

## Illustrated construction manual: The Camera Obscura

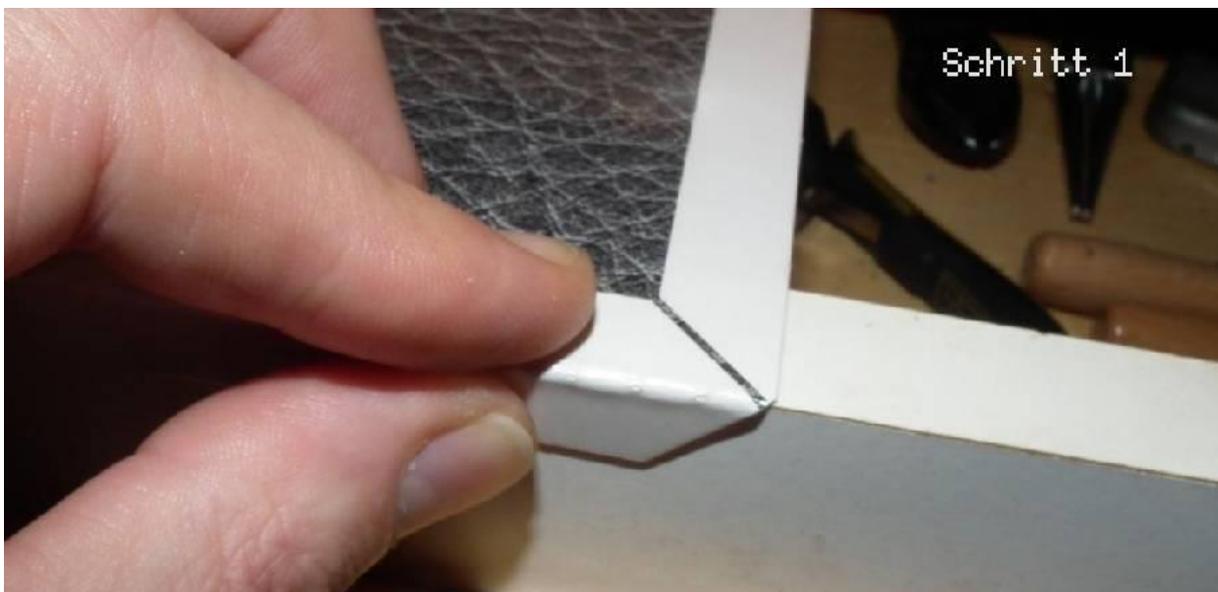
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<https://michelswunderland.de/solderiron/camobs.html>

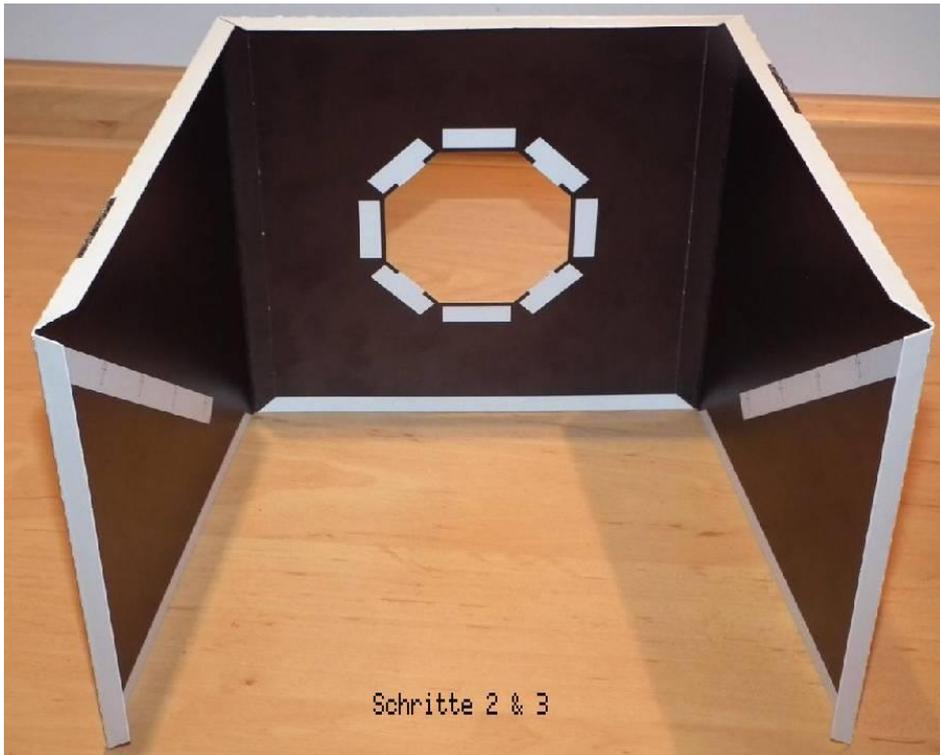


The parts of the cardboard kit are distributed over eight sheets, and there is also a lens and a smaller sheet with the lens aperture. In addition to glue, scissors and a craft knife, toothpicks (to distribute the glue on the glue tabs) and a weight for pressing glued areas as well as a gold felt-tip pen and some black paint are helpful.

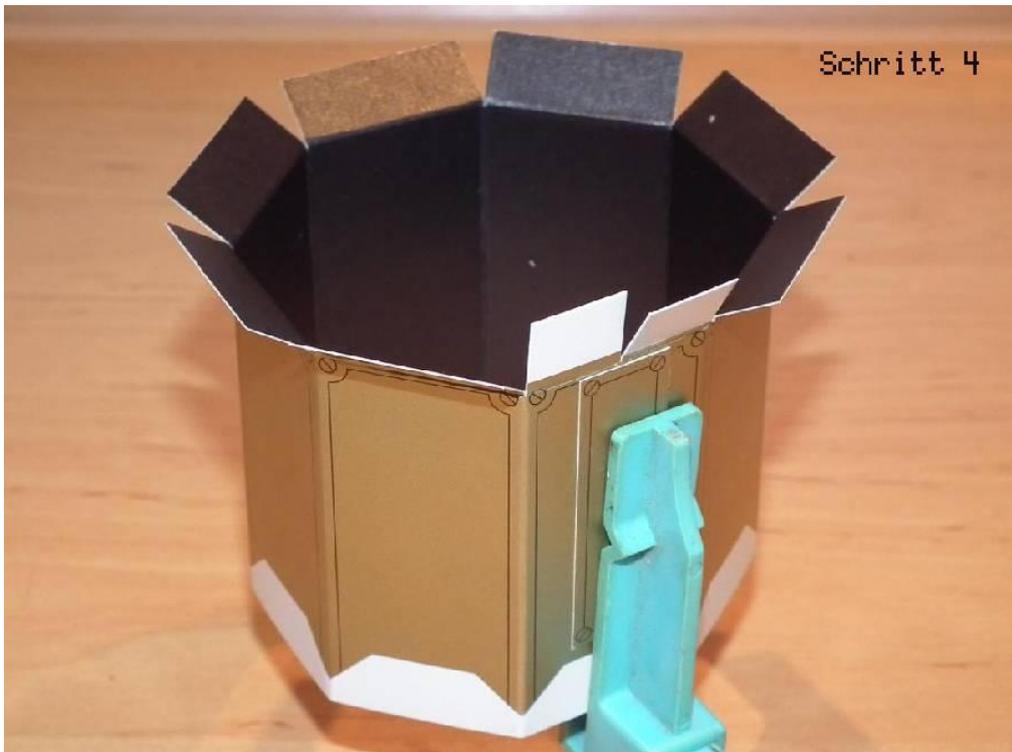
The gluing was done with a solvent-based multi-purpose glue, with two exceptions for the tube supports and the locking of the back wall door.



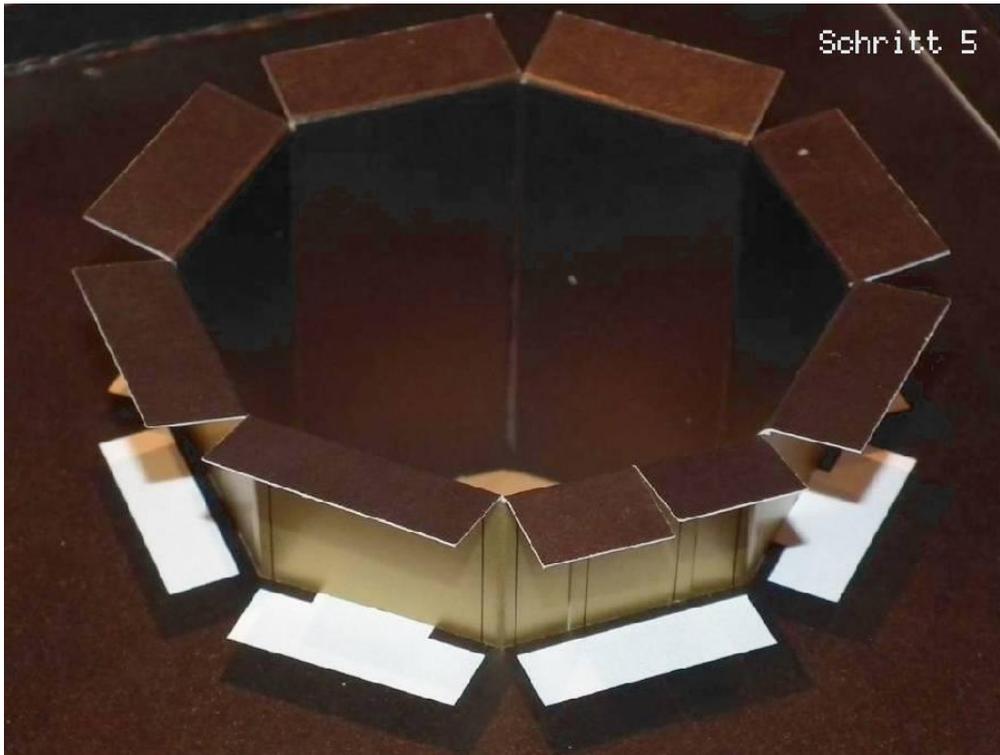
**Step 1:** Folding the glue flaps of the front wall and the side walls - an edge is very helpful for a clean result.



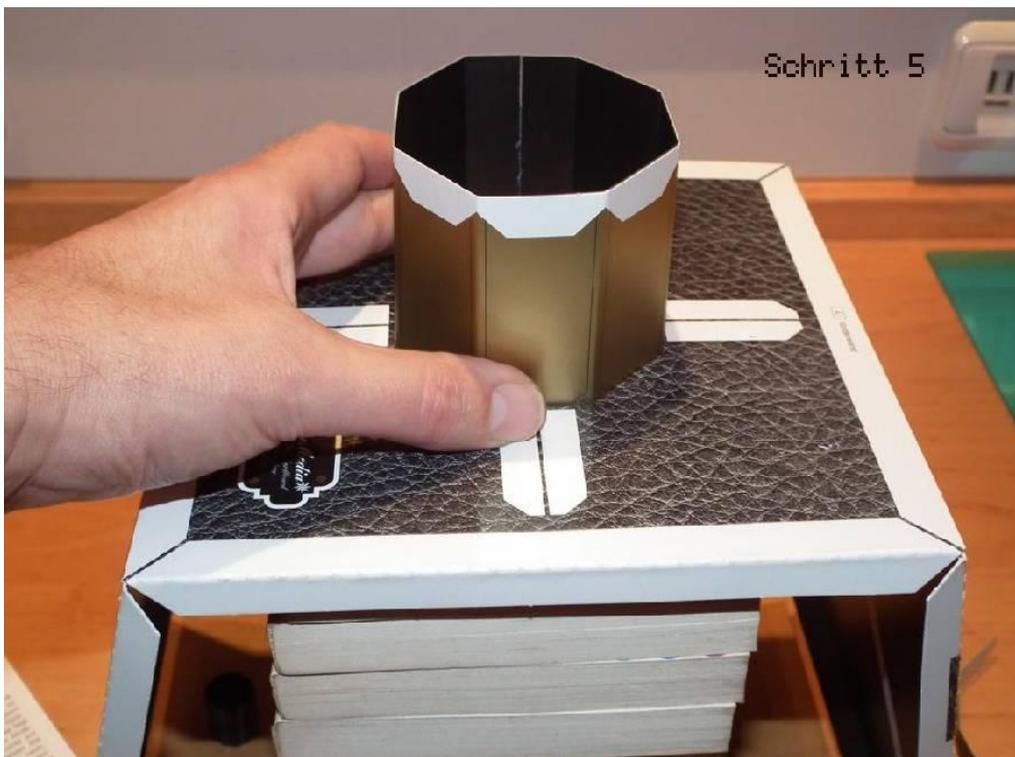
**Steps 2 & 3:** Side walls glued to the front wall - make sure that the workpiece rests flat on the surface while drying.



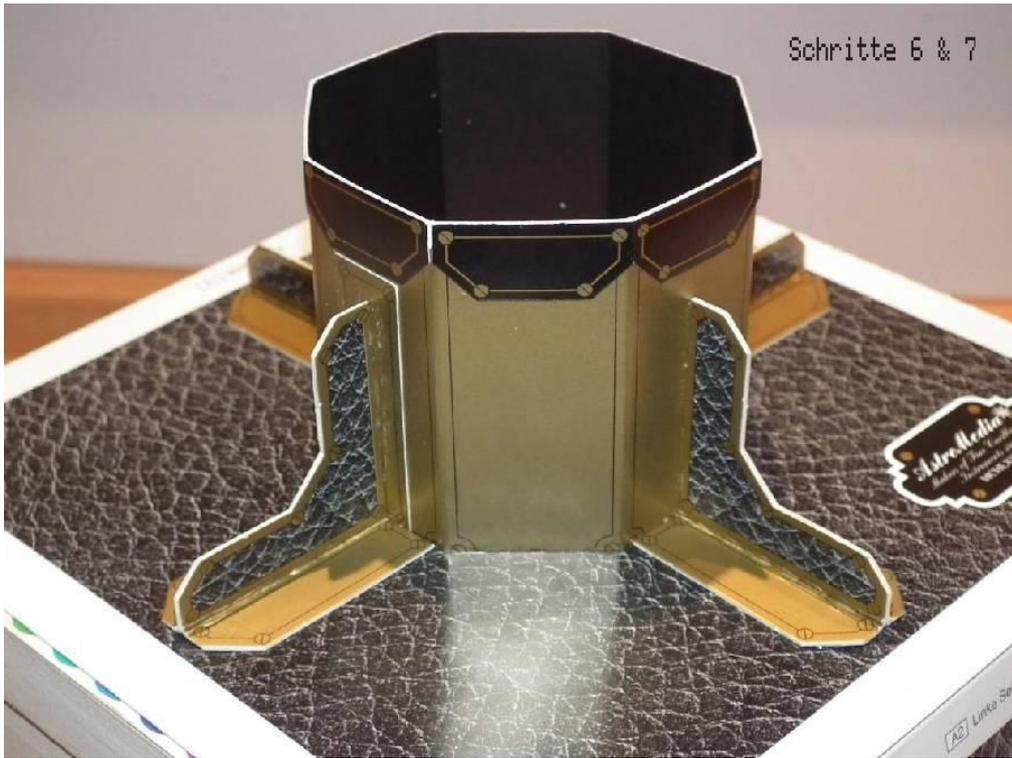
**Step 4:** Gluing on the connecting piece creates the octagonal tube. The miniature clamp prevents the glued parts from slipping.



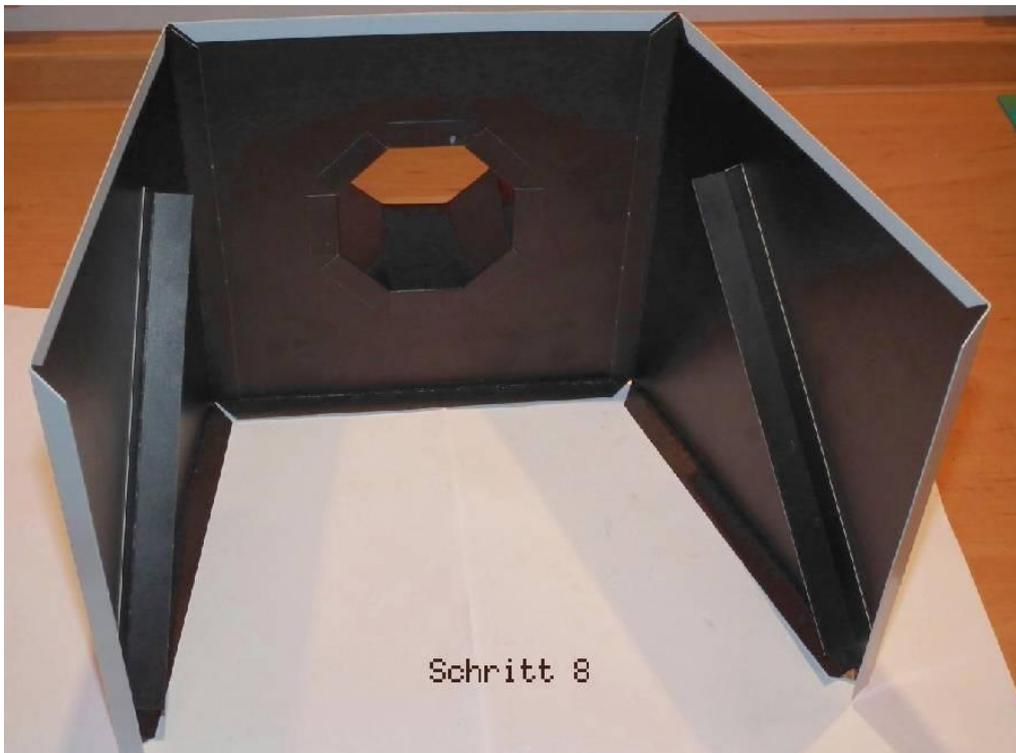
**Step 5:** Installation of the finished outer tube in the front wall - here the view from the inside.



**Step 5:** Installation of the finished outer tube in the front wall - here the view from the outside. In order to be able to press the adhesive tabs on the inside against the front wall, it is helpful to create a simple device for pressing on.



**Steps 6 & 7:** Glued-on edge reinforcement and tube supports. The flapless edges of the supports that touch the tube are best bonded to the tube with a little super glue.



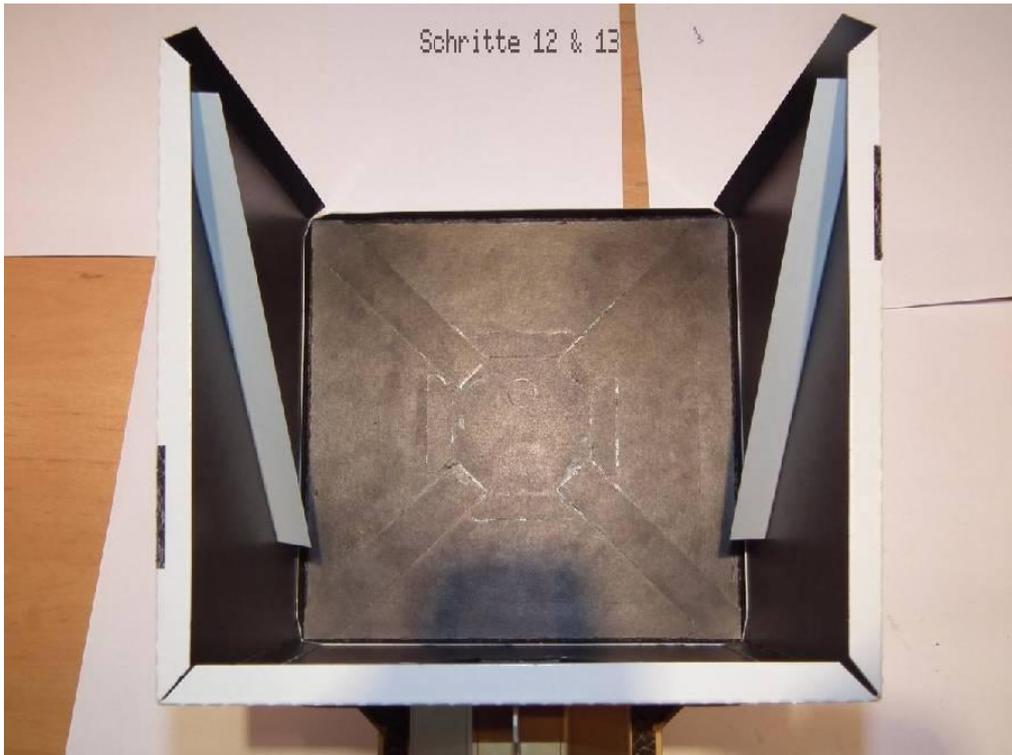
**Step 8:** The paper strips glued to the inside of the side walls, serve as mirror holders.



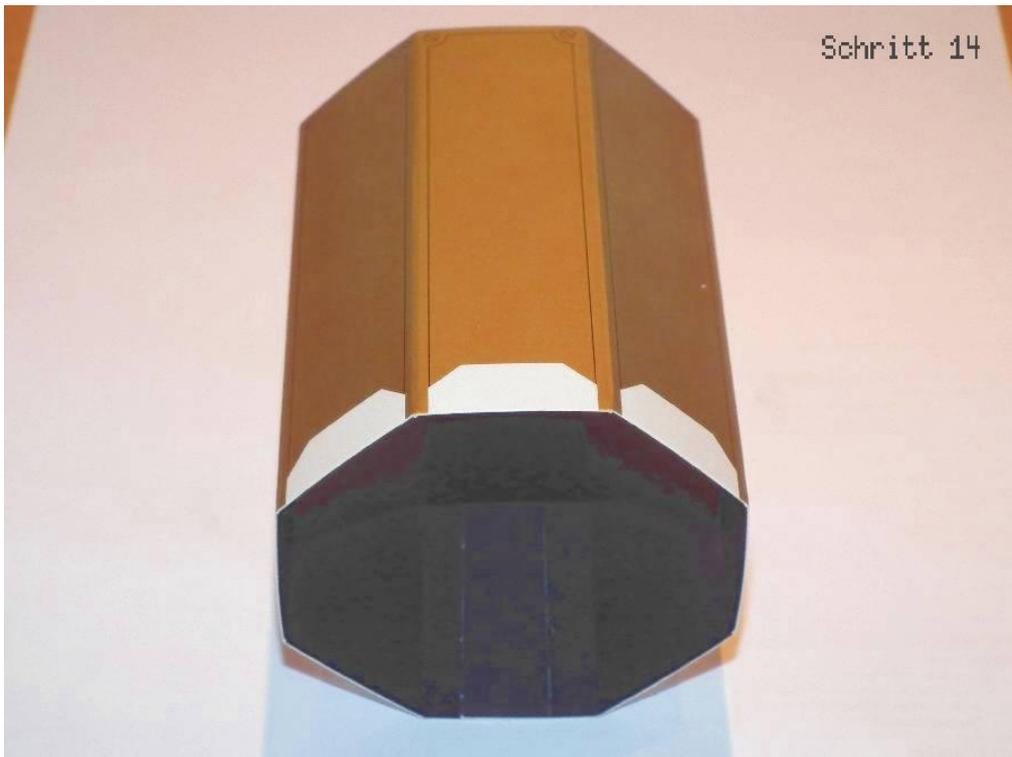
**Steps 9 – 11:** The base panel, which at this point consists of 13 parts - one part still has to be glued on...



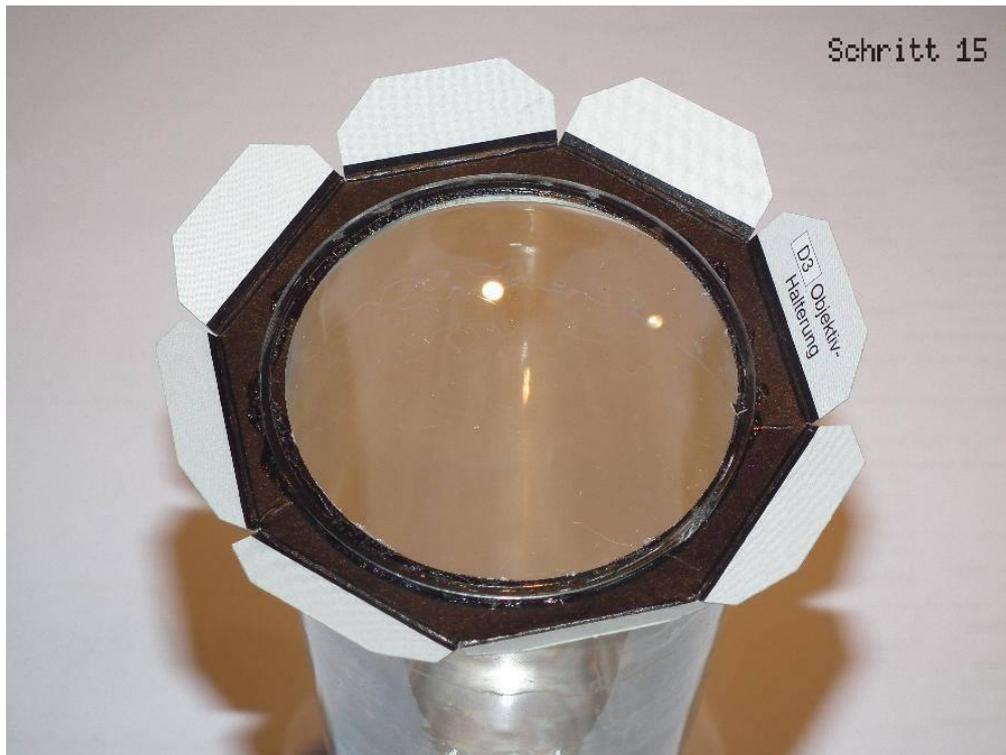
**Steps 12 & 13:** Base panel glued to the front wall and side walls, which in the meantime has received its 14th part, the central cover.



**Steps 12 & 13:** Base panel glued to the front wall and side walls - seen from the inside.



**Step 14:** The octagonal inner tube is formed using a glued-on connecting piece.



**Step 15:** Lens glued into the lens holder. A drinking glass of suitable diameter was used as a fixture for the gluing.



**Step 16:** The tabs of the lens holder are glued to the inner tube. A rubber band helps to keep the tabs in place until they dry.



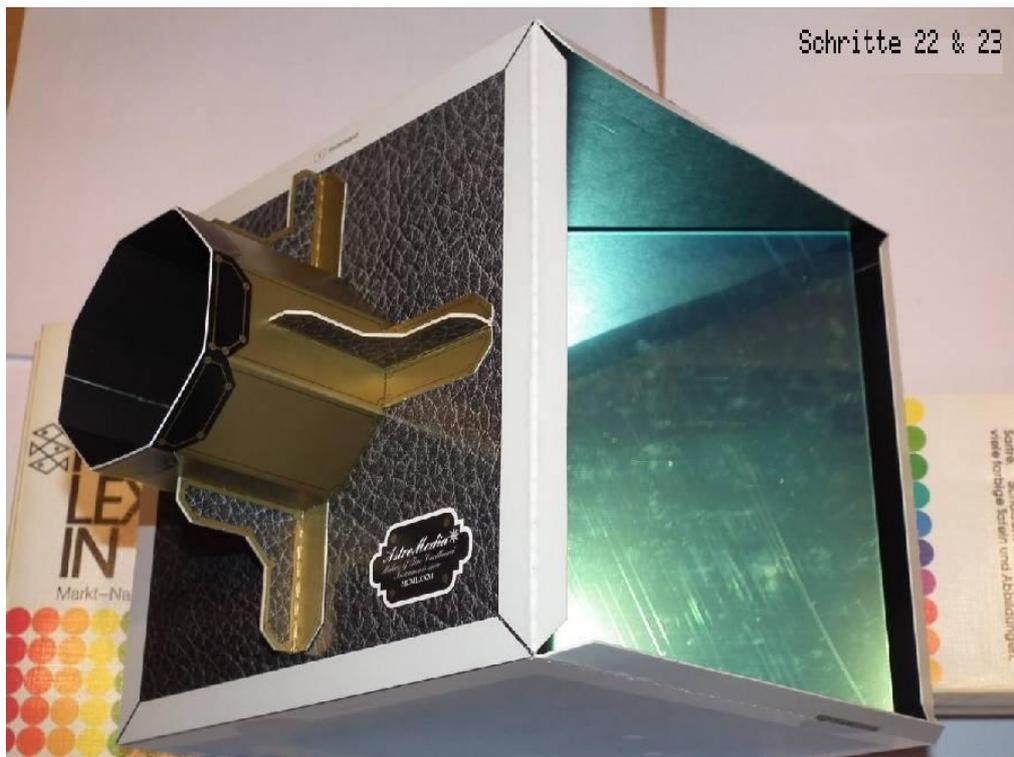
**Step 16:** Insert inner tube and test for smoothness of movement.



**Steps 17 – 20:** The back door with parts of its latch already pre-assembled. The shaft (E5) of the inner bar is glued to the handle after pushing it into the hole of the door - best with a small drop of super glue.



**Steps 20 & 21:** Finished back wall with the door and its hinge and latch.



**Steps 22 & 23:** A view of the inserted mirror. While the glue sets, it is advisable to tilt the housing to bring the mirror into a horizontal position. On the right hand side, you can see the back wall that was previously inserted.



**Step 24:** Only visible when looking closely: The transparent pane glued to the flaps of the side walls on the top.



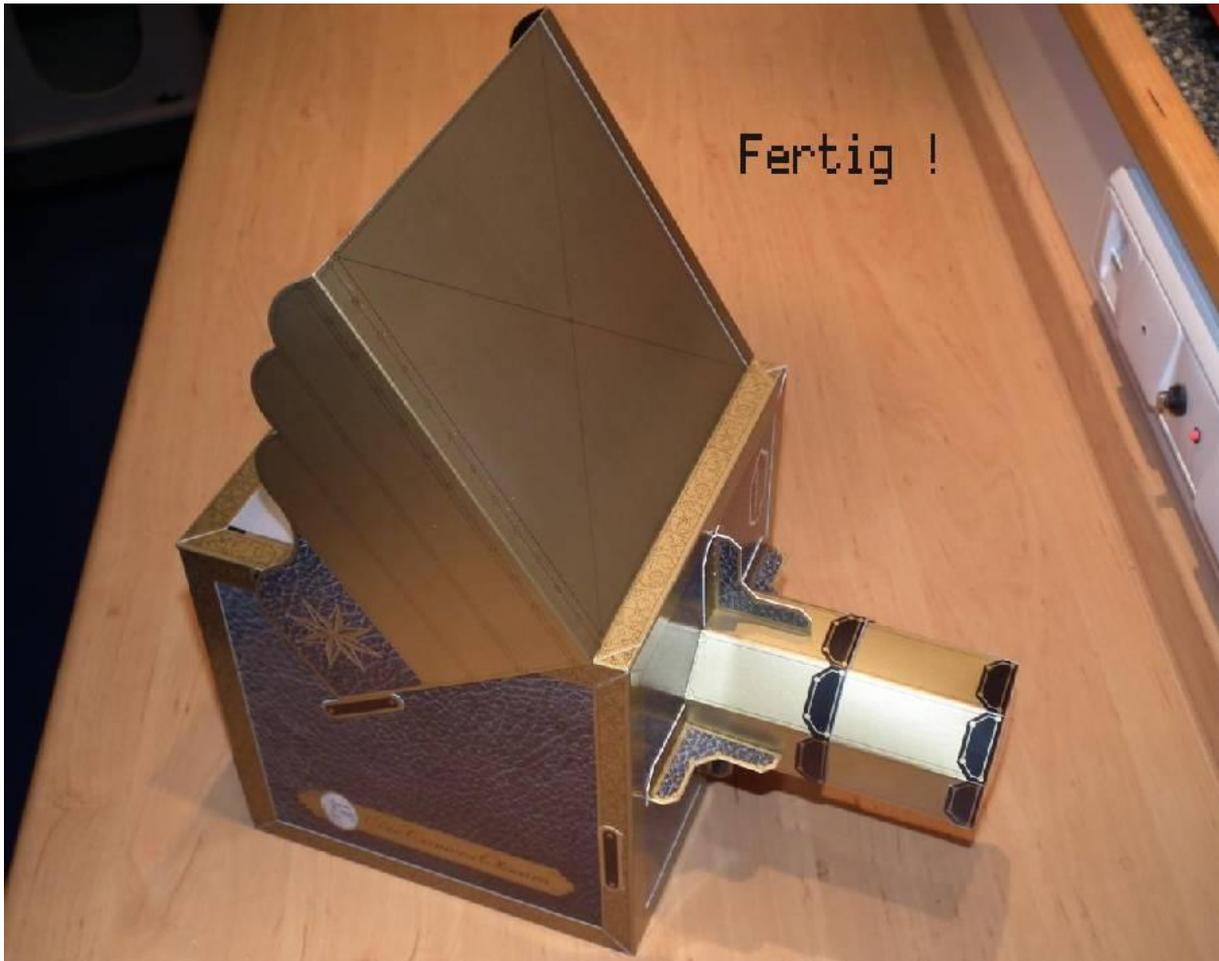
**Steps 25 – 27:** The edges covered with the 12 corner strips.



**Steps 28 – 30:** Important for the function is the top cover – it helps keep the projection screen in the shade.



**Steps 31 & 32:** With the final assembly of the three footrests for the side panels on both sides, the camera obscura is complete...



**Finished model - ready for the first test.**



**A first, amazingly accurate image!**

In a dark room, you need a well-lit object to achieve a good result on the projection screen, whereas outdoors in bright daylight, consistently good results are achieved.