3. Iron Floating Docks are of various shape and design, probably one of the largest in existence is that at Bermuda, which is 330 feet in length by 84 feet in width inside. The bottom is flat and the sides curved, so that the outline roughly assumes the shape of a vessel amidships, and the ends are open. It is divided lengthwise into eight water-tight compartments and transversely into three on each side. It is provided with two caissons and can take in vessels drawing water up to 26 feet. Its cost is said to have been about \$1,200,000. One of the objections to a dock of this description seems to be that the difficulty of reaching the bottom for the purpose of cleaning or repairs is great and expensive, besides being attended with no small risk to the entire structure.

An iron floating dock 300 feet in length by 72 feet in width inside was constructed in 1866 at St. Thomas. It was composed of six pontoons, each of which was divided into three watertight compartments. The sides were formed of girders resting upon the pontoons and between the girders were placed large floats, the object being to counteract any tendency in the structure to cant and to prevent it from sinking too far. Soon after its completion, however, an accident occurred and the whole dock sank to the bottom, where it remained for a considerable time.

Depositing Docks.—The first dock of this description is 4. said to have been constructed at the Arsenal of Nicolaieff, in the Black Sea, for the Russian Government in 1877. It was designed for the purpose of raising the large circular iron-clads and the ordinary iron-clads of the Russian navy, and will lift a dead weight of about 4,000 tons. It has but one side, which is 280 feet long, 441 feet high, and 12 feet broad, and is divided into three similar lengths, which can be attached or detached at pleasure. To each is fastened a series of pontoons or "fingers" on one side, which are passed beneath the vessel to be raised. On the other side is a sliding out-rigger which balances the dock and prevents it from tipping over. A ship is raised by pumping the water out of the pontoons, and when at a sufficient height the dock, with the ship upon it, is drawn sidewise to a staging along the shore. The staging is built of piles arranged in parallel rows in such a manner that the pontoons supporting the ship pass between the rows just as the fingers of one hand, if extended a little, may be made to fit between the fingers of the other. When the pontoons are in this position they are allowed to fill with water, partially sink, and be withdrawn so as to be ready for use again, the ship, of course, being left standing upon the stage. In this way any number of vessels can be deposited high and dry out of water with the one dock the limit being simply the length of the staging. 111122-11

Ċ

t

a

c k

0

0

t

 $\mathbf{t}$ 

li

f

i