

Forty years had to elapse before these elements of success were adopted in ocean navigation. At the time of Colonel Stevens' experiments there were no competent workmen in America to construct the boilers and engines he planned. He had, therefore, to fall back upon the paddle-wheel as a propeller. with its slow-moving engine, whose boilers carried steam at only two or three pounds above atmospheric pressure.

Speed soon became a prime consideration in steamboating. At first Colonel John Stevens bestowed his attention wholly upon his motive power and machinery, giving little heed to the hulls of his vessels. In improving their lines, his son and associate, Robert, effected a notable advance. At first his father's steamers were little else than boxes with pointed ends. In the *New Philadelphia*, Robert Stevens introduced a false bow, long and sharp, which parted the water with a new facility. At once this vessel bounded forward at thirteen and a half miles an hour, a marvelous speed for that period, and even to-day a goodly pace. When the designer asked his shipbuilders, Brown & Bell, to construct this bow, they declined from fear of public ridicule. Mr. Bell said: "That bow will be called 'Bell's nose,' and I will be a general laughing-stock." So Robert Stevens had to build the bow himself, with anything but laughter at the result. The *New Philadelphia* inaugurated a day line between Albany and New York. No predecessor of hers had ever run fast enough to complete a trip betwixt dawn and dusk. With her, too, began models which, in clipper sailers and steamers, won new records in speed. Of equal importance with the steamboats plying between the metropolis and the capital of New York, were the steam ferries which joined New York City with the shores of New Jersey and Long Island. Until 1810 only comfortless rowboats or pirogues offered a passage across the North and East Rivers. First as an im-