. 1, and beyond the dotted lines of Figs. 2 and 3, represent the bearing part which in the mold and which are removed on finishing the shaft. It is understood that the molds will have been prepared for the placing in them this interior part of the shaft. The exterior part is then formed by running in the molten metal upon and around the interior portion. This exterior portion may be brass or any other metal, or alloy, and the interior wrought or cast iron, or the interior may be wrought iron and the exterior cast iron. A shaft constructed in this manner will in case of strain have a uniform distribution of the force in the direction of its length and will successfully resist fractures in a line at right angles to its length.

It is evident that this construction is susceptible of being used in making other articles than propellers and wheel shafts, as it may be extended to mill spindles, pieces of ordnance, and other shafts where it is desirable to provide against force exerted in opposing directions to the line of the shaft.

Having thus set out my invention what I claim as new and desire to secure by Letters Patent is—

A propeller or paddle-wheel shaft constructed as herein set forth.

WM. PETERS.

Witnesses:

JOHN S. HOLLINGSHEAD,  
W. S. CLARY.