

ARCS Workshop Presentation

**Packing and Crating Dynamics-
Current and Future Trends**

November 6-7, 2014

**Carnegie Museum of Art
Pittsburgh, PA.**

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**Cavity packed
bronze figures in
urethane foam with
Nomex® linings.**



Text

Cavity packed porcelain in urethane foam with Nomex® lining.

Cavity packed firearm in urethane foam with Nomex® lining.



↑ ELS2007 2.355
MUSKET



Dressed mannequin on sliding wooden tray secured with padded cotton web strap around waist.

Dressed mannequin on sliding wooden tray secured with padded strap across chest.



**Framed pieces tray packed on 1/2" Ultra® Board
with Ethafoam® bumpers.**



**Tray packed framed pieces on 1/2”
Ultra®Board with Ethafoam® bumpers.**





**Brace packed
furniture on sliding
wood tray. Braces
are fitted with bolt
plates**




**Detail of furniture supported
by blocking on tray.**

Volara® insert and tabs used to secure drawers and handle pulls.





**Packing error:
Adhesive tape used to hold drawers
closed.**

An ornate, gold-colored framed painting is shown inside a light-colored wooden travel frame. The painting is held in place by several white, padded braces that are attached to the inner frame. The travel frame is constructed from light-colored wood and has metal hinges on the right side. A yellow strap is visible on the right side of the frame. The painting itself depicts a scene with a green door and a red object.

**Ornate framed painting
in travel frame secured
with padded braces.**



Remove this inner box and lay flat to
unpack.

Enlever ce boîtier à l'intérieur et le
déposer à plat pour déballage.

Entfernen Sie die innere box und legen
sie flach zu entpacken.

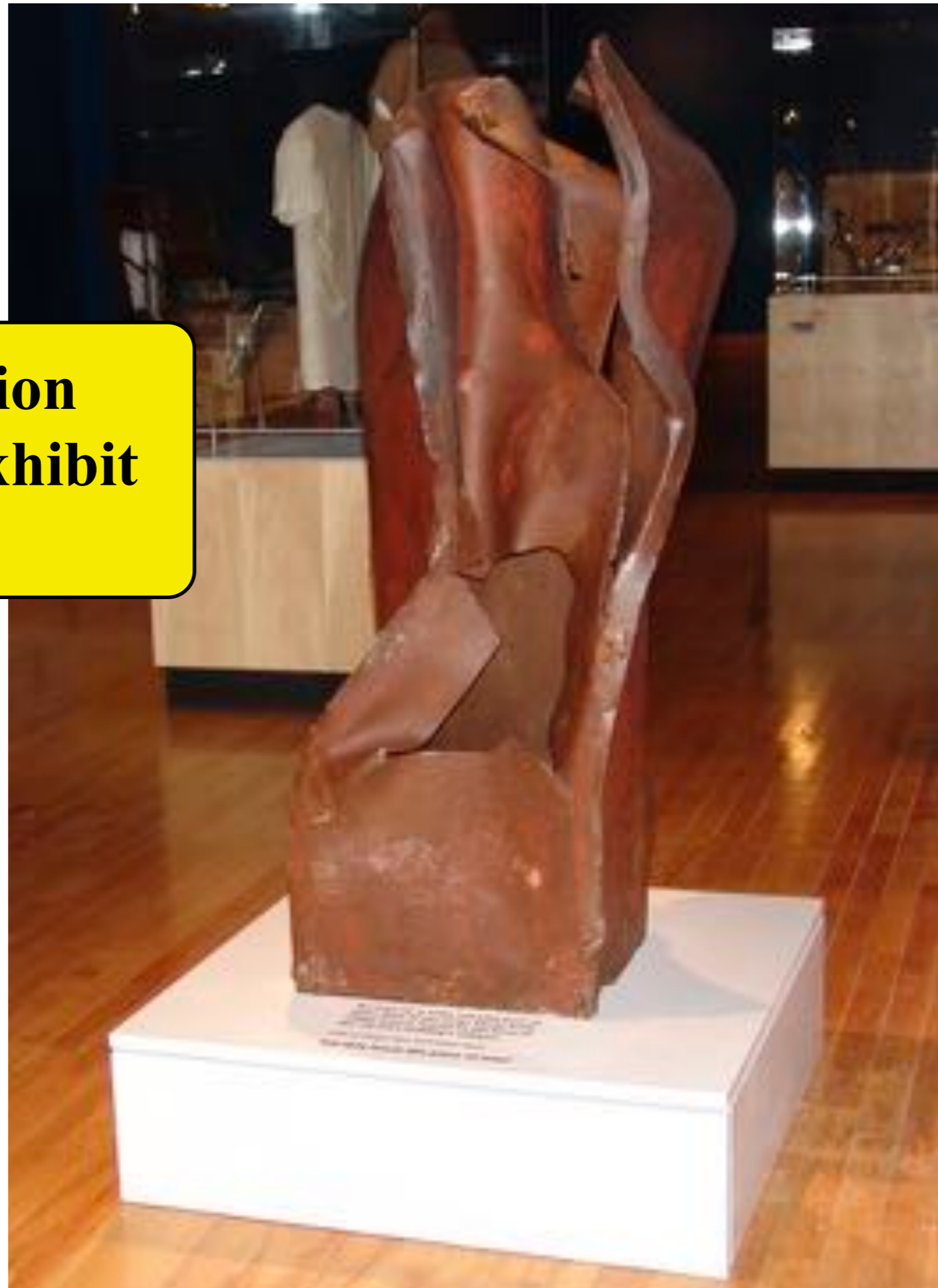
FRAGILE
HANDLE
WITH CARE

**Photos on travel frame lid
with packing instructions in
the language of the three
exhibit's venues.**



**Steel girder section
braced into travel crate.**

**Steel girder section
mounted onto exhibit
platform.**




Side panels of platform remove to reveal pallet. Panels are secured with double ball cabinet latches.





Girder and pallet base with side panels removed. Crate body shell is moved into position and bolted to base. Side panels are stored above object.



**Packed three piece crate.
Note bolts along side to
remove crate body from
pallet base.**



**Three piece crate using wooden cross braces to secure heavy object onto pallet base.
Braces are T beam construction.**



After removal of front braces and pallet bolts, entire crate body is removable.



**Object on pallet with
360° access for
condition reporting,
examination, and
removal from pallet.**





**Packing instructions
with photographs on
the interior wall of the
crate.**



**Specimen on original
period mount.**



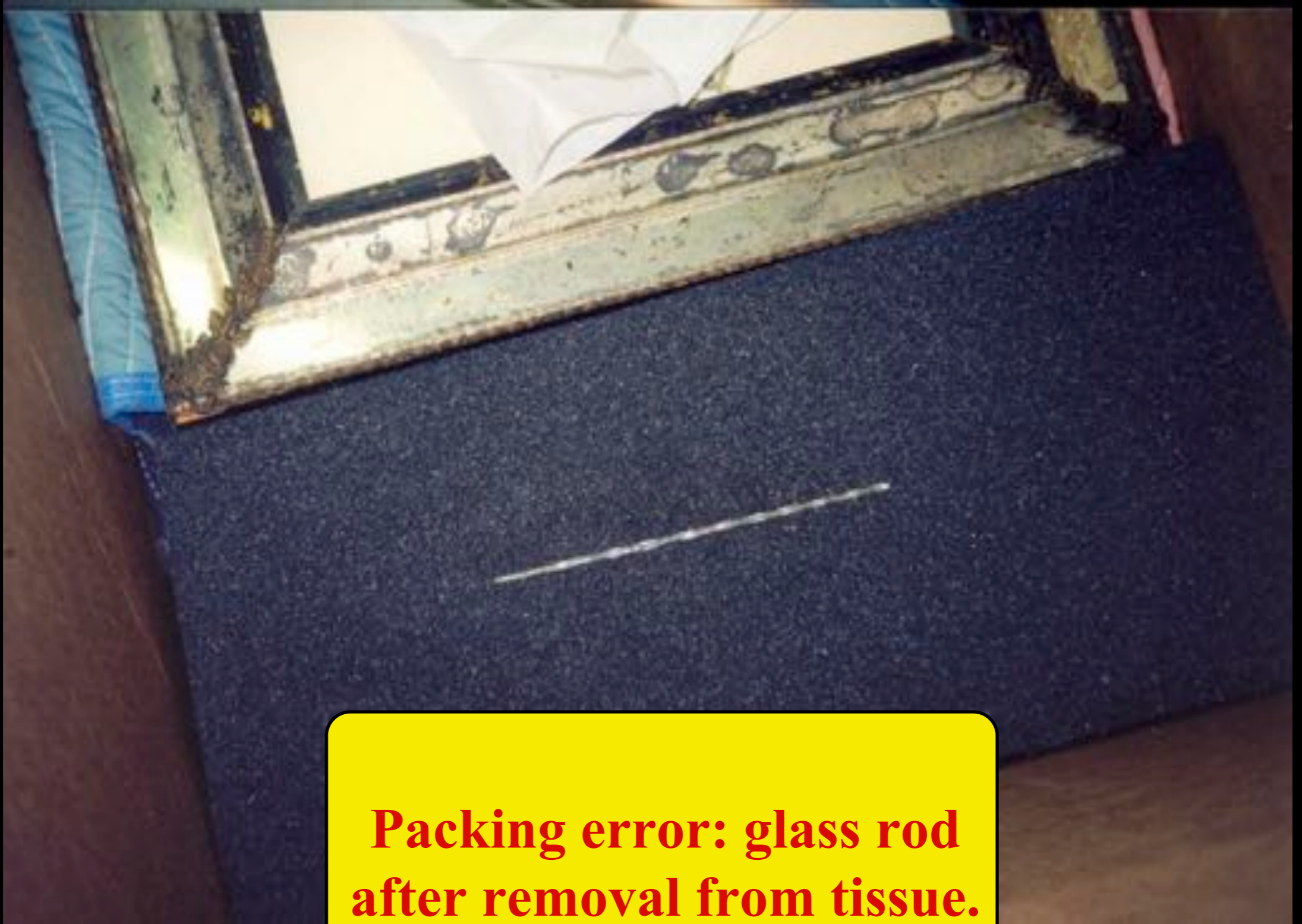
Mount secured on sliding tray in box. Contact with specimen is minimal.



Detail of padded web strap that secures the mount onto the packing support.

Packing error: glass rod wrapped in tissue without structural support.

282006
EXTREMELY FRAGILE
GLASS RODS



**Packing error: glass rod
after removal from tissue.**

**Packing error: attempt to
add structural support.
Electrical tape used to
secure piece to block of
wood.**





**Thin and fragile Pre-Columbian
gold foil object.**

Folder stock slides under object to ease handling and limit direct contact with object.



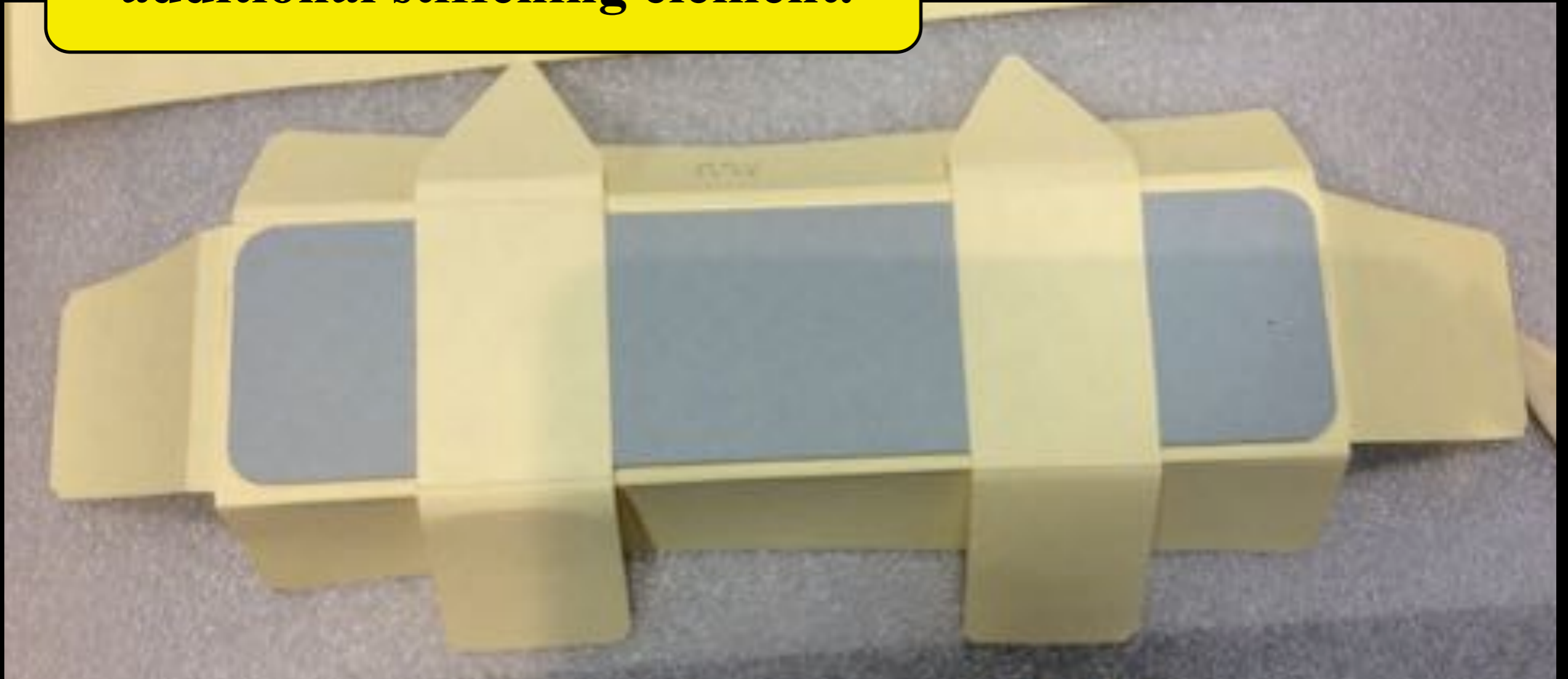
Four flap enclosure holds both object and support.



Four flap enclosure secured with slots and tabs.



E flute board (1/16") attached to underside of enclosure as an additional stiffening element.





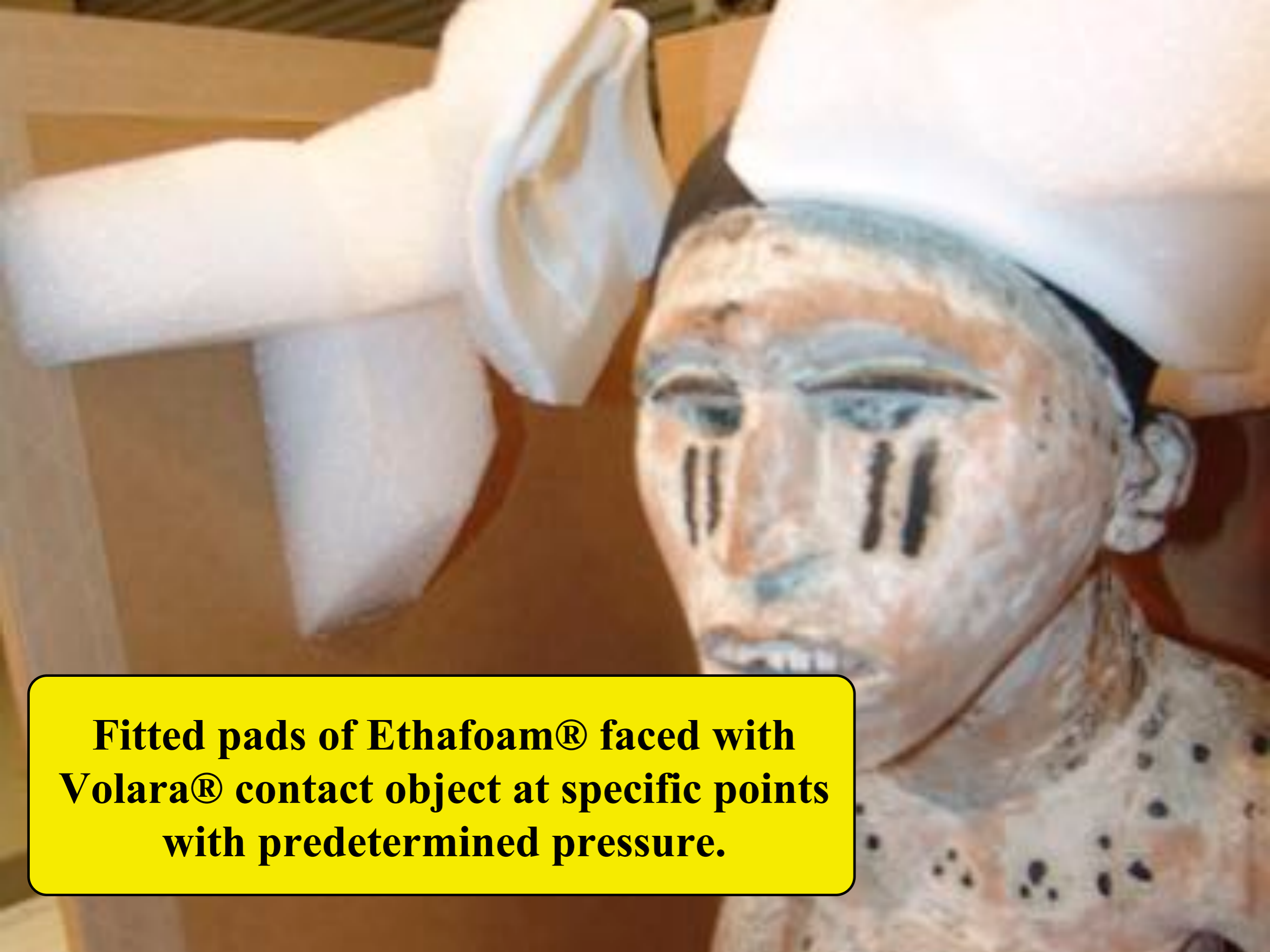
Carved African figure with fragile pigmented surface. Head and edge of base are designated as points of contact.



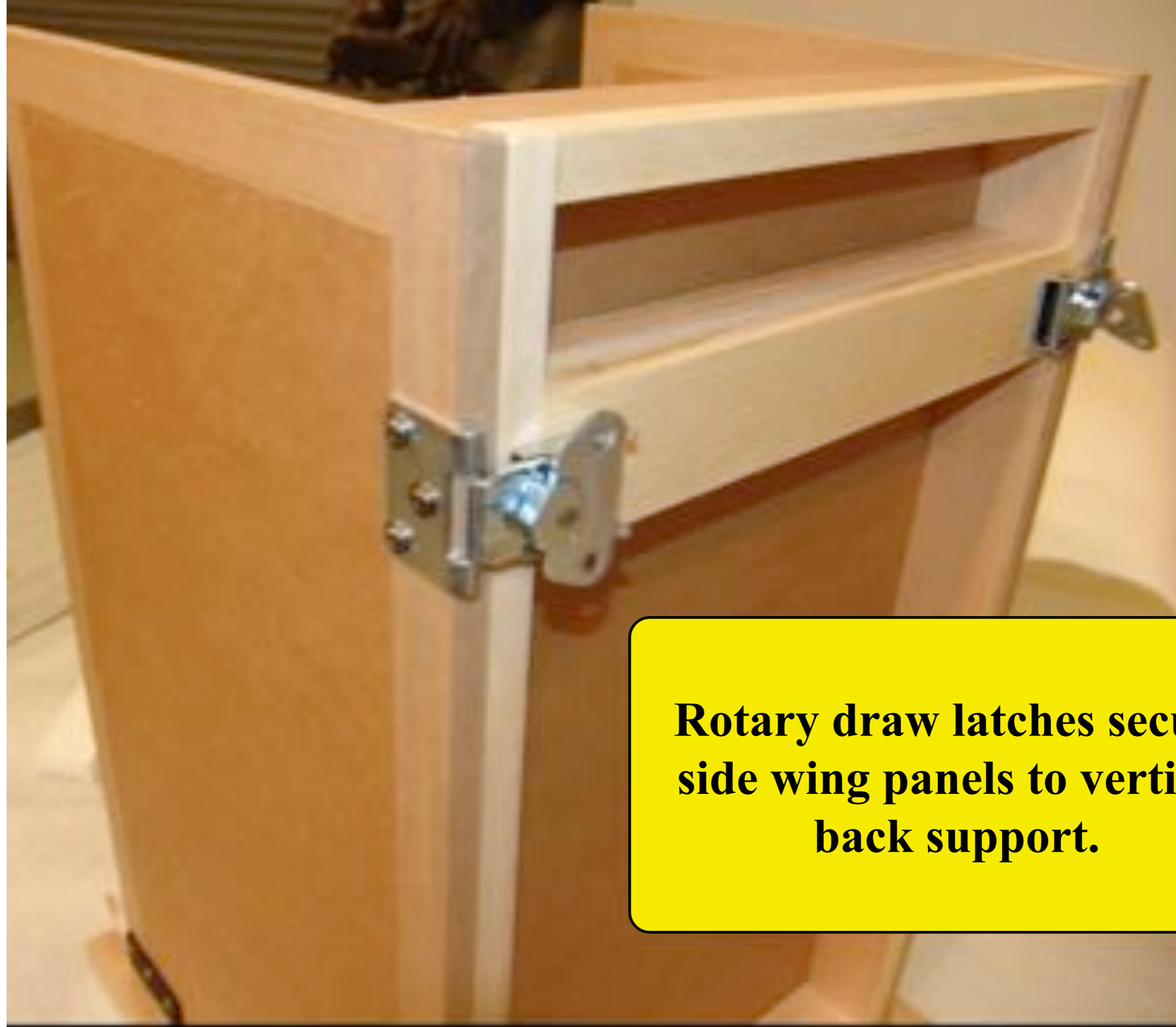
Hinged side support panels fitted with Ethafoam® pads faced with Volara® fold up and contact object at specific points with predetermined pressure.

**Object on packing
mount with hinged
wings open.**





Fitted pads of Ethafoam® faced with Volara® contact object at specific points with predetermined pressure.



Rotary draw latches secure side wing panels to vertical back support.



Packing mount fits into hinged interior box on sliding wood tray.



Final packing configuration. Side loading travel crate fitted with interior boxes.



**Gilt epergne with
slightly loose
attachments to base.**



**Fitted packing mount
adds structural
support to object.**



Shaped Ethafoam® pads faced with Volara® conform to object.

Pressure bridge secures basket from above with predetermined pressure.





Cotton web straps with contoured Volara® pads secure object in packing mount.



**Packing mount in travel
crate on sliding tray.**

**Silver serving basket
with handle. Object is
displayed with the handle
upright, but handle is
able to move.**



Basket handle held upright by Ethafoam® pressure bridges faced with Volara® and secured to tray with cotton web straps and buckles.





Tray limits need for direct handling but still affords object support.

**Interior box showing
padded slot at top.
Nomex® covering on pads
allows handle to slide easily
in and out of box.**



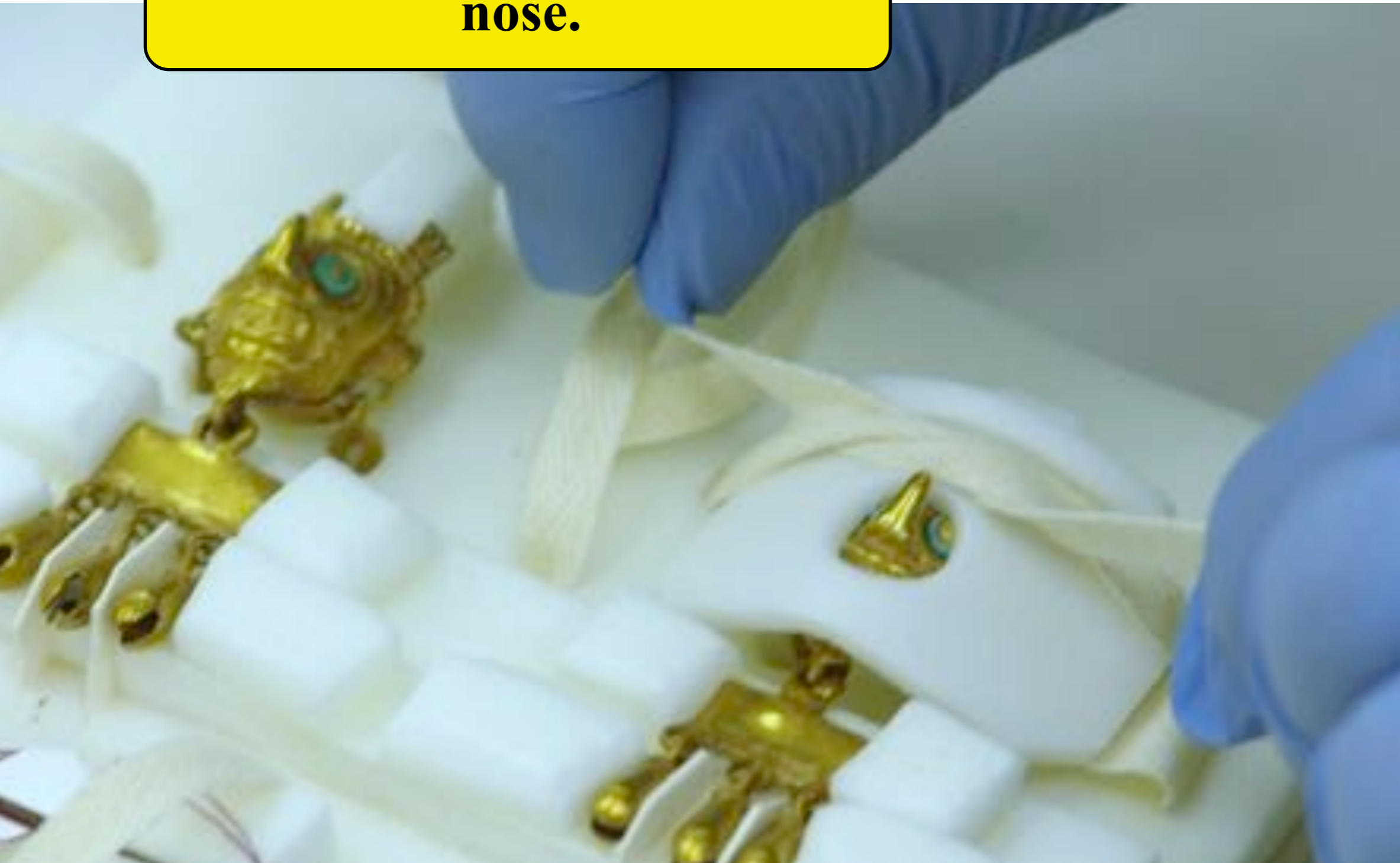
Gold Pre-Columbian ear ornaments with fragile hanging attachments.




Objects on packing tray with mat board tabs separating lower pendants. Holes in the Volara® tray base allow ear attachments to hang freely.



**Volara® pad secures object's
face mask, while hole
prevents pressure on the
nose.**



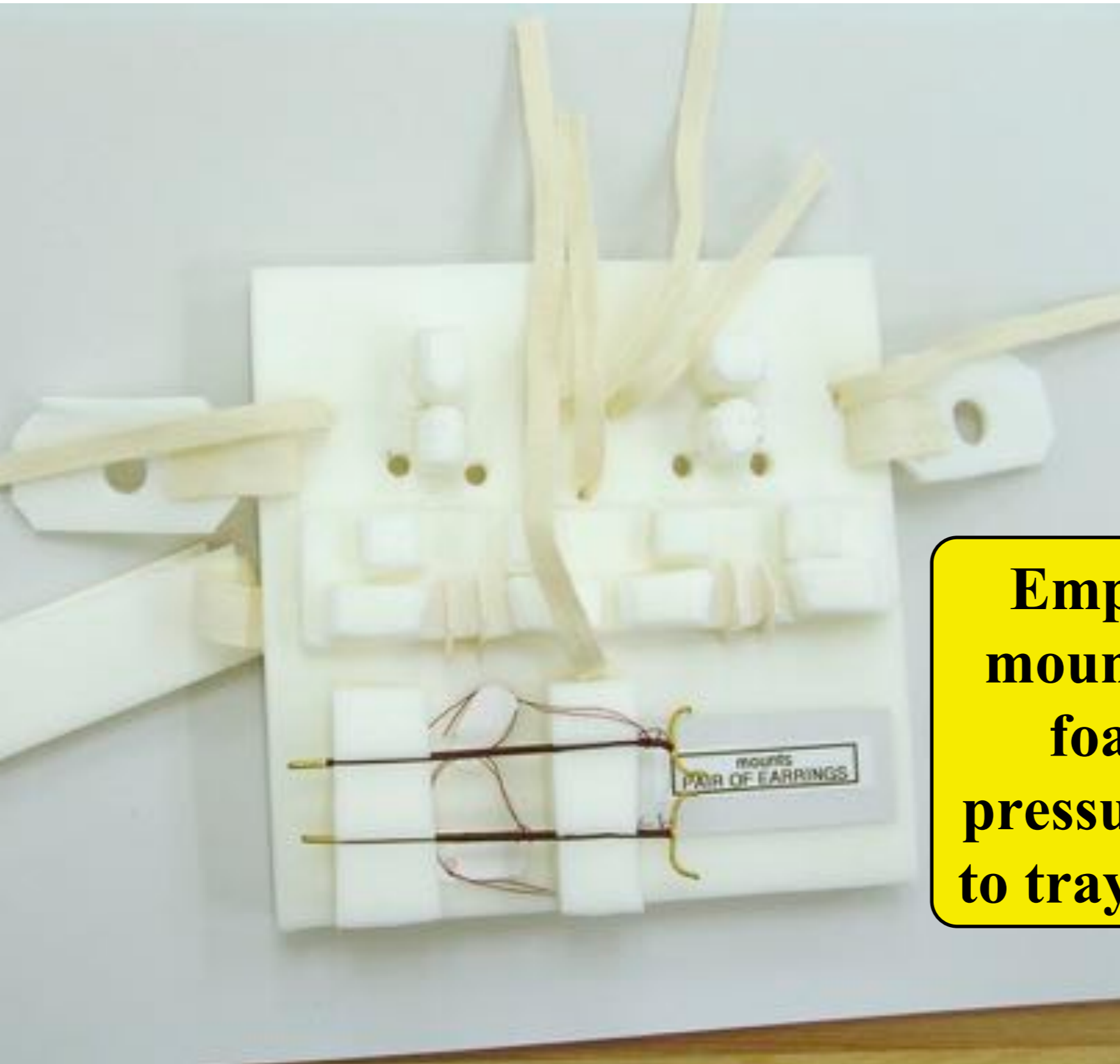


Objects' face masks secured with pads and twill ties.

Eunts
EARRINGS



Pressure bridge of eight ply mat board faced with Volara® secures lower pendants. Tray lowers into interior box for packing into travel crate.



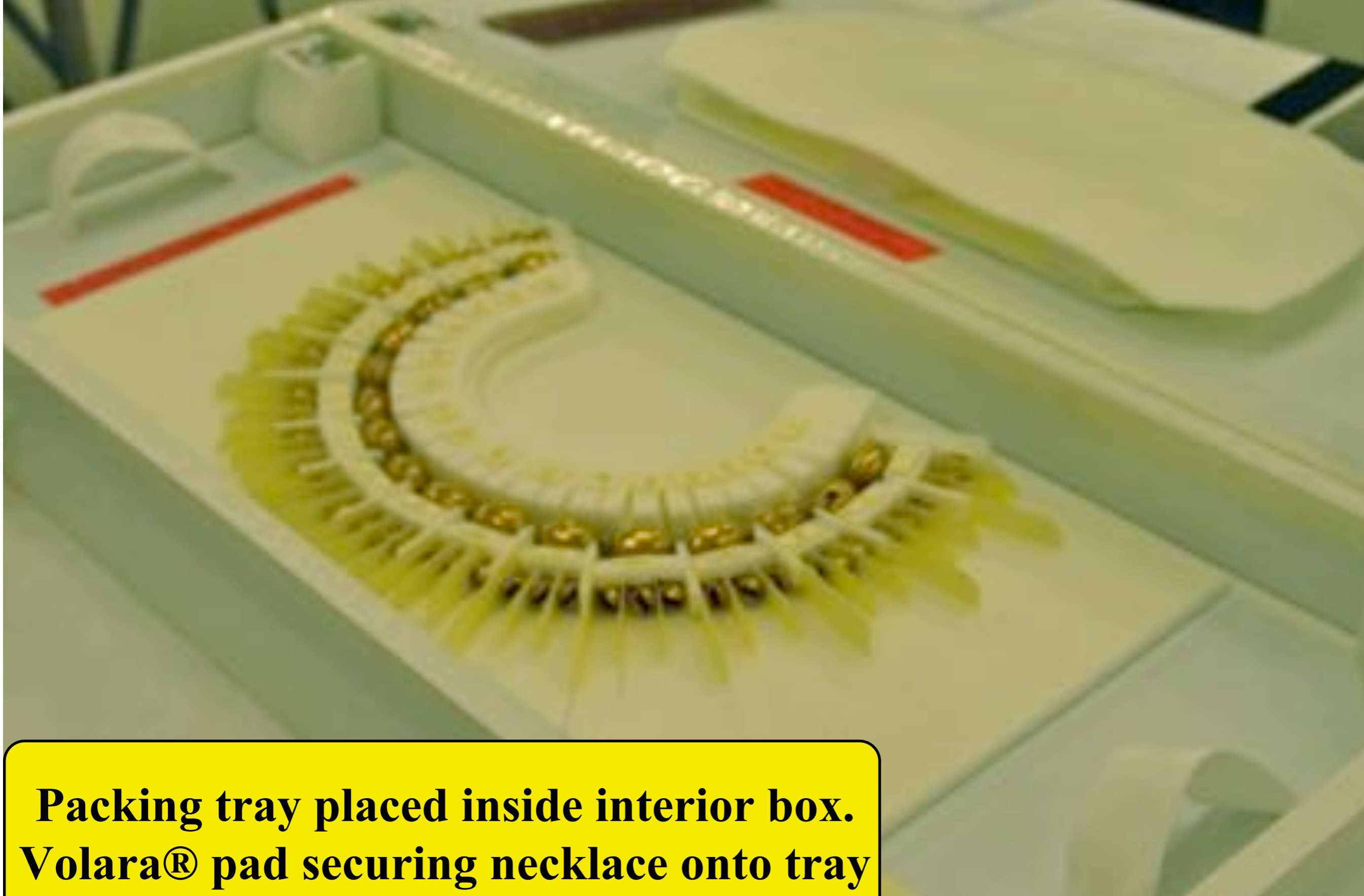
Empty packing tray with mounts pressure fitted into foam. Mask pads and pressure bridge are attached to tray with cotton twill tape.

**Gold Pre-Columbian
necklace with
multiple pendants.**



**Necklace on packing
tray faced with
Volara®. Individual
pendants are separated
by folder stock dividers.**





**Packing tray placed inside interior box.
Volara® pad securing necklace onto tray
is attached to underside of lid.**



Each folder stock divider slides back and forth in a slit to ease in the packing of the necklace. Bottom edges of dividers are folded under the Volara® to keep them in place on the tray.



**Native American shirt mounted
on display form.**



**Padded wood brace secures
exhibit mount in crate.
Volara® wrap secures costume.**



Inner and outer Volara® pads prevent excessive movement of lower sections of shirt.



Inner Volara® pad fitted to support outer pad. Pad is fastened around waist of display with a cotton web strap and buckle.

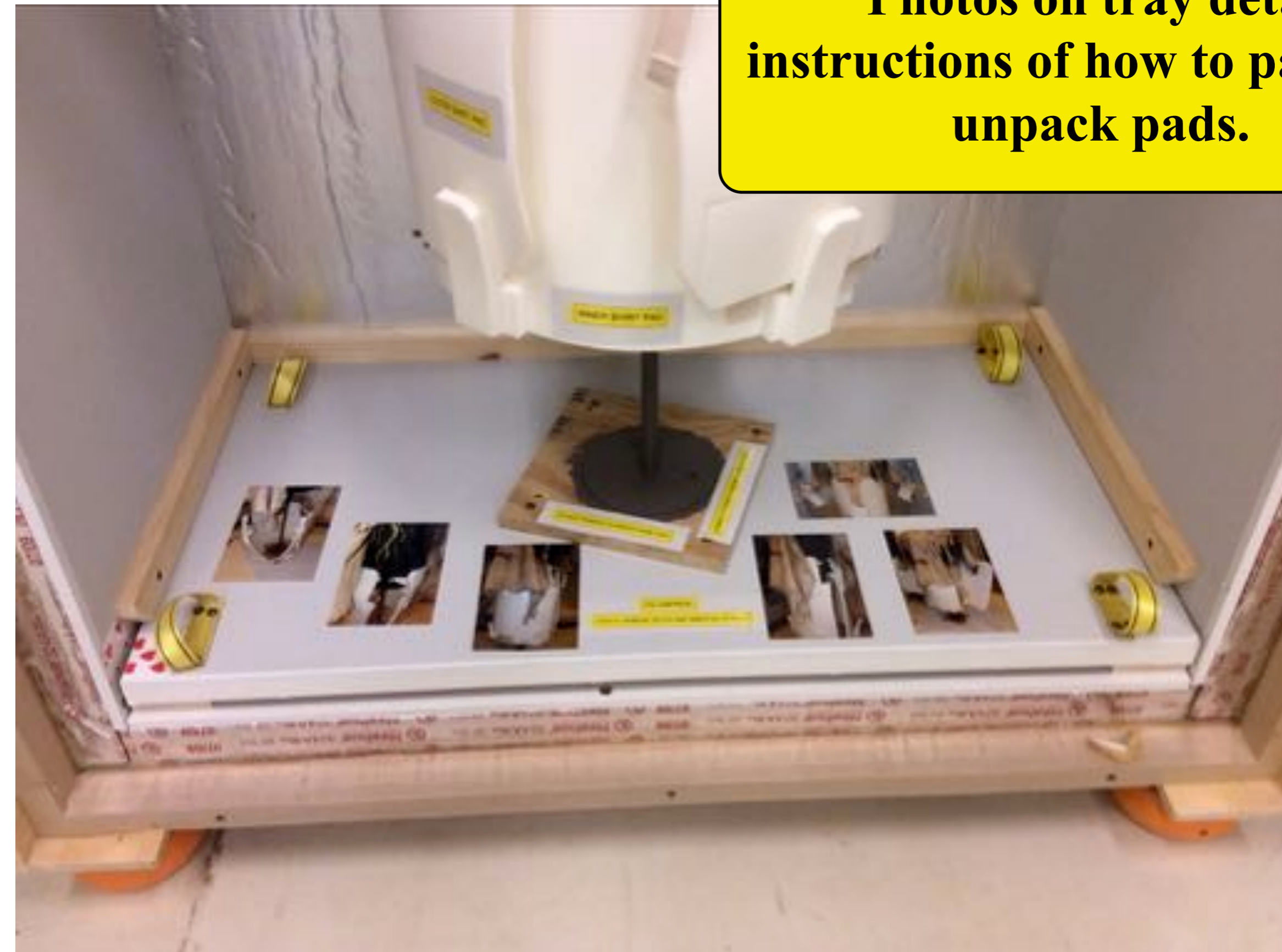


Outer pad fits onto tabs on lower edge of inner pad.



Outer pad is cinched with a cotton web strap and buckle. Shirt is secured between inner and outer pads.

**Photos on tray detail
instructions of how to pack and
unpack pads.**





Hinged supports keep arms extended, but fold down and out of the way so as not to impede unpacking.



Arm support in the lowered position.



Gold chalice set with cut diamonds.



Chalice packed in double-hinged box with Ultrasuede® covering side pads. Sharp prongs of the settings would snag on Nomex®.

A ring of Volara® under the foot positions the object on the box's tray.



Jeweled pins and medallions with hasps that would snag on a cavity lining of Nomex®. Fitted Volara® inserts lift out individually.



Volara® insert has slot to accommodate the hasp and pin on the back of the piece.



Fragile 700 year old tea storage jar with hairline fissure.



**Hinged packing mount with
three opening sides and
stationary upright.**



Object seated in packing mount.



**Object seated in packing mount.
Upper front panel in open position.**



**Photo and arrow orients
object in mount.**



**Upper front panel in open position.
Split in front panel eases access to
object.**

Packing mount fitted with wire rope isolators that help mitigate vibration and shock.





**Packing mount fitted
into travel crate.**

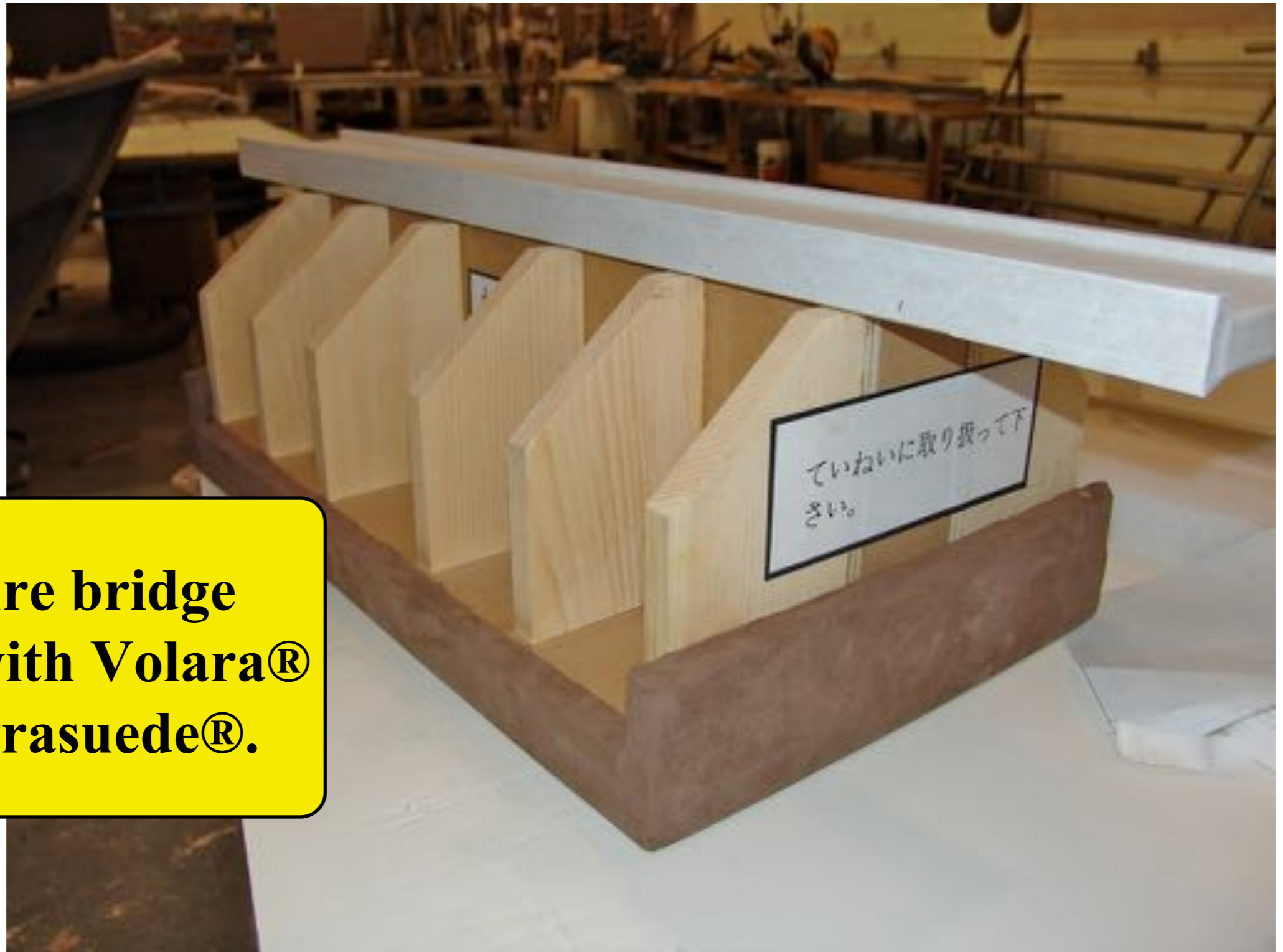



Wire rope isolators of various sizes.



**Edo period Japanese
palanquin with
delicate gold and
lacquer surface.**

**Pressure bridge
padded with Volara®
and Ultrasuede®.**



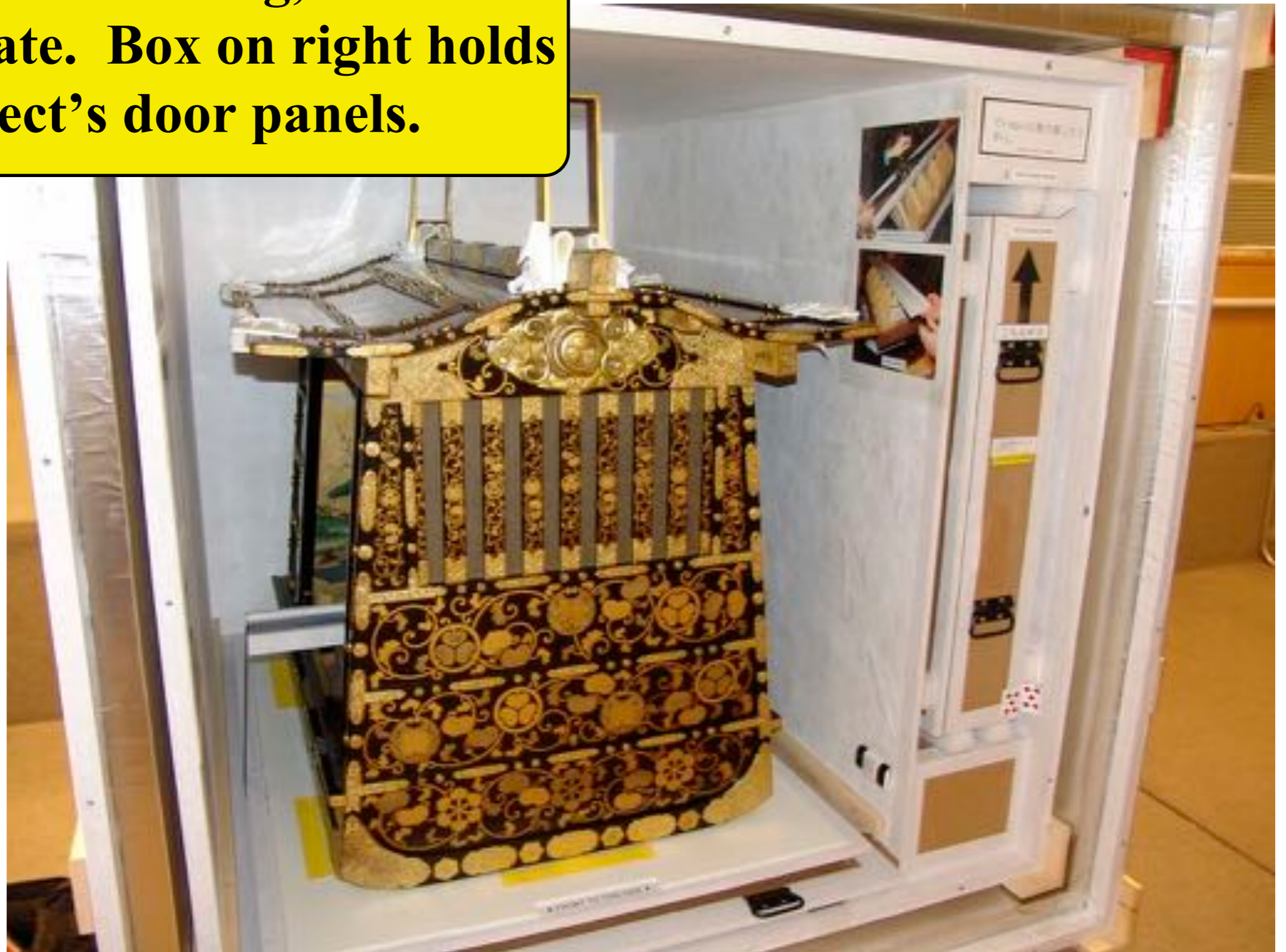
The image shows a close-up of a traditional Chinese cabinet. The cabinet's surface is dark wood with intricate, raised gold-colored floral and scrollwork patterns. A sliding wood tray is partially pulled out, revealing a white object underneath. A metal pressure bridge is positioned over the tray, designed to hold the object in place without touching its edges. In the background, a framed painting of a white crane is visible. A yellow text box is overlaid on the left side of the image.

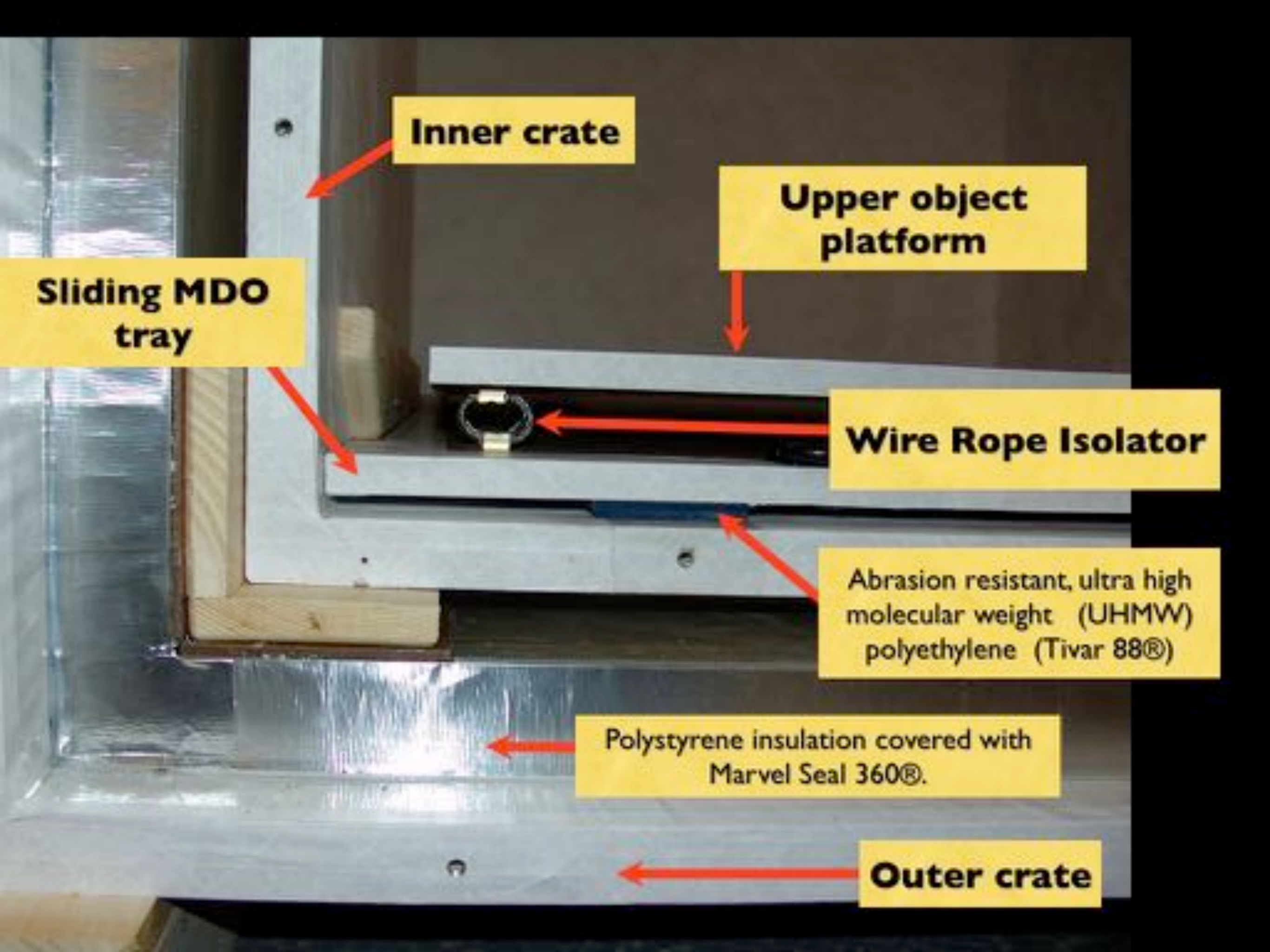
**Pressure bridge
secures object onto
sliding wood tray, but
keeps strap clear of
object's edge.**

Wood tray fitted with wire rope isolators sliding into travel crate.



Double, side loading, insulated travel crate. Box on right holds object's door panels.





Inner crate

Upper object platform

Sliding MDO tray

Wire Rope Isolator

Abrasion resistant, ultra high molecular weight (UHMW) polyethylene (Tivar 88®)

Polystyrene insulation covered with Marvel Seal 360®.

Outer crate



Native American wooden chief's seat. Note the high and sloping arm rests.

Steel display mount provides structural support to object's legs.





Stepped pressure bridge secures object to sliding tray.



Object on sliding tray fitted with wire rope isolators.

**Bronze bust packed
using 1" nylon web
ratchet straps
padded with
Ethafom® faced
with Volara®.**





**Larger bronze bust
packed using 2”
nylon web ratchet
straps padded with
Ethafom® faced
with Volara®.**

2” ratchet straps are secured directly to reinforced crate. Tivar 88® strips attached to crate deck are used as slides to ease removal of piece.





**Rare and fragile
18th century
Chippendale table
with pierced gallery
top and carved
arched stretchers.**



**Detail of the pierced
gallery top.**




**Sliding wood tray
with uprights that
support table under
the apron with felt
covered Ethafoam®
blocks.**



**Tray support
with table.
Initial stage
of packing.**



**Front brace is
removable and bolts
in place onto tray.
Guide rails locate
brace on tray.**

A photograph of a wooden crate containing a table. The crate is made of light-colored wood and has a lid on top. The lid is being lifted, revealing the table inside. The table has a dark wood top and legs. The crate is sitting on a wooden pallet. The text "Step 2: Remove Lid A" is overlaid on the image.

**Step 2:
Remove Lid A**

**Padded wood lid
secures table
onto packing
tray.**



Detail showing lid padding and gap between gallery top and lid.

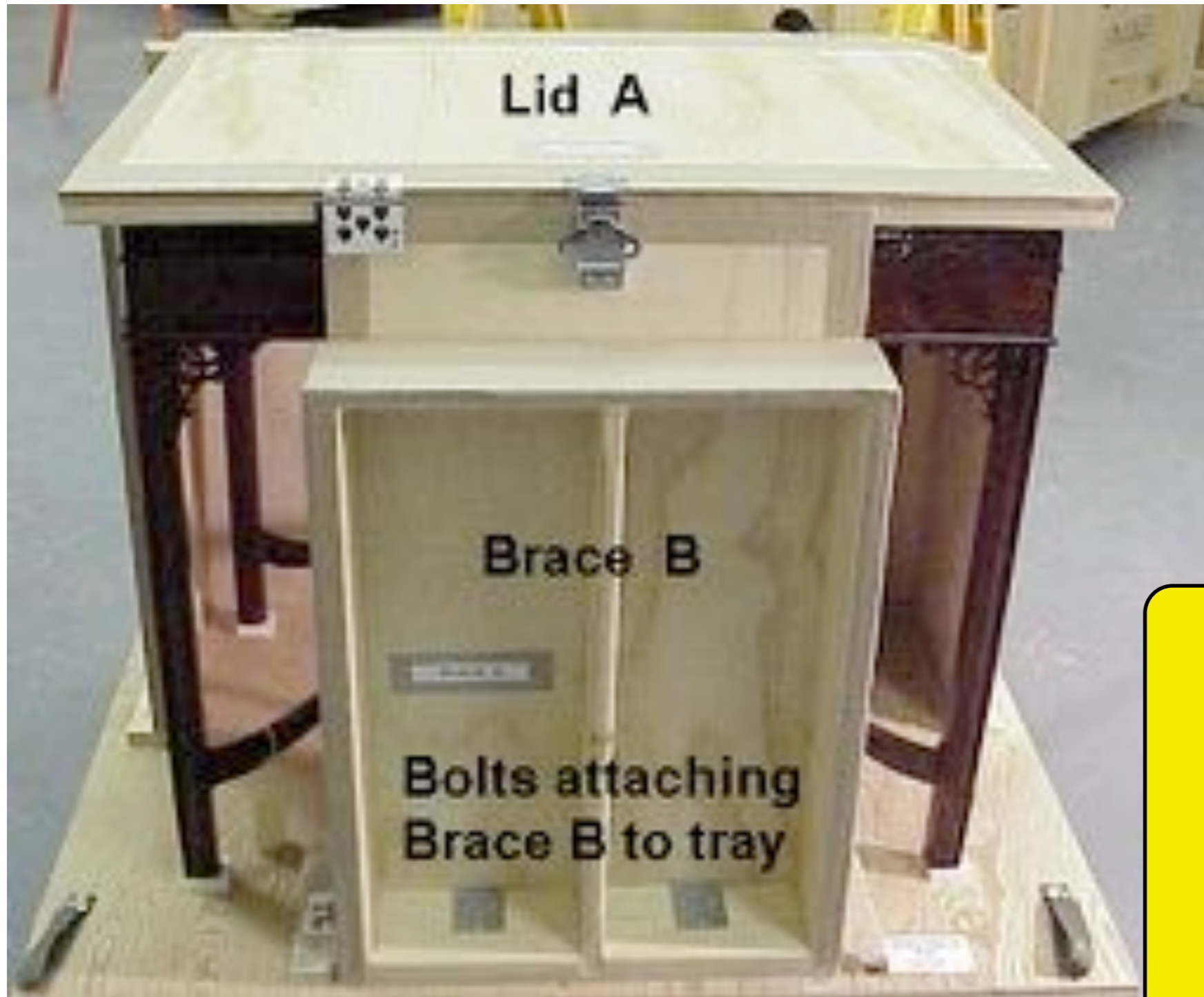


Table secured on sliding tray. Tray then slides into crate.



**Interior component of an
Imperial Fabergé Easter Egg.**



Imperial Fabergé Easter Egg in the open position showing the interior compartment.



Interior component laid flat for travel on Volara® lined tray with hinged lid.

Detail showing limited points of contact with the object.





Federal Period gilt eagle wall bracket with chains and pendants.

**Wall bracket laying on
tray against padded
upright support.
Velcro® strap holds
base of object in place.**





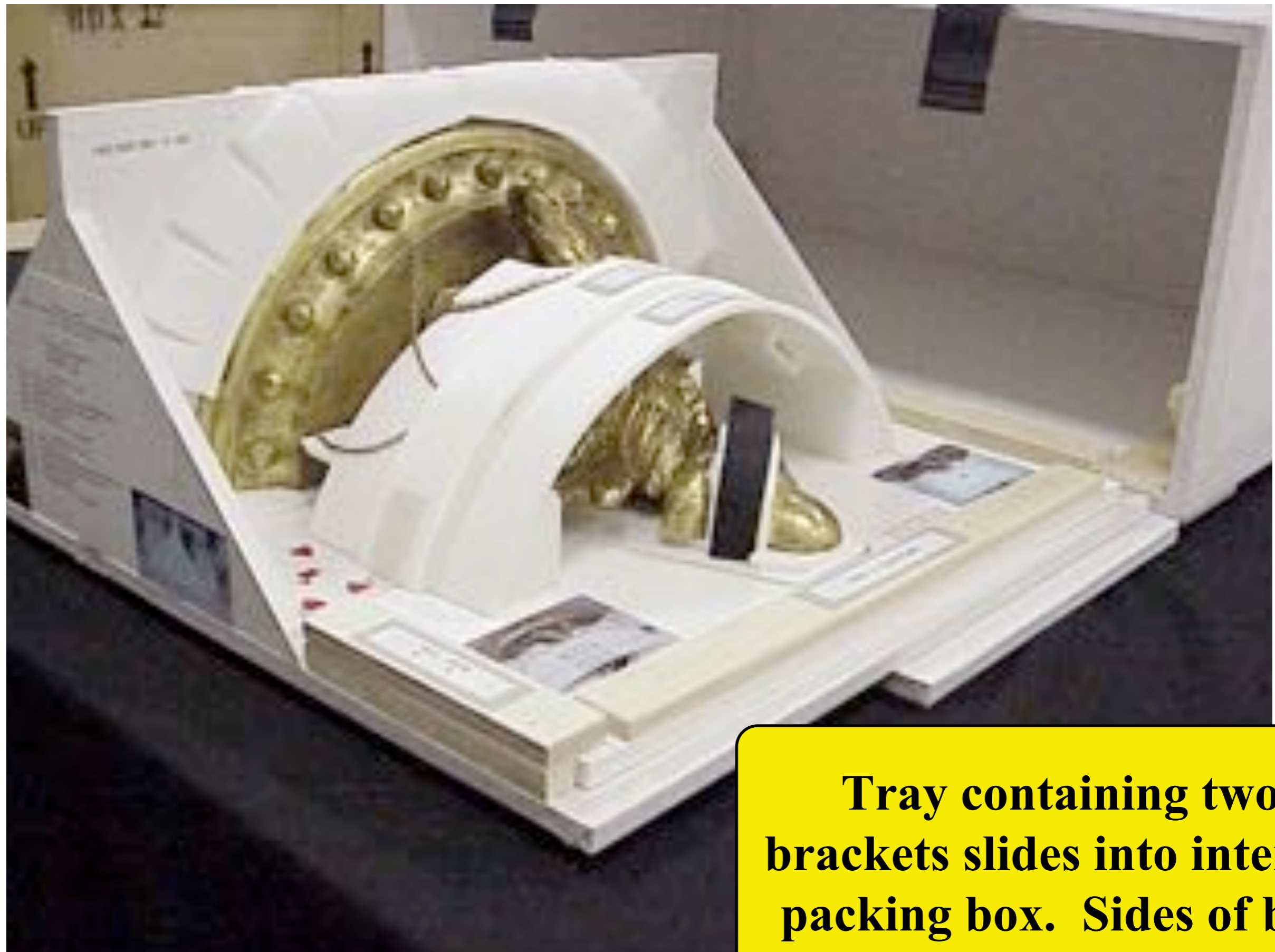
Secondary insert slides into place onto tray with an arch support made of Volara®.



Holes in arch are sized for the gilt pendants.

**Hinged flap
secures pendants
into holes in arch.**





Tray containing two brackets slides into interior packing box. Sides of box lock arch supports onto tray.



Indian shrine with peacock ornament on top.



**Ornament loosely
attached and rotates
freely on object.**



Heat fused Volara® pad prevents rotation.



One piece pad slips on from the rear and is held in place with a flap at the neck.



Pad functions in place independent of object's primary packing.



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