Military Technology
The traction trebuchet is designated as the «King's trebuchet» by az-Zardkāš (1374).
(Cat. V, 106; G 1.01)

Counterweight trebuchet
az-Zardkāš (1374) knows a certain form of the trebuchet called the «European catapult.»
(Cat. V, 107; G 1.02)

Large counter balance catapult
This type of siege engine seems to have been invented in the Islamic world during the 12th century CE, i.e. the era of crusades. Progressive features were the extended beam, windlasses or winches, gearing and clinometer (ballistic protractor).
(Cat. V, 108; G 1.03)
Counterweight trebuchet with arrow ejector. This type of trebuchet was a sub-variety of the model Qarābugā. The main difference between the two was that the latter was meant to hurl heavy arrows instead of stones or other voluminous objects. (Cat. V, 110; G 1.20)

Counterweight trebuchet with crossbow. This type of catapult has two functions; it hurls missiles as well as large arrows. It was developed in the 12th century. (Cat. V, 112; G 1.19)

The large triple crossbow was popular already in the 12th century in the Arabic-Islamic culture area. (Cat. V, 114; G 1.18)

The windlass crossbow was popular already in the 11th century in the Arabic-Islamic culture area. (Cat. V, 113; G 1.17)
Arab counterweight trebuchets in occidental tradition (13th cent.).

(Cat. V, 115; G 1.05)

Arab counterweight trebuchet in occidental tradition has reached Europe already in the 13th century from the Islamic world. Our model was reconstructed after an illustration of 1405.

(Cat. V, 116; G 1.04)

One more Arab counterweight trebuchet in occidental tradition was reconstructed after an illustration of 1405.

(Cat. V, 117; G 1.06)

One more Arab counterweight trebuchet in occidental tradition was reconstructed after an illustration of 1405.

(Cat. V, 118; G 1.07)
Trebuchet with distance regulator, reconstructed according to a sketch by Leonardo da Vinci (1519).
(Cat. V, 119; G 1.21)

Ballistic gauge
Used for the adjustment while taking aim with counterweight trebuchets.
(Cat. V, 134; G 1.14)

Fortification tower was reconstructed after an illustration from the book by az-Zardkāš.
(Cat. V, 136; G 2.01)

Ballistic instrument for levelling used at the time of installing the catapults.
(Cat. V, 135; G 1.15)
Fire-pot and biological grenade, reconstructed according to the description and illustrations in the book of az-Zardkāš (14th century).

(Cat. V, 120; G 2.18-2.20)

Grenades partially reconstructed according to the book al-Furūsiya by Hasan ar-Rammāḥ.

(Cat. V, 123; G 2.03-2.17)
The flame-thrower consists of a longish reservoir of metal for paraffin which is connected through two tubes with a cylindrical nozzle. From this the incendiary material is sprayed with a pump while it is lit by a small igniter. Reconstructed according to the description and illustrations in the book of az-Zardkāš (14th century).

Torpedo according to Nağmaddin Hasan ar-Rammāh (d. 1295). The propulsion elements were saltpeter, sulphur and coal.

Grenade with chemical war materials by az-Zardkāš (1374).

Rocket by the Ottoman engineer Lâgeri Hasan Çelebi, under Sultan Murād IV (r. 1623–1640).
Advanced type of gun. Firearms came into use in the Islamic world from the 13th century CE. This model was made after drawings found in a 14th century CE manuscript, at which point the construction had already become rather sophisticated. (Cat. V, 131; G 1.16)

Rifle. It seems that portable guns were developed in the Islamic world in the 14th century and introduced to Europe in the 15th century CE. Our model was built after the description contained in an Arabic manuscript of the 14th century CE. (Cat. V, 133; G 2.21)

Armoured vehicle with battering ram, used for breaking down fortified gates under siege. After the illustration and description found in a 14th century CE Arabic Manuscript. (Cat. V, 137; G 2.02)