

SMOKE SAUNA

Traditional and Modern Design

RT 91-11262 / SIT 97-610125

April 2017

*Comprehensive Guide to Finnish Smoke Sauna
Construction and Use*

TABLE OF CONTENTS

1 GENERAL

- 1.1 Smoke sauna placement
- 1.2 Family sauna
- 1.3 Commercial and hospitality saunas
- 1.4 Traditional sauna types
- 1.5 Sauna size
- 1.6 Interior height

2 FOUNDATION AND FLOOR

- 2.1 Foundation
- 2.2 Floor

3 WALLS

- 3.1 Log type and corner joint methods
- 3.2 Doweling
- 3.3 Sealing materials

4 ROOF

- 4.1 Traditional roof structures
- 4.2 Modern roof structures
- 4.3 Interior ceiling (Laipio)

5 OTHER STRUCTURES

- 5.1 Window
- 5.2 Door
- 5.3 Benches
- 5.4 Eaves and gutters

6 MODERN SMOKE SAUNA

- 6.1 Design starting points
- 6.2 Interior ceiling form
- 6.3 Eaves and gutters
- 6.4 Fire protection
- 6.5 Usage guidelines

7 HEATER (KIUAS)

- 7.1 Heater placement
- 7.2 Heater dimensioning
- 7.3 Heater foundation
- 7.4 Stones
- 7.5 Firebox walls and arch
- 7.6 Surrounding wall
- 7.7 Firebox and combustion air
- 7.8 Heater cover

7.9 Vault heater PT-1 construction

7.10 Fire protection

8 SMOKE SAUNA USE

8.1 Lighting

8.2 Water heating

8.3 Heating curve and lövly duration

8.4 Heating the smoke sauna

8.5 Smoke sauna care and maintenance

9 SMOKE SAUNA CONSTRUCTION AND REPAIR

1 GENERAL

1.1 Smoke sauna placement

1.2 Family sauna

1.3 Commercial and hospitality saunas

1.4 Traditional sauna types

1.5 Sauna size

1.6 Interior height

2 FOUNDATION AND FLOOR

2.1 Foundation

2.2 Floor

3 WALLS

3.1 Log type and corner joint methods

3.2 Doweling

3.3 Sealing materials

4 ROOF

4.1 Traditional roof structures

4.2 Modern roof structures

4.3 Interior ceiling (Laipio)

5 OTHER STRUCTURES

5.1 Window

5.2 Door

5.3 Benches

5.4 Eaves and gutters

6 MODERN SMOKE SAUNA

6.1 Design starting points

6.2 Interior ceiling form

6.3 Eaves and gutters

6.4 Fire protection

6.5 Usage guidelines

7 HEATER (KIUAS)

7.1 Heater placement

7.2 Heater dimensioning

7.3 Heater foundation

7.4 Stones

7.5 Firebox walls and arch

7.6 Surrounding wall

7.7 Firebox and combustion air

7.8 Heater cover

7.9 Vault heater PT-1 construction

7.10 Fire protection

8 SMOKE SAUNA USE

8.1 Lighting

8.2 Water heating

8.3 Heating curve and löyly duration

8.4 Heating the smoke sauna

8.5 Smoke sauna care and maintenance

9 SMOKE SAUNA CONSTRUCTION AND REPAIR

Smoke sauna construction should follow traditional principles as closely as possible. The essential characteristics can be achieved through somewhat different approaches, accommodating both traditional designs and modern adaptations while maintaining the authentic smoke sauna experience.

1.1 Smoke Sauna Placement

The smoke sauna must be placed as a separate building, distinct from residential or other structures. A minimum distance of 20 meters must be maintained from other buildings for fire safety. Construction must comply with local fire and building inspection authority requirements. The sauna should be positioned to capture prevailing winds for smoke ventilation during the heating phase.

1.2 Family Sauna

A typical family smoke sauna has a floor area of approximately 9 square meters. This size accommodates 4-8 bathers comfortably and is practical for regular family use with reasonable heating time. The sauna should be designed with good proportions, allowing clear sight lines and comfortable movement.

1.3 Commercial and Hospitality Saunas

Commercial smoke saunas range from small resort installations to large public facilities. Larger saunas (20-40 m² floor area) accommodate more users and require careful heater sizing and ventilation planning. Commercial use benefits from modern infrastructure including proper drainage, ventilation, and heating controls, while maintaining the traditional smoke sauna aesthetic and experience.

1.4 Traditional Sauna Types

Several distinct regional variations developed in Finland until the early 1900s, each with characteristic features:

Southwest Finnish sauna (Lounaissuomalainen): Low building with heater in corner, simple straight corners

Savonian-Karelian type (Savolaiskarjalainen): Higher construction with distinctive log joints, central heater placement

Häme region type (Hämäläissatakuntalainen): Compact design with efficient bench arrangement

ARCHITECTURAL DRAWINGS AND PHOTOGRAPHS



Figure 1



Figure 2



Figure 3

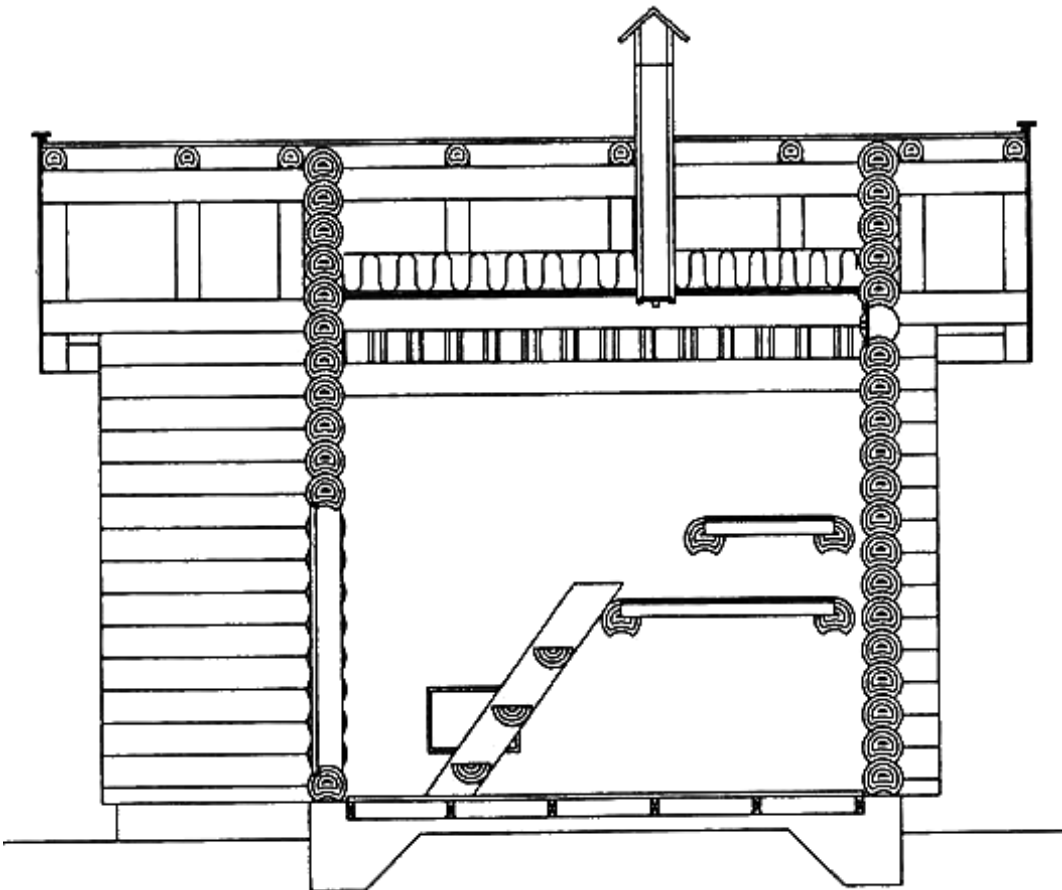


Figure 4

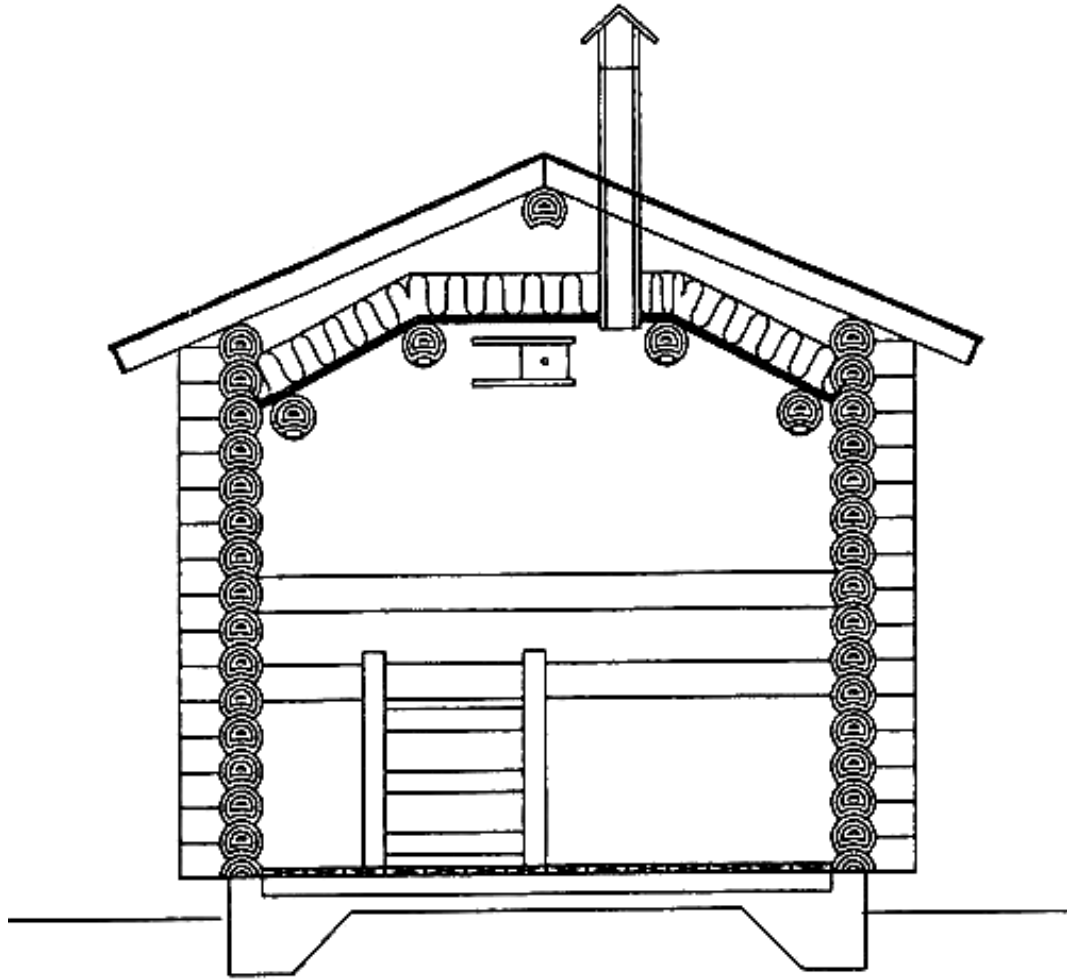


Figure 5

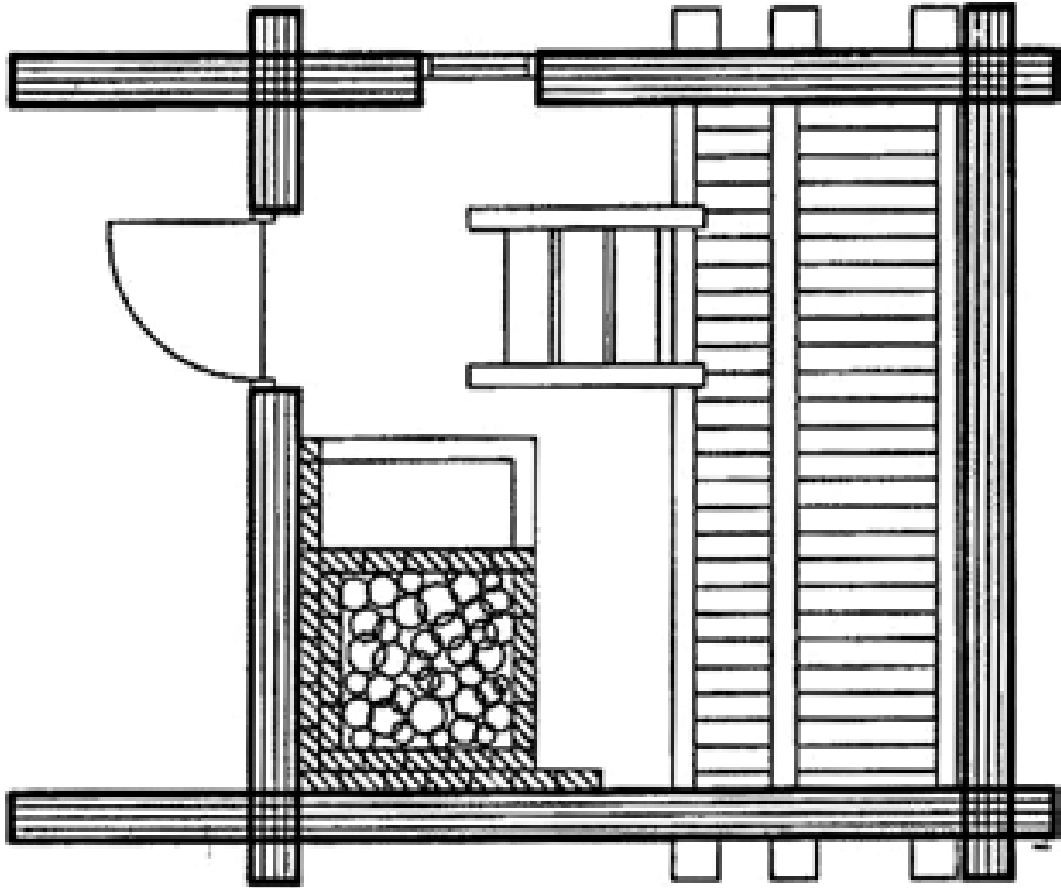


Figure 6



Figure 7

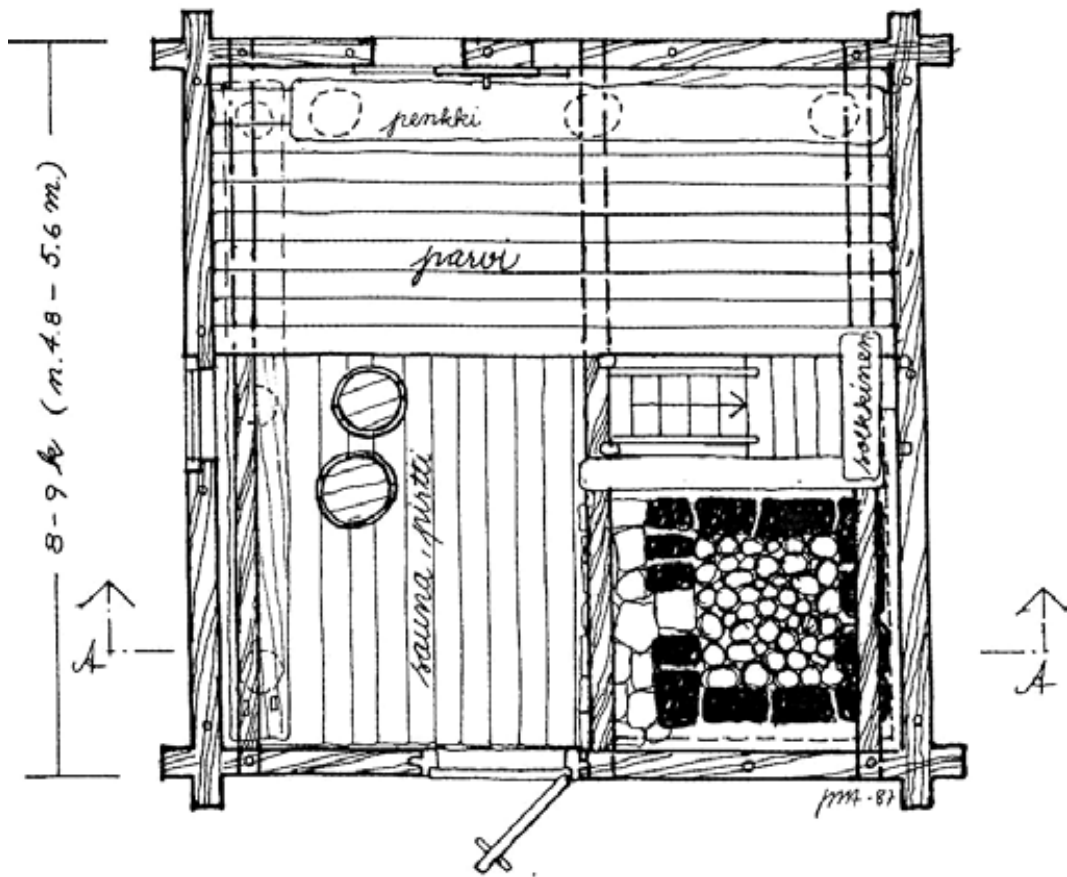
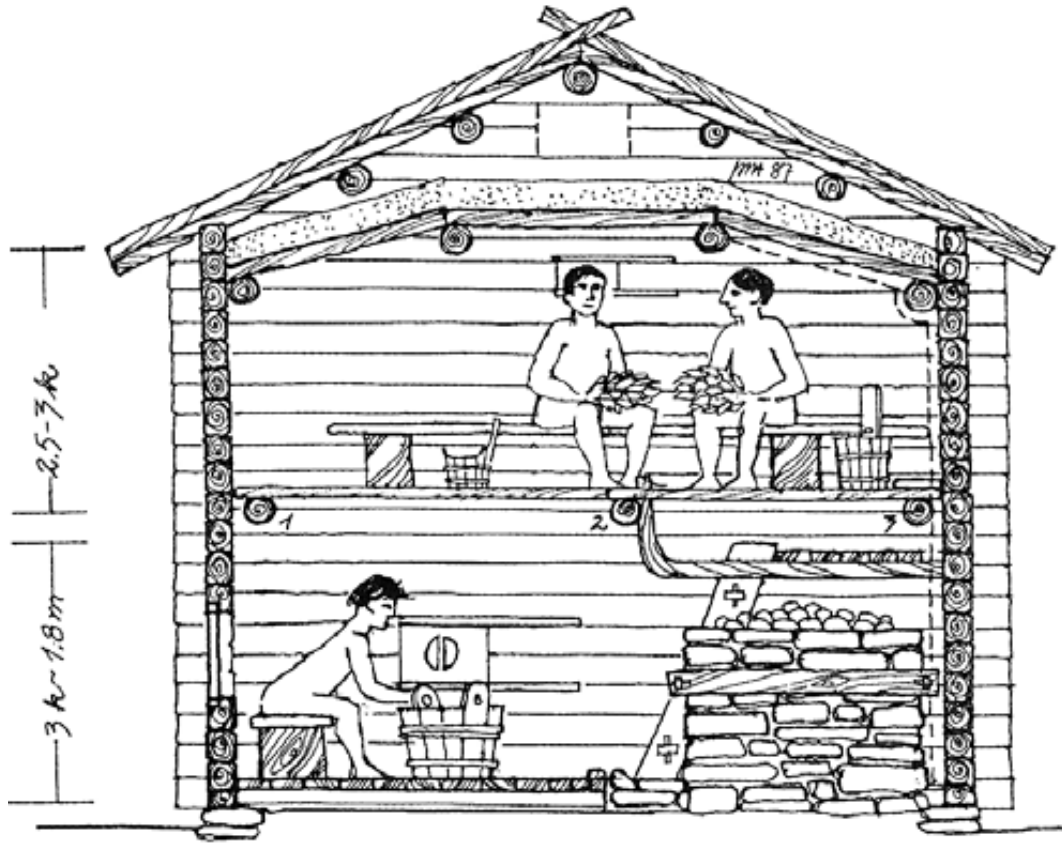
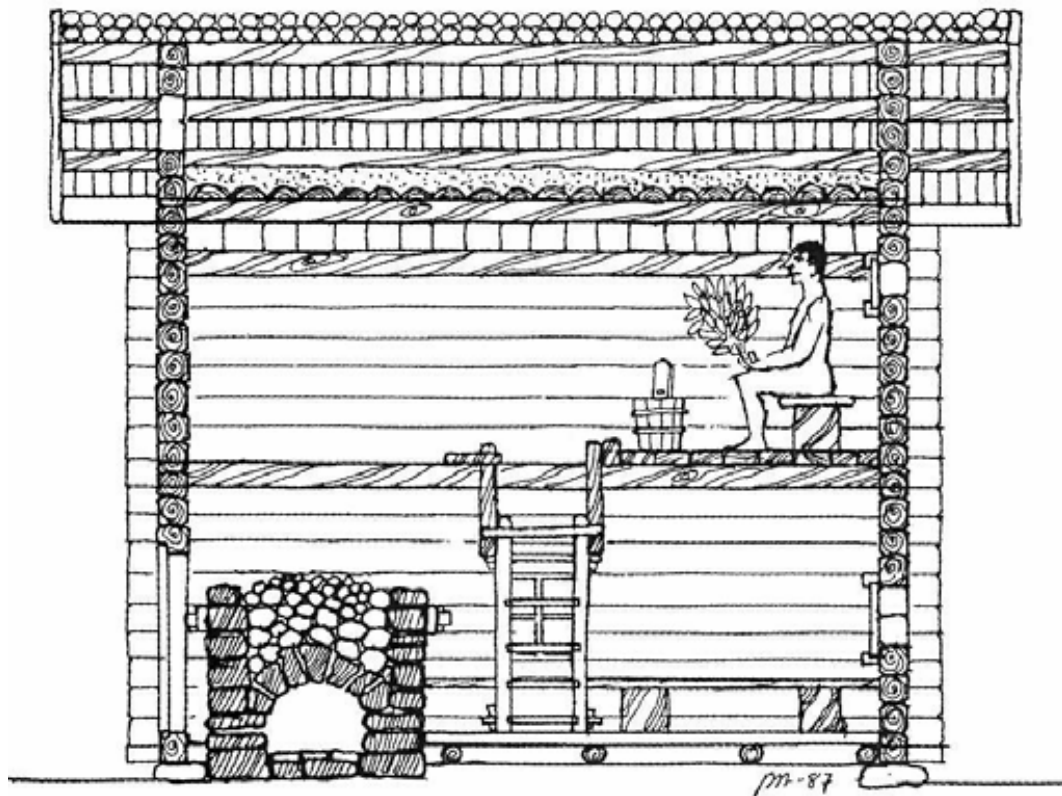


Figure 8



leikkaus A

Figure 9



leikkaus B.

Figure 10

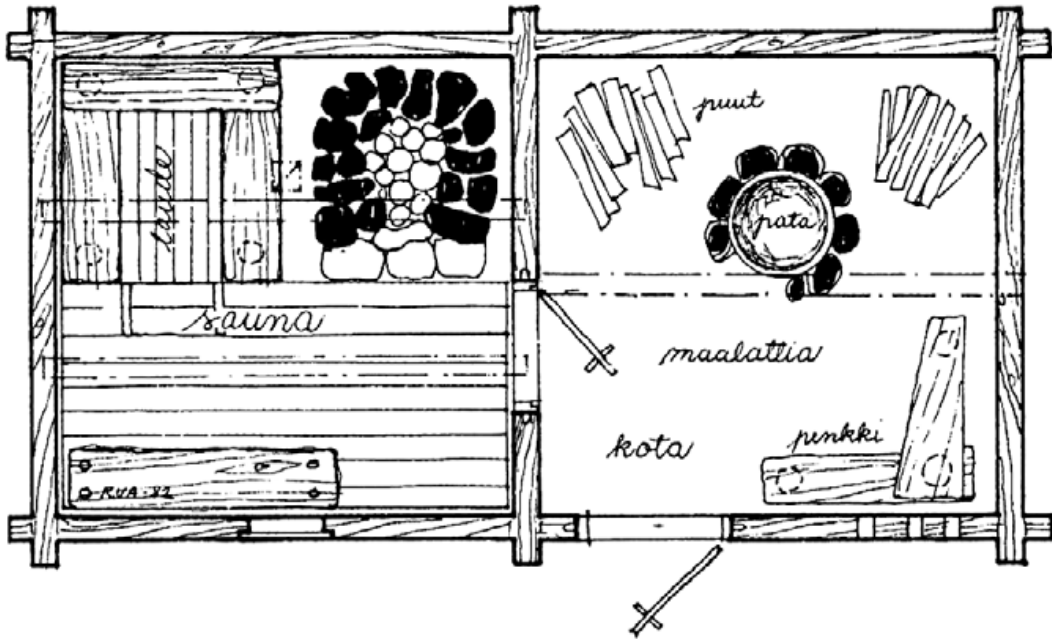


Figure 11



leikkaus A.

Figure 12

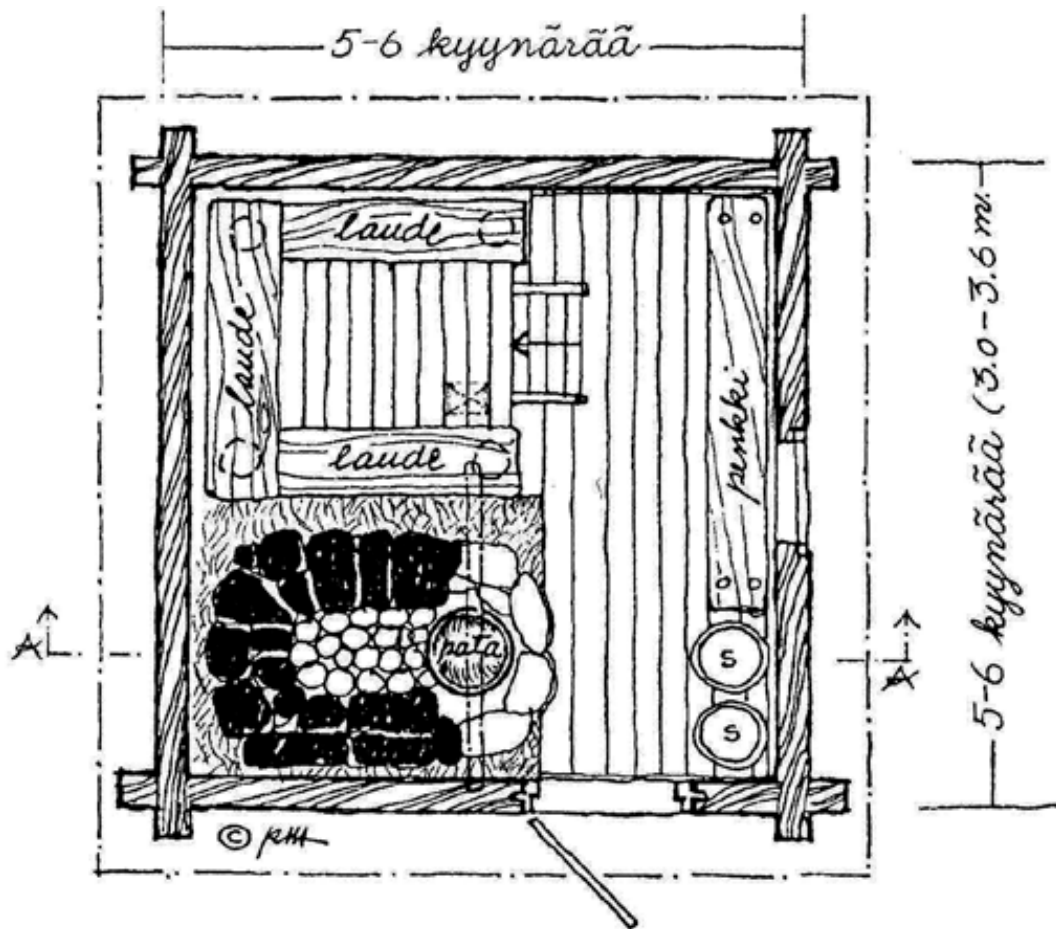


Figure 13

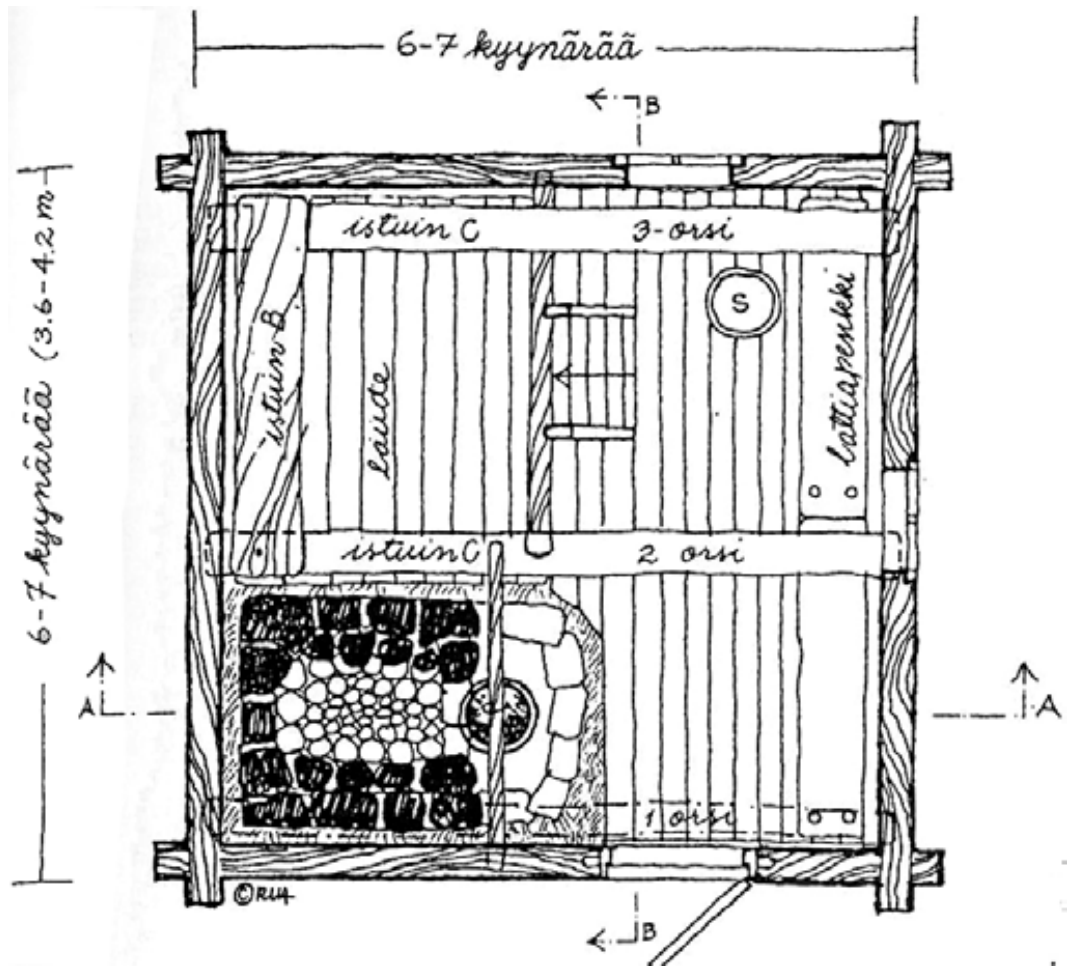


Figure 14

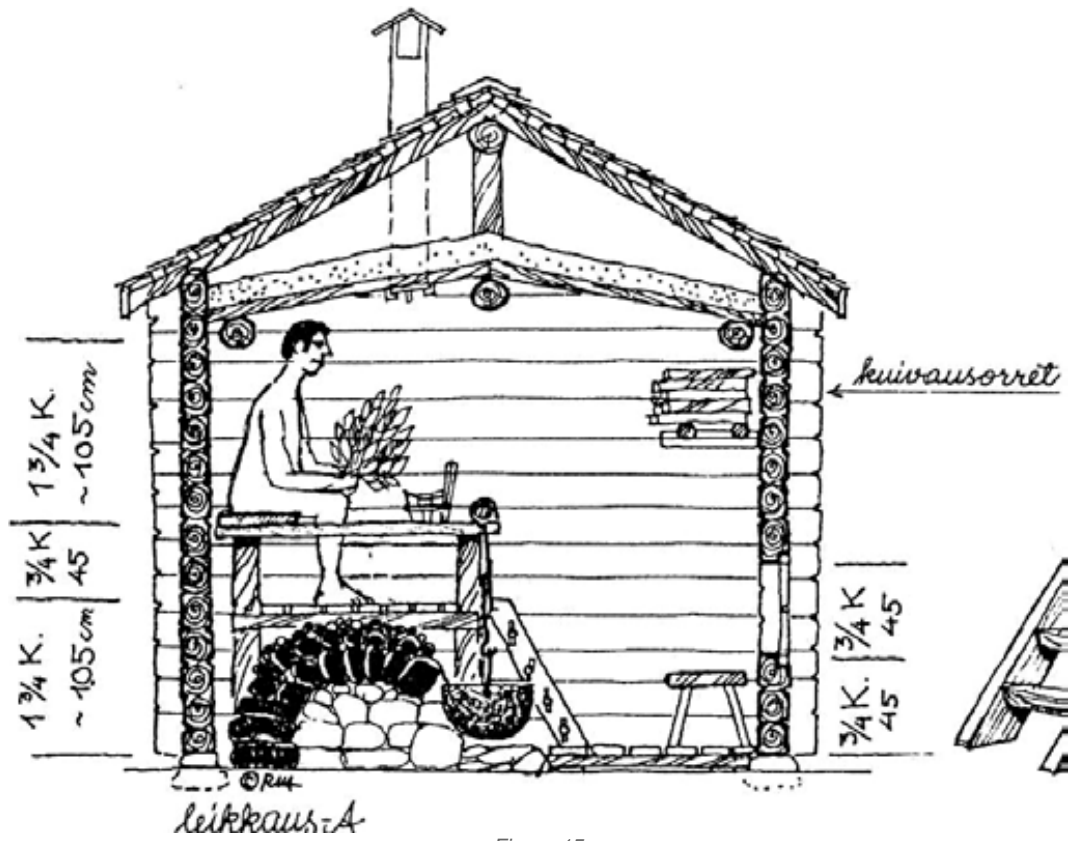


Figure 15

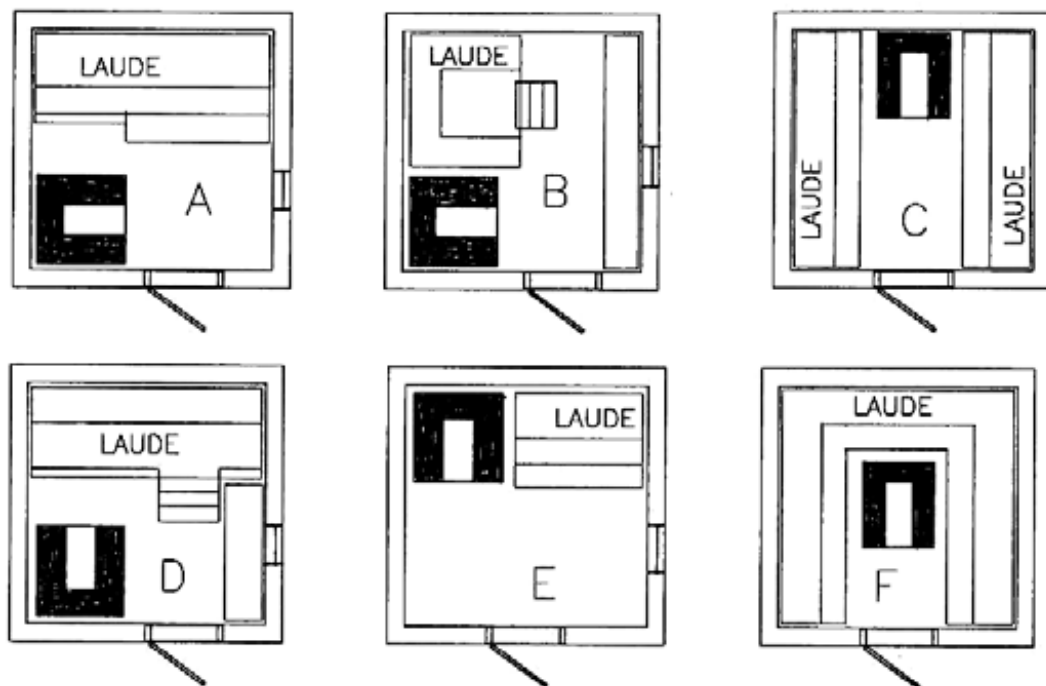


Figure 16

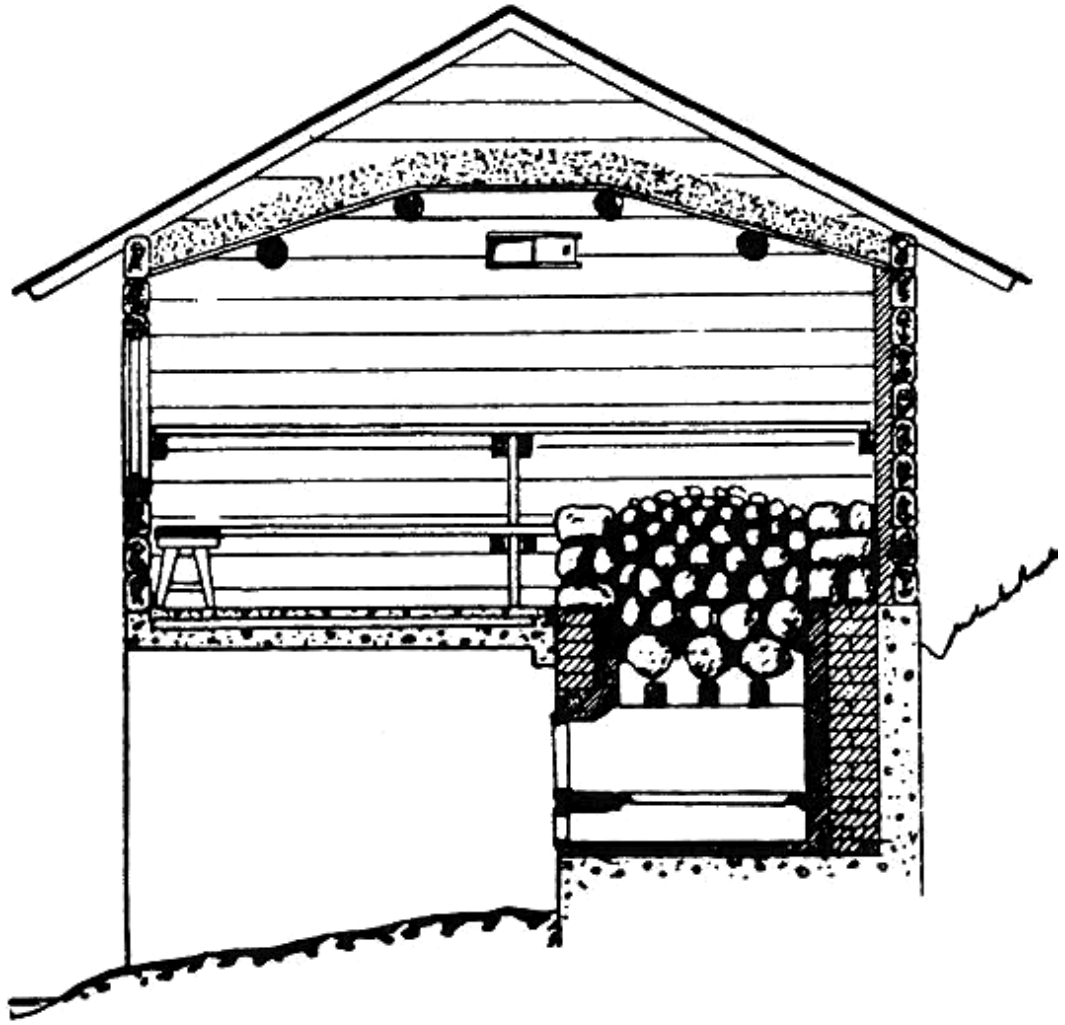


Figure 17

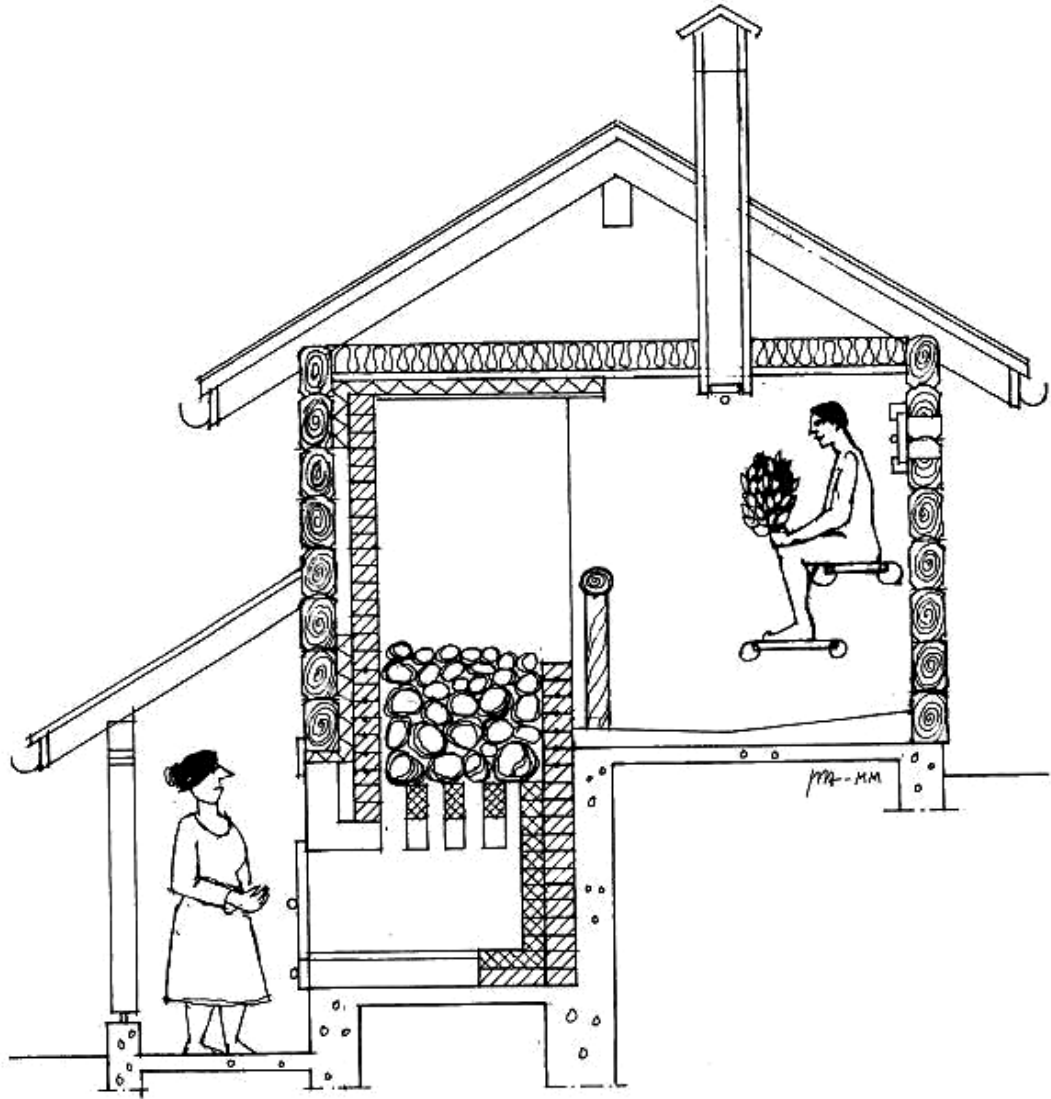


Figure 18

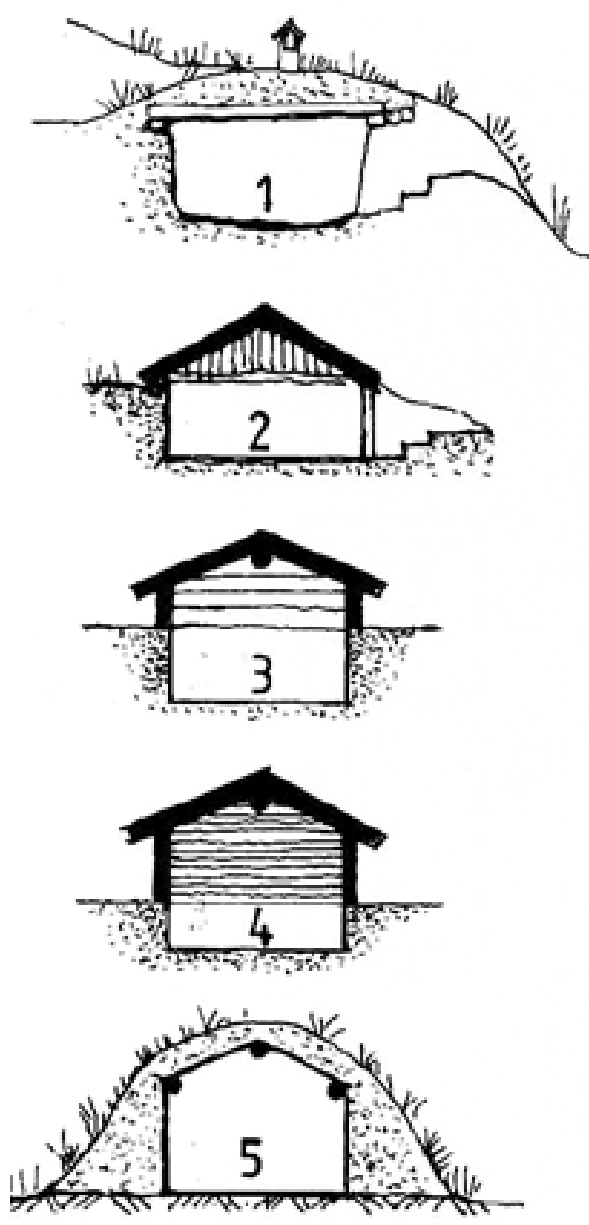


Figure 19

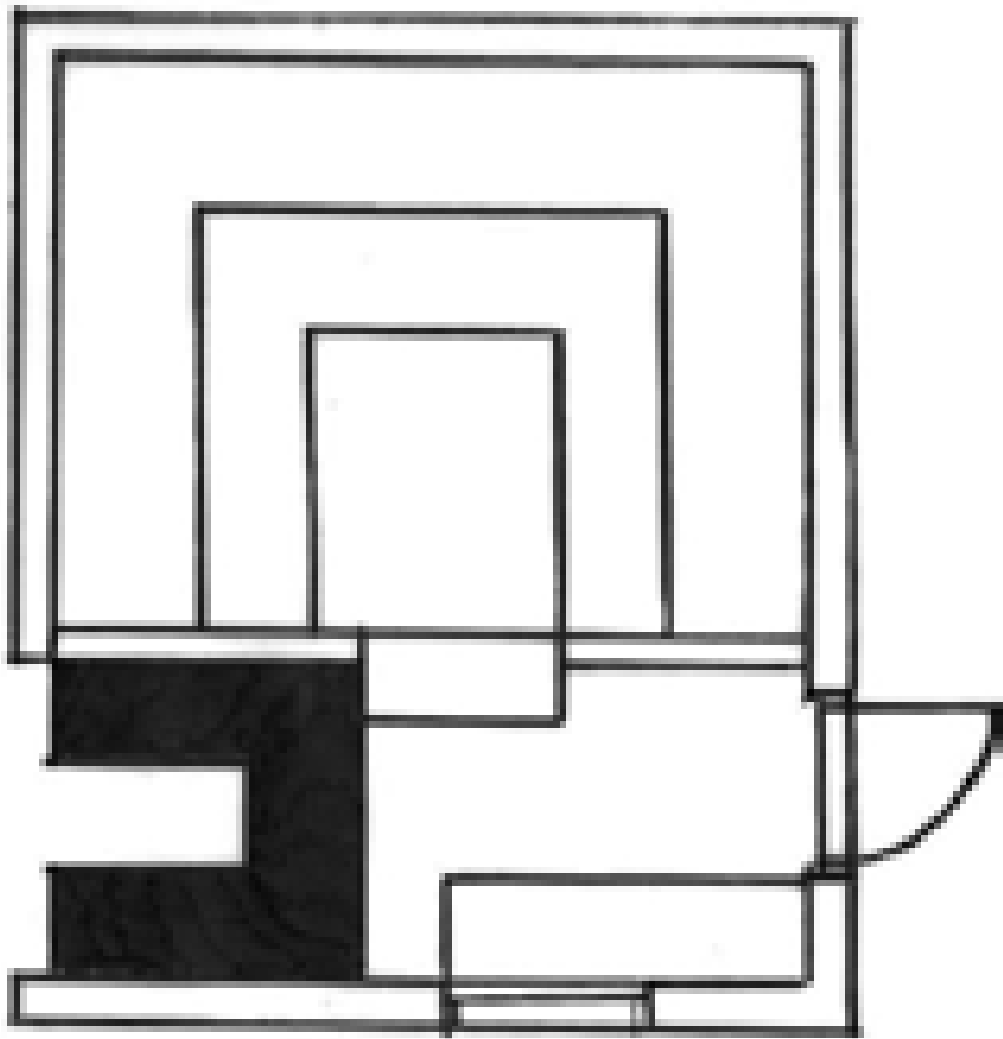


Figure 20

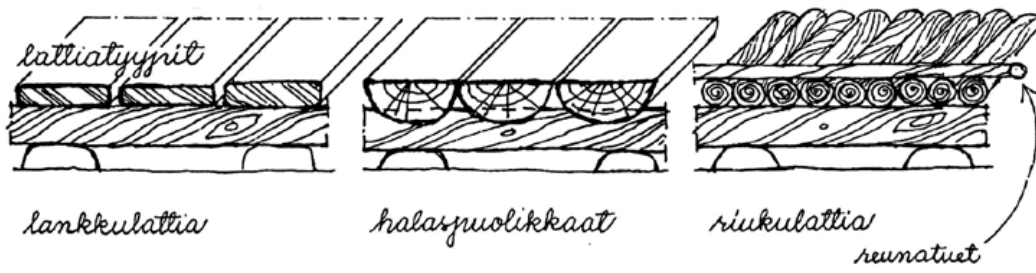


Figure 21

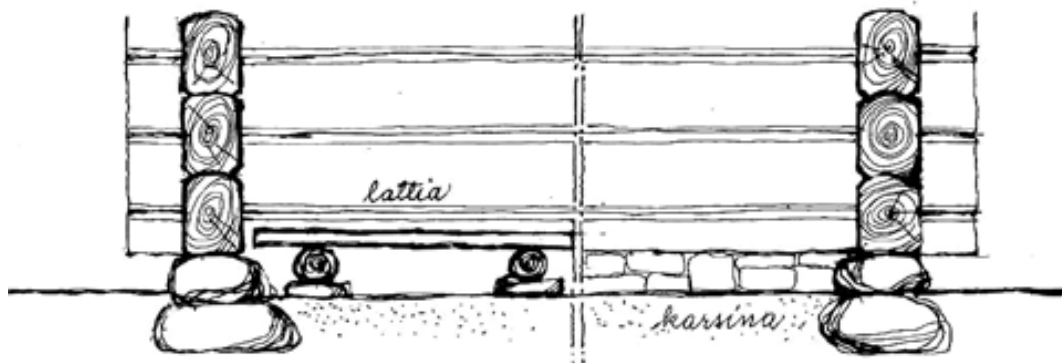


Figure 22

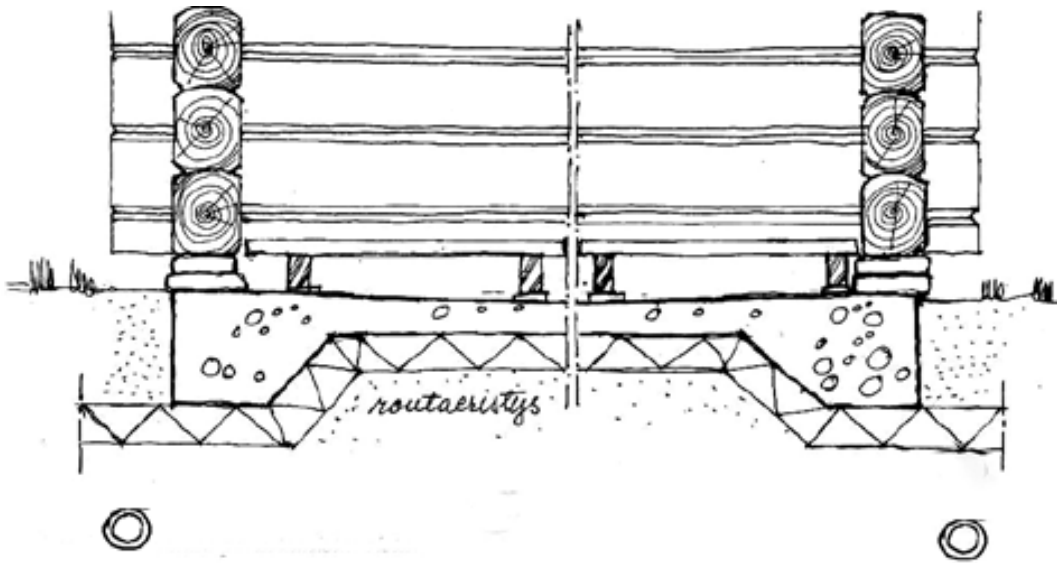


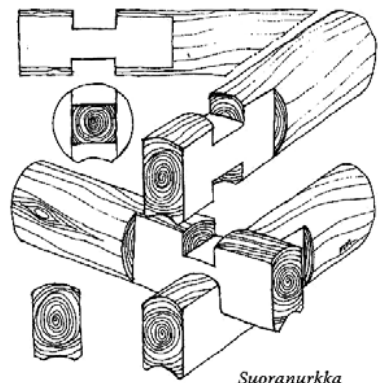
Figure 23



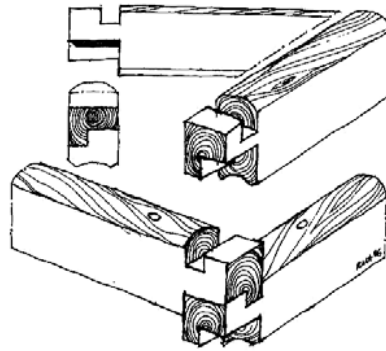
Figure 24



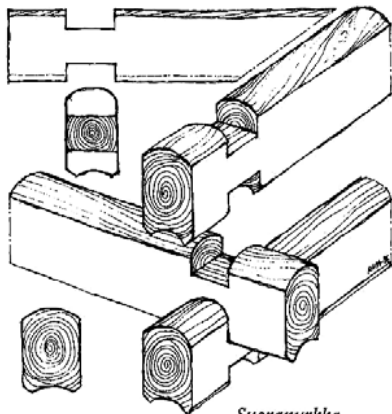
Figure 25



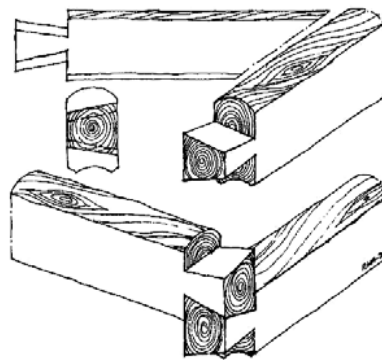
Suoranurkka



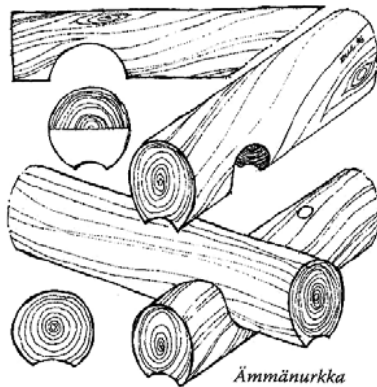
Hammasnurkka



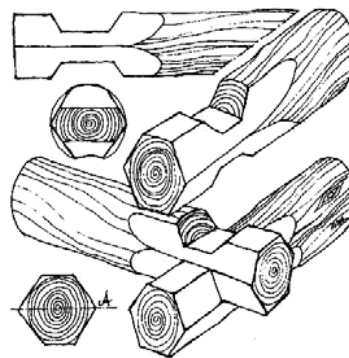
Suoranurkka



Lohenpyrstönurkka



Ämmänurkka



Sulkanurkka

Figure 26

tapitus seinässä

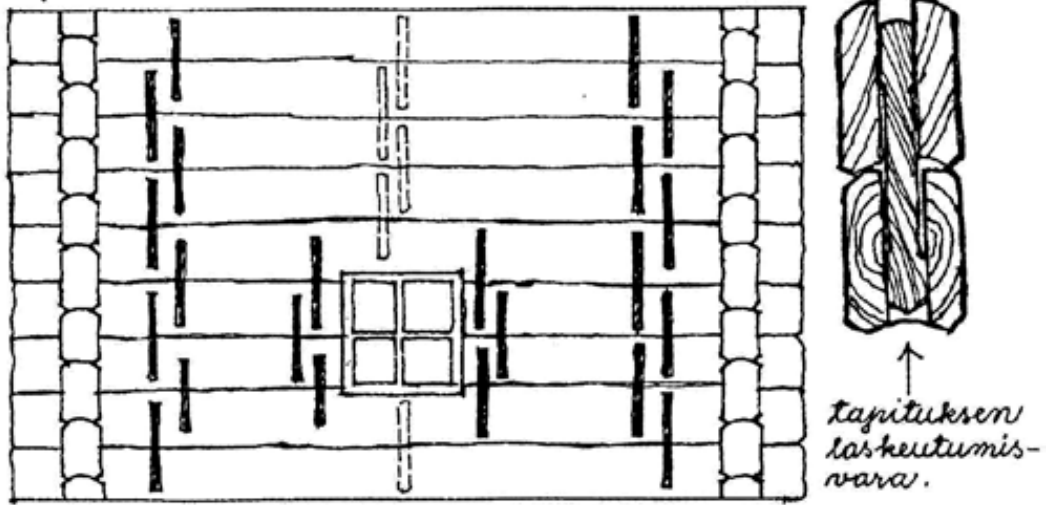


Figure 27



Figure 28

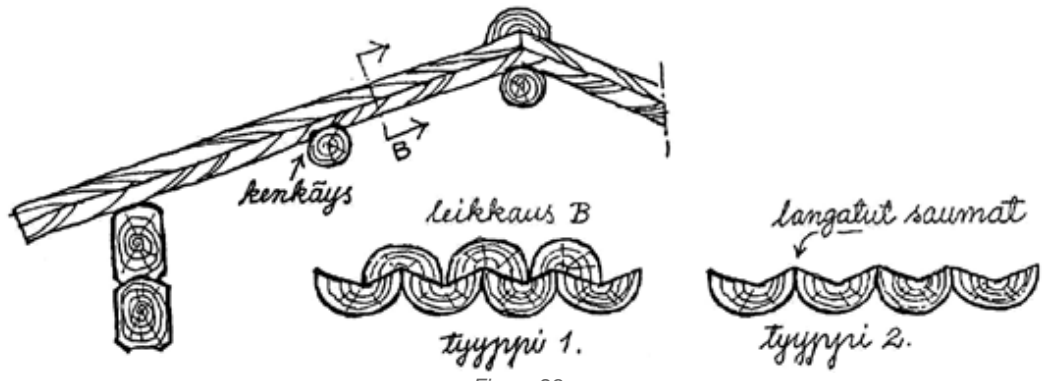


Figure 29



Figure 30



Figure 31

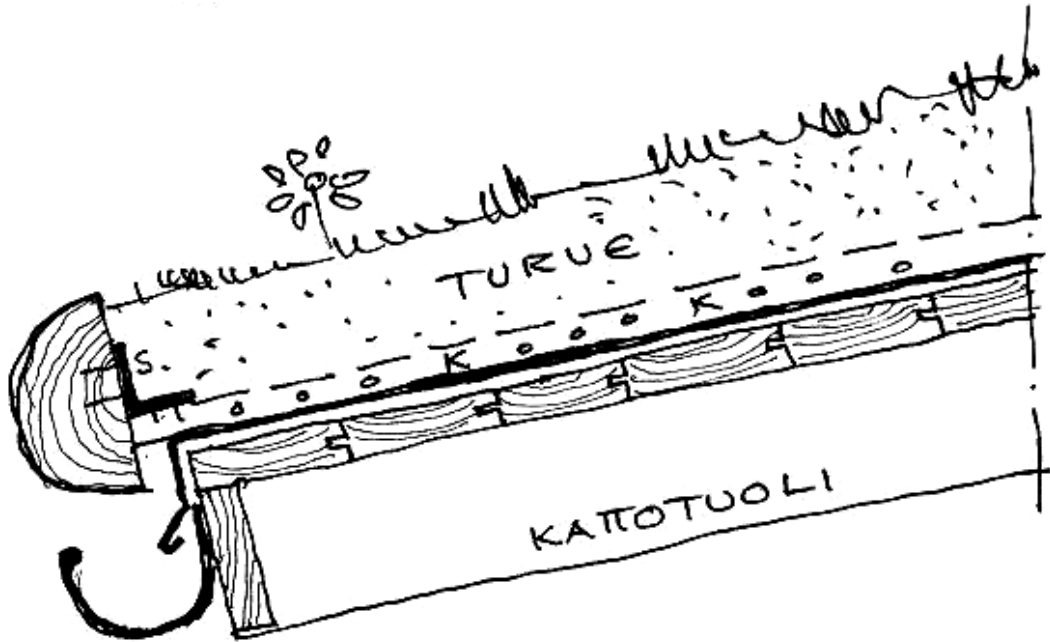


Figure 32

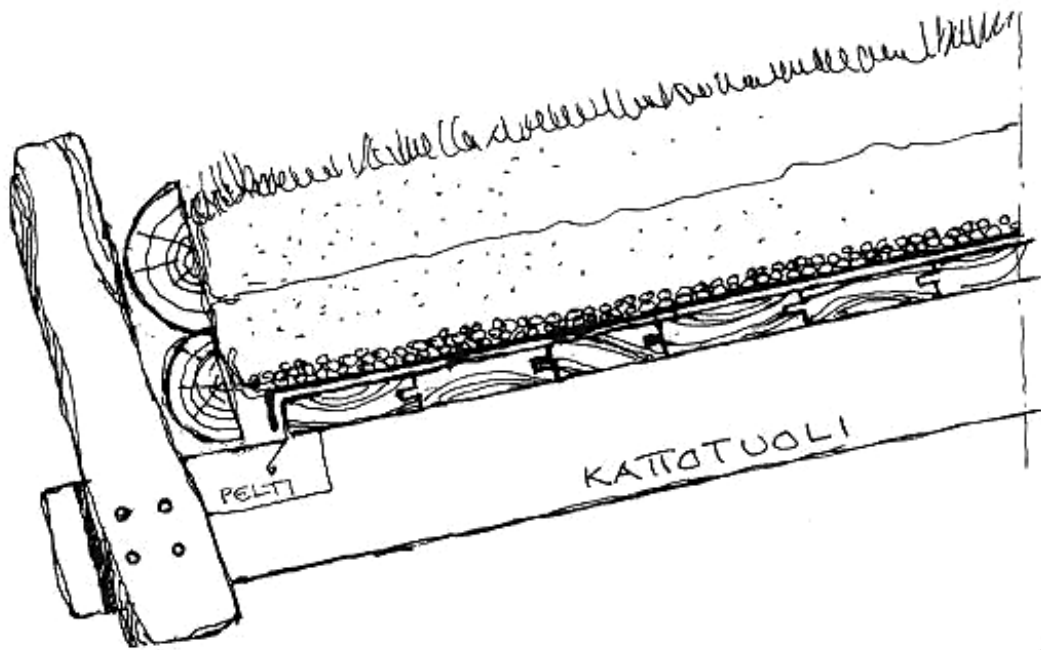


Figure 33

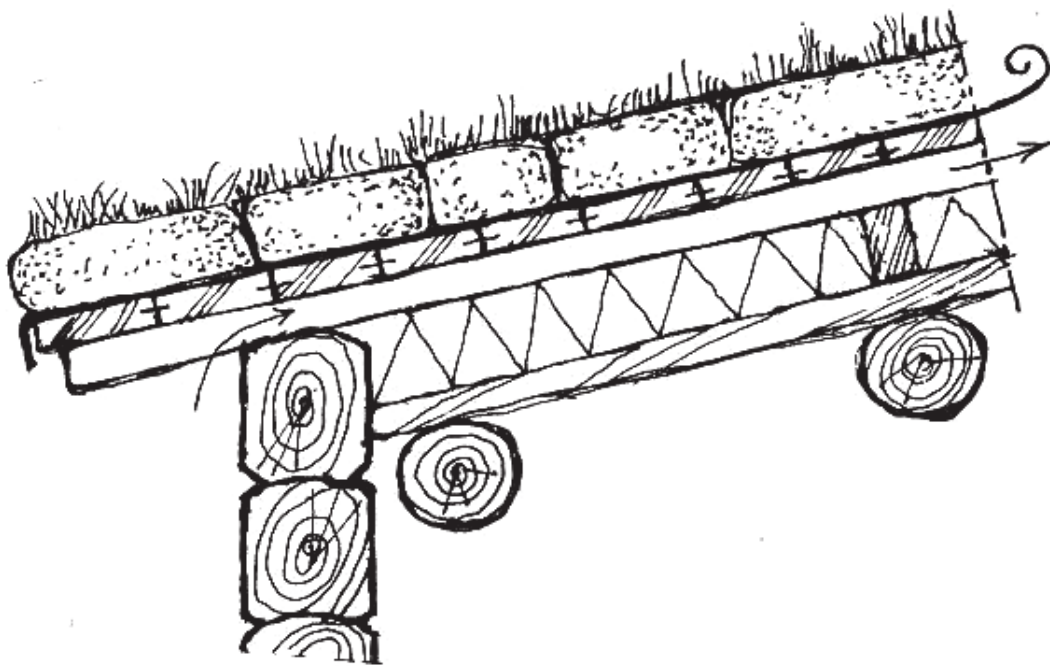


Figure 34

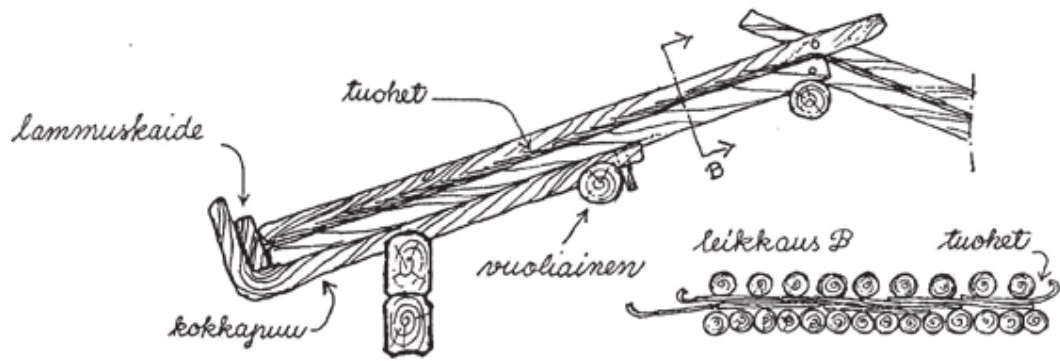
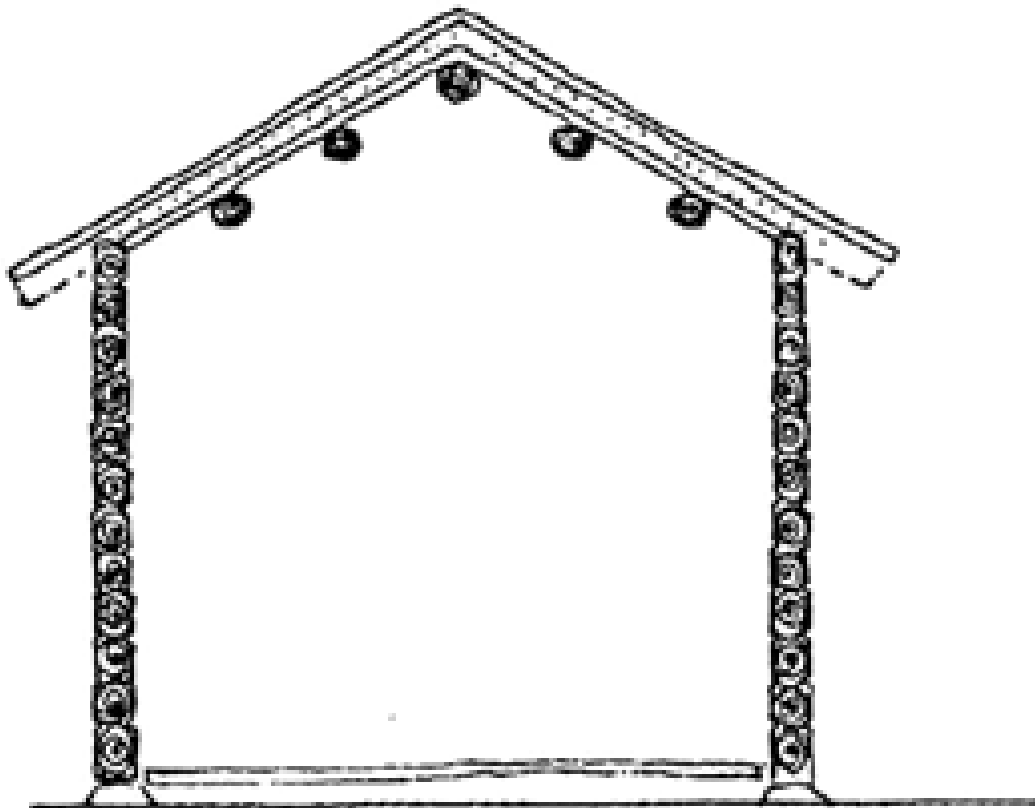
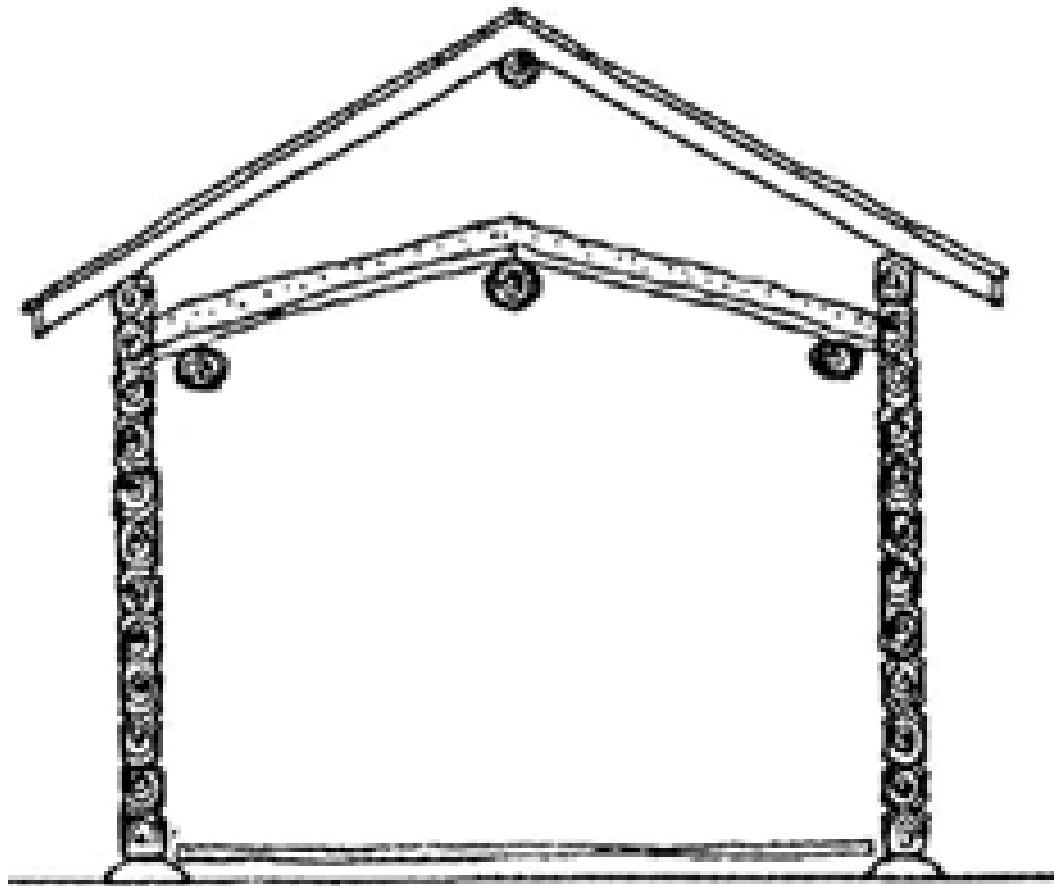


Figure 35



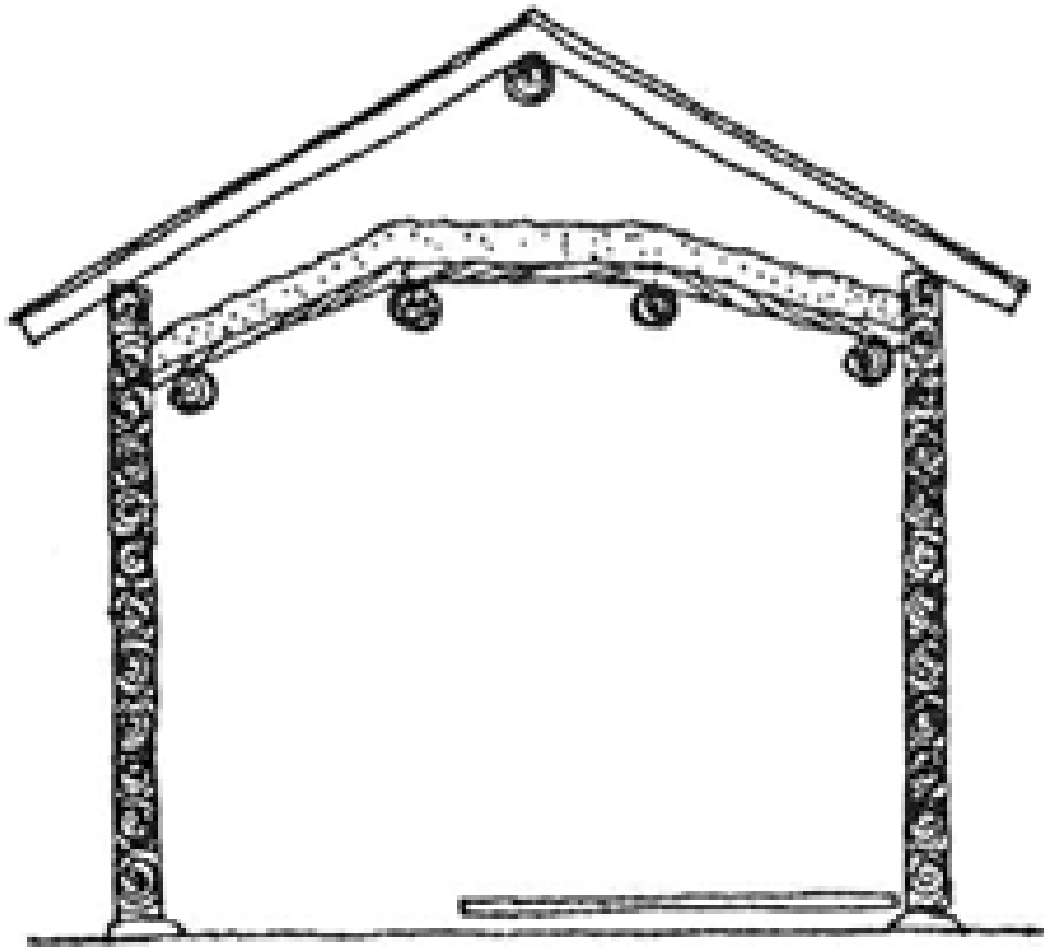
yhdistetty katto ja laipio

Figure 36



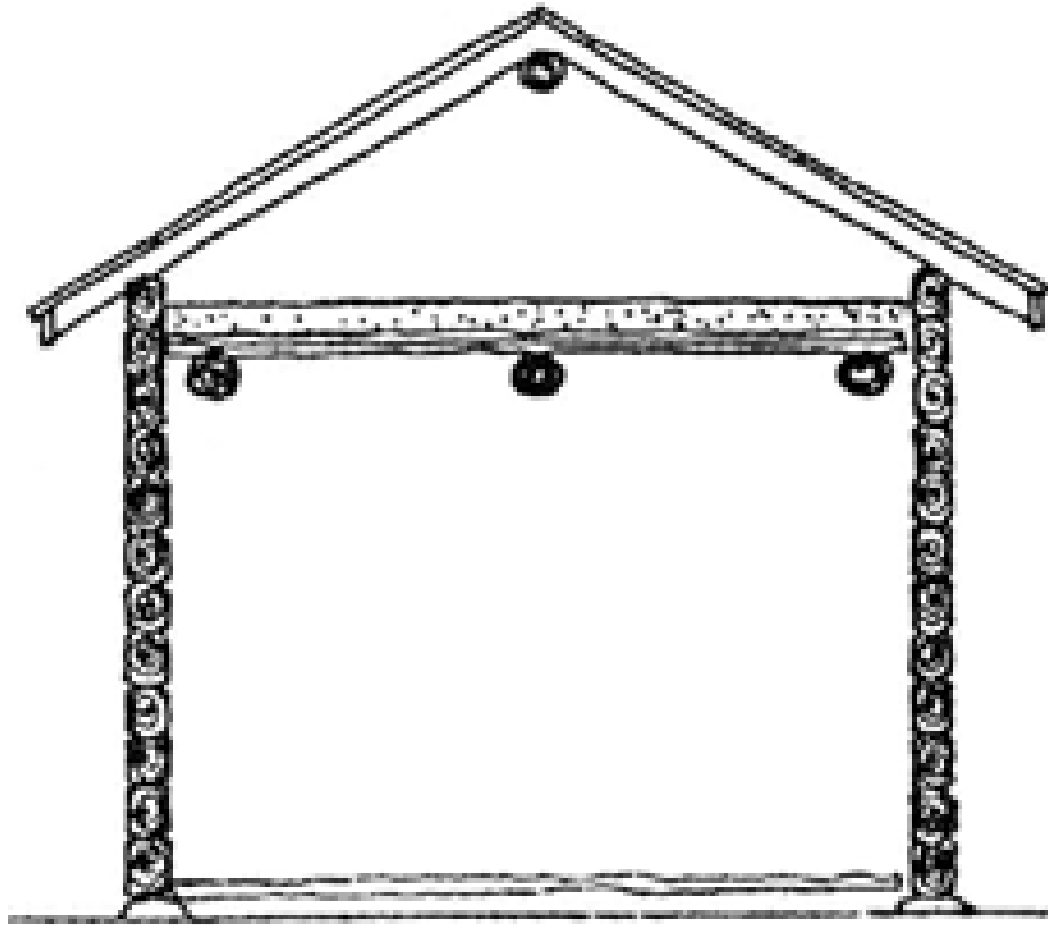
1-taitteenen lairio

Figure 37



2-laitteinen laipio

Figure 38



suora laipio

Figure 39

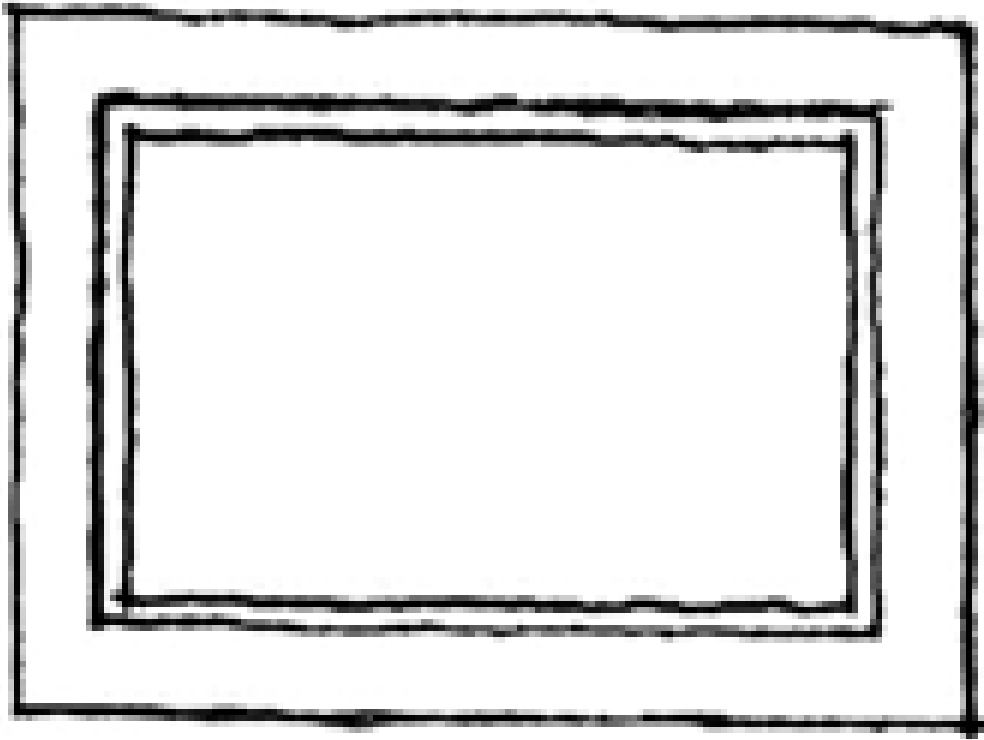


Figure 40

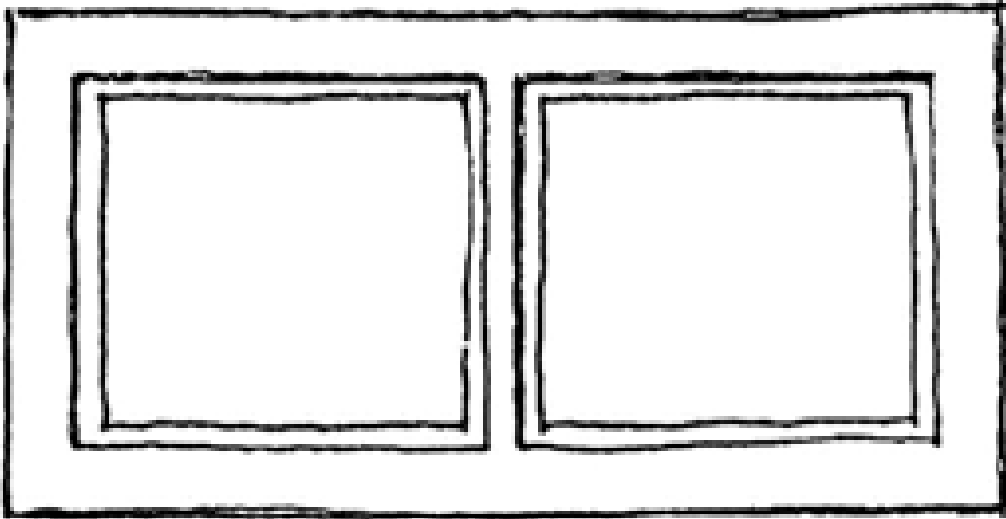


Figure 41

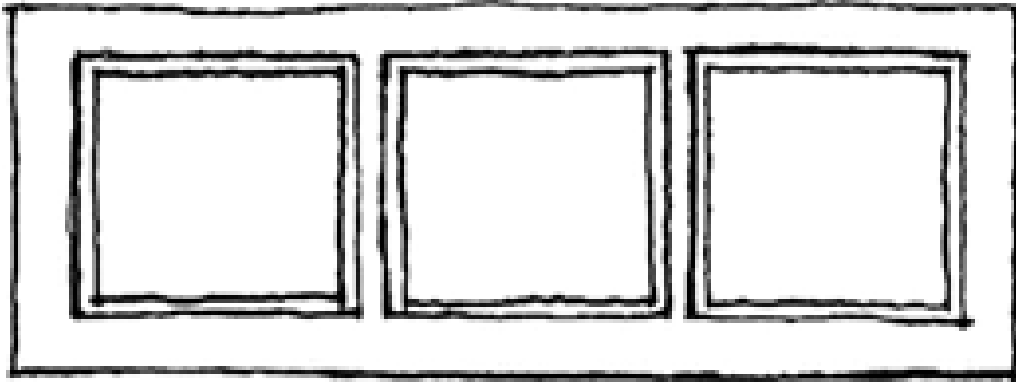


Figure 42

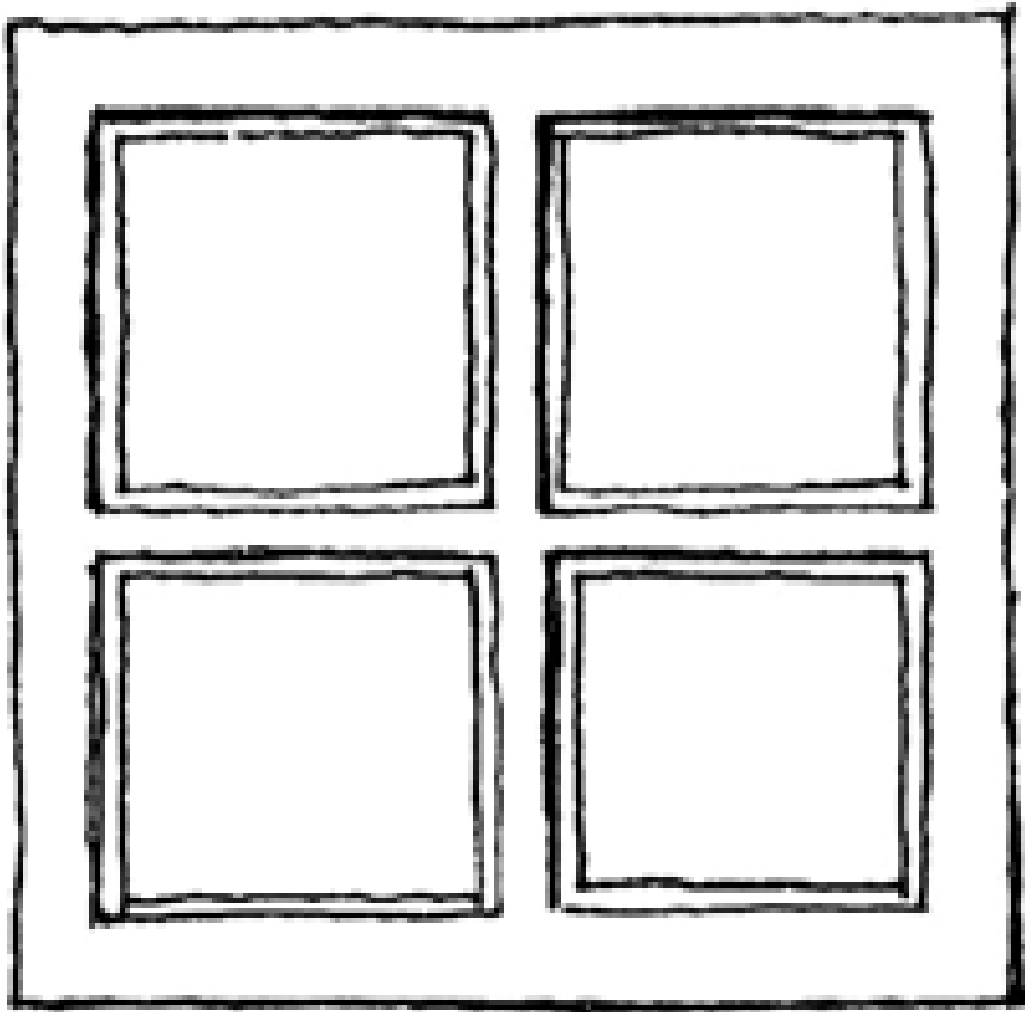


Figure 43

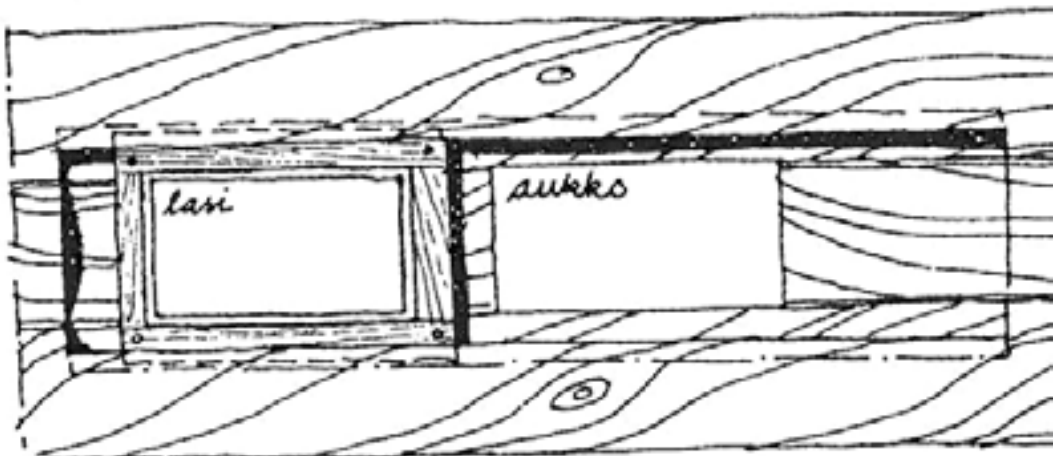


Figure 44

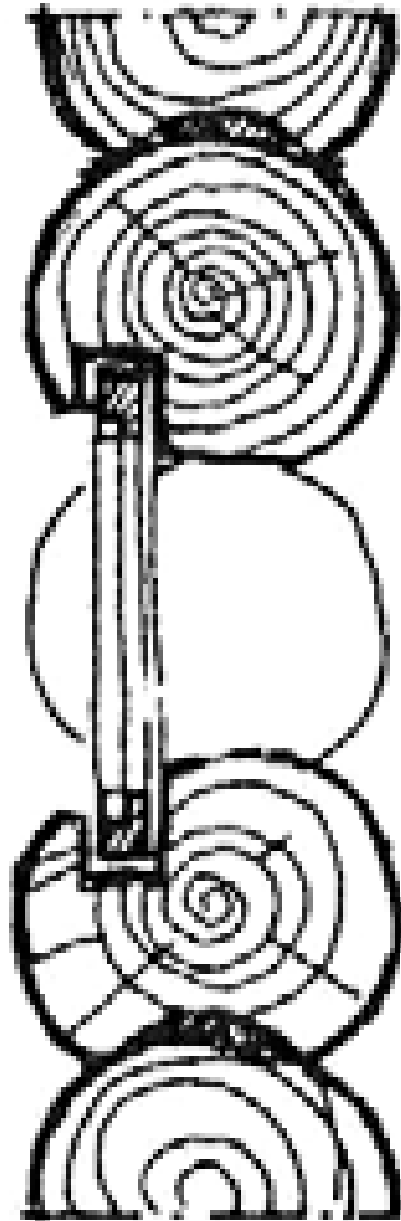


Figure 45



Figure 46



Figure 47



Figure 48

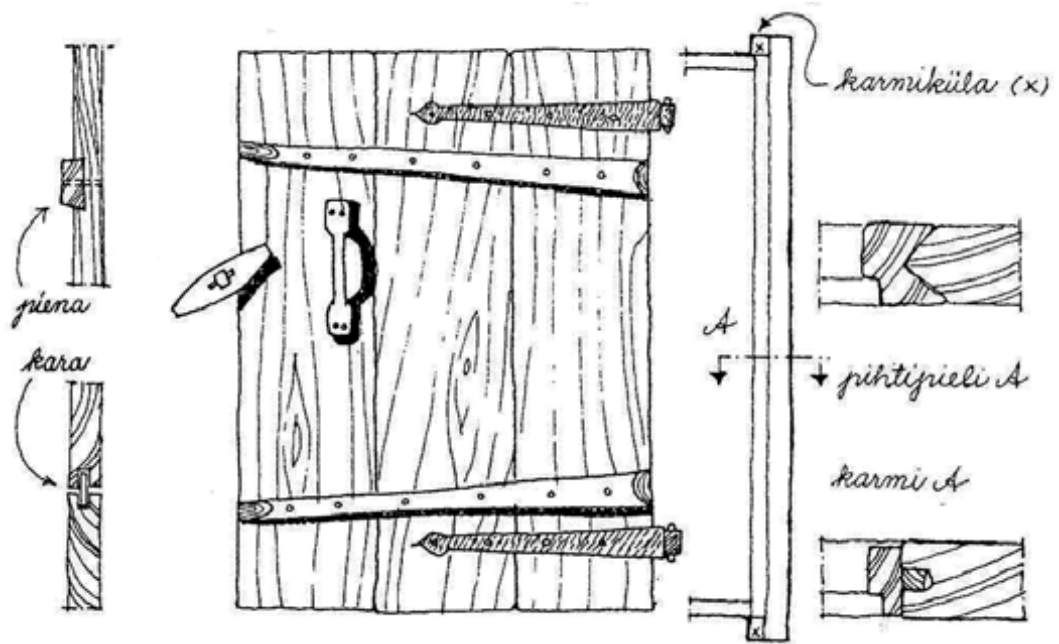


Figure 49



Figure 50



Figure 51



Figure 52



Figure 53

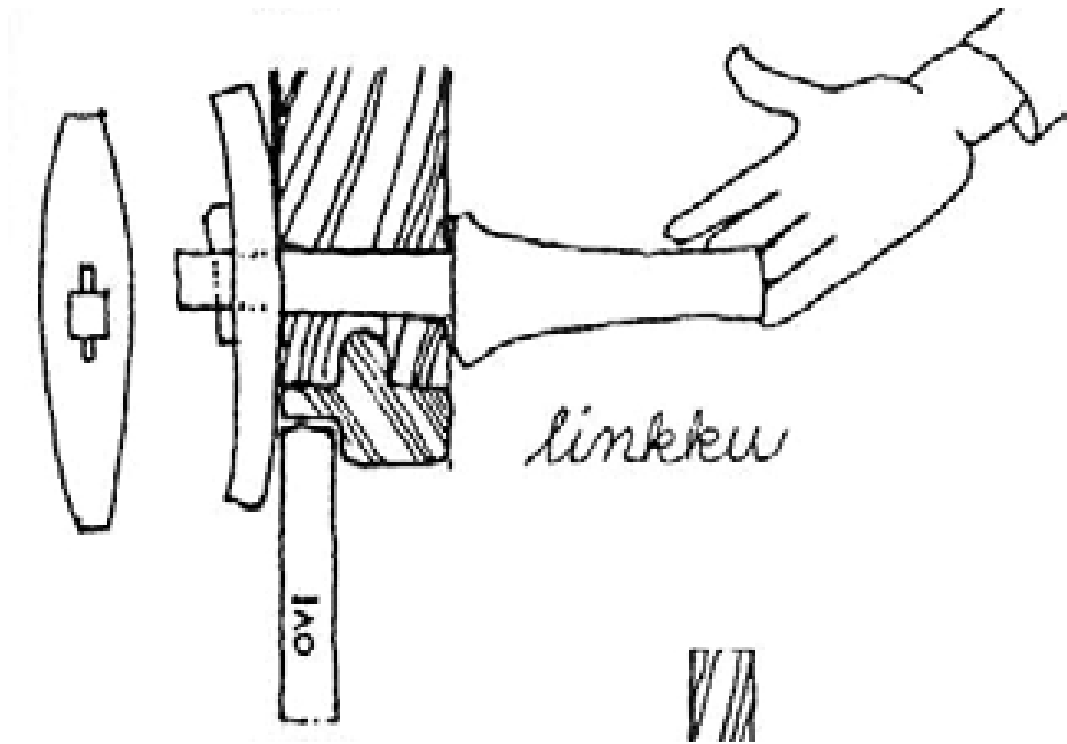


Figure 54

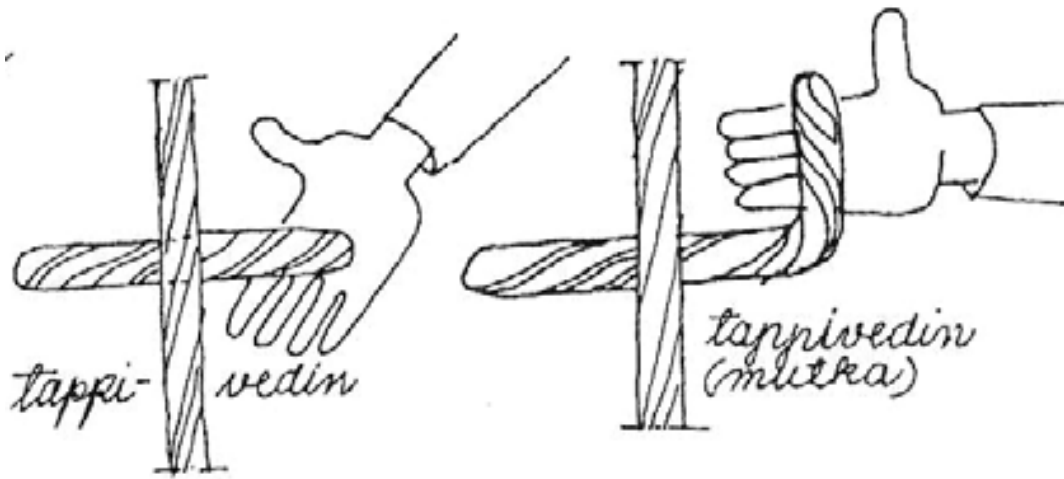


Figure 55

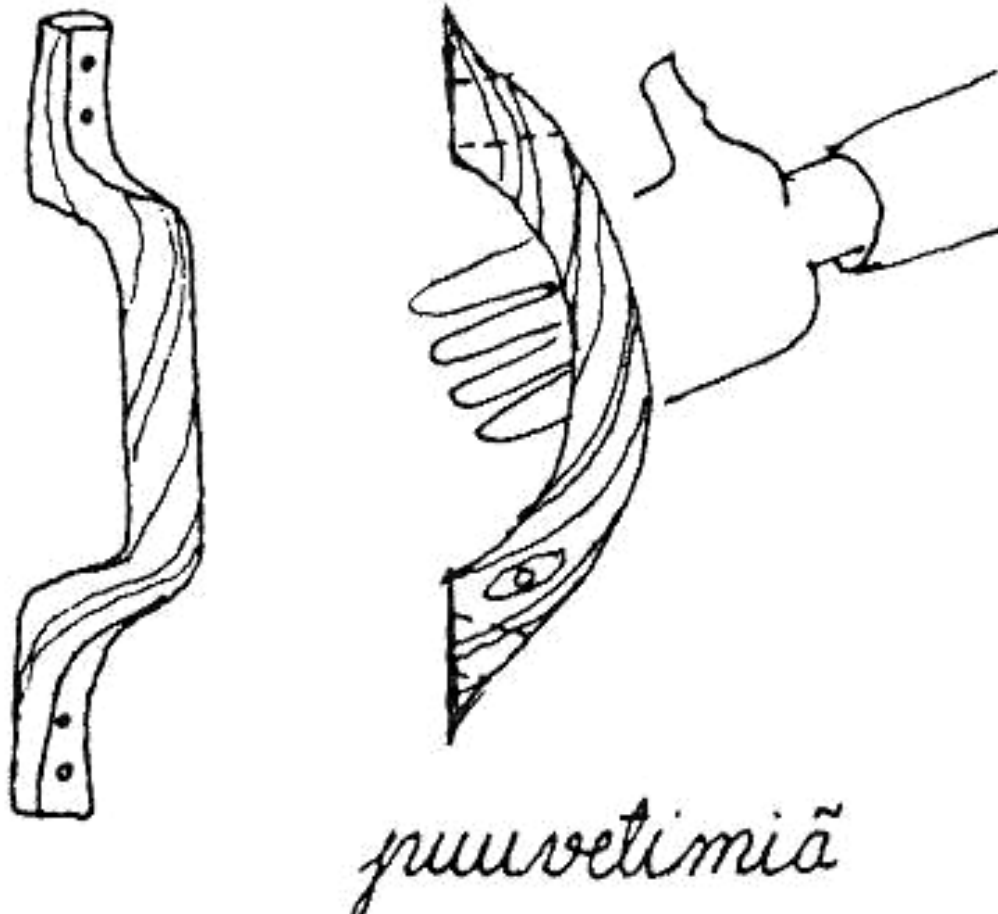


Figure 56

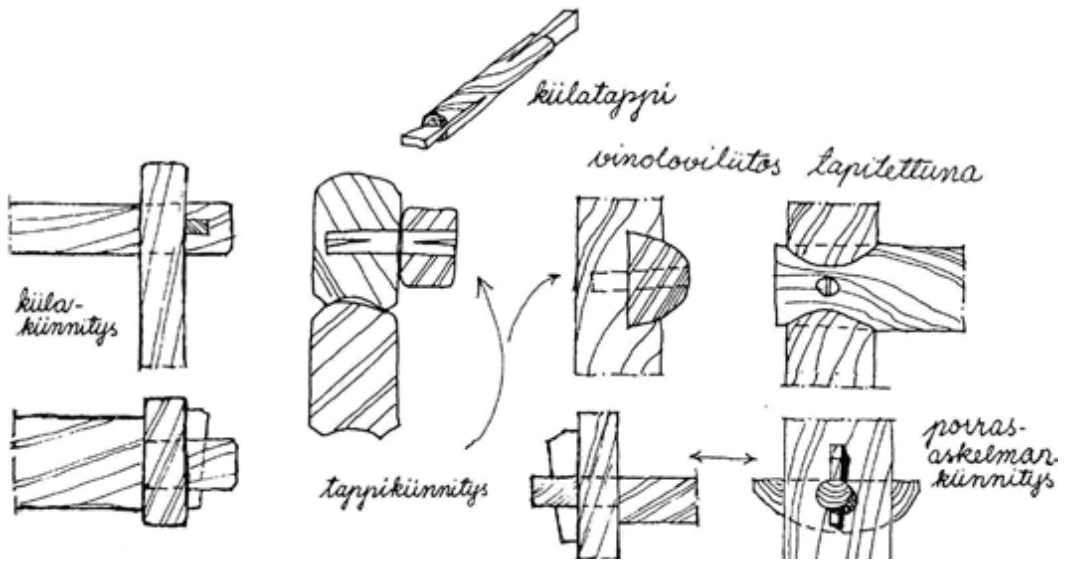


Figure 57

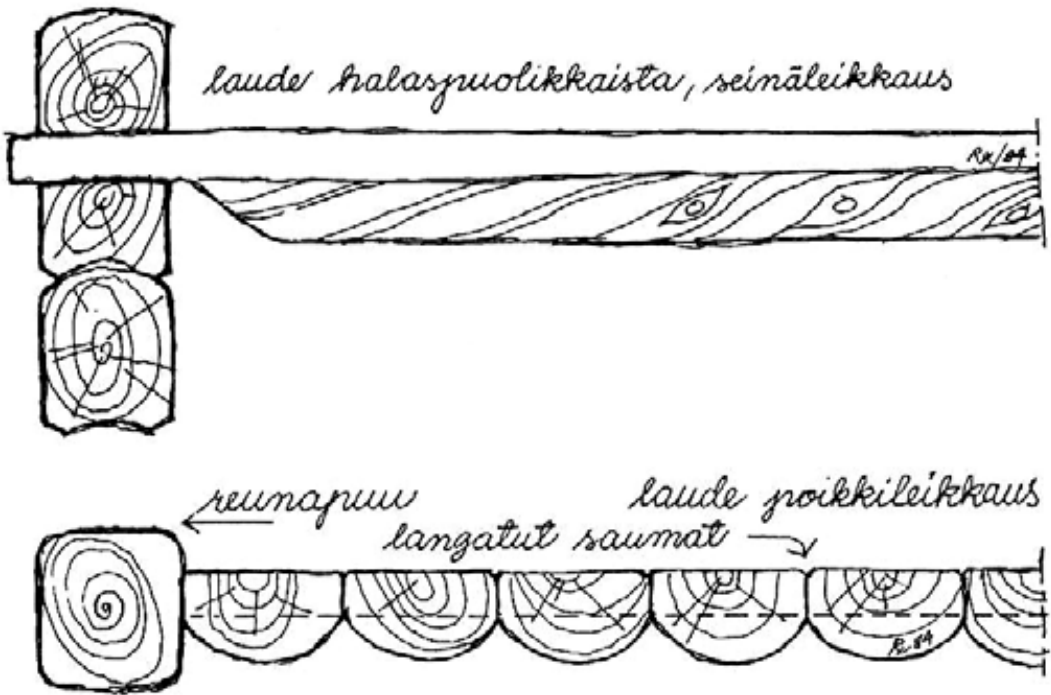


Figure 58

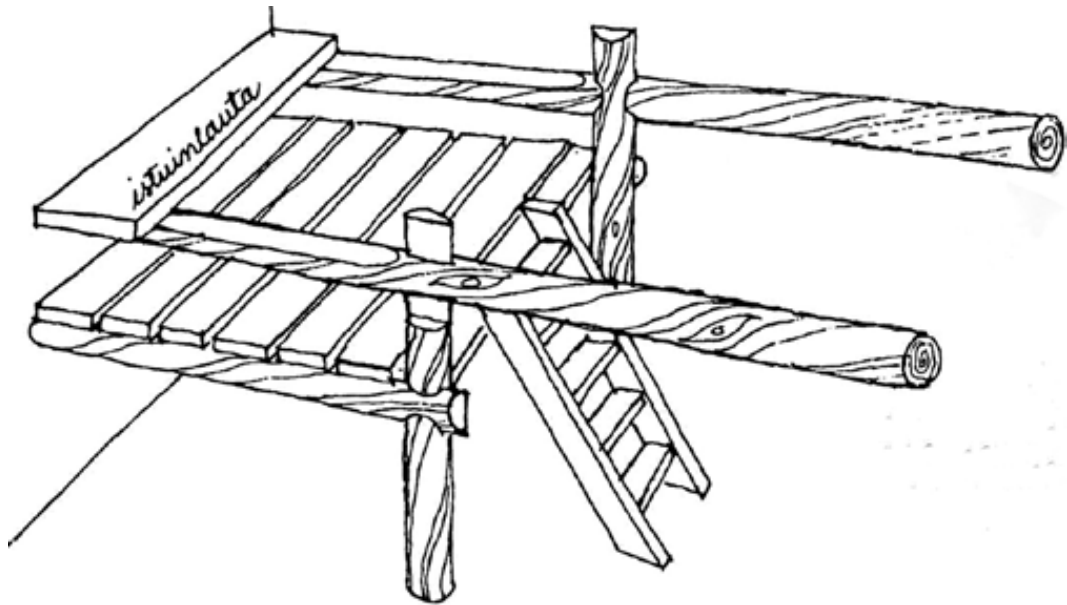


Figure 59

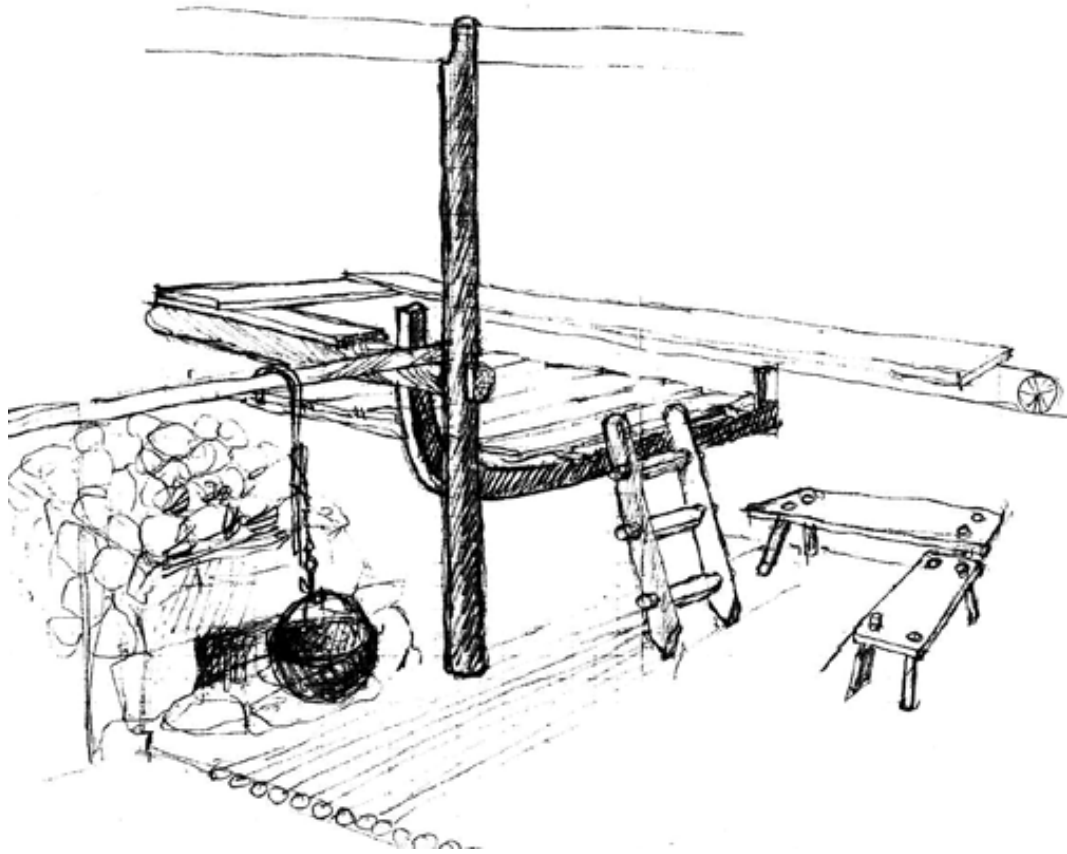


Figure 60



Figure 61

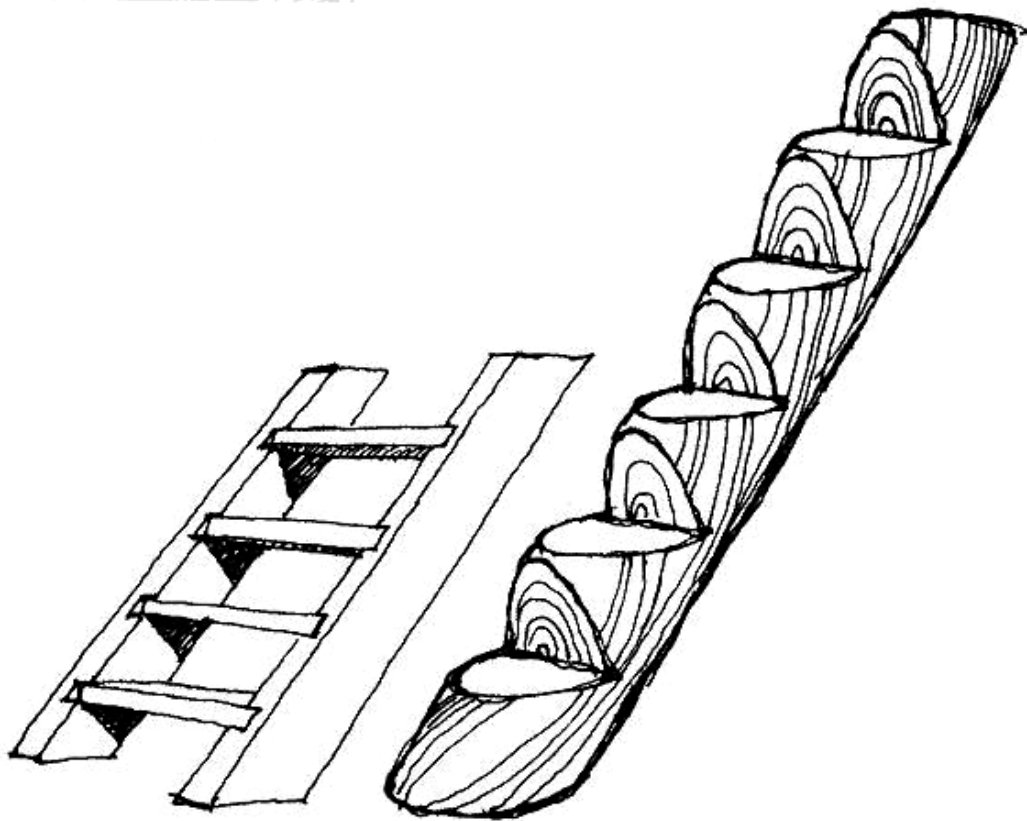


Figure 62

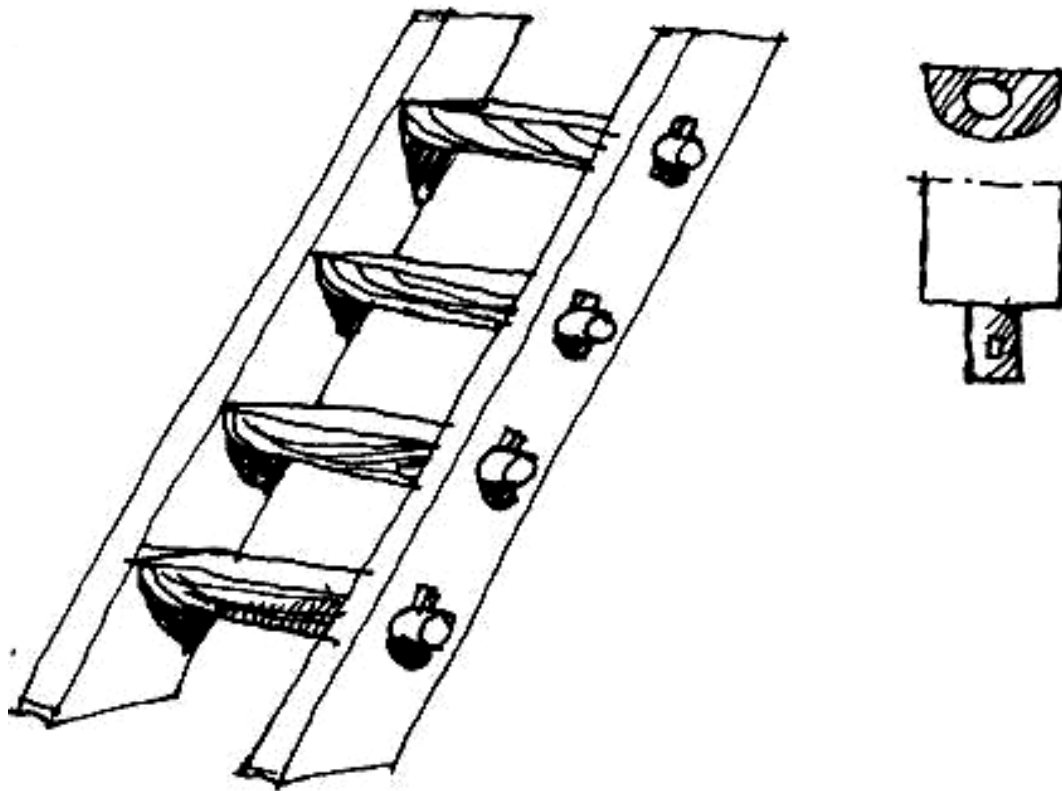


Figure 63

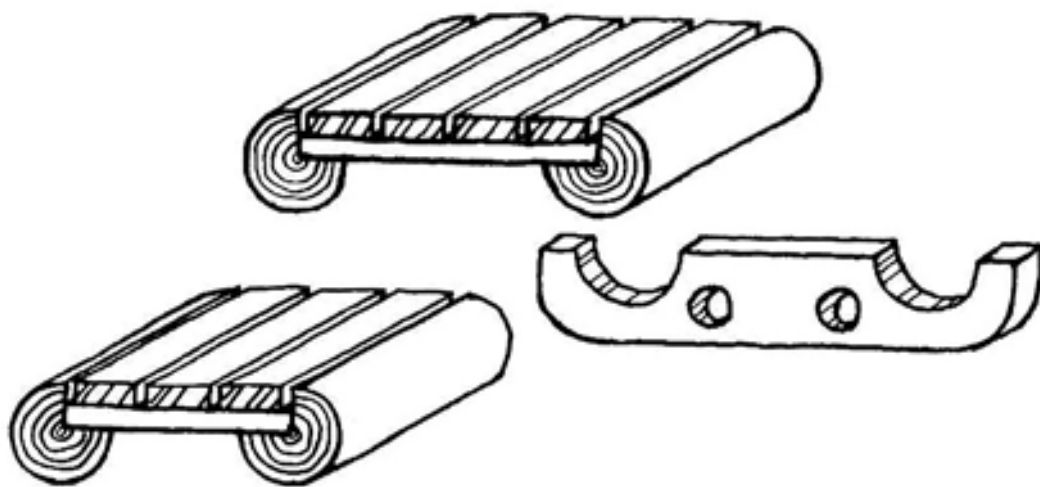


Figure 64

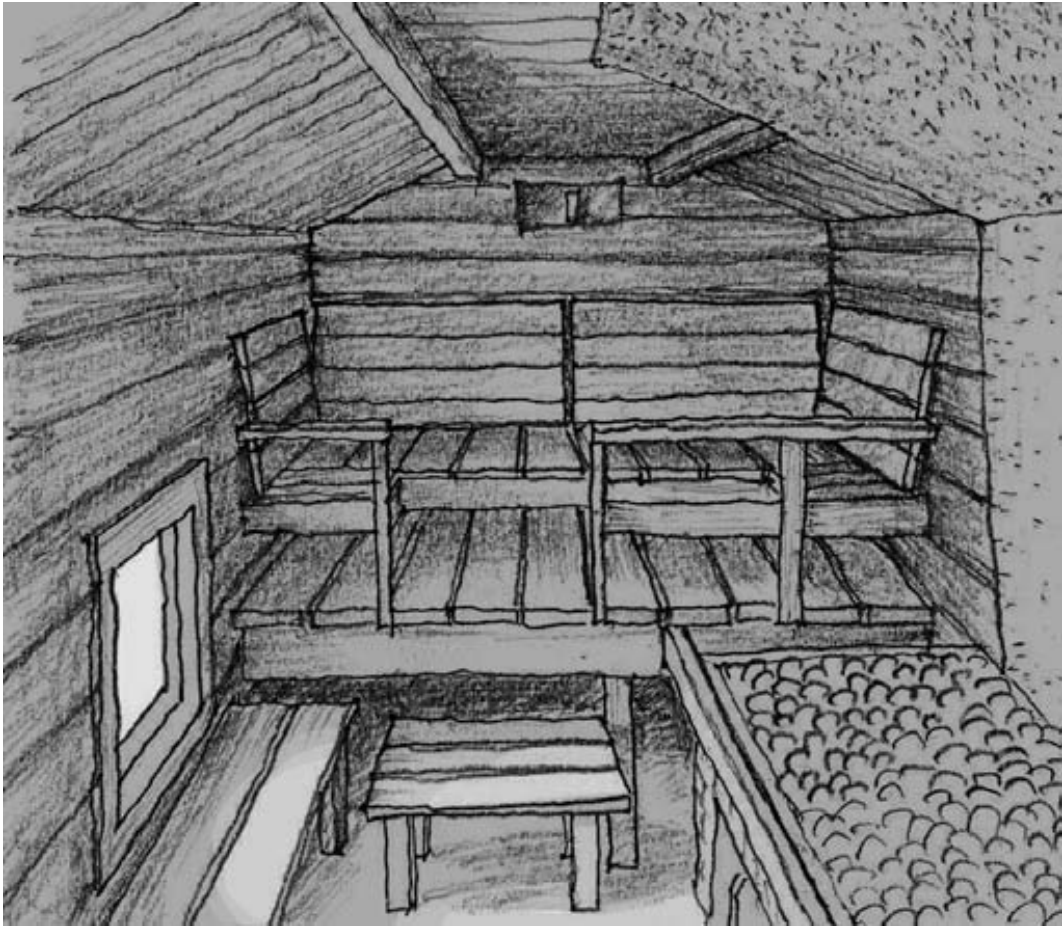


Figure 65

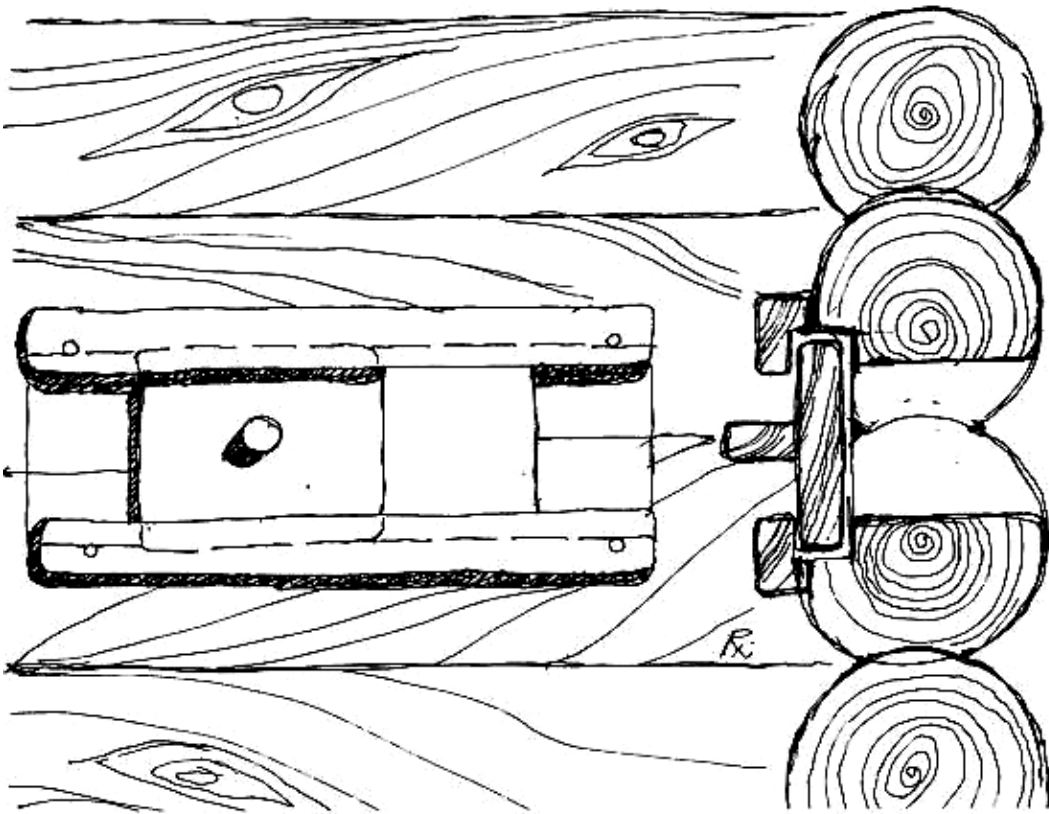


Figure 66

räpyränäluukku

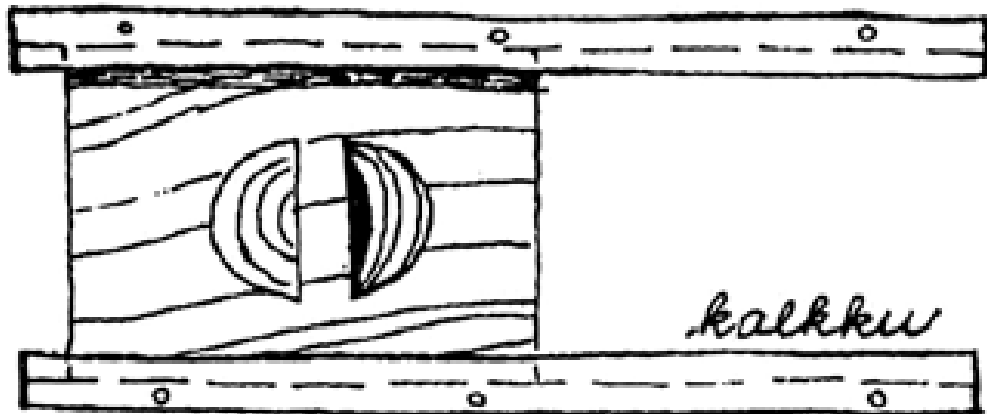


Figure 67

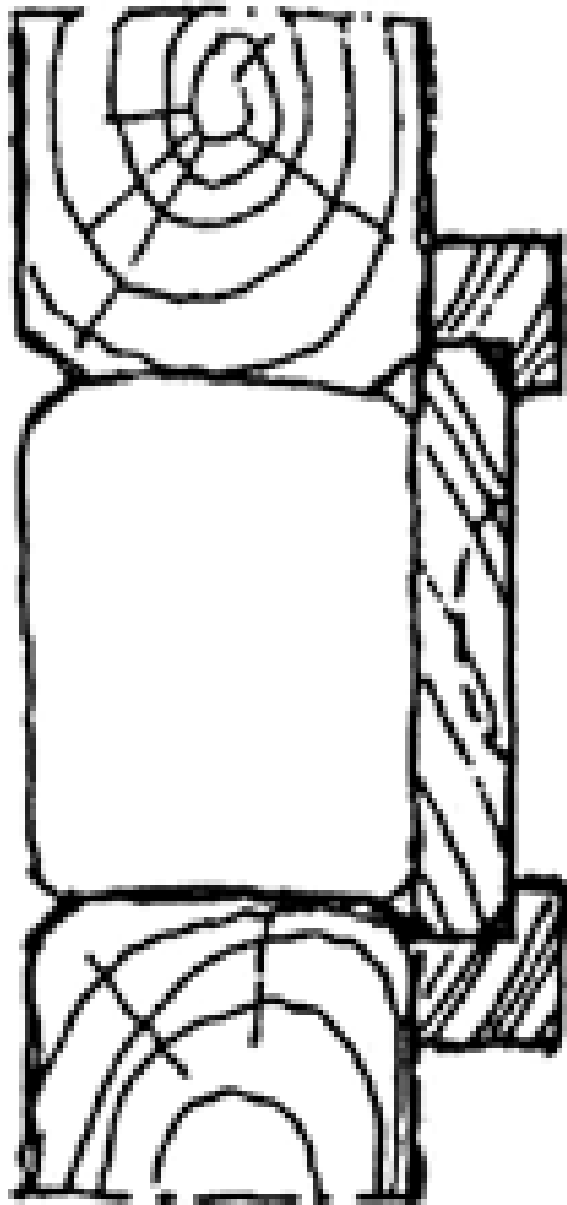


Figure 68

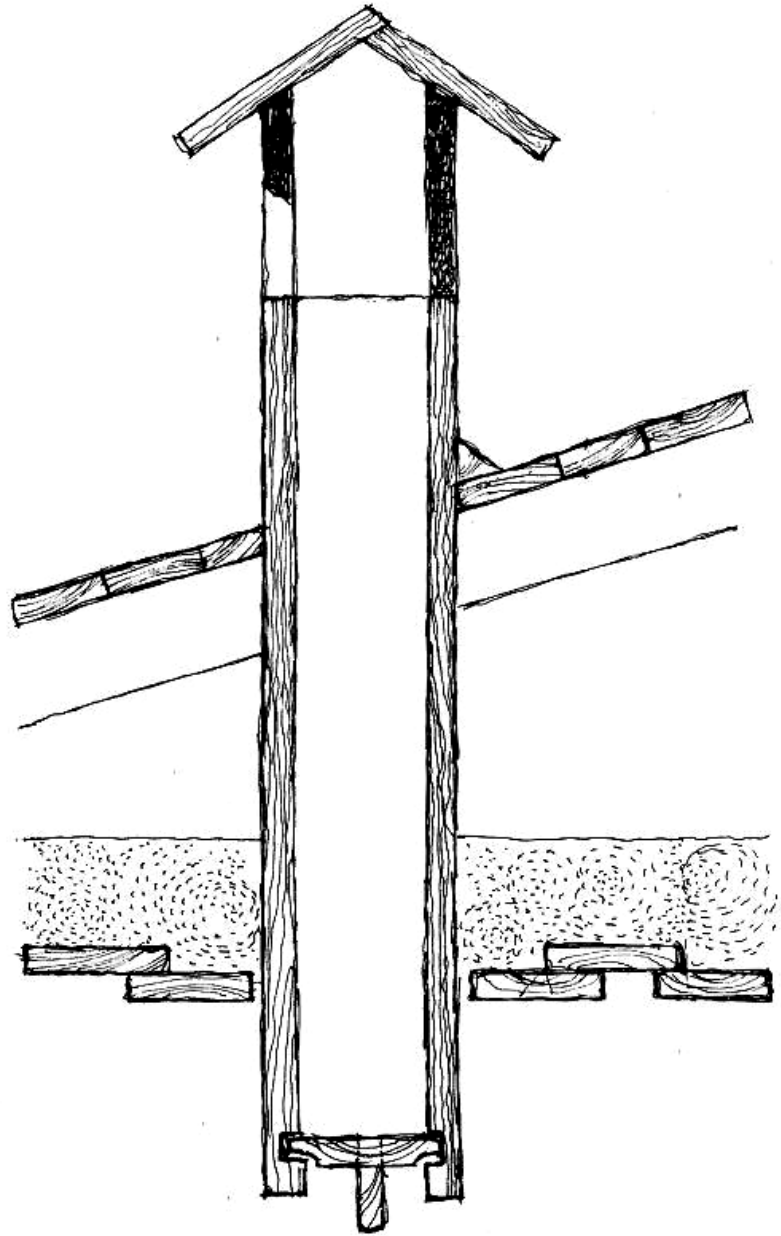


Figure 69



Figure 70

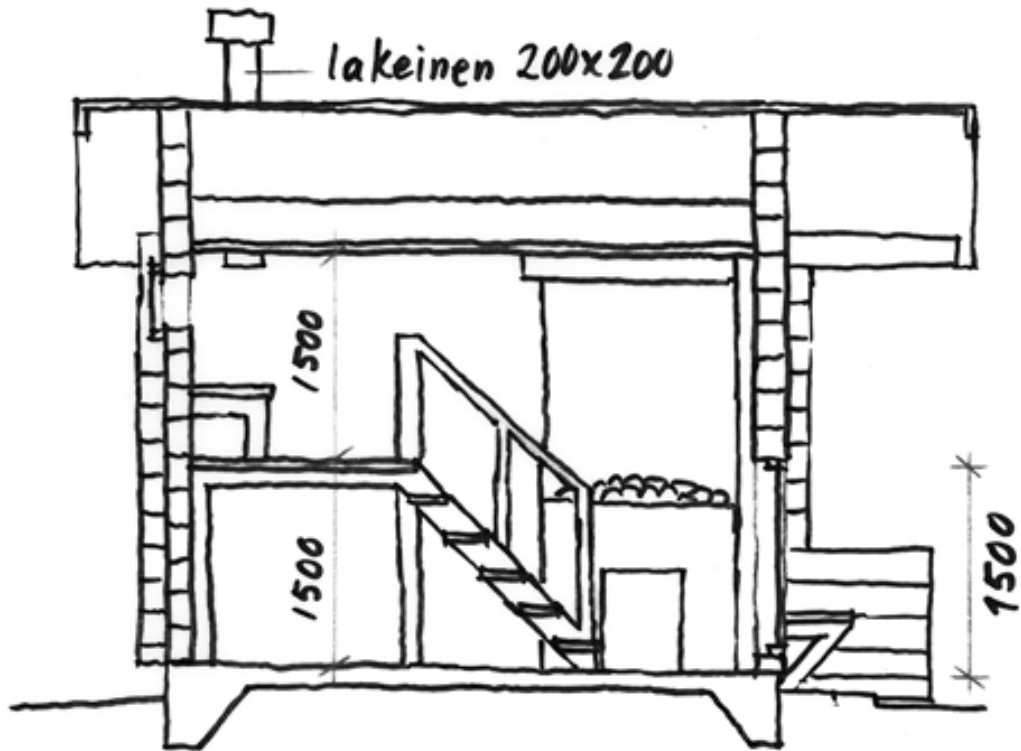


Figure 71

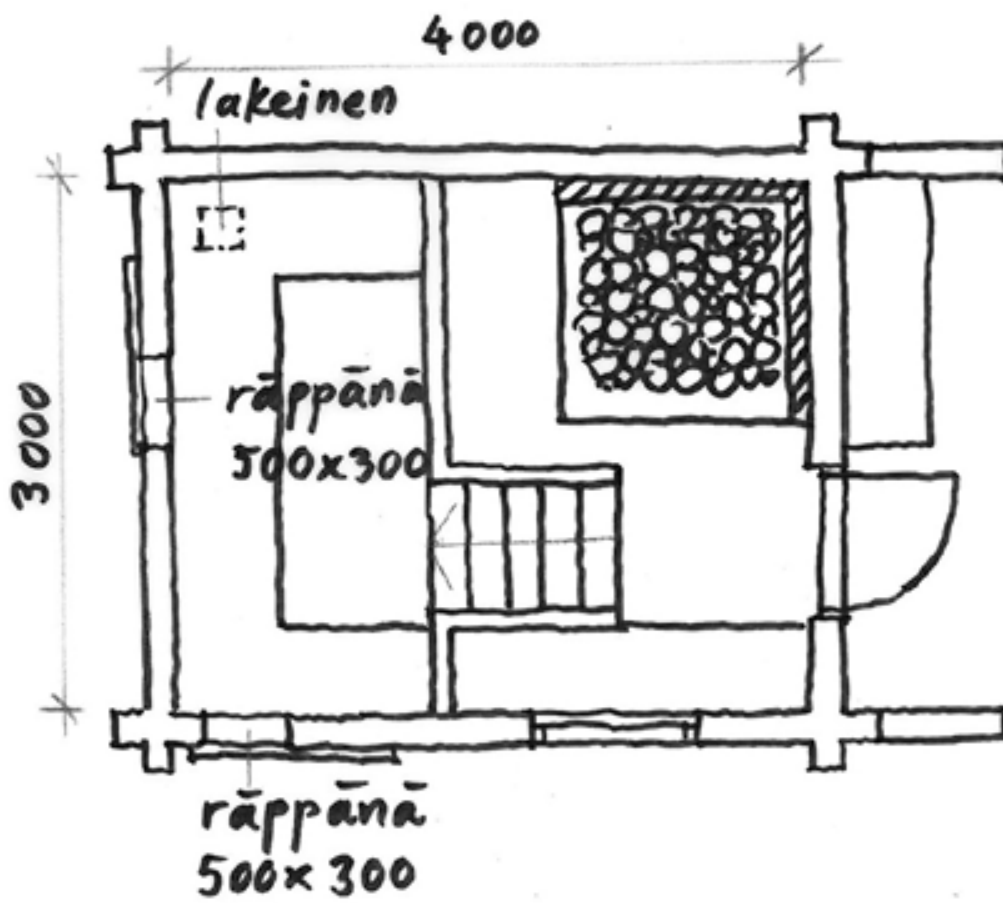


Figure 72



Figure 73



Figure 74

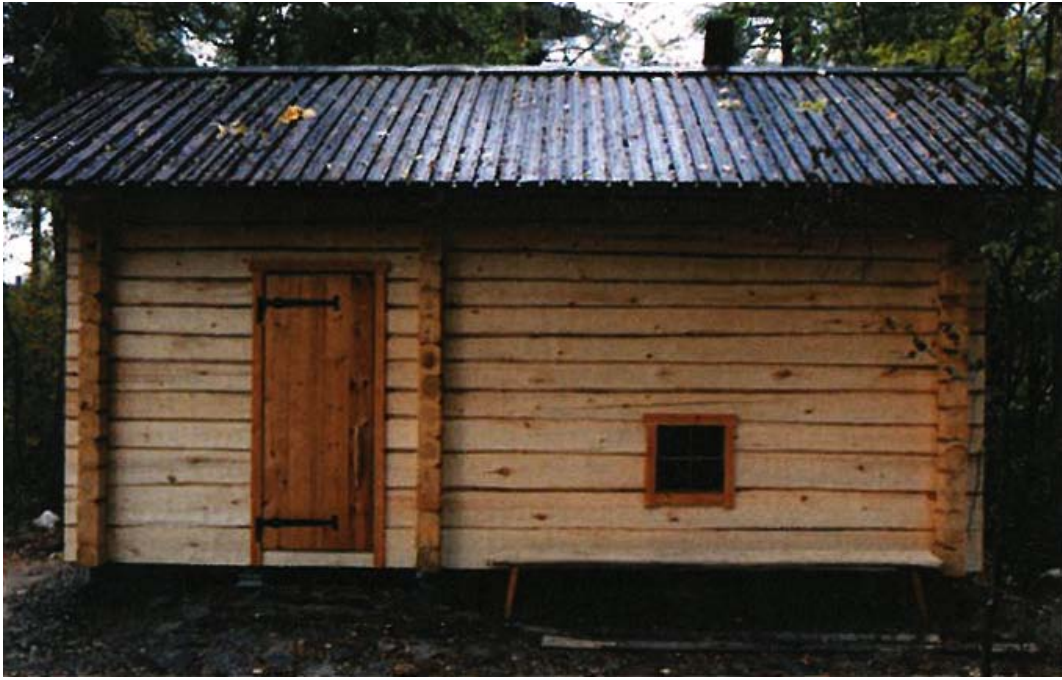


Figure 75



Figure 76



Figure 77

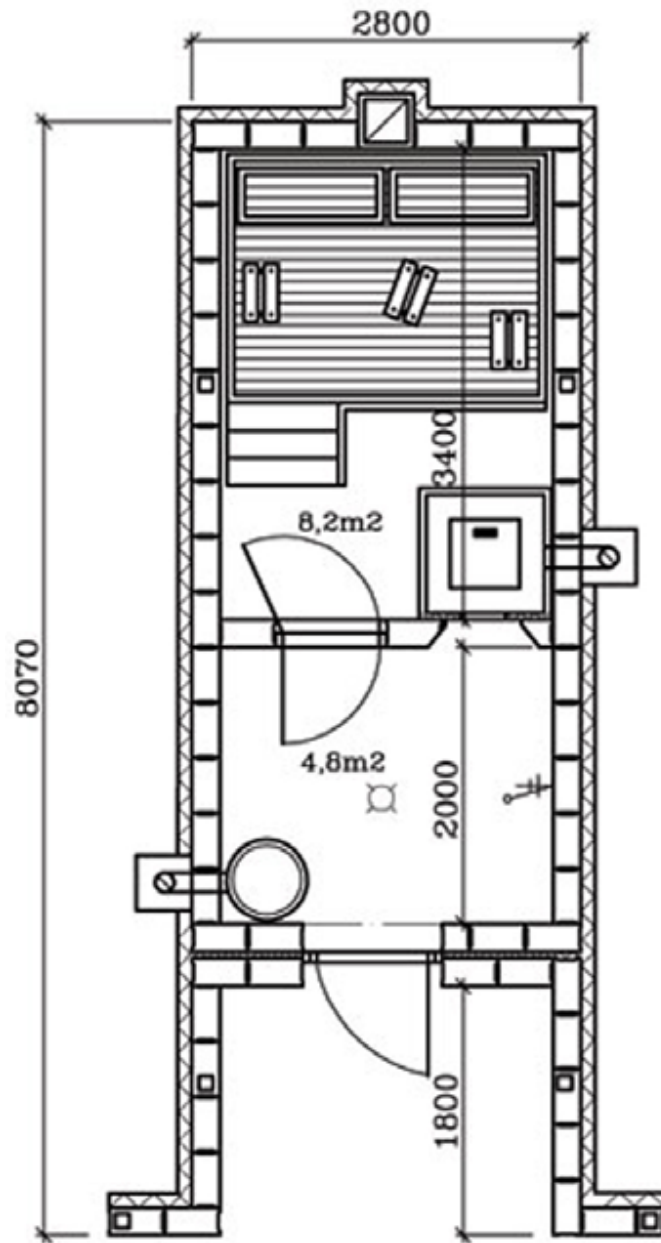


Figure 78



Figure 79

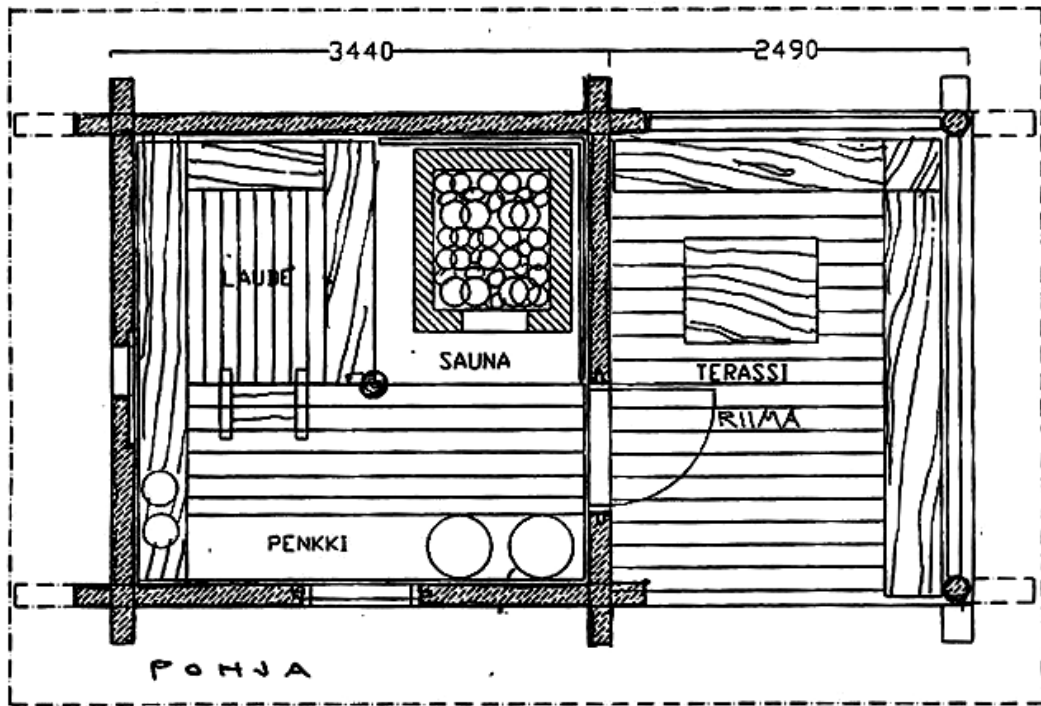


Figure 80



Figure 81

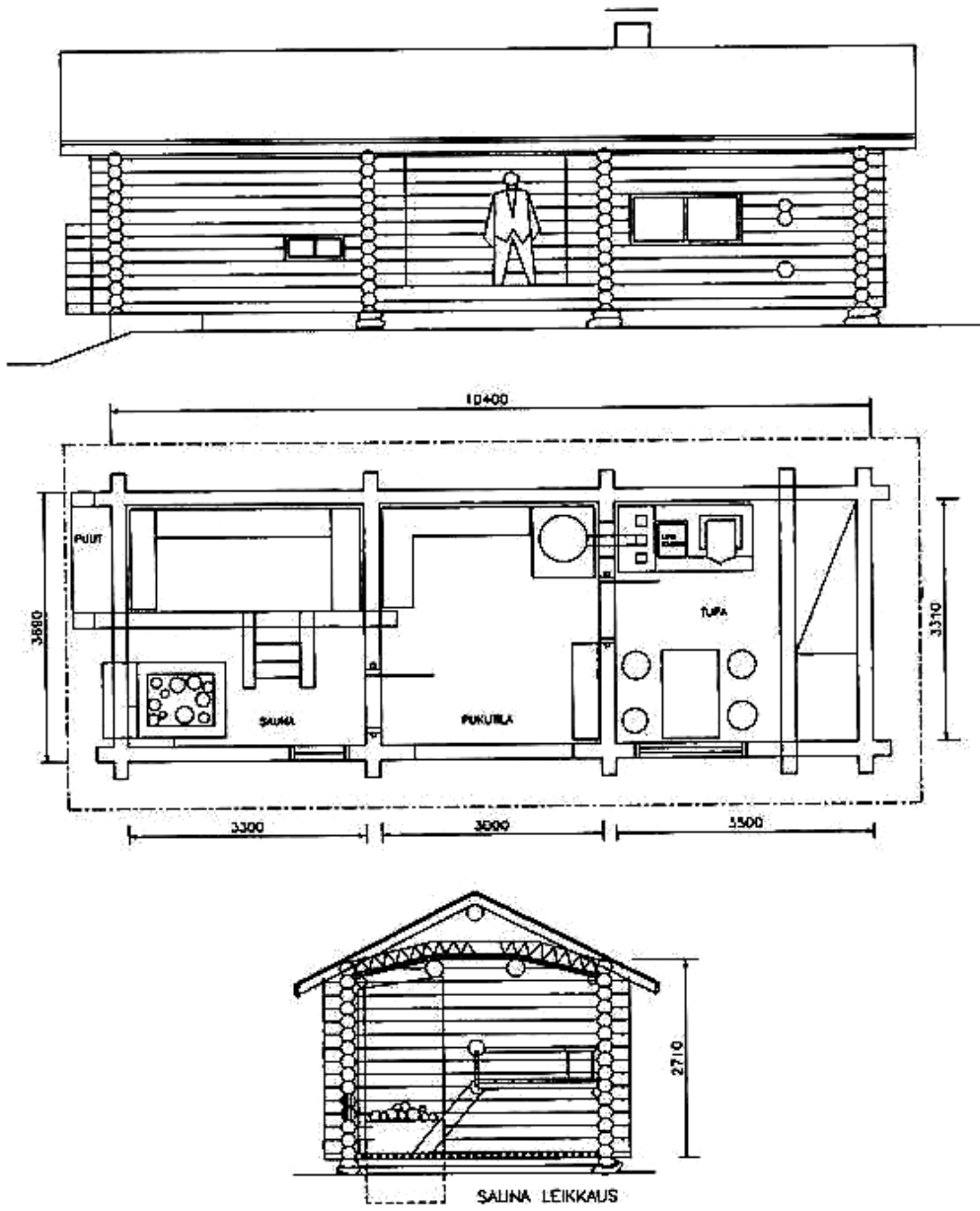


Figure 82



Figure 83



Figure 84



Figure 85



Figure 86



Figure 87

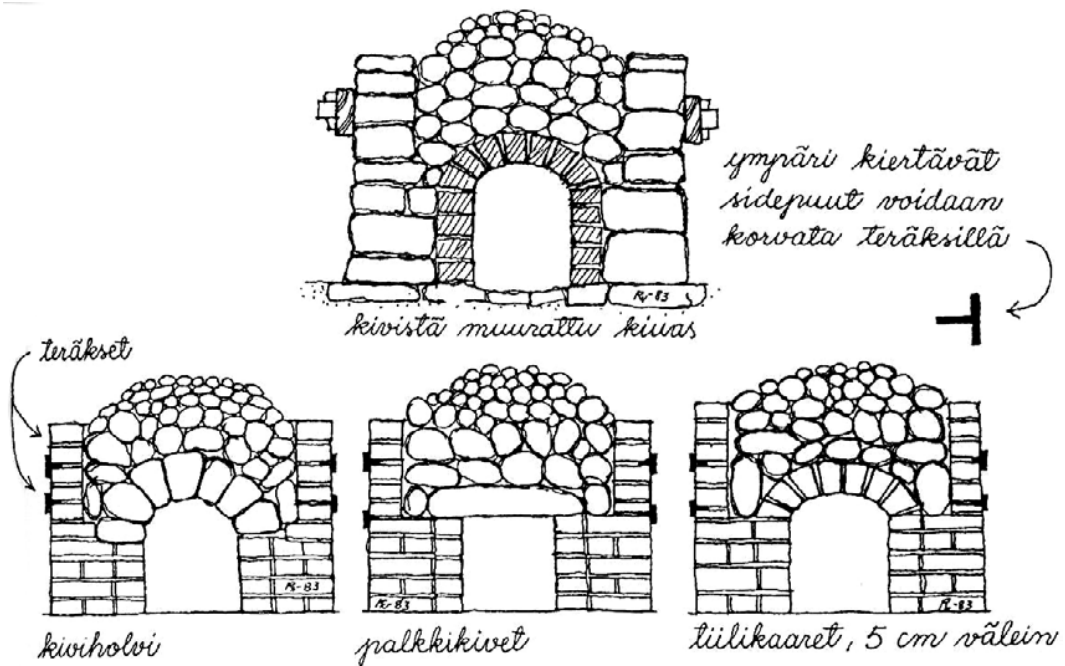


Figure 88

*Kiukaan kutominen
luonnonkivistä.*



Figure 89

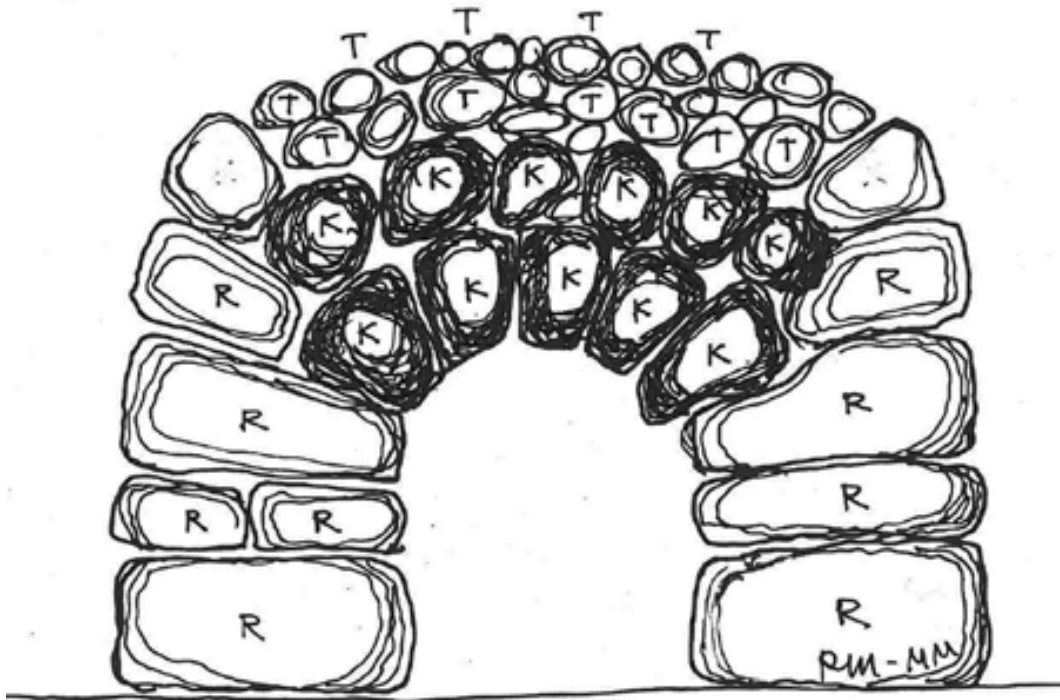


Figure 90

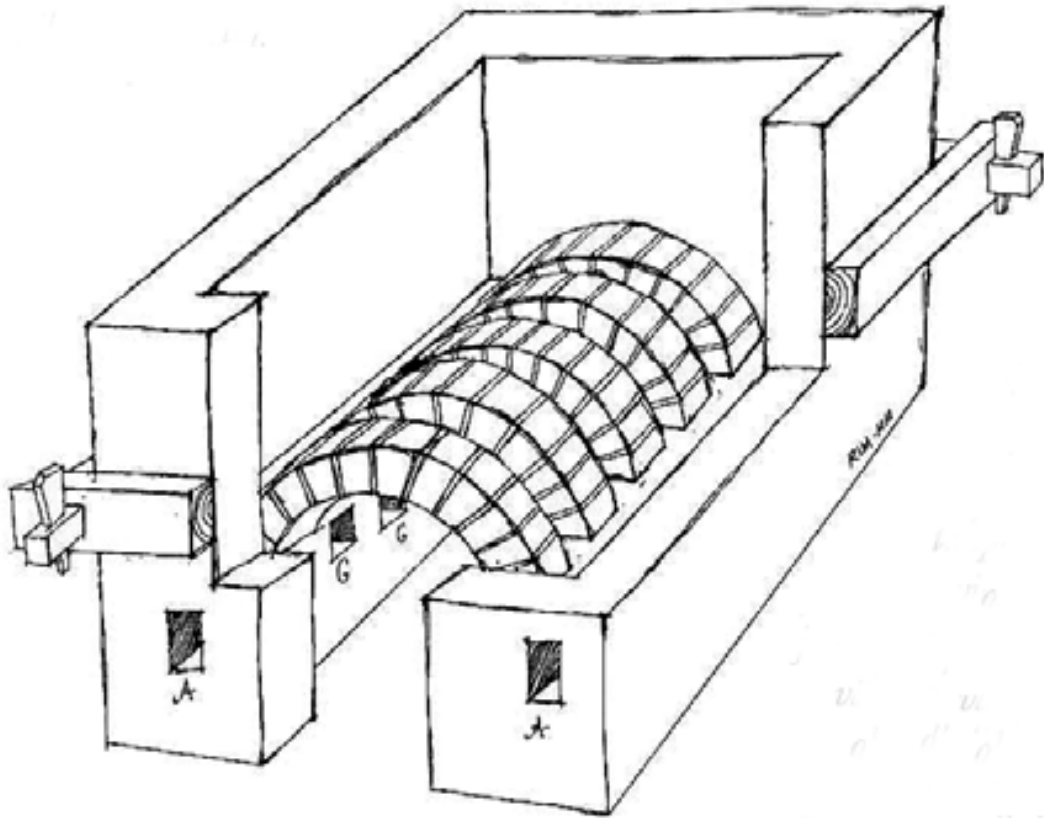


Figure 91

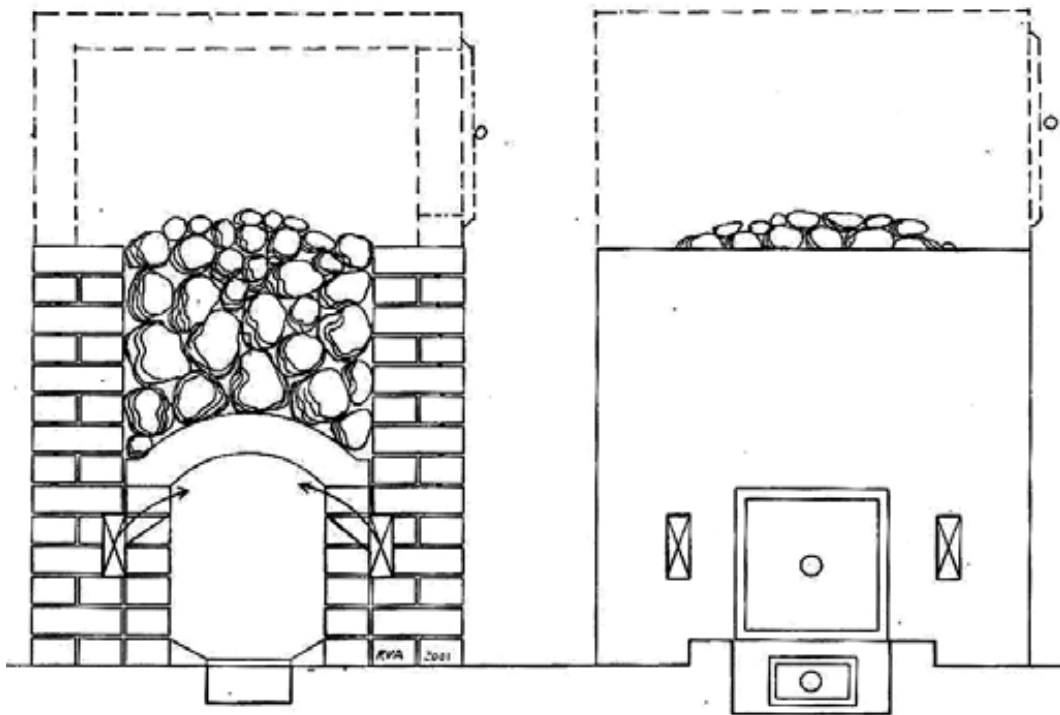


Figure 92

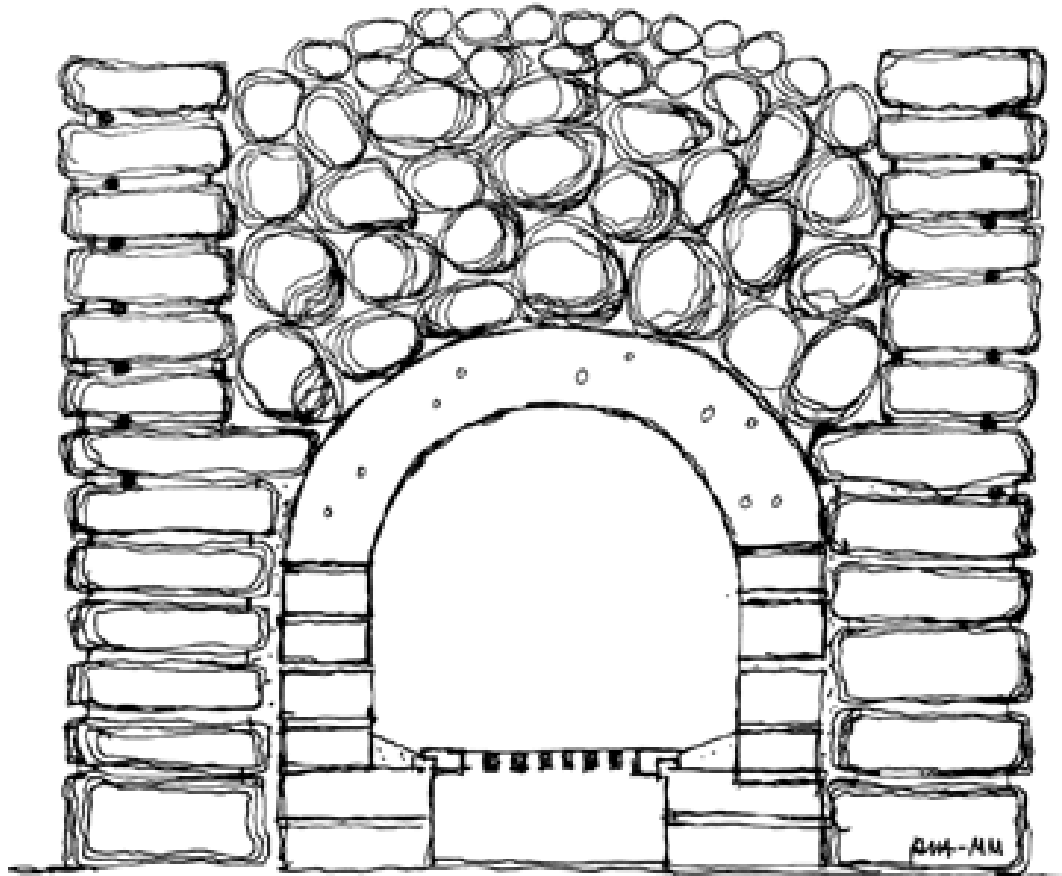


Figure 94



Figure 95



Figure 96

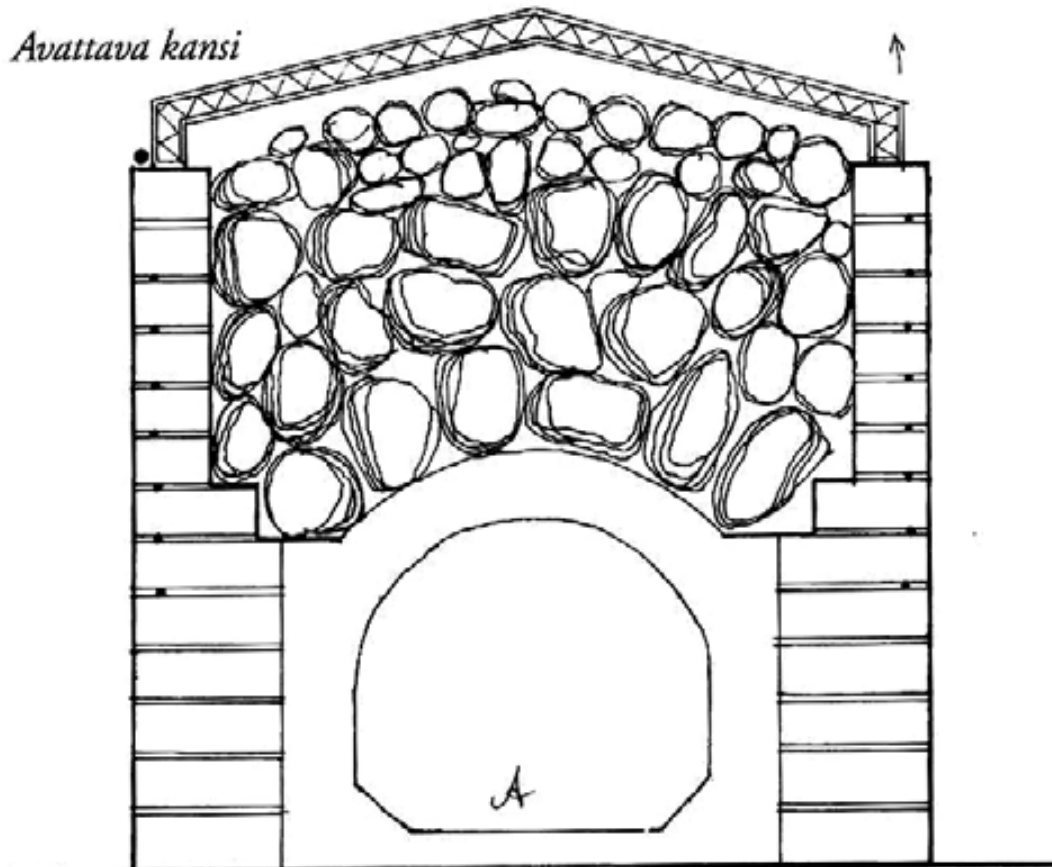


Figure 97



Figure 98



Figure 99



Figure 100



Figure 101



Figure 102



Figure 103

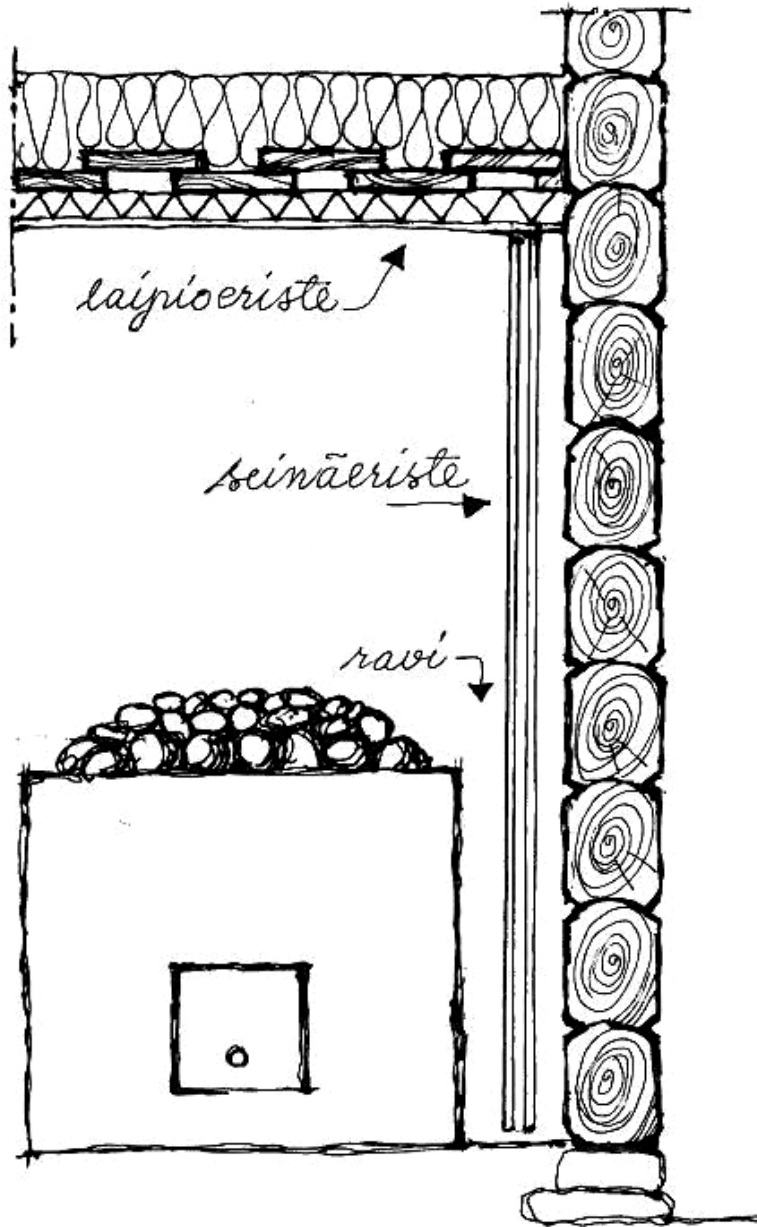


Figure 104

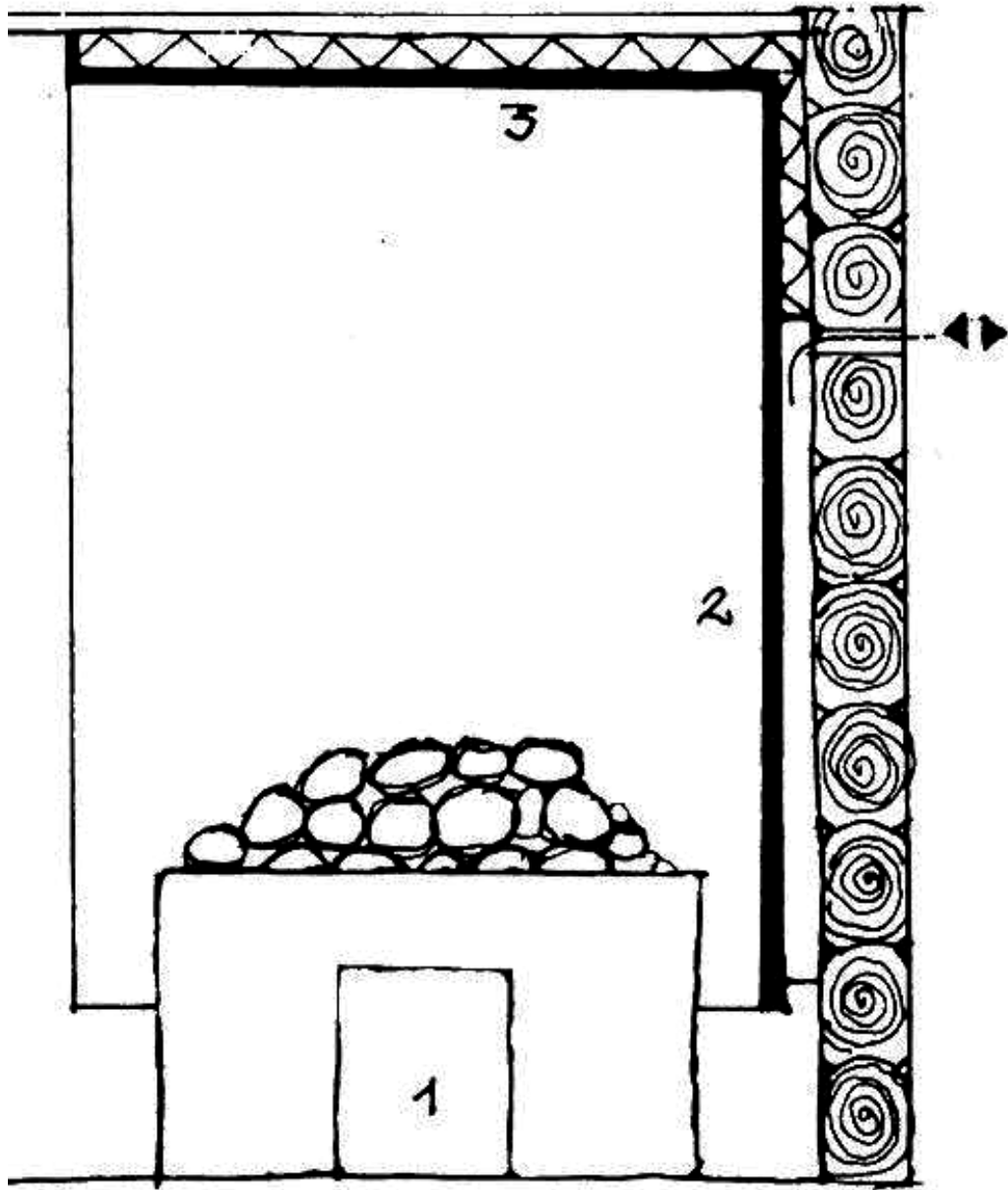


Figure 105

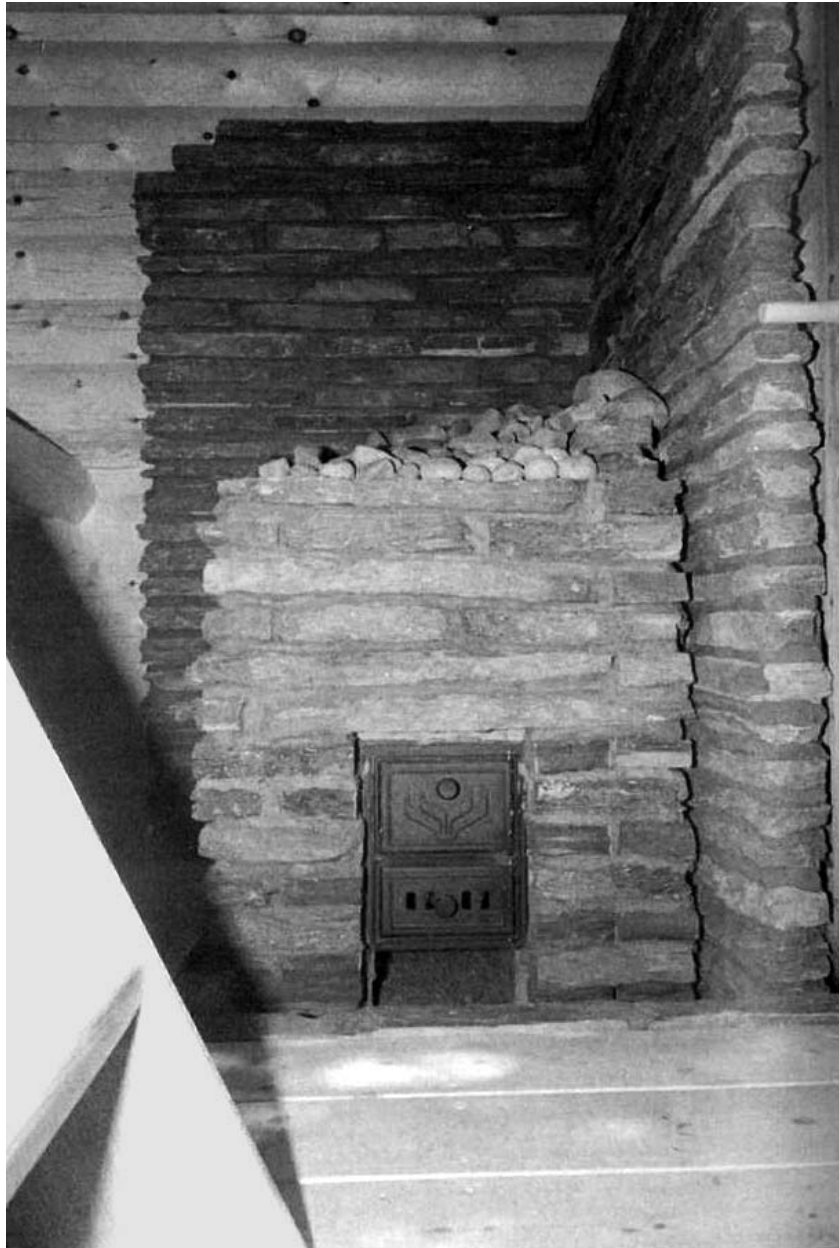


Figure 106



Figure 107

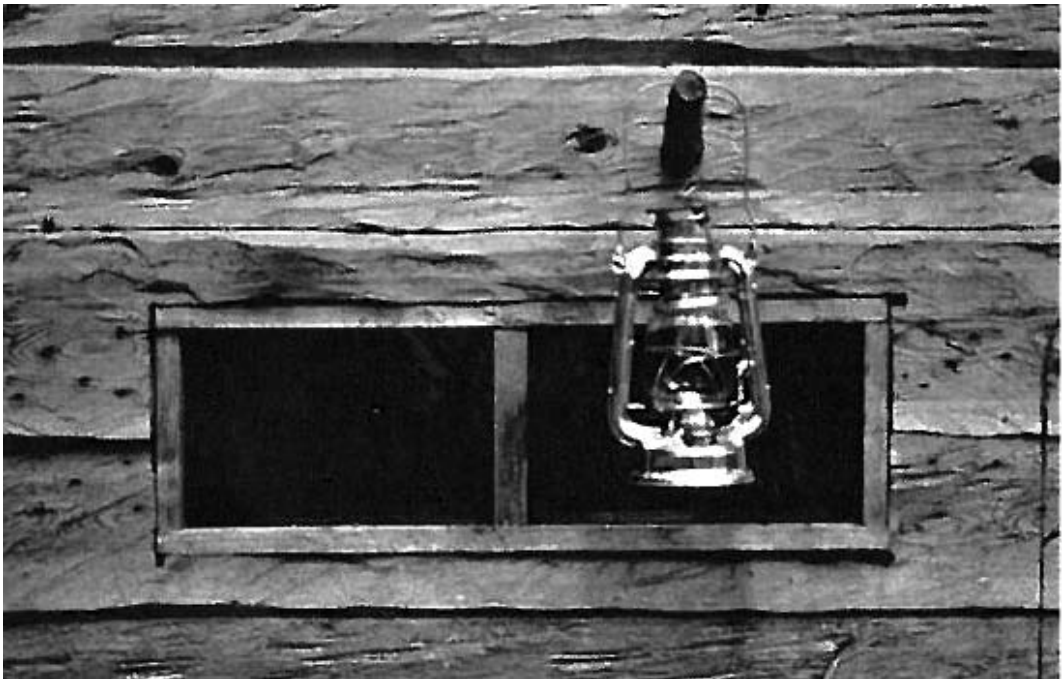


Figure 108



Figure 109



Figure 110

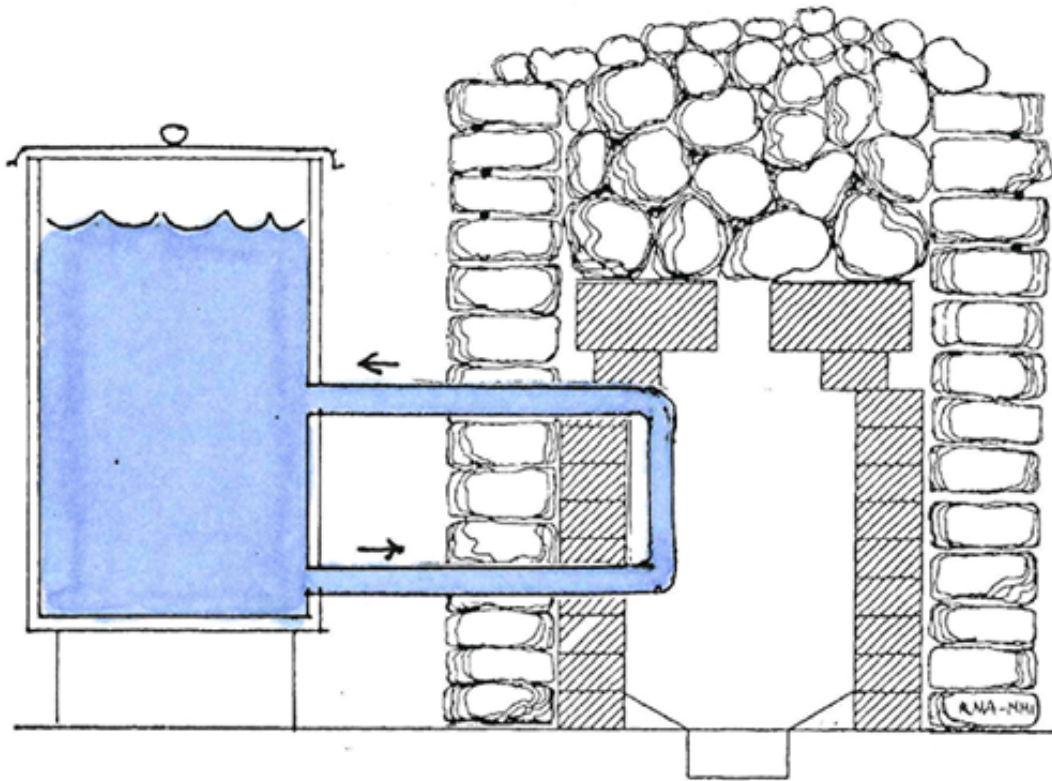


Figure 111

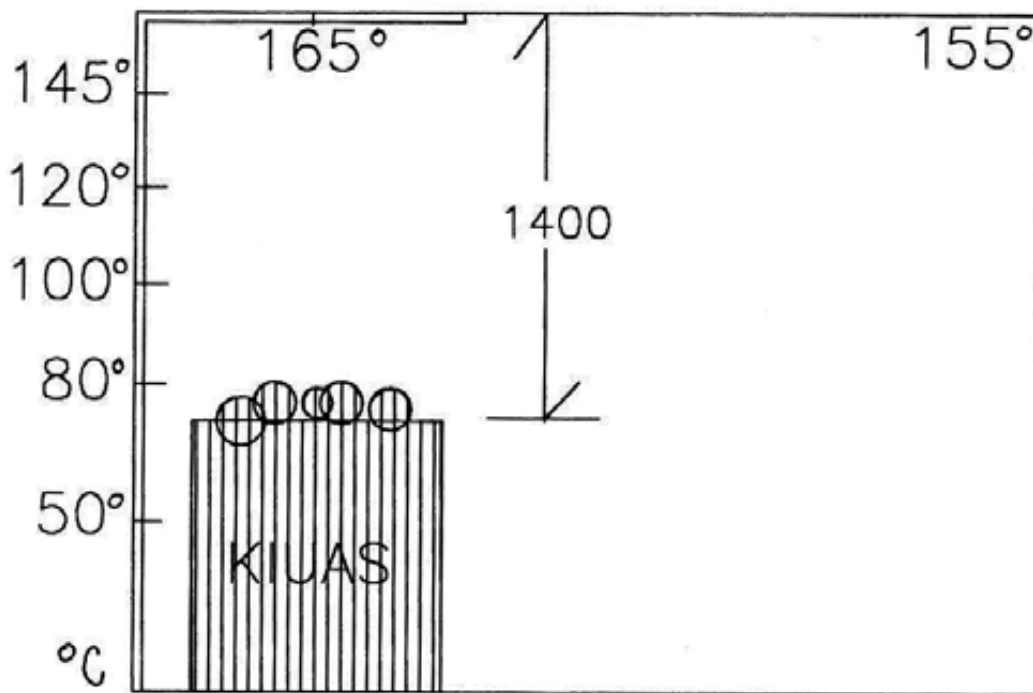


Figure 112

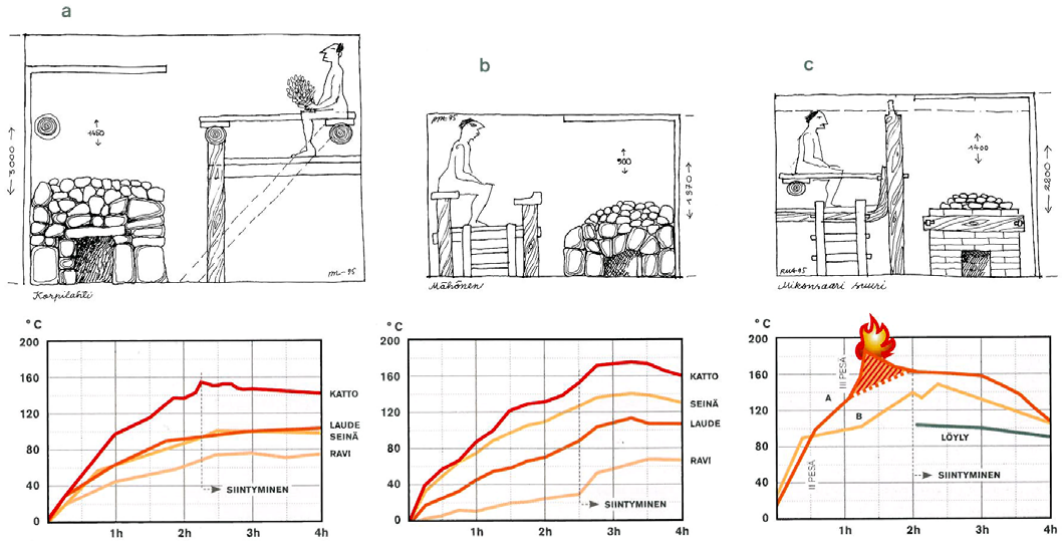


Figure 113

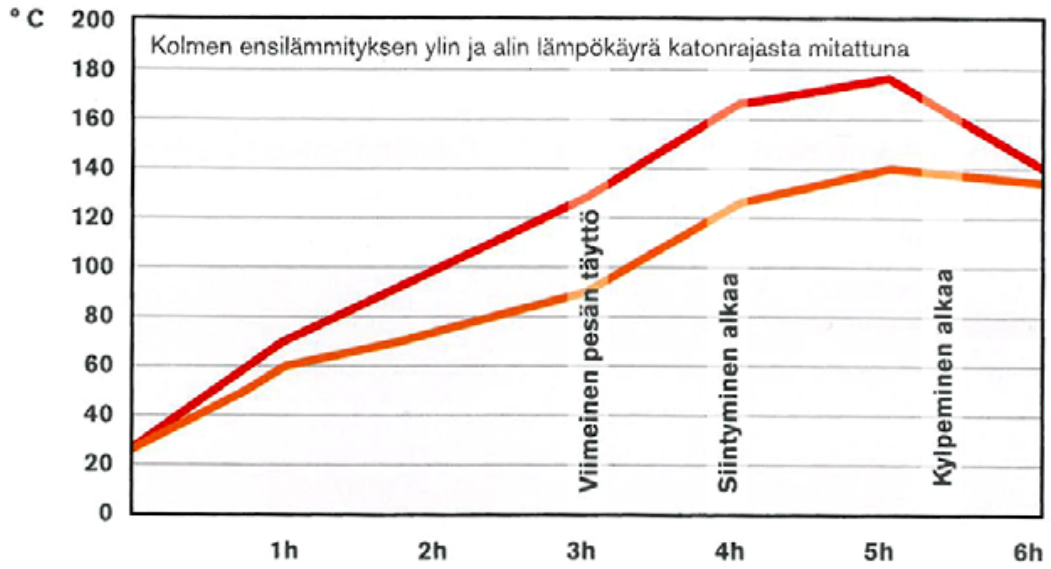


Figure 114



Figure 115



Figure 116



Figure 117



Figure 118

A-täytehirret

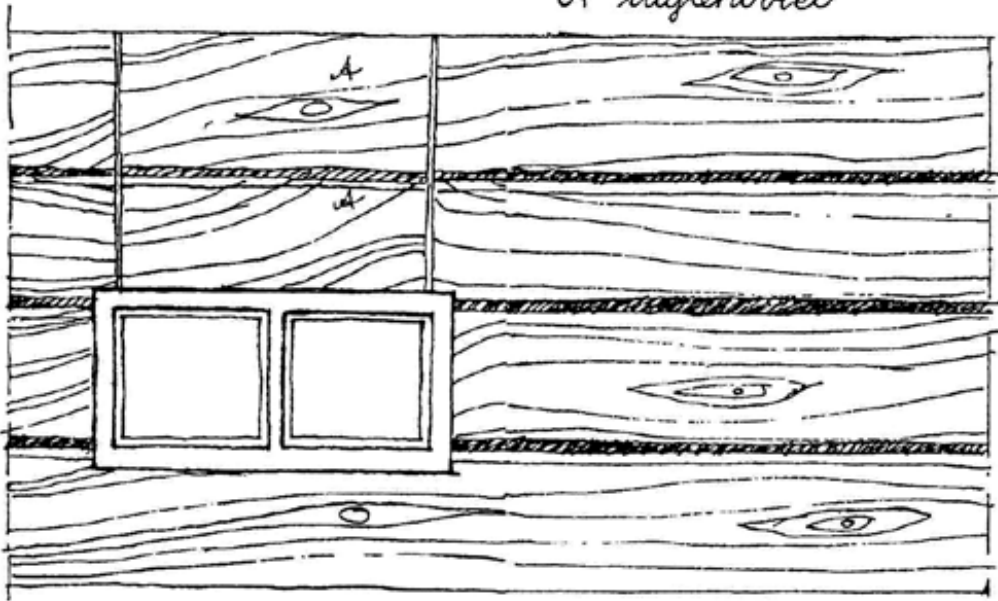


Figure 119

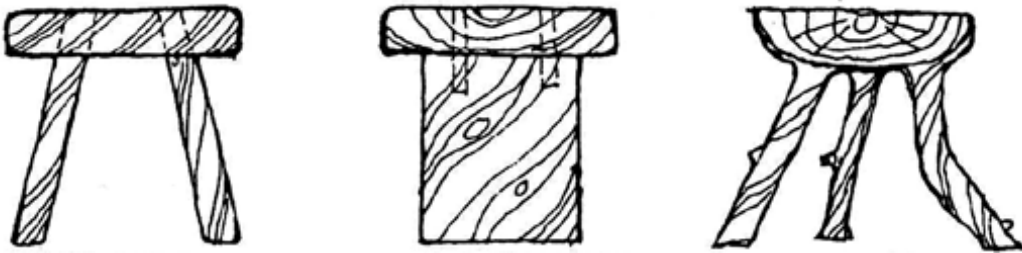


Figure 120

seinien nostaminen tunkin avulla

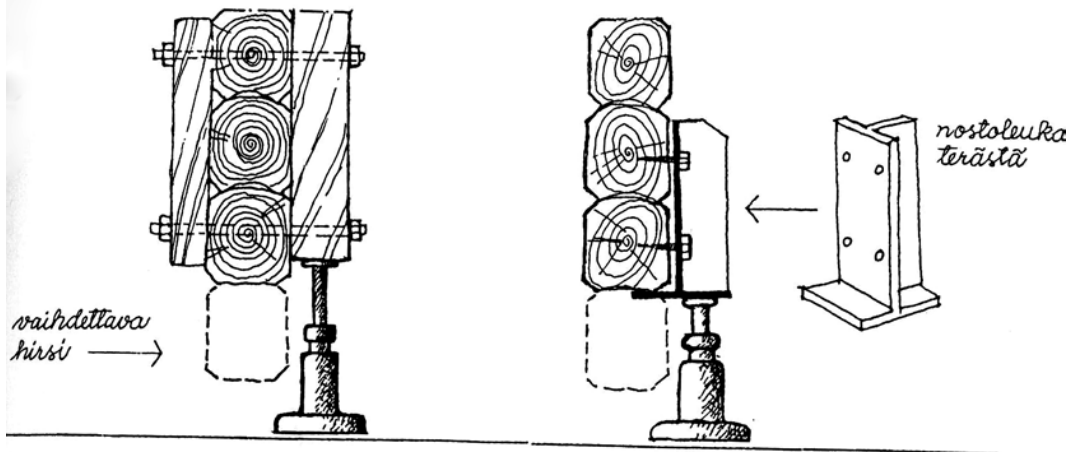


Figure 121