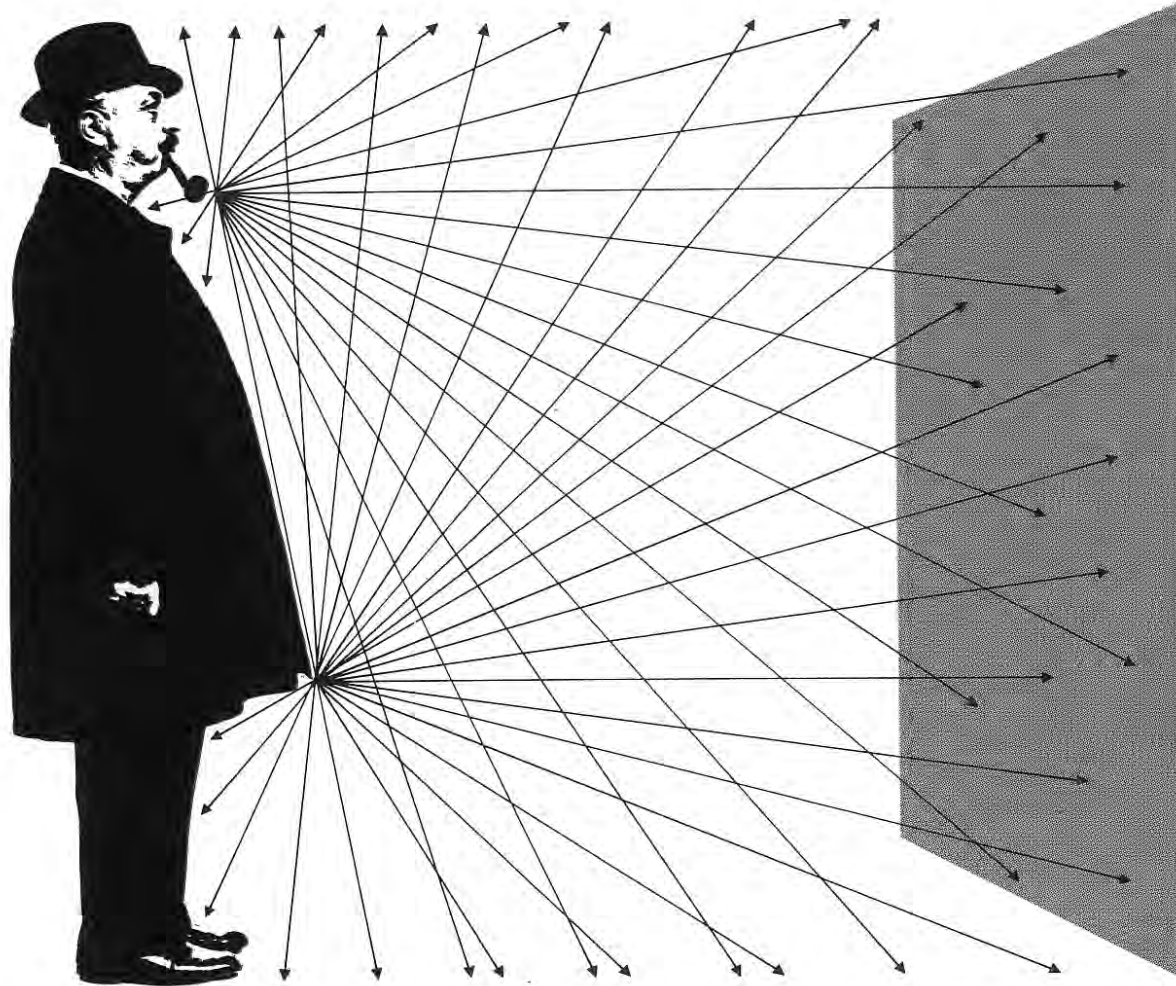


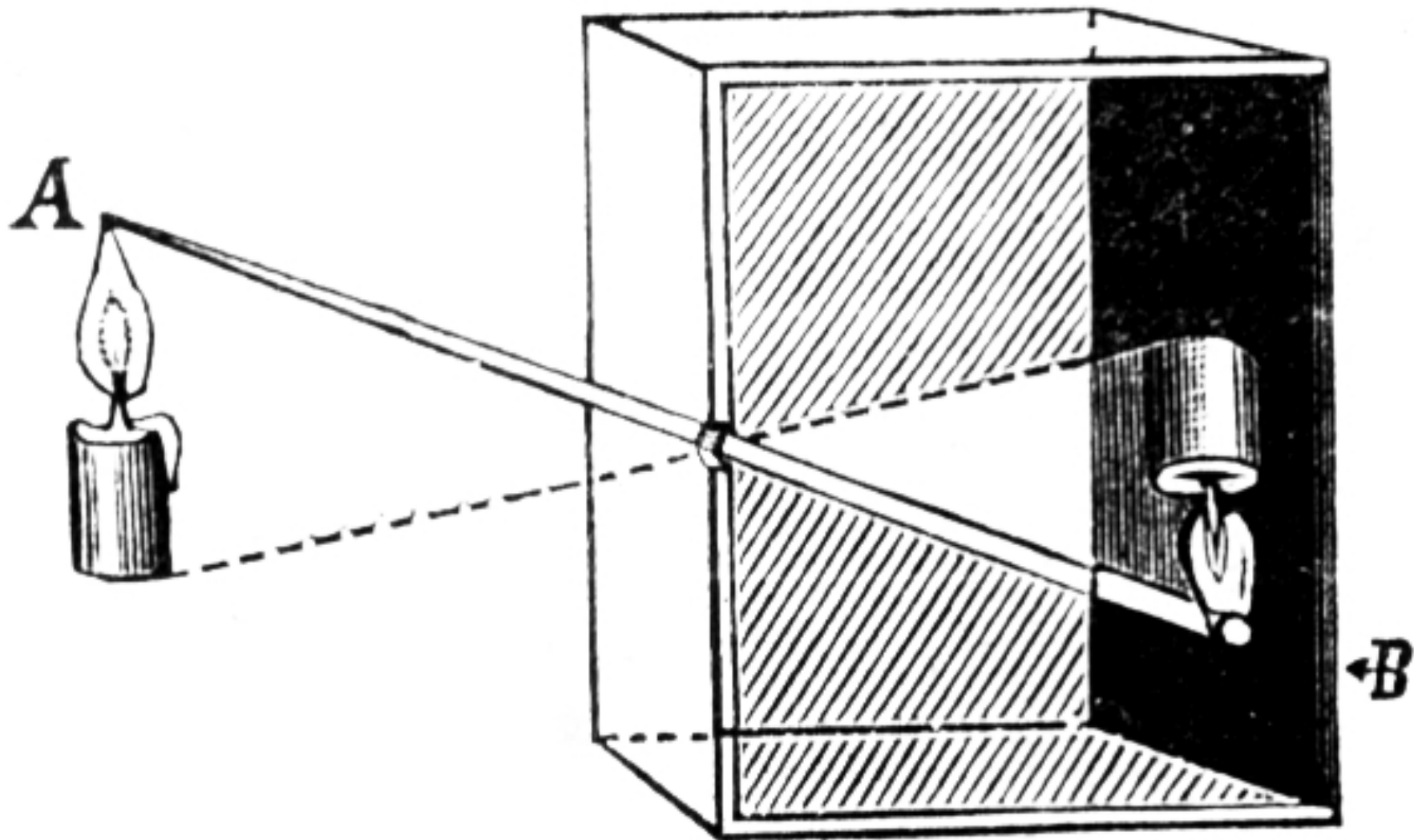
CAMERA OBSCURA

ABELARDO MORELL



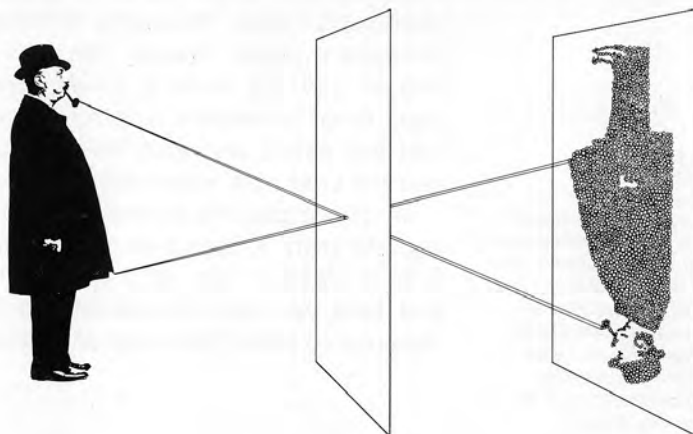


Uncontrolled light rays, shown reflected from two points—the subject's pipe and the bottom of his coat—travel in straight lines in almost all directions toward a sheet of film placed in front of the subject. Rays from the pipe strike the film all over its surface and so do rays from the coat; they never form an image of pipe or coat at any place on the film. The result is not a picture but totally exposed film.





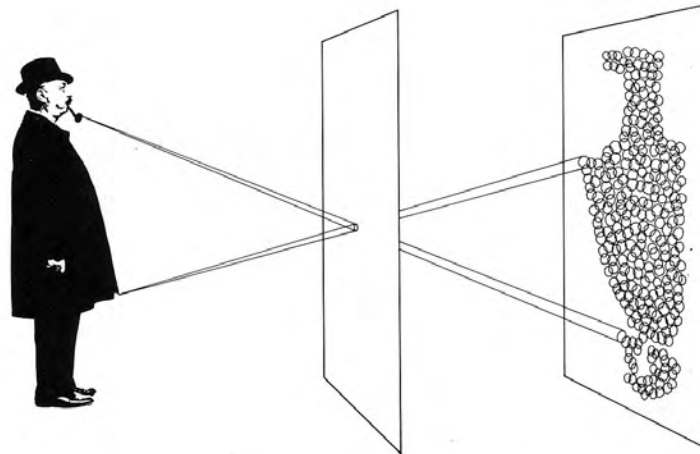
1/50”



To take this picture of a fence and barn in California, photographer Ansel Adams replaced the lens of an ordinary camera with a thin metal disk pierced by a pinhole with $\frac{1}{50}$ -inch diameter. The film was exposed for 6 sec. The way the pinhole produced an image is illustrated in the diagram at left. Only a few rays of light from each point on the subject can get through the tiny opening, and these strike the film in such tight clusters that blurring is reduced to a minimum. The result is a soft but acceptably clear photograph.

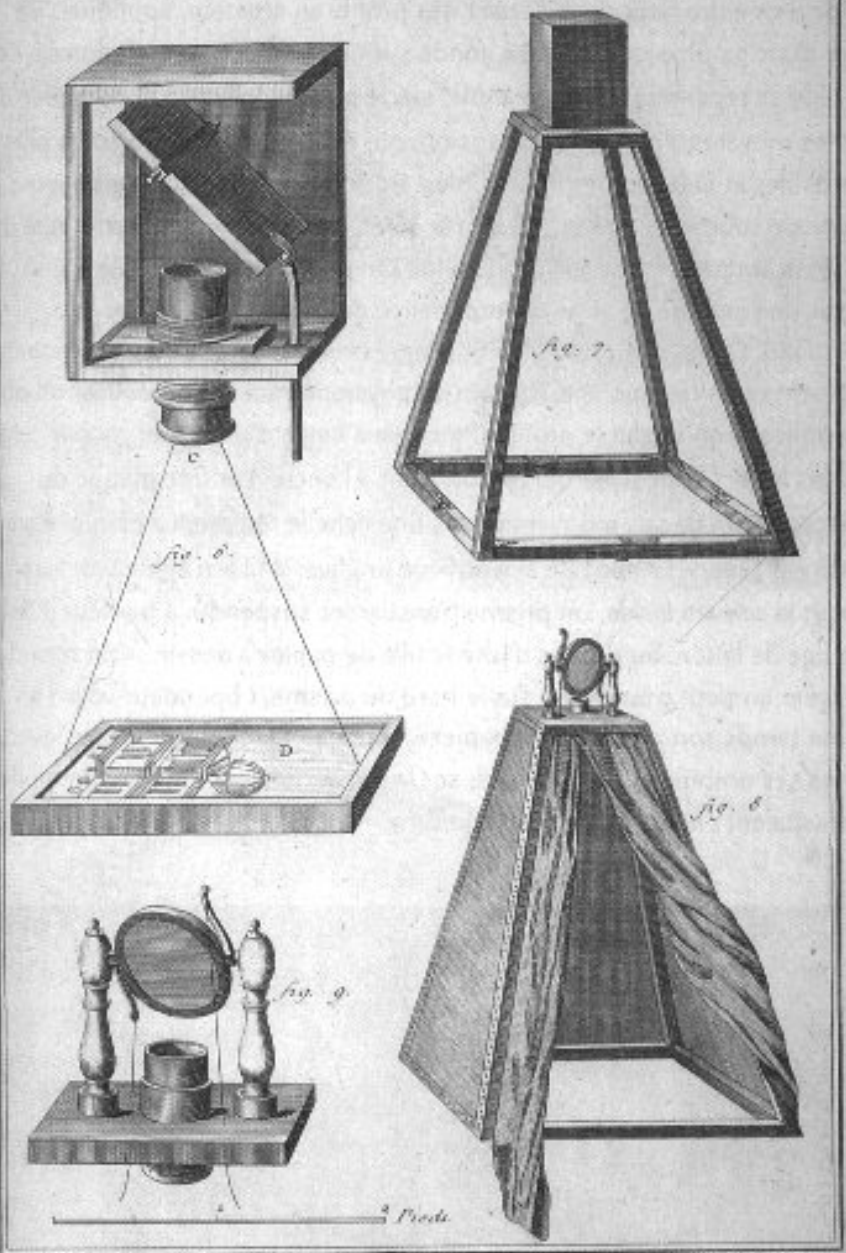
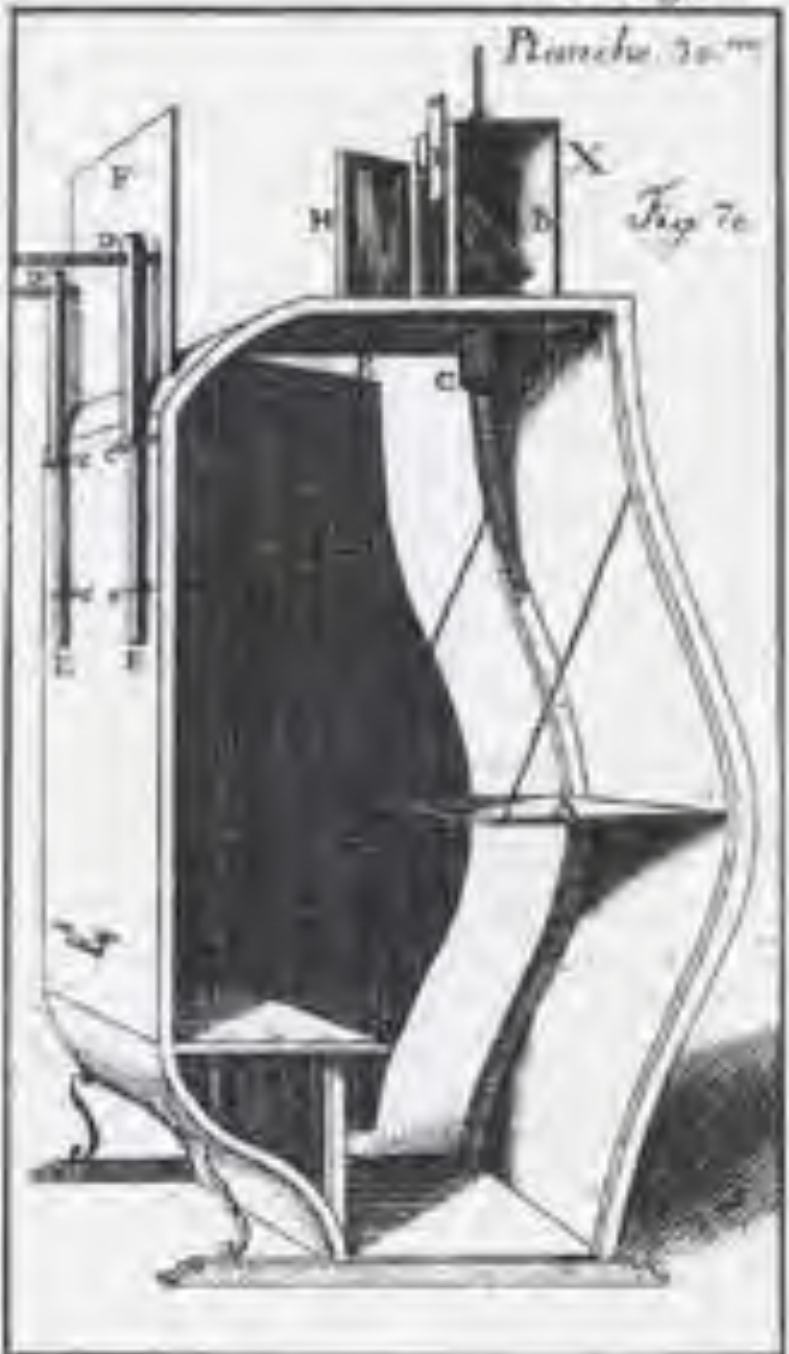


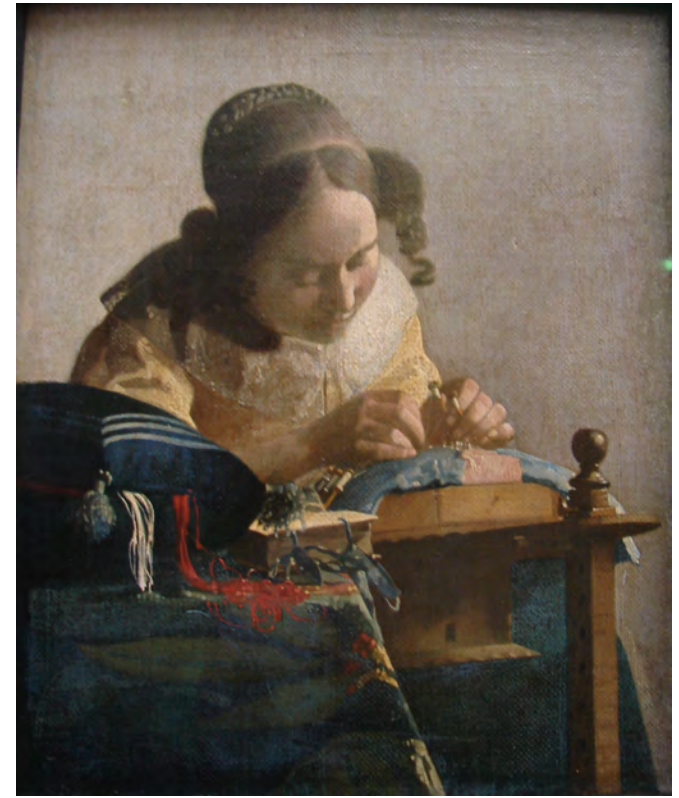
For a second photograph of the same scene, Adams increased the size of the opening to $\frac{1}{8}$ inch, which meant reducing the exposure time to $\frac{1}{5}$ sec. The result is an extremely out-of-focus picture. As shown in the diagram at right, the larger hole permits a greater number of rays from each point on the subject to enter the camera. These rays spread before reaching the film and are recorded as large circles. Because of their size, these circles tend to run into one another, creating an unclear image.



$\frac{1}{8}$ "

Fig. 7c





A great number of studies have investigated the subject and, although most scholars now agree that Vermeer did in fact use a camera obscura, there is still great debate to exactly to what extent he did so.



[HTTP://VIMEO.COM/5212904](http://vimeo.com/5212904)



[HTTPS://VIMEO.COM/40989010](https://vimeo.com/40989010)

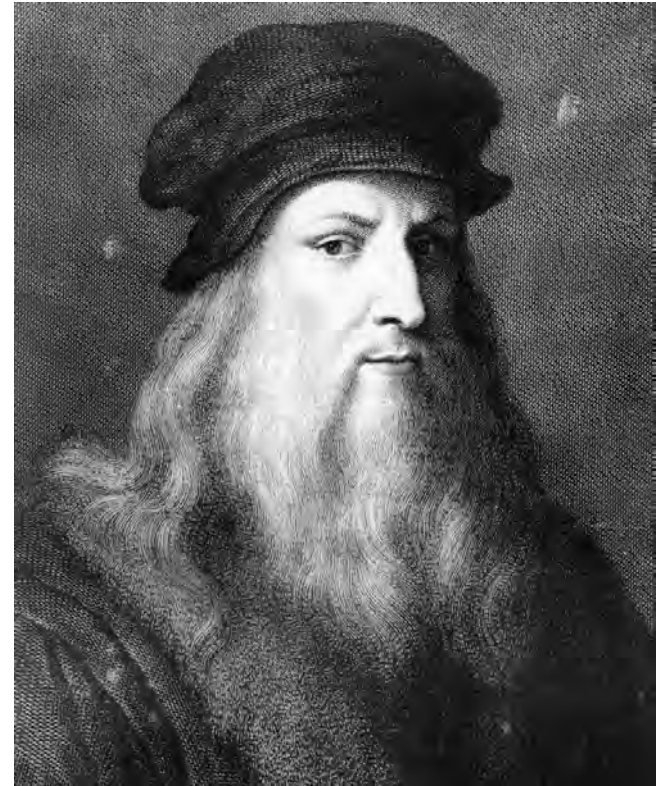


REPROJECT

— THE ART OF CAMERA OBSCURA —

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=-
CR5YWZSID0](https://www.youtube.com/watch?v=-CR5YWZSID0)

LEONARDO DA VINCI (1452 -1519)



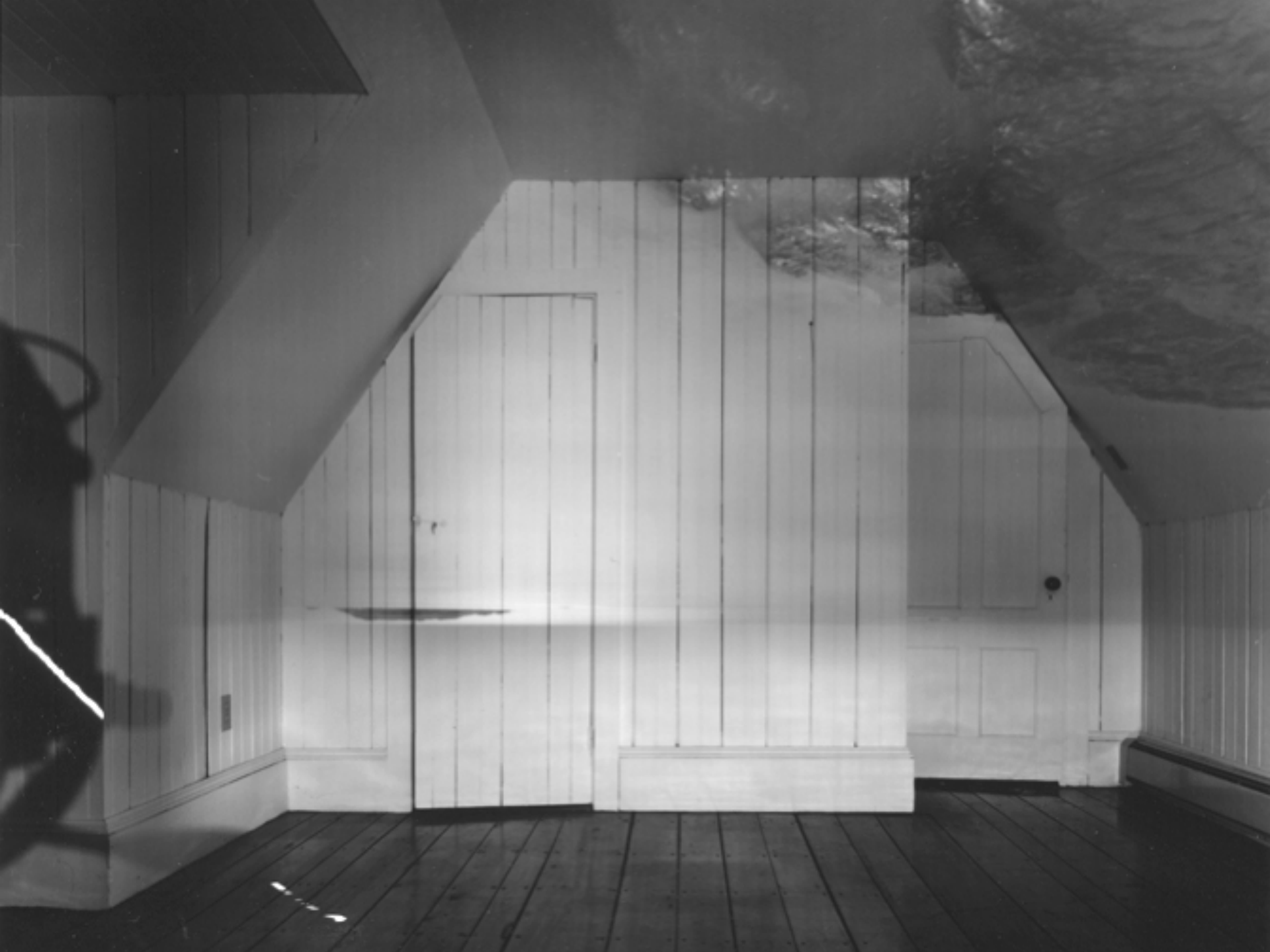
In writing on the eye, Vinci incorporates the camera obscura effect seen through the pinhole. He writes;

"O marvellous, O stupendous necessity, thou with supreme reason compellest all effects to be the direct result of their causes; and by a supreme and irrevocable law every natural action obeys thee by the shortest possible process. Who would believe that so small a space could contain the images of all the universe? O mighty process! What talent can avail to penetrate a nature such as these? What tongue will it be that can unfold so great a wonder? Verily none! This it is that guides the human discourse to the considering of divine things. Here the forms, here the colours, here all the images of every part of the universe are contracted to a point. What point is so marvellous? O wonderful, O stupendous necessity---by thy law thou constrainest every effect to be the direct result of its cause by the shortest path. These are miracles...forms already lost, mingled together in so small a space it can recreate and recompense by expansion. Describe in thy anatomy what proportion there is between diameters of all the lenses in the eye and the distance from these to the crystalline lens."













ASIV
BEVIT

LIZING MOISE
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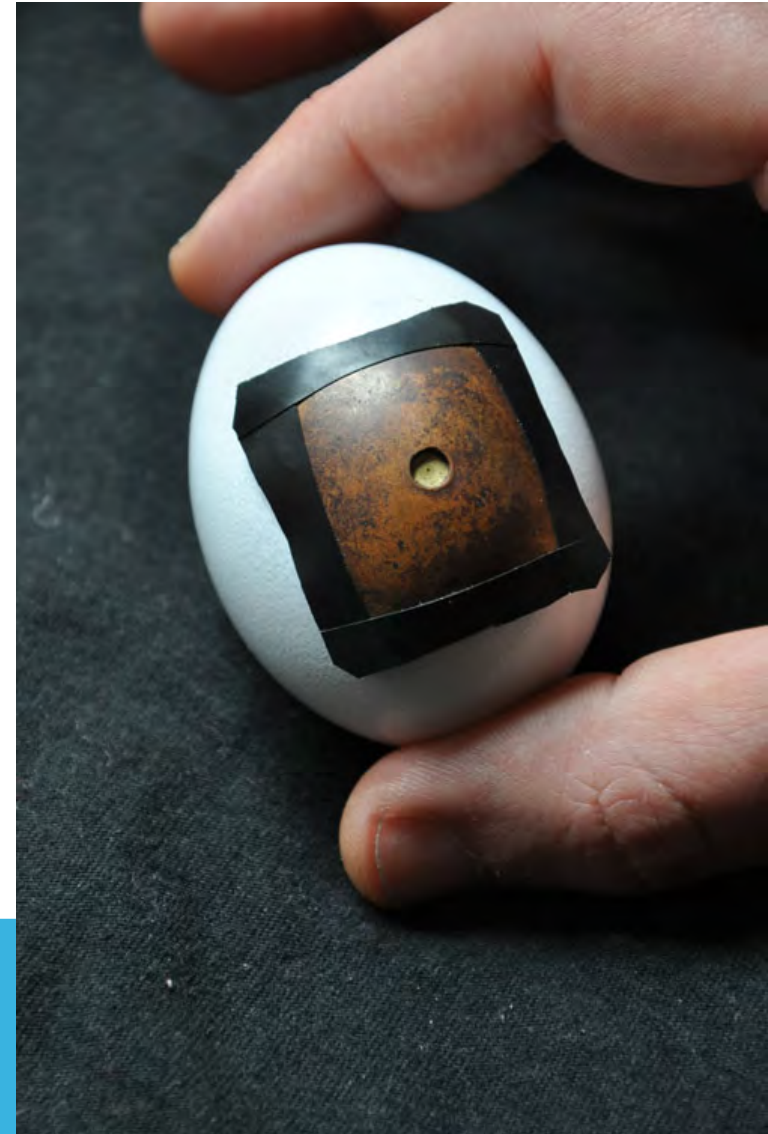














près les orages. C'est le parti de celui qu'on
l'appelle *l'hérétique gauche*, du héros des deux-mou-
vements gagnés le héros des deux millions. Il a
ses maux, ses chefs et ses cercles. Il rasole les
et la société, les rebuts de la révolution, les
le la franc-maçonnerie, et fait la guerre pour
de, en attaquant à la fois tous les principes.
réta bien sa tête, mais non sa queue. Il se
soutient au milieu des deux autres partis pour
pas le reconnaître, mais trop peu pour qu'il
tienne compte dans une étude du genre de la

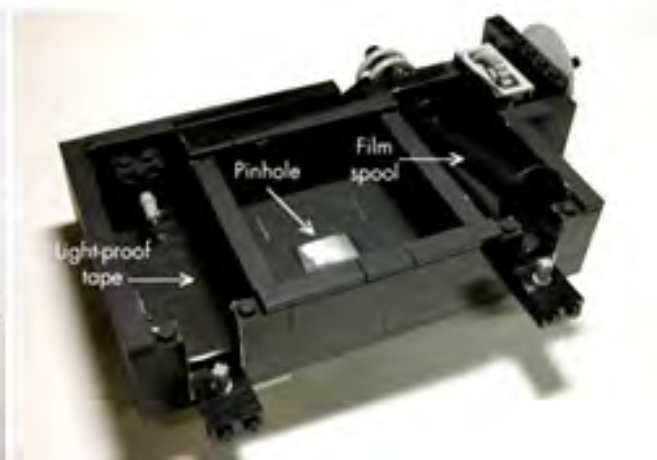
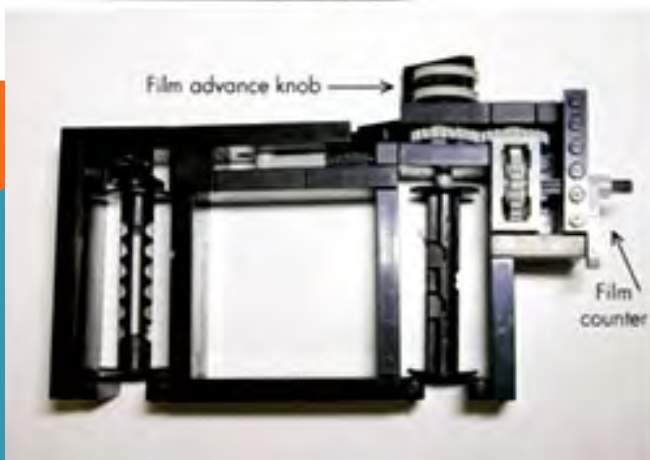
et voulons pas, croyez-le bien, nous occuper
n'être exclusive du parti vainqueur. Quel
pourrions-nous y trouver? Mais puisque ser-
gent dans les couvents, que ses officiers traî-
ent à sa suite dans les rues, que ses clairons sonnent
promenades, qu'on le rencontre partout, et
initiale il fait *Rome nouvelle*, il faudra bien
occuper.

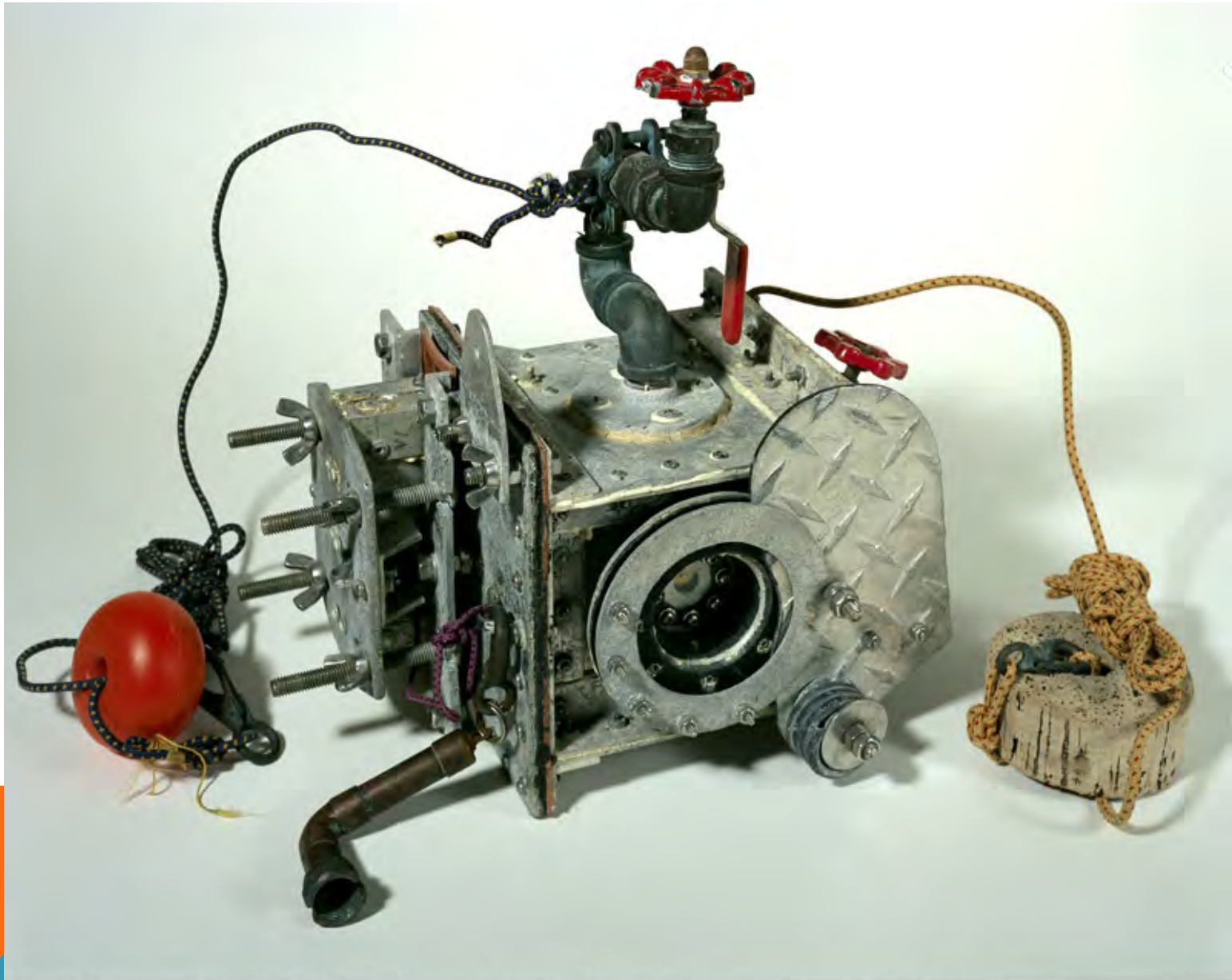
sur de deux ans dans la Ville éternelle tout

ROME NOUVELLE

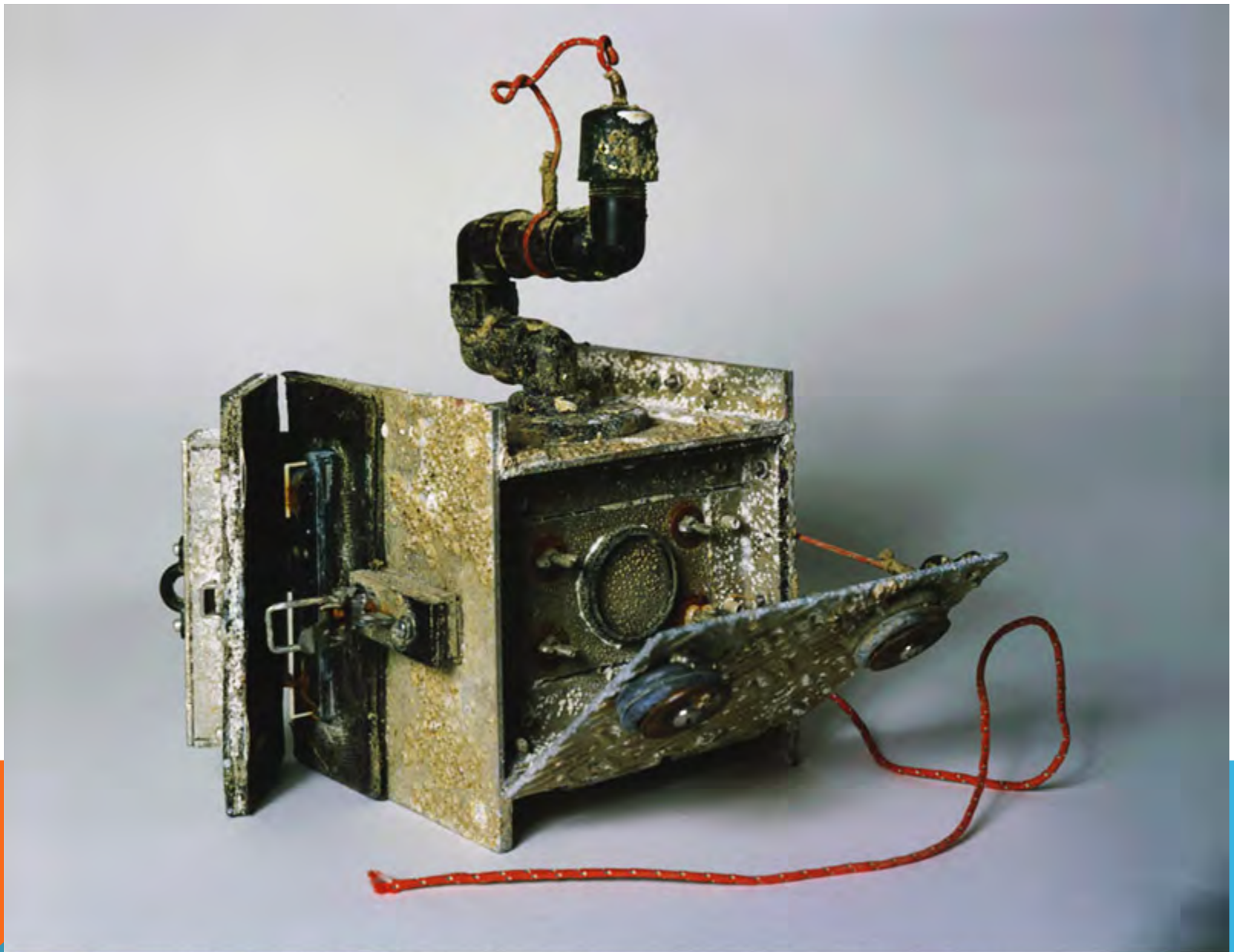


Nous partons de n'importe où, du Nord ou du
Midi, de l'Est ou de l'Ouest... nous prenons le train,
ou pour mieux dire, le train nous prend et nous
emporte... puis, nous voilà partis. Nous traversons,
sans nous arrêter, Marseille la *becarde*, Gênes la
superbe, Pise la *silencieuse*; nous saluons au pas-

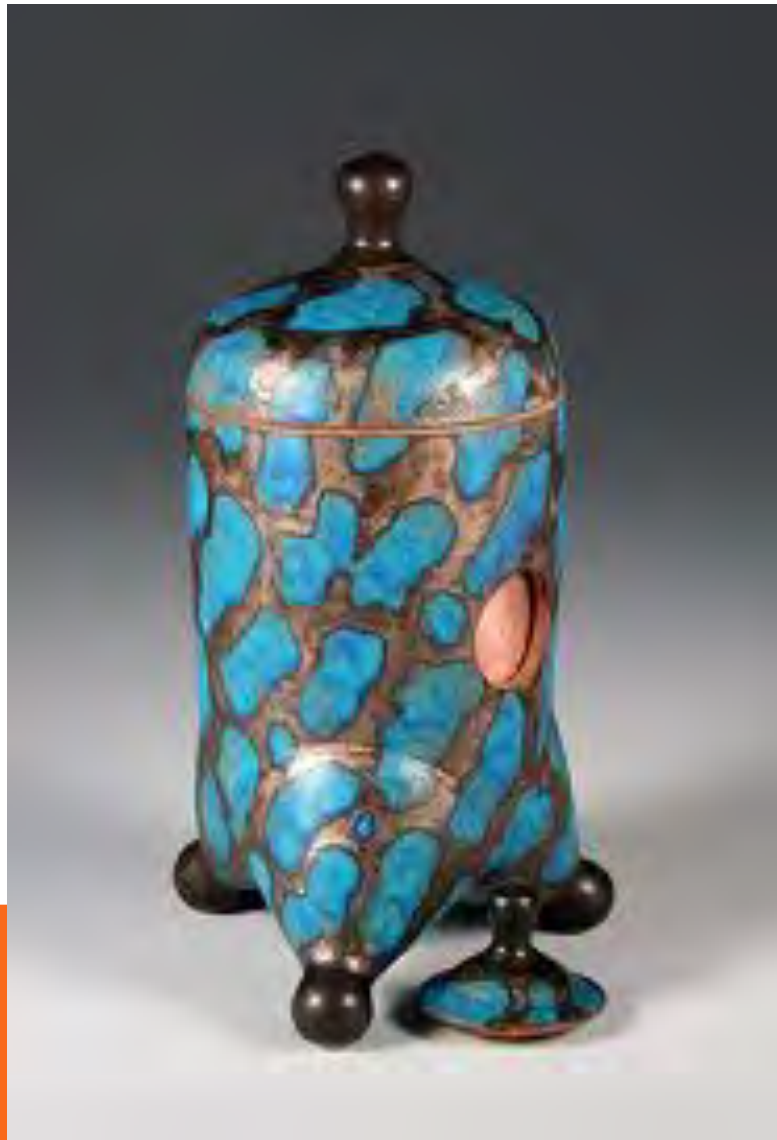




Donald Lawrence. *Underwater Pinhole Camera III*, 2002. Aluminum construction with miscellaneous fittings.



Donald Lawrence. *Underwater Pinhole Camera I*, 1997. Aluminum construction with 4" x 5" film holder.









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video-features-bullet-time-using-625-
pinhole-cameras-and-35mm-film/](http://petapixel.com/2013/05/25/video-features-bullet-time-using-625-pinhole-cameras-and-35mm-film/)

[https://www.youtube.com/watch?fe
ature=player_embedded&v=pkeDB
wsIaZw](https://www.youtube.com/watch?feature=player_embedded&v=pkeDBwsIaZw)