Not so the Bridge the author has to boast;
His plan is sure to save such needless cost;
A ladder on each side is lower'd down,
And shifted from the fulcrum to the crown;
Two men on each descend to drive the bolts,
Wedge fast the trunnels or set taught the nuts,
Or line with boards the parabolic form,
Expos'd to weather and the furious storm.
The lateral shape of Bridge resists the wind,
By concave circle throws its force behind;
The butment on each shore receives the charge,
Repels with weight the pressure by, and large.
If shores supply with rock to build upon,
The builder then hath an advantage won,
By which he saves the cost that oft ensues
In sinking coffers, caissons, or mud pews.
But should some softer strata heave in sight,
The consequences will be truly light,
As nothing is more easy to provide
Than concave circle on the under side,
By which the pressure will combine to force
The neighbouring infirm strata much more close;
Its watery particles must soon escape,
And force the solid grains into a heap,
By which the massy butment rests secure,
And through its firm foundation must endure.
Not so the tottering piles of ancient day;
When prest by weight they quickly slide away,