

The First Ship Launching by Cradle in Japan

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Water colored painting: Launching of The Schooner *Heda*

1. Introduction

“Sakoku or National Isolation of Japan: 1639 – 1854”

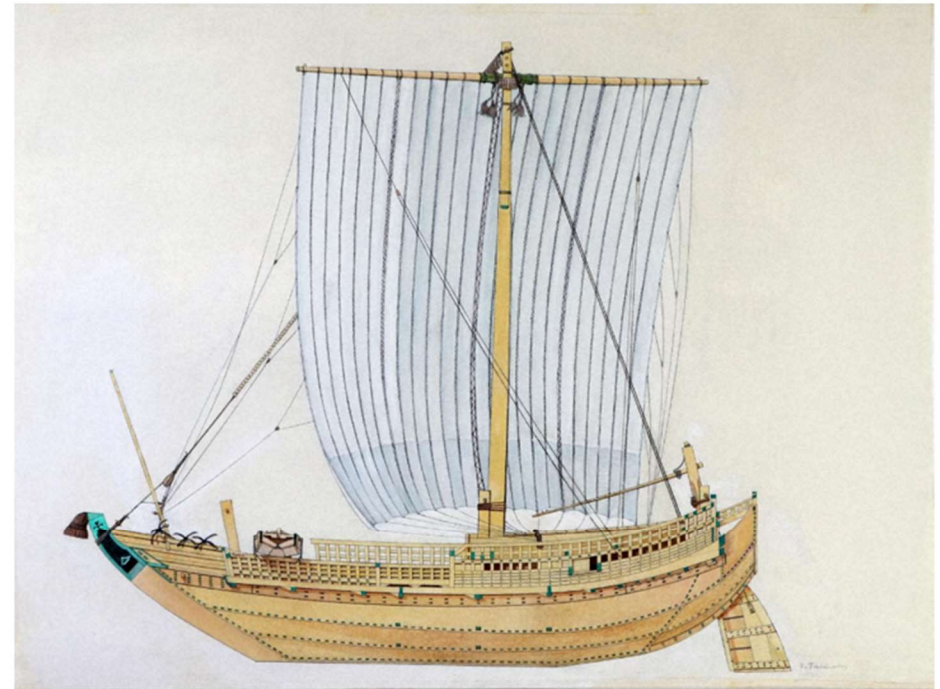
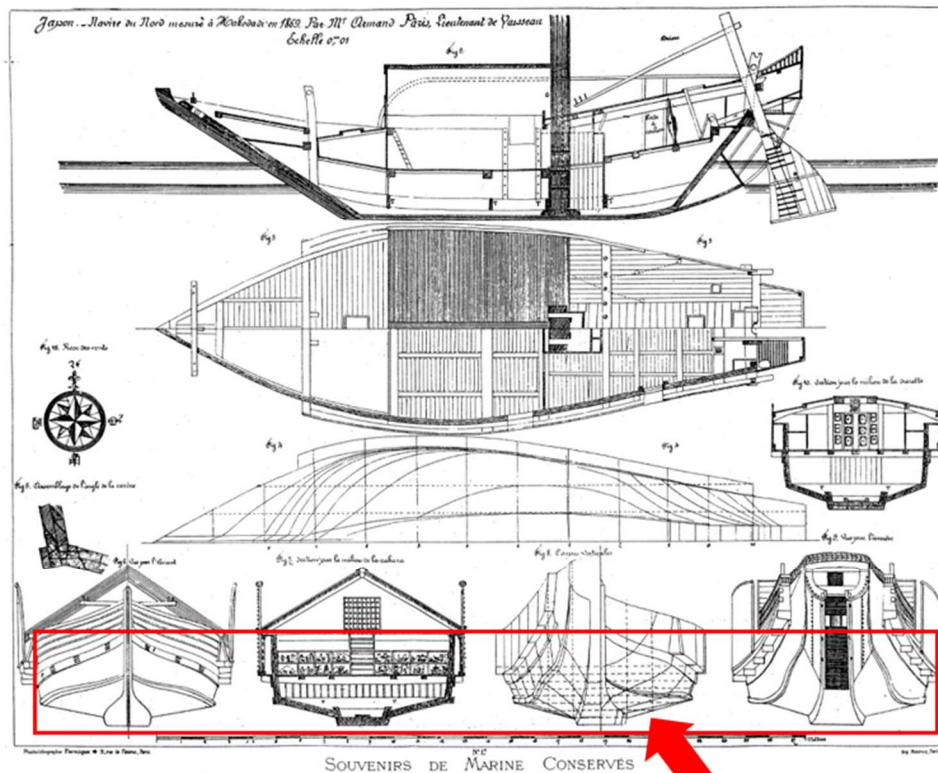
During this period Japanese people was prohibited to go abroad, and foreign peoples were prohibited to enter Japan except Chineses, Koreans, and Dutch.

Before the Sakoku, Japanese people sailed to South-east Asian countries boarding on ocean-going ships, like as Arakibune classified as “**Mestizo** Type Ship”.

(Japanese pronunciation “**Mistuisu**”)

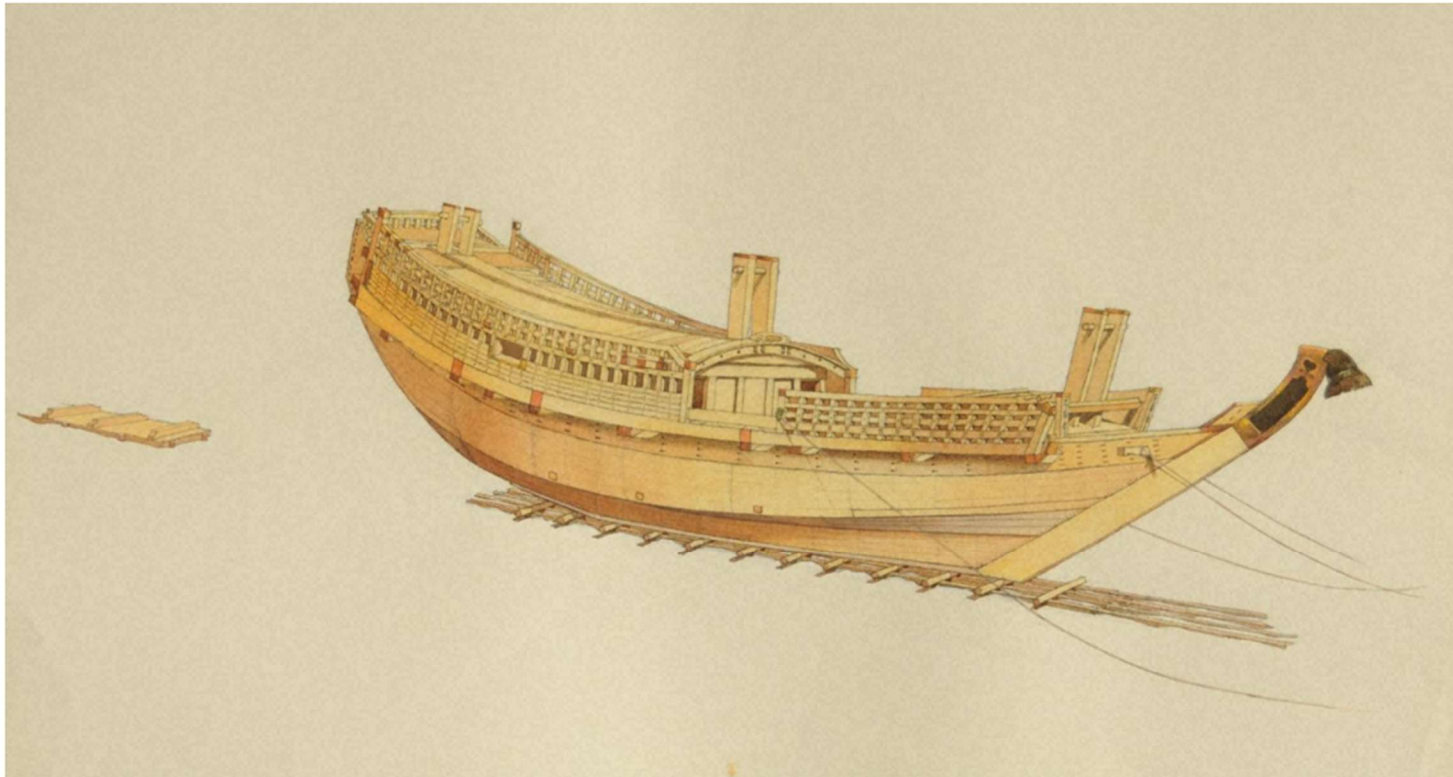


Japanese unique ship “Bezaisen” dominated domestic trading navigations



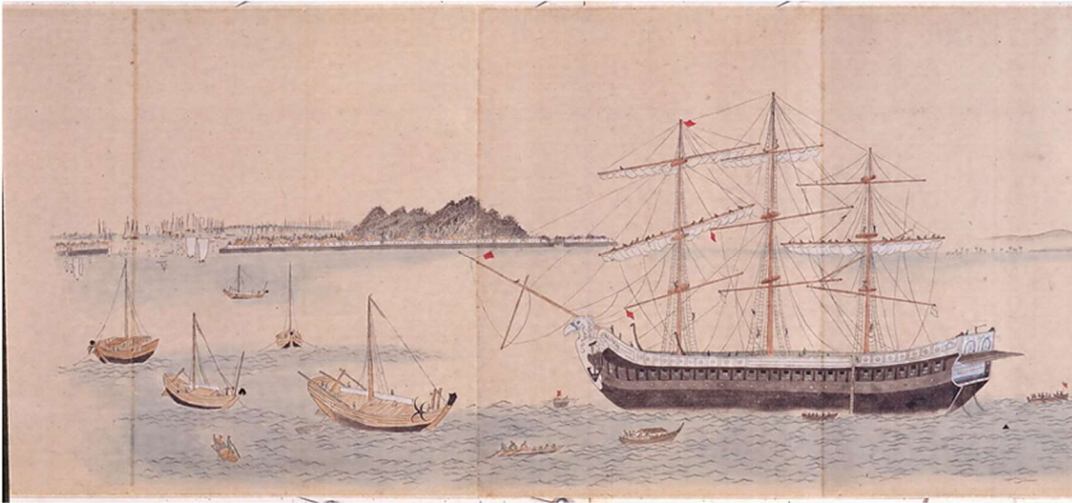
with flat bottom and
low height of ship's sides

As the Bezaisen was launched down, slipping on round timbers laid on ground, with support of pulling ropes, any kind of cradle was not necessary.

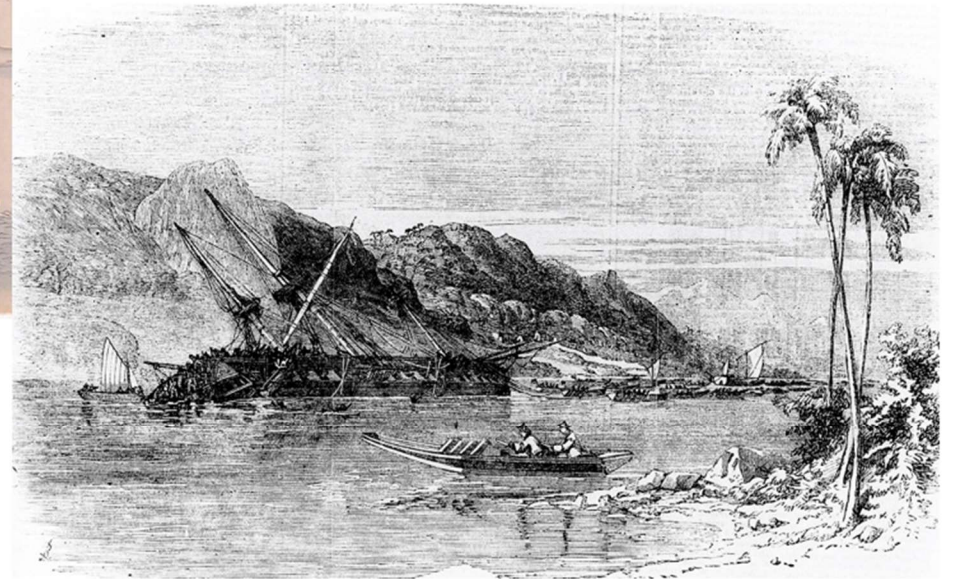


Courtesy of The Museum of Maritime Science, Tokyo

2. Shipwreck of Russian Frigate *Diana*



The *Diana* anchoring at Osaka Port 1854
a Japanese water colored painting preserved in
the Kobe City Museum



The wrecked *Diana* from The Illustrated London News, January 1856.
However, actually the hull of the *Diana* totally sank in a deep sea.

The *Diana* sank 23 December 1854 by Tsunami

Admiral Jevfimij **Putjatin**, who came to Japan on board the *Diana* of about 2000 tons in order to make a Treaty of Peace and Amity with Japan. Soon after beginning of the negotiation, a huge earthquake and a tsunami occurred on 23 December. Finally the ship was lost, and Putjatin decided to construct a schooner and to send it to the mother country for asking a larger ship to return the survived 500 people.

For a location to construct her, **Heda Village** was selected.

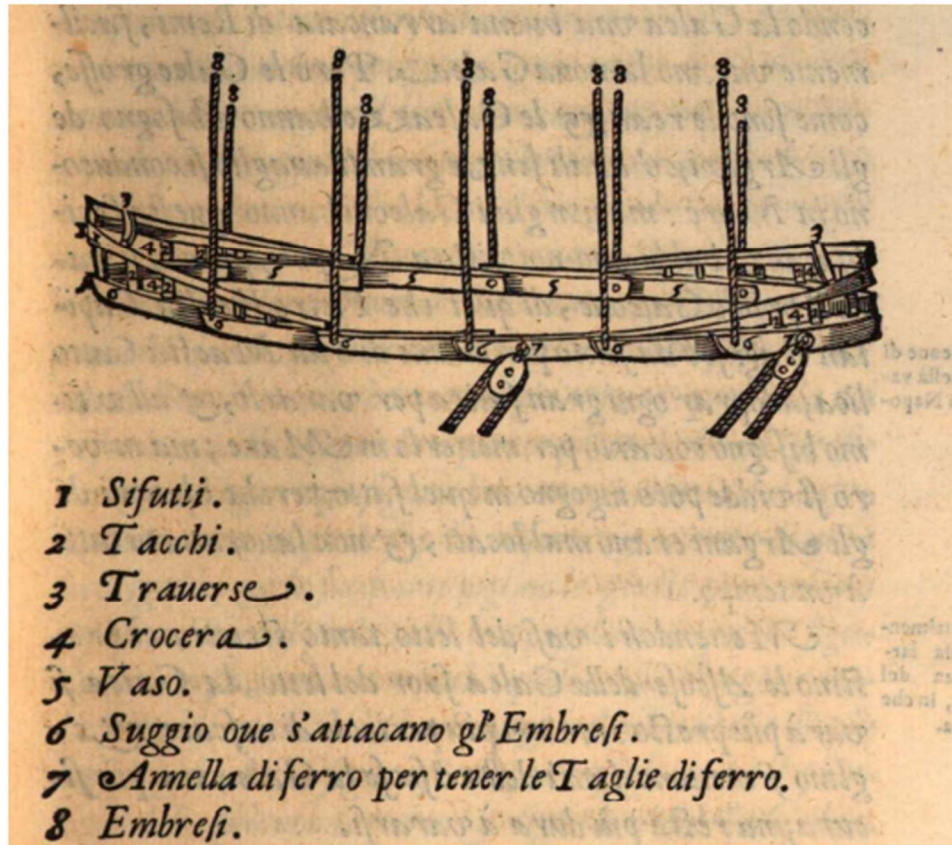
Japanese government was willing to assist them of the construction for a purpose of getting know-how to built western style ships.

Heda Village

where the schooner **Heda** was built.

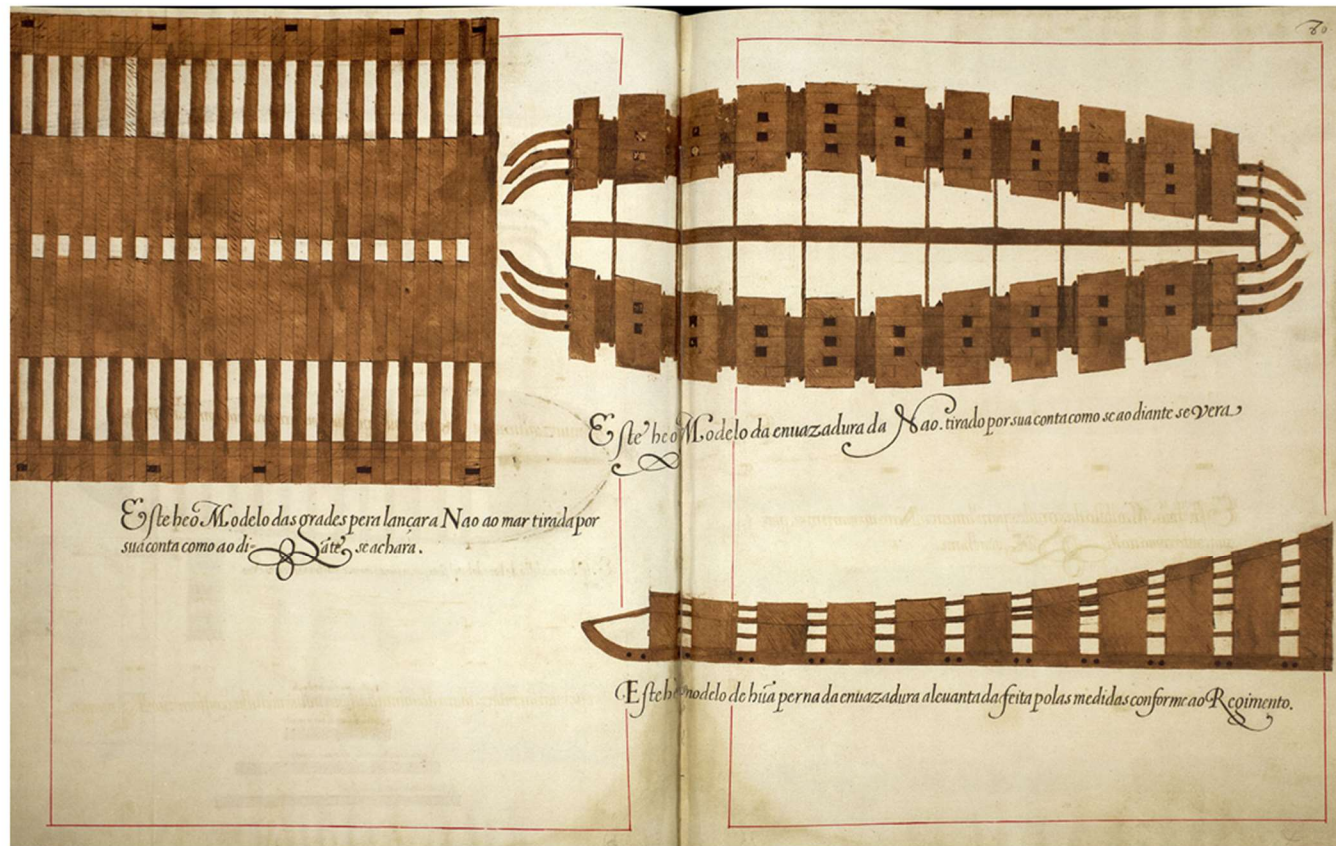


3. Important developments of launching of ships by cradle in Europe



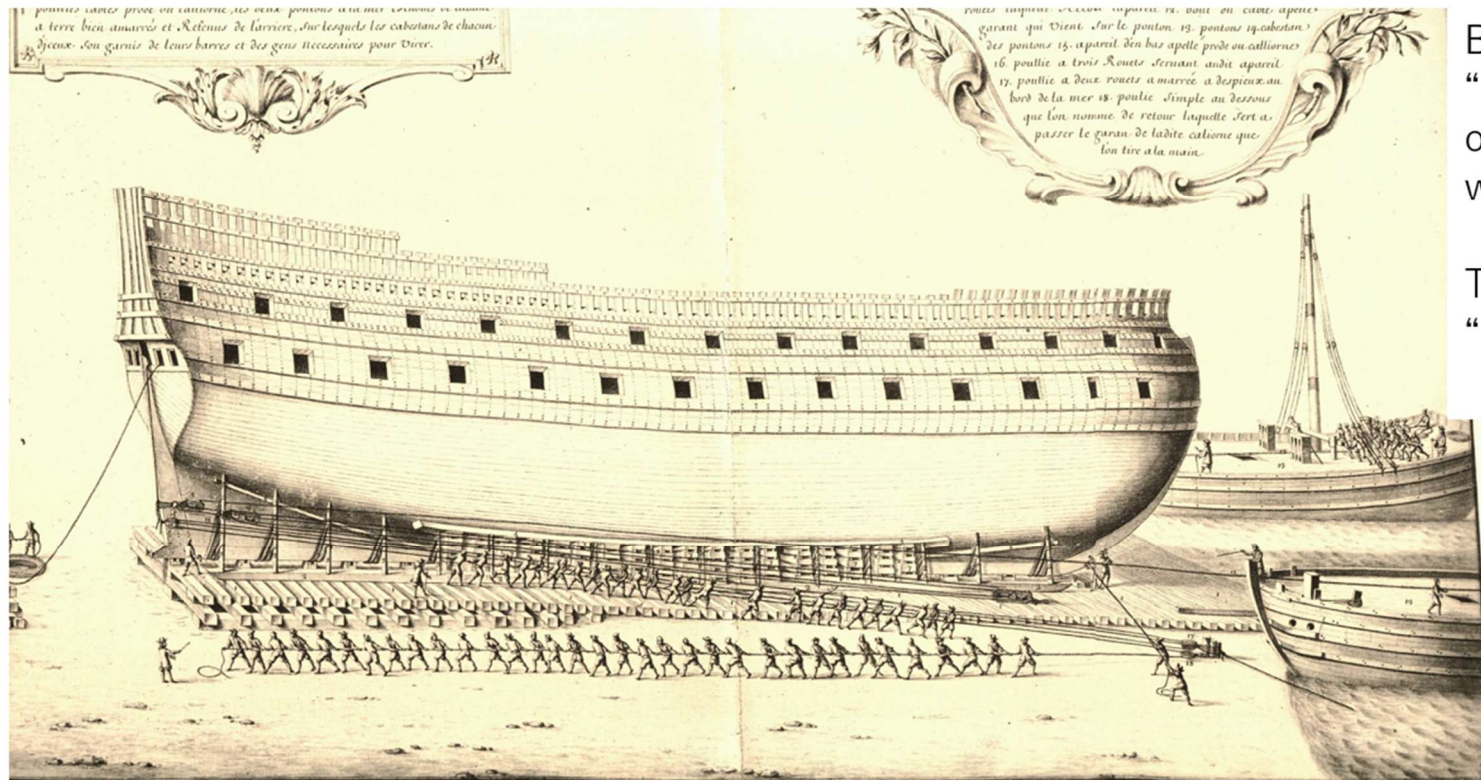
Italian “*letto*”, a cradle for galleys drawn in **Bartolomeo Crescentio's** “*Nautica Maditerranea*” 1607

Portuguese cradle for naus by Manuel Fernandes
“*Livro de Traças de Carpintaria*”, 1616



Vasadura

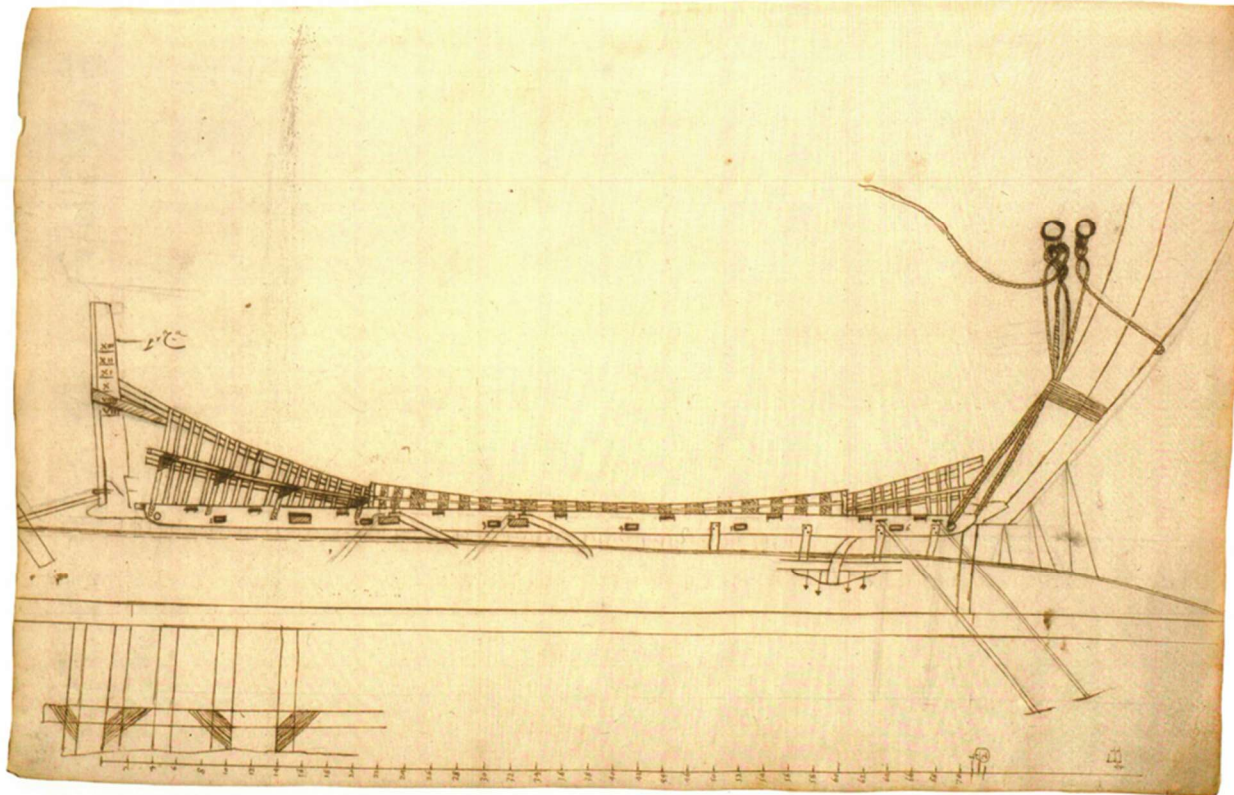
French cradle shown in “*Album de Corbert*”, 1670



Bilgeways called “**angilles**” are playing roll of sledges, and there were not sliding planks.

This meathod was not yet “Free sliding”.

Spanish cradle getting near to modern style in “*Arte de Fabricar Reales*” by Antonio Gastañeta, ca.1688

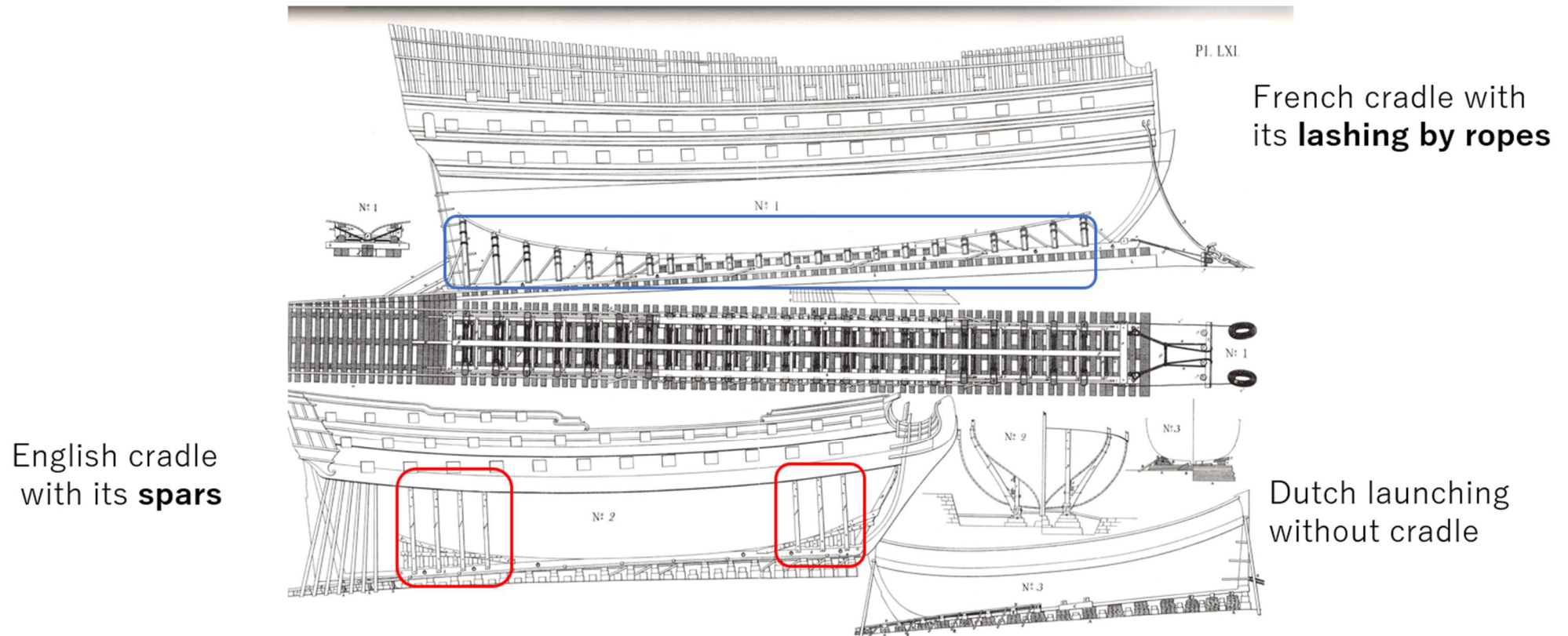


- Ledge called as “**baso**”.
- Launching way called as “**imada**”
- Poppet called as “**charancha**”
- Lashing by ropes called as “**trinca**”

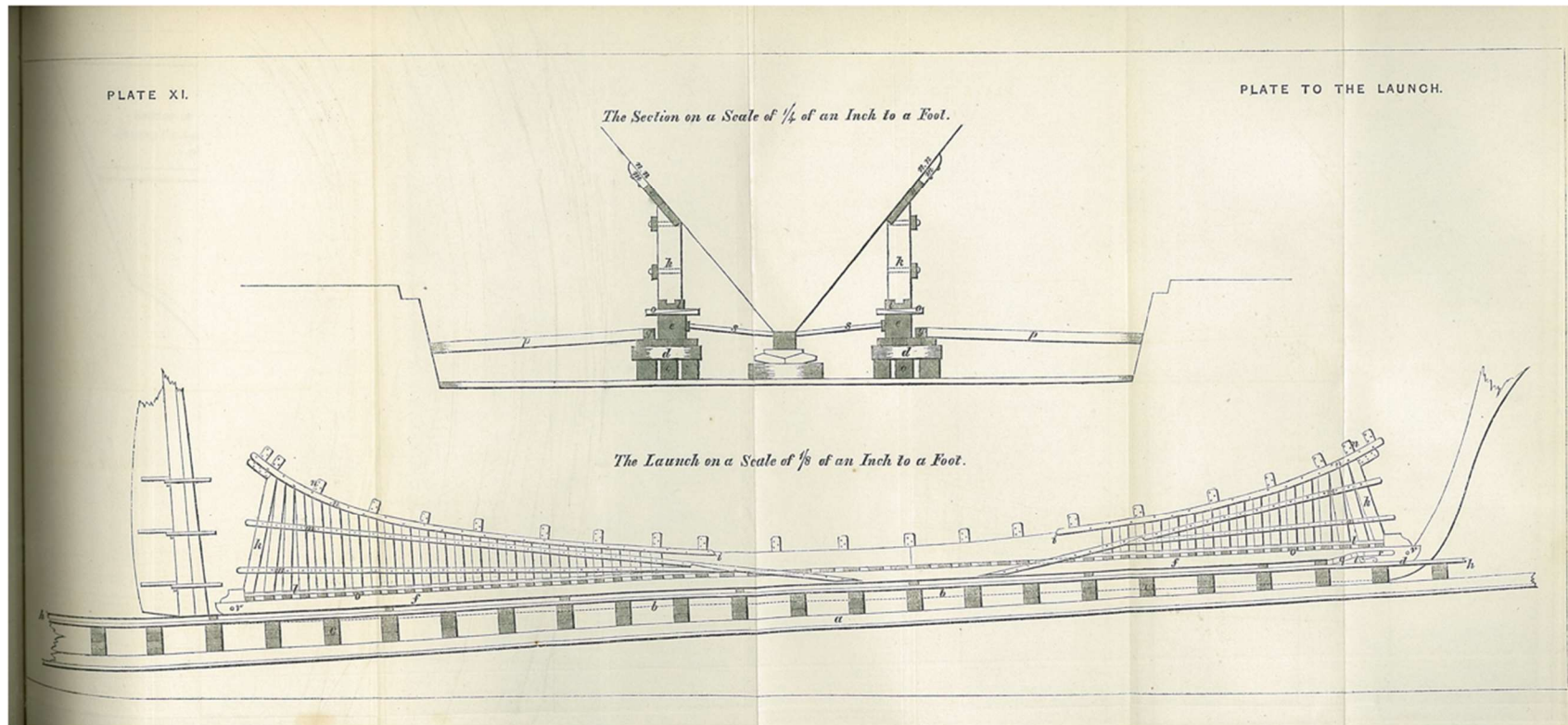
Blaise Ollivier recommended launching
by “Free Sliding” on a cradle

Blaise Ollivier dismissed launching by pulling cradle’s head and by pushing its sternpost at the same time as an old-fashioned style, and he recommended a free sliding to go down by ship’s own weight, as a new style in his book “**Traité de construction**” written in ca. 1735. He distinguished “*angille*” from cradle and gave to the latter a name “*berceau*”.

Frederik af Chapman showed differences between three main launching ways in his “*Architura Navalis Mercatoria*”, 1768.



Typical form of a cradle at the later half of 19th-century :
James Peake's "Rudiments of Naval Architecture", 1859



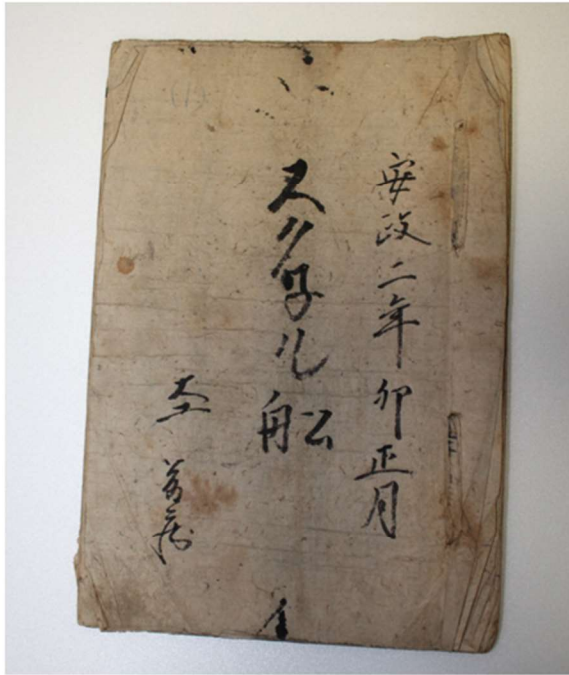
4. The first launching of ship by a cradle in Japan, 1855

1. Historical materials relating to the launching of the *Heda*

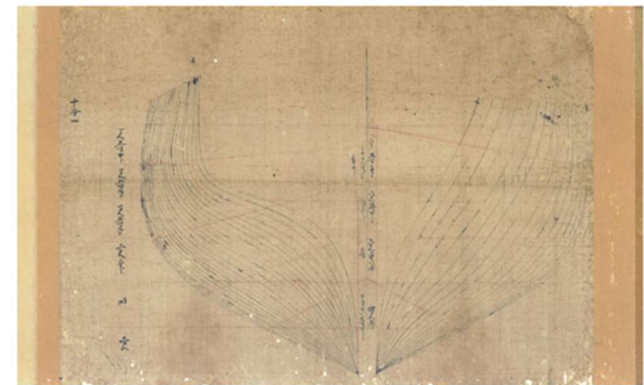
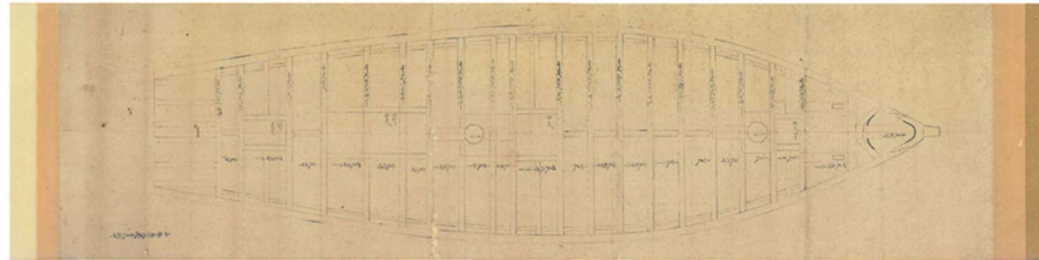


The Roll of the Construction of Russian Warship *Heda* , courtesy of The Toyo Bunko

Memorandum and drawings related to the *Heda*

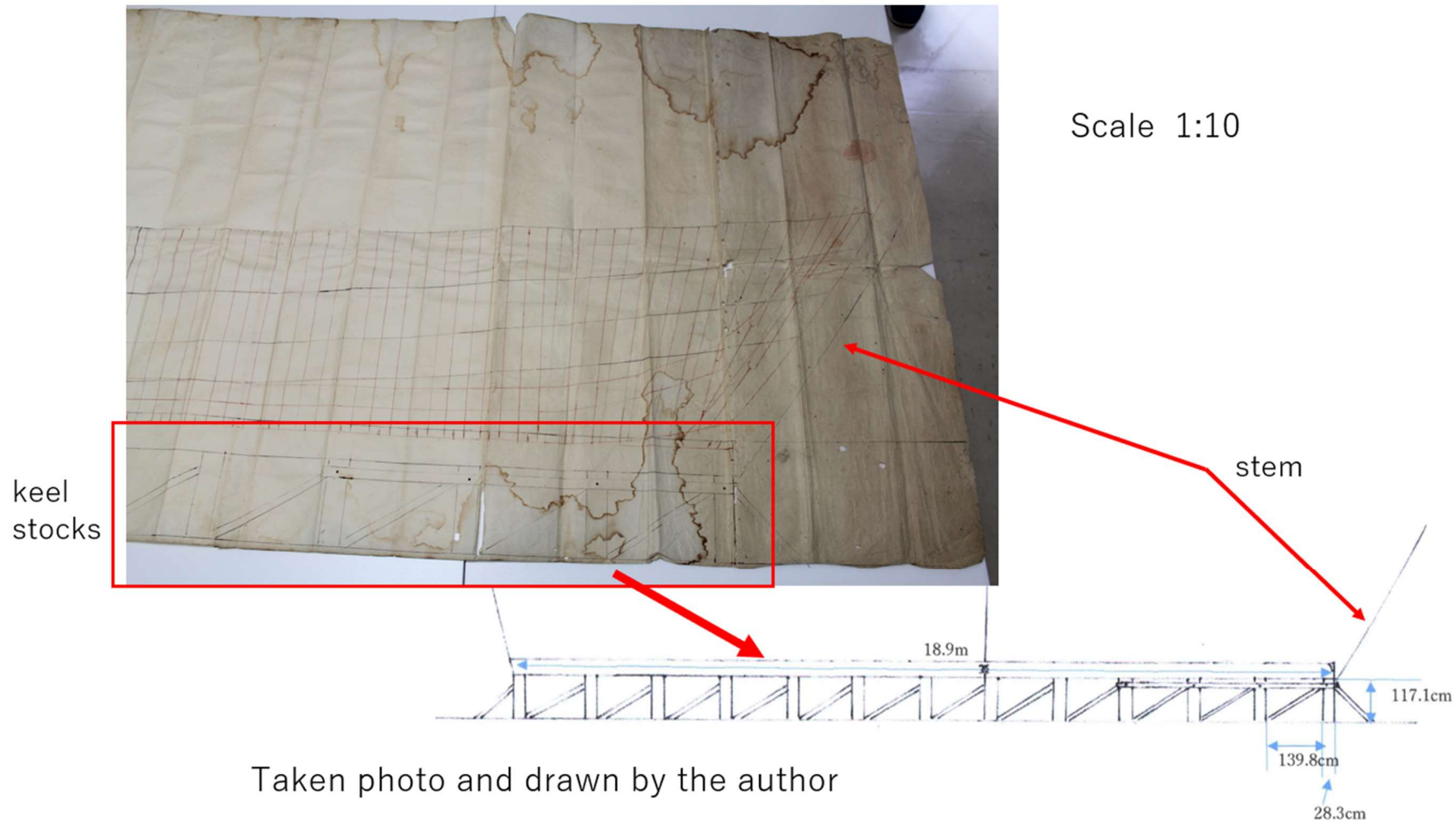


Memorandum of Carpenter
Touzou Ishihara, dated Feb.
1855

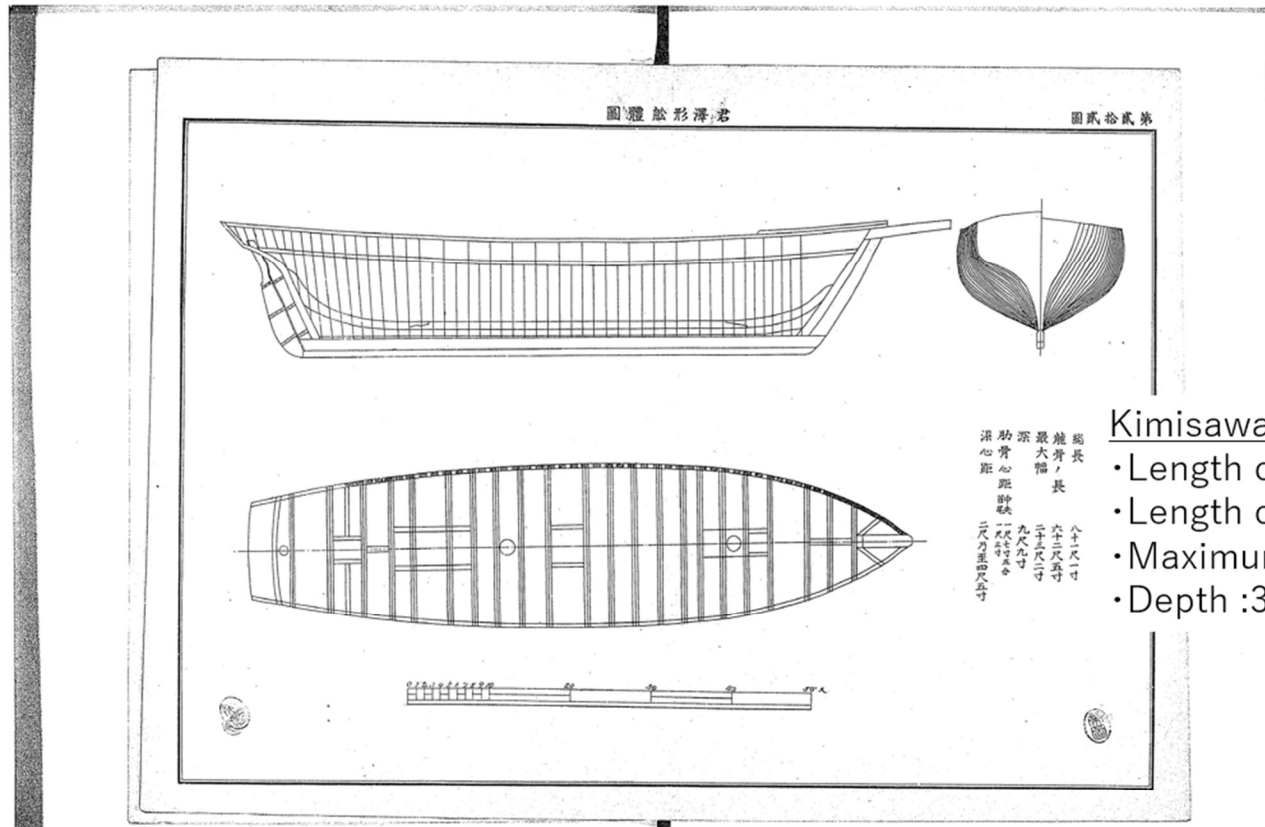


Drawings and rigging plan

Drawings of arrangement of frames and keel stocks



Drawing of *Kimisawa Type* which was derived from the *Heda*



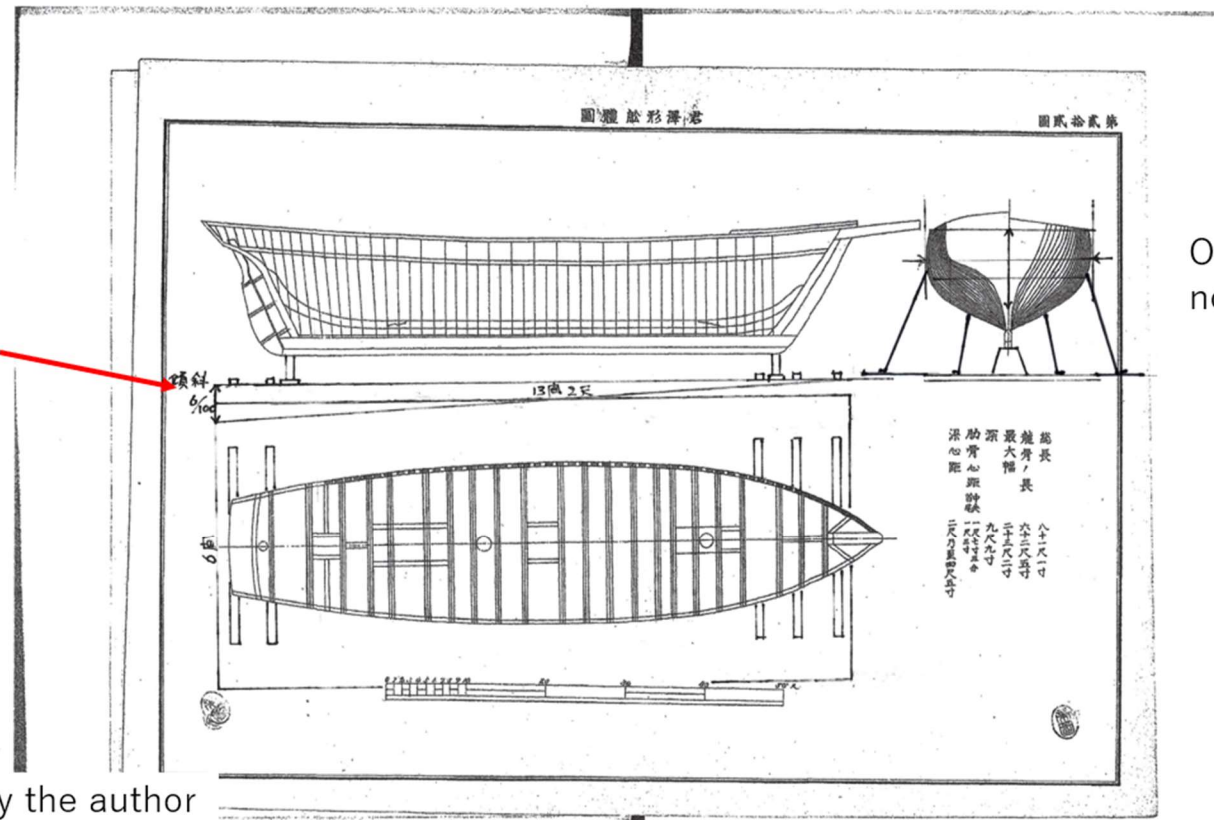
Kimisawa Type's main measurement

- Length of the ship: 24.61m
- Length of keel :18.96m
- Maximum width : 7.04m
- Depth :3m

From “**History of Japanese modern shipbuilding**” published by The Shipbuilder’s Association of Japan, 1911 (public domain)

Assumption of building site with slipways and shores based on a description of the Memorandum

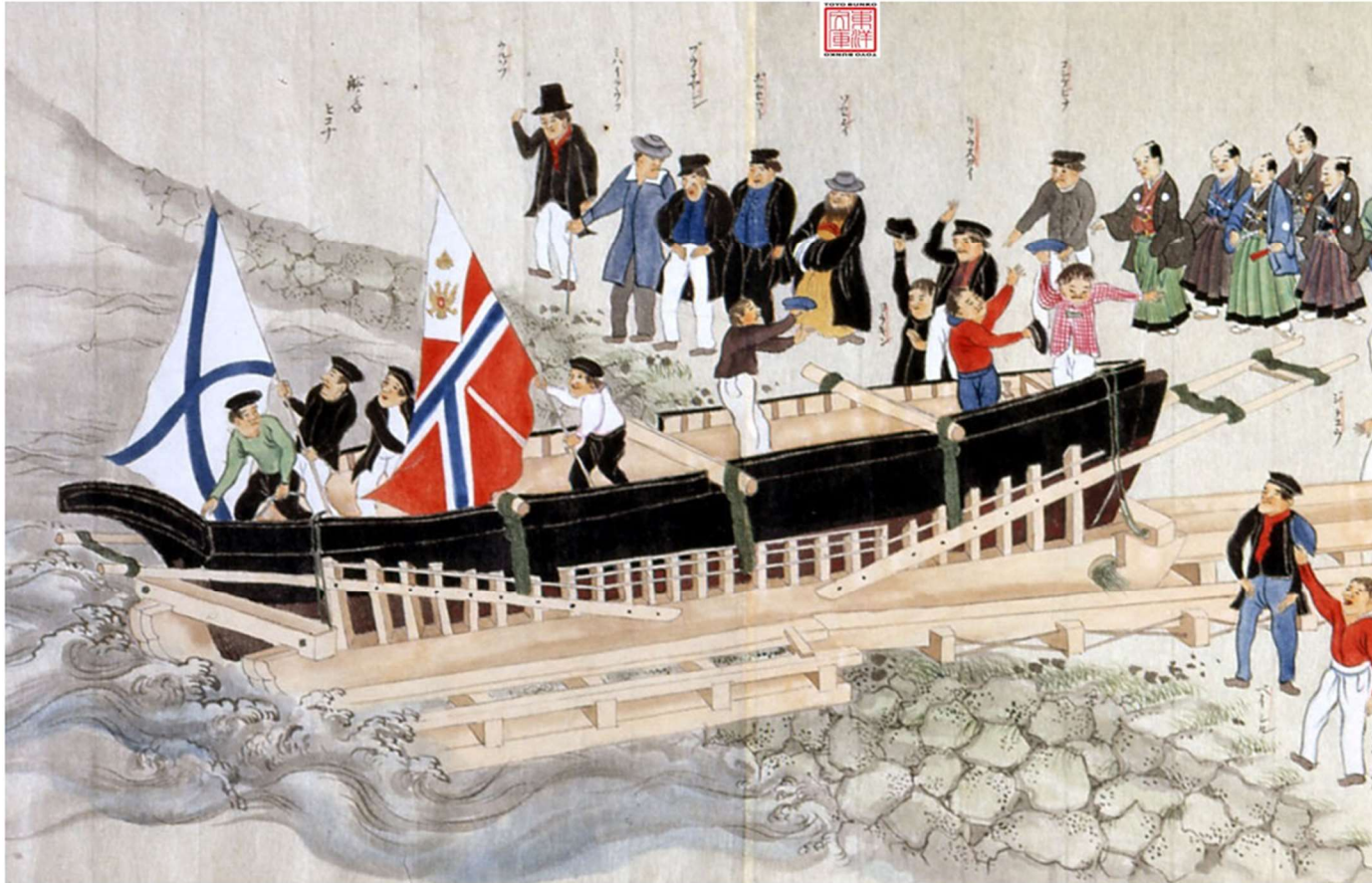
Declination ratio of slipways to ground: 6/100



Other shores are not drawn.

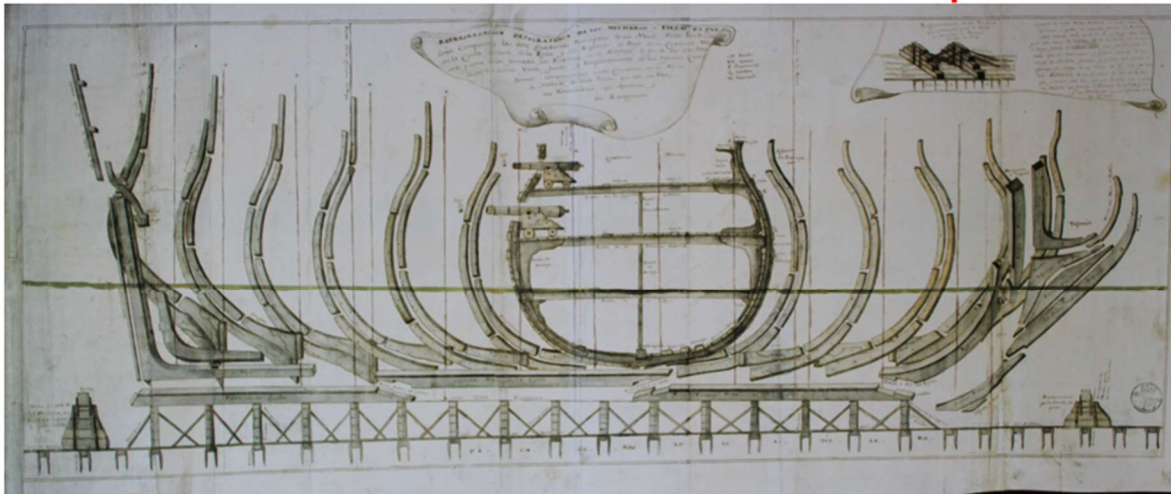
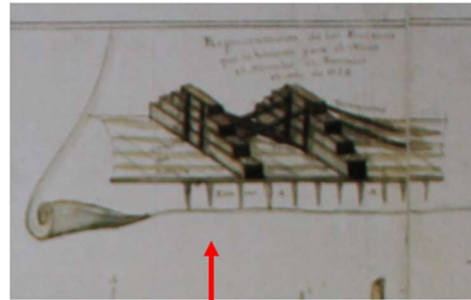
Modified drawing by the author

The **Heda**, launching her stern
without rudder ahead on the cradle



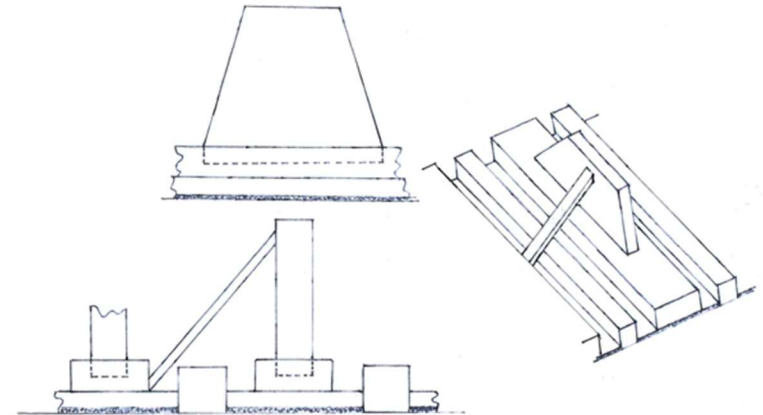
Assumption of keel stocks

Composed of square timbers



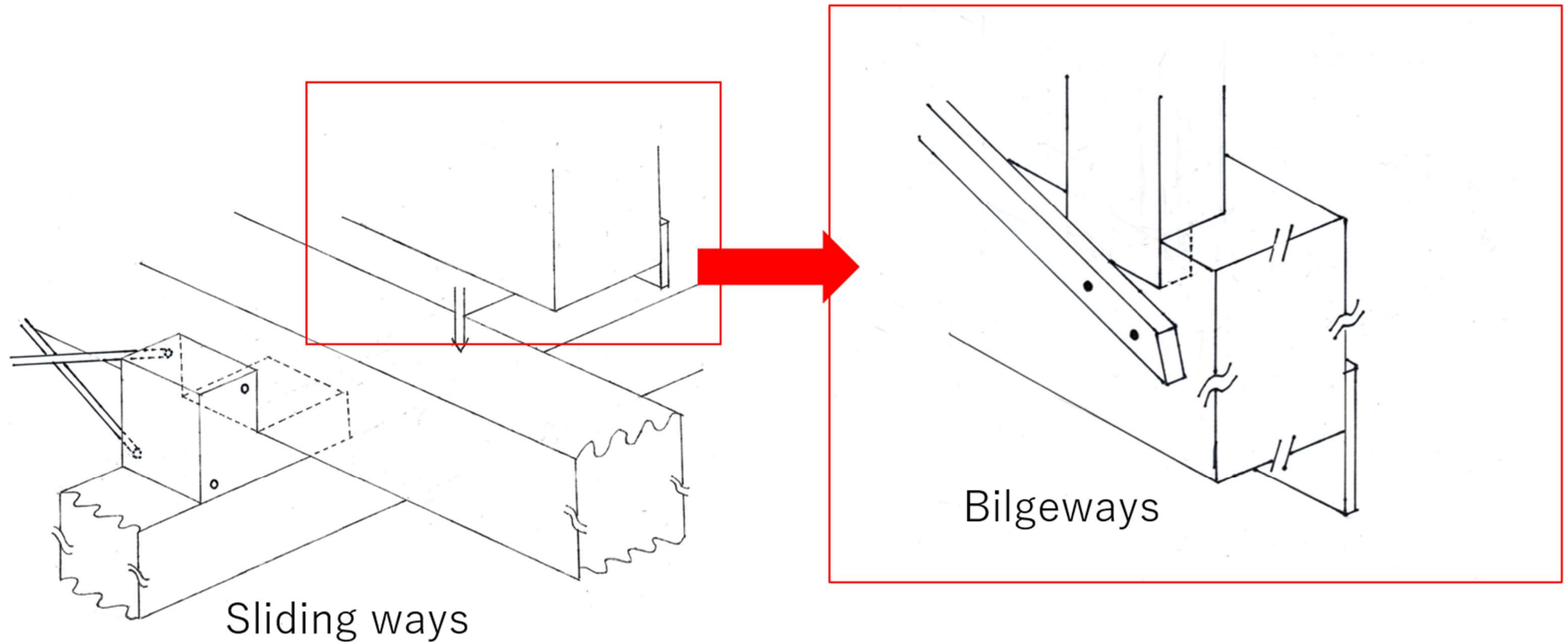
From Album de Marques de Victoria

Each stock was composed of one trapezoidal plate.



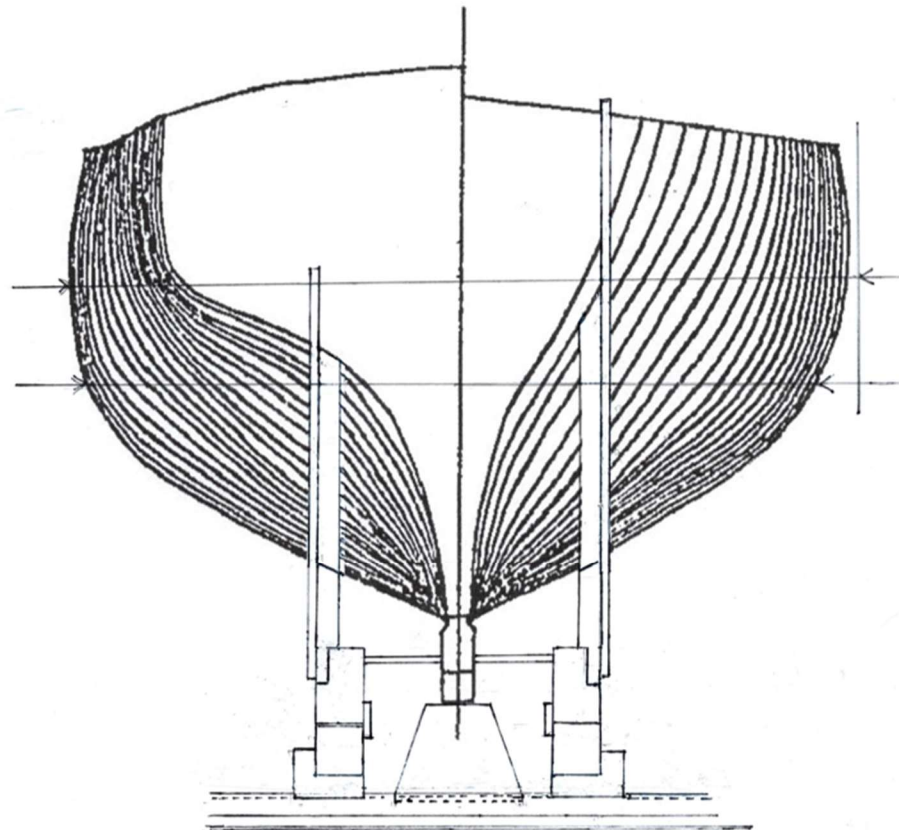
Drawn by the author

Assumption of sliding ways and bilgeways



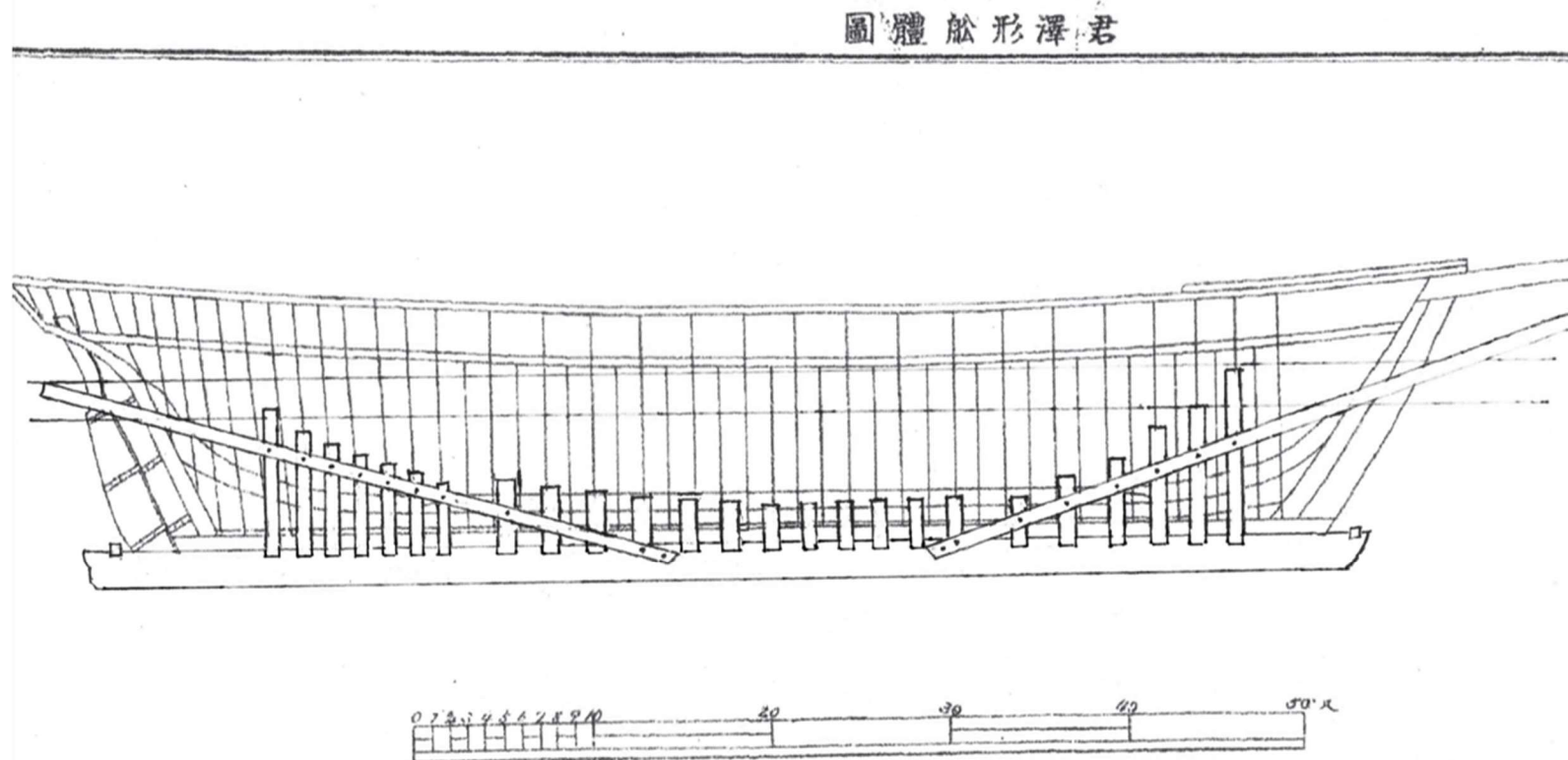
Drawn by the author

Sectional view of the hull, the cradle, the sliding ways and the keel stocks



Drawn by the author

Side view of the hull with the cradle



The *Heda* at the moment of launching
on April 26, 1855.



Report of the Capitan Corocolizoff (1)

“ Along with completing the construction of the schooner, Japanese increased interest **how we would launch her.** Though they **could not imagine how** it would be done, also it was sure for them that it could not be adopted a Japanese way of sliding ships on round timbers. For launching, in accordance with our advice, they **prepared sliding bed (or sledge** on which ship was laid), and **ways of two lines of square timbers on ground**, and a frame in length of 9.1meters. This frame was helpful to extend the sliding ways to water of 3.6 meters depth. However, **Japanese could not understand totally what would happen** by these preparations.

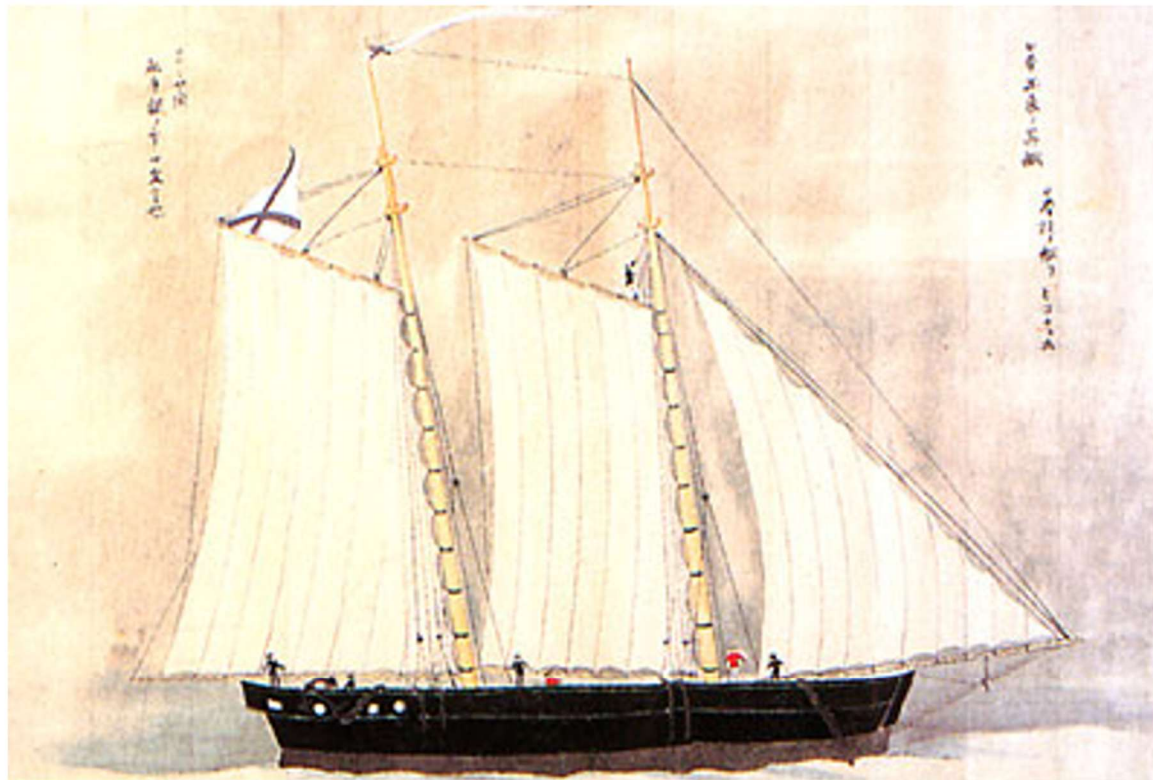
Report of the Capitan Corocolizoff (2)

Therefore, when we began to explain to them how to set the schooner on the sledge, and why **the schooner would take only some minutes to reach at water**, they **burst out laughing innocently**. . . . The Japanese people who did not believe to launch her in this way could not make up their mind to fabricate a block of cradle Therefore, all the preparation of **the launching was done by ourselves**

As soon as a high tide arrived, the first order was given and we **removed shores** by knocking them. **Japanese**, who were **terrified** and in doubt what would go to happen, withdrew themselves **father from the schooner**. Afterward, when we cut stopping ropes and moved a long lever lightly, the schooner went down on the sliding ways slowly at first, and gradually speed up under **cheers of the mariners on board** all at once. Finally, the schooner entered into water and began to sway relaxedly.

At last the *Heda* sailed

Putjatin named the schooner “*Heda*” after the name of the village.



End