other with or without intervening sockets,—as gas-pipes, and steam or air-pipes.

The patentee claims the formation of a thickened end or ends to tubes by pressing or jumping up a portion of their length.

*Arched Bulkheads for Iron Steamers.**

In the disasters which have happened to steamers during the past year, you cannot have failed to notice that the bulkheads, constituting the water-tight compartments, have usually burst at the very and only time when their services were needed. This may have led to a doubt as to whether they might be depended upon at all as a means of safety, in case the vessel should be stove and one of her compartments filled. But looking at their present system of construction, that is, a flat surface nearly unsupported in a fore and aft direction, it is a wonder that they have in any case been able to withstand the pressure of a column of water equal to the vessel's immersion when laden, increased by the filling of a compartment, aggravated, too, by the pitching motion of the vessel.

To make the bulkheads strong enough to withstand the pressure and motion of the water, I suggest that they should be shaped to the form of an arch, springing from the sides across the vessel. They may be made with either the convex or concave side towards the bow, but the former arrangement is to be preferred, as the vessel is most liable to receive injury forward, and the pressure of the water on that side cannot force the bulkhead out of shape.

March, 1855.

KENNETH.

The New Iron Screw-Propeller Steam Transport-Vessel "Sovereign. †

Built and fitted by Messrs. Lawrie & Co., Iron Ship-builders and Engineers, White Inch, Glasgow, 1854.

DIMENSIONS.—

Length on deck,	.	.	196 feet	·8
Breadth at two-fifths of midship depth,	.	.	24	·9
Depth of hold amidships,	.	.	18	·1
Length of engine room,	.	.	45	·3
“ of shaft space,	.	.	67	·0
Breadth of “	.	.	1	·8
Depth of “	.	.	1	·9

TONNAGE.—

Hull,	.	.	602	·24
Engine room,	.	220 ·95	222	·99
Shaft space,	.	2 ·04		
Register,	.	.	379	·25

Fitted with a pair of geared angular engines, of 100-horse nominal power: diameter of cylinders, 40 inches; length of stroke, 3 feet; having reversing gear. Screw propeller: diameter, 11 feet 6 inches; pitch, 11 feet 6 inches; two blades. One tubular boiler, fired fore and aft: length

* From the Lond. Practical Mechanics' Journal, April, 1855.

† From the London Artizan, April, 1855.