the construction of draw bridges, the current chapter is introduced in the present edition, in order to make the work as satisfactory and useful as may be to those who may have occasion to consult its pages.

The present design is not a historical sketch of the construction of draw bridges, but to give the author's views, derived from experience, observation and investigation, as to the most direct, feasible, and convenient means of accomplishing the ends requiring the use of such works.

CLXVI. The indispensable requisites of a draw bridge are, first, strength to sustain with safety the weight of the land traffic, and second, mobility, enabling it to be withdrawn, so as to afford sufficient width of unobstructed water way, and sufficient head room for the passage of the water traffic. Hence, strength combined with lightness is a desideratum.

Draw bridges, as hitherto constructed and used, may be distinguished into three classes; Retractable, Swing (or pivot), and Lift Draw Bridges. The former

Fig. 68.

are withdrawn bodily, either in the direct line of the land traffic, or obliquely, so as not to come in conflict with the stationary portion of the way; as represented