
WE WILL BE MAKING ACTIVE FORM

In response to the relative redundancy of architect-designed buildings and the proliferation of commercial structures that are rolled out to a highly formulaic spatial format across the world's cities, **Keller Easterling** advocates a new architecture of 'active form'. These active forms potentially perform as 'verbs' rather than 'nouns' to the city's activities, providing 'the means by which the field changes' and the 'repertoire for how it plays'.



Dubai, UAE, 2006

The rapid growth of urbanism in the Middle East and China naturalised the accelerated use of spatial products and free-zone urbanism.

Buildings that are typically considered to be geometrical formal objects, and the cities they inhabit, have become infrastructural technologies. Far from being a hidden substructure, they seem to press into view a cartoon of their abstract technical and economic logics. Mobile, monetised, repeatable formulas for spatial products like resorts, golf courses, malls, IT campuses or big boxes increasingly shape most of the space in the world. Now, not only small communities and resorts, but also entire world cities, are constructed according to a formula, and usually one that replicates Shenzhen or Dubai anywhere in the world.

No marshalling of statistics is necessary to note that the building as a singularly authored object is responsible for a relative trickle of the world's spaces while a fire hose blasts out the rest. Infrastructure space inflates and deflates like currency, producing building as the by-product of a spatial software. Infrastructure is, then, no longer just the urban substructure, but the urban structure itself – the very parameters of global urbanism. Some of the most radical changes to the globalising world are being written not in the language of law and diplomacy, but rather in the language of these spatial infrastructural technologies. They have become a medium of de facto polity and a secret weapon of some of the most powerful players in the world.

For many architects and urbanists, this space, delivered by logistics and econometrics, constitutes a threat to the specialised arts of making object form. Yet for others these spatial technologies are seen to be far from a threat, the means by which architecture potentially acquires nothing less than the powerful repertoire of a software or protocol. Perhaps there are simply a few inclusive and non-modern propositions to be made about an extra species of form making or an extra artistic endeavour in another register that redoubles design faculties. Perhaps there are design propositions at ease with crafting both the object forms and active forms of the city.



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Technologies, Scripts and Disposition

The spatial technologies of infrastructural space are an excellent tutor of these extra artistic pleasures and powers. Those who, like the French sociologist and anthropologist Bruno Latour, have studied the socio-technical networks of infrastructure, have long recognised that humans script activities in technologies, and that technologies script human activities. Humans may direct the use or application of a technology, as in the choice to use electricity for lighting. As narrative or persuasion, a script may also set the ideological course for a technology. In turn, a technology delivers new capacities to enhance the activities of humans.

Yet there is an additional agency, a third valence, which seems to exceed the interplay between technology and script. For example, large-scale organisations for utilities such as hydroelectric networks at the beginning of the 20th century were associated with scripts about decentralising, regional planning and a more equitable distribution of resources. Yet while multi-centred as well as decentralised, the network had the capacity to concentrate powers into a patchwork of corruption and monopolies. Originally scripted as a stealth network, ARPANet (Defense Advanced Research Projects Agency) was able to evolve into the open networks of the Internet. A field of identical suburban houses like those in Levittown (the name given to the planned communities initiated by developer William Levitt between 1947 and 1958 in New York, Pennsylvania, New Jersey and Maryland) used conventional construction technology with

attending scripts about homeownership and traditional values, yet the overwhelming force in evidence was an undeclared propensity to organise all the components in an almost agricultural assembly that sequenced construction across a population of homes. Facebook is a technology scripted for social networking, but discrepant from that script, another undeclared property of the network allows it to unfold in the Arab Spring as an instrument of dissent.

In these cases, information resides not only in the script and technology, but also in some immanent activity or what we might call 'disposition' in the matrix. The organisation is doing something. It is enacting a disposition that may also remain undeclared or discrepant from the published script. What the urban organisation is saying is different from what it is doing. That activity – that disposition – is one of the reasons why space can be a sly agent and a secret weapon that is manipulated with not only object forms, but also with active forms.

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Ordos, Inner Mongolia, 2008

China's instant city of Ordos is a cartoon of spatial softwares like this mimicry of North American neo-traditional suburbs.



Active Form

Disposition is manipulated with active forms as well as object forms. Active form would first seem to be an almost oxymoronic or supernatural expression. If summoned to create something called active form, urban and architectural designers would naturally rely on what they are best trained to create – a formal object themed, choreographed or dressed to represent action. For instance, geometry is used to name or fix an arrangement or to create a placeholder for a process that cannot be named or fixed. The design process might offer a mathematical or cybernetic prescription. The form might be considered to be active only if it is mediated or coated in digital sensors that respond to movement or touch. Active form might be regarded merely as the architectural programmes that choreograph human activities. A more simple-minded confusion (made more powerful by being simple-minded) arises when action or activity is confused with movement or kineticism. A building is given dynamic forms, or the passage of light or the circulation of inhabitants is mapped with a blizzard of arrows. The more complex or agitated these tracings, the more 'active' the form is meant to be.





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This billboard in Ordos reads 'Create-City'.
.....

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In grasping for apprehension of an evolving spatial field with changing components, the architect also might design the entire field of activity with a fixed architectural pattern. Urban infrastructures grow incrementally over time and implementing changes may require multiple and indirect adjustments – reconditioning with planned, but not entirely predictable, effects. Still, a professional activity like urban planning often attempts to author a portion of the city as a single object or event. Few would look at a concrete highway system, an electrical grid, a suburban housing tract or a single building and perceive agency in their static arrangement. Agency in networks might only be assigned to the moving cars on the road, the electrical impulses in the fibre, or the behaviour of humans who inhabit them.

Yet with the active forms of infrastructure space – the spatial technologies making the global urbanism – objects are often less important than what they, for instance, inflect, ignite or suppress. Verbs may be more consequential than nouns. Active forms establish a set of parameters or capacities for what the organisation will be doing over time. Active forms might describe the way that some alteration performs within a group, multiplies across a field, reconditions a population or generates a network. The designer of active forms is designing not the field in its entirety, but rather the delta or the means by which the field changes – not only the shape or contour of the game piece, but also a repertoire for how it plays. There is no need for movement or event because the activity is latent, serial and indeterminate. While object or enclosure is often touted as the architect's primary avenue to power, active form, however invisible and indeterminate, can also be manipulated.

Returning to the simple example of the agricultural field of repeatable suburban houses mentioned above, the organisation enacts a set of sequenced moves concerning financing, marketing, framing, plumbing, electrifying, roofing or cladding that are applied across a population of houses. It renders some alterations significant and some insignificant. Within this organisation, the urge to address a single enclosure with object form is less powerful than designing active forms that would direct a set of changes to be replicated across that population of houses. An active form might also use this organisation as a carrier or multiplier of change. Here, while engaged with material and geometry, active forms are inclusive of, but not limited to, enclosure, and may move beyond the conventional architectural site. Active form may partner with and propel object form, determining how it will align with power to travel through culture, redoubling design capacities with additional modes of authorship, time-released powers and cascading effects.

Most artists and entrepreneurs in the world would insist on a repertoire that includes both object form and active form. A geneticist cannot represent all the gene sequences of DNA with an image of a double helix, but can engage the ongoing development of an organism with an active form that alters one of those gene sequences. A computer scientist would never attempt to fully represent the Internet, but would rather author active forms that ride the network with very explicit instructions. An entrepreneur designs not only the product, but also its passage through a market. An environmentalist would not attempt to work on a forest by placing every bird in every tree or planting every sprig of undergrowth, but would rather send in instrumental players that inflect and recondition different ecologies over populations of objects over time.

Nairobi, Kenya, 2007

The broadband and security attributes of the Athi River Export Processing Zone might be sited within Nairobi itself instead of in extra-urban enclaves.

Infrastructural spatial technologies that currently structure urbanism are platforms that, ongoing and indeterminate, are like a software that is continually updating. As the author of software, one is not the author of all of the forms that flow through that software, but rather the author of a platform that shapes and manages information. Like a calculus function, software provides variables that facilitate relationships while not controlling every outcome. The calculus function cosine, for instance, is an explicit expression of variables for a set of values. Knowing all of those values is less important than understanding the tendency to form, when graphed, a particular curve. Active forms, like softwares, are a form for handling forms.

Active Form in Two Urban Platforms: Free-Zone Urbanism and Broadband Urbanism

The free-zone formula is perhaps the world's most popular urban platform and a vessel of many spatial technologies. The free zone is incentivised urbanism that provides tax holidays and exemptions from labour and environmental law for free-market advantage. While it has roots in ancient freeports, the modern free zone evolved from an early 20th-century warehousing compound to a mid-century United Nations Industrial Development Organization (UNIDO) backed formula for jumpstarting the economies of developing countries, to become a contagious world city paradigm – the glittering mimic of Dubai, Shenzhen, Singapore or Hong Kong with petrodollar palaces and a full complement of programmes. The zone is the formula for making extraterritorial space and the vessel of corporate externalising where state and non-state actors use each other as proxy, double and camouflage. Now major cities and even national capitals are developing their own zone doppelgangers or their own non-national territory (for example, Navi Mumbai or Astana, Kazakhstan).

In the free zone, both object forms and active forms are at play. The architect can design specialised buildings within it, or position design to divert or deflect the currents of active form that surround it. As the zone creates an addiction to incentivised urbanism, it becomes a self-fulfilling prophecy and a multiplier of any design that alters it. Some experiments, such as Foster + Partners' Masdar City in Abu Dhabi (2006), seem to see the entire zone formula as a potential multiplier of green technologies deployed in entire precincts. Still any building that introduces a potentially contagious technological detail, political wrinkle or cultural meme, has this power – an object form positioned to be carried by a multiplier or active form. Alternatively, one could begin by manipulating active form and assessing the effects on object form. The smartest spatial entrepreneurs will probably design a new urban software. A new zone protocol, a Zone 2.0, might be wise to simply reconsider the isomorphic topologies and dispositions of the extra-urban enclave. There may no longer be a need for the double of Mumbai in Navi Mumbai, or the zone on the outskirts of Nairobi. Mapping the same incentives, scripts and technologies on the city itself is an enormous yet undisclosed political change that simultaneously delivers bandwidth, wealth, security and employment to cities that have been left to decay as a vestige of the state governance. It is a move that manipulates both active and object form.



Athi River Export Processing Zone, outside Nairobi, Kenya, 2007
Existing patterns of broadband urbanism would site the zone in
extra-urban enclaves outside the city.



The urban space of broadband in the developing world provides another example of a context in which both object form and active form are relevant. Mobile telephony is now the world's largest shared platform, and with the majority of devices in the developing world it has become the platform of global entrepreneurialism and innovation, creating new business and management paradigms for the rest of the world. While urbanists frequently analyse urban values and morphologies associated with physical infrastructures such as rail, highway, power and water utilities, the discipline is under-rehearsed in an analysis of the compound spatial dispositions attending broadband infrastructure. Broadband is delivered in fibre that territorialises with linear topologies not unlike a railroad or a highway, or in microwaves that facilitate mobile telephony with atomised topologies. It is not clear whether linear fibre will reinforce existing urban development and generate zone-like enclaves, or whether it will penetrate rural areas to sponsor development and education. Mobile phones are already changing relationships between rural and urban areas.

Economists, specialists in informatics, global financiers, software developers, politicians and other global entrepreneurs are creating econometrics to meet this new technology – metrics that, at their best, engage the complex context on the ground. They are developing, for instance, goals for what is called ICT4D (ICT for development), or as they say in their own jargon, 'Development 2.0'. There may be econometrics, but there are few spatial protocols despite the fact that architecture and urbanism will be a major determining factor of population concentrations, accessibility and resilience of the broadband network. A singular object form will not address the ongoing spatial consequences, but a dispositional protocol or software that sets out parameters of an ongoing process might be as powerful as the digital softwares residing on this platform.

Political Arts

In an expanded repertoire of form making, there is an elegant artfulness in knowing when it is most powerful to be object form and when it is most powerful to be active form; when it is most powerful to be the stone in the water and when it is most powerful to be the water. Acknowledging that infrastructure technologies behave almost like a software, it is extremely advantageous to know when and how to write the update or the killer app. The invisible man was only powerful and sneaky because he both appeared and disappeared. When the man himself was not visible, the space that he disturbed was visible. Water was drained from a glass, or doors opened and closed. Architecture has the same opportunity of gaining power by occasionally dissolving into its background and directing changes to object forms by designing the actions and variables that inflect them. With these extra arts, and with potentially enormous political consequence in the world, we will also be making active form. ▴

This piece is adapted from a forthcoming book by the author, *Extrastatecraft: Global Infrastructure and Political Arts*, Yale University Press, 2013



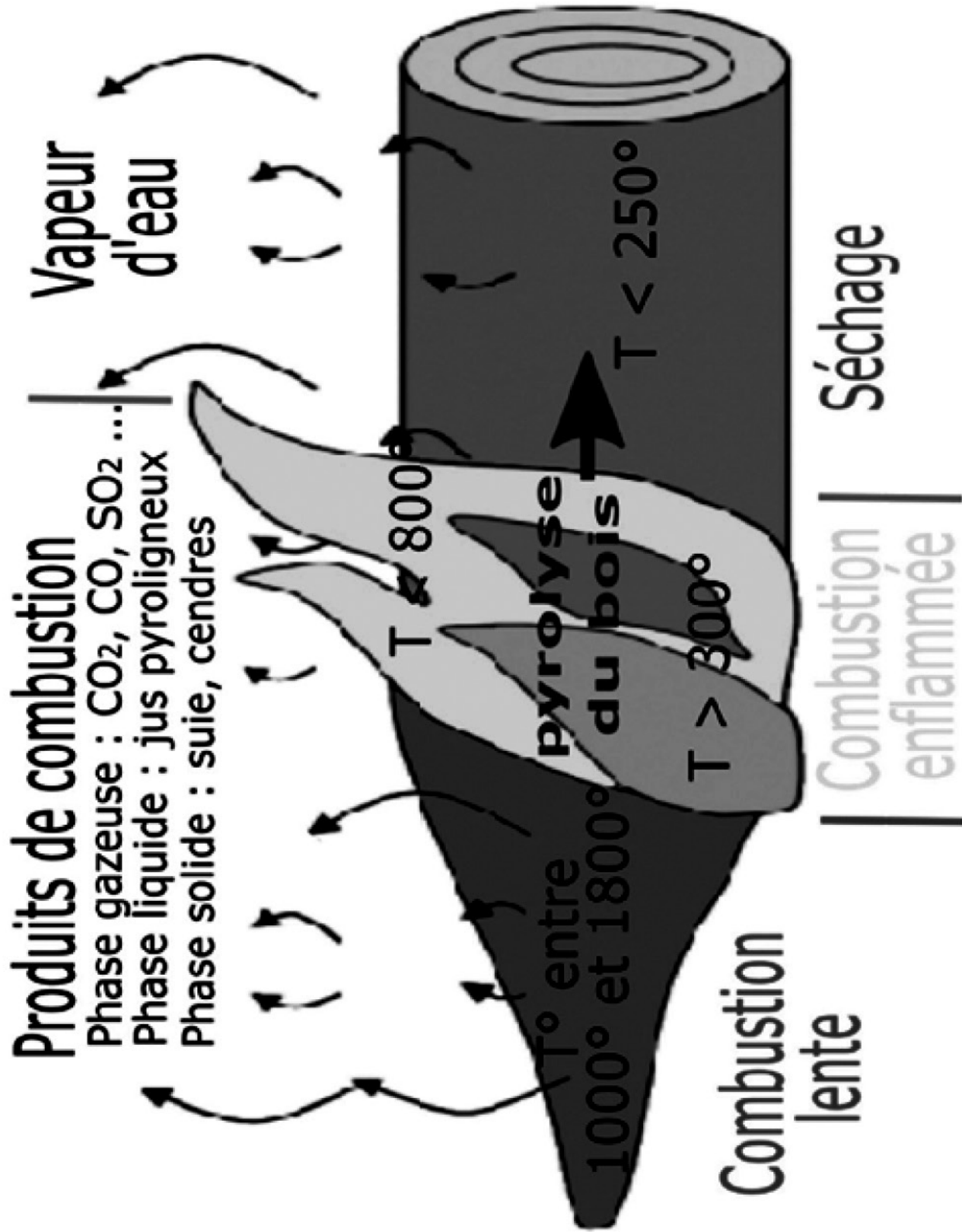




Fig. 2. — *La découverte du feu.*
Cette gravure ancienne illustre la découverte du feu par friction rotative.
(Extrait de Figuier, L., «L'homme primitif», Paris, Hachette, 1870).

Kindex
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- 8 oz. Fuel Can
(Cherry-Scented accelerant included)



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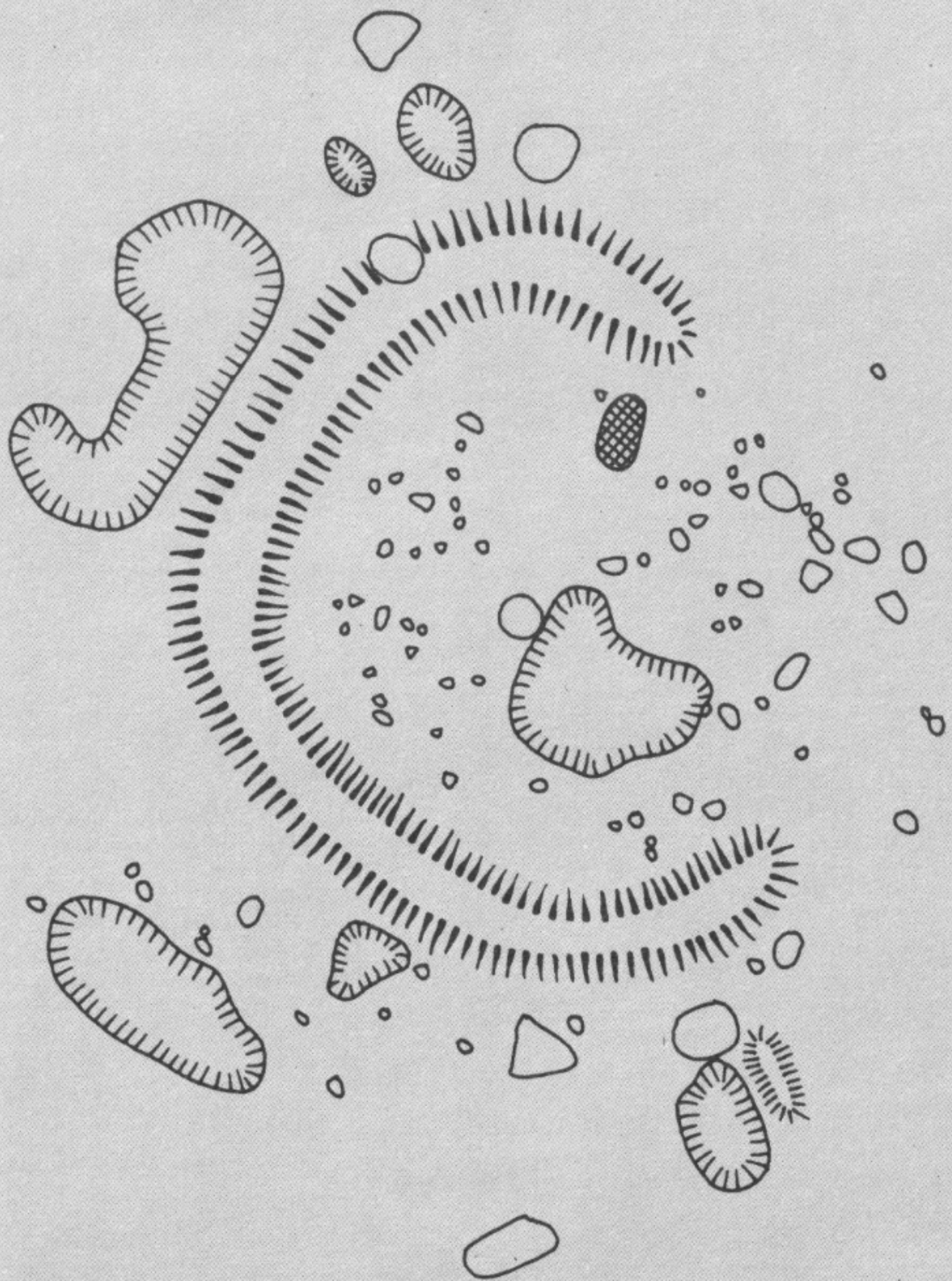


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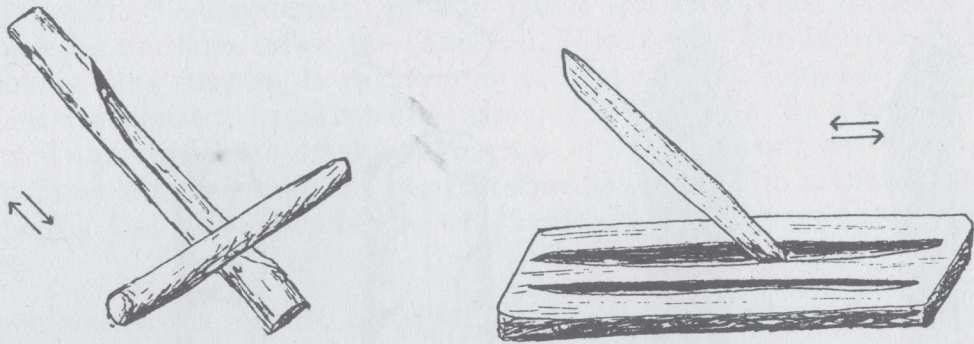


Fig. 13. — Deux méthodes de production de feu par friction longitudinale.

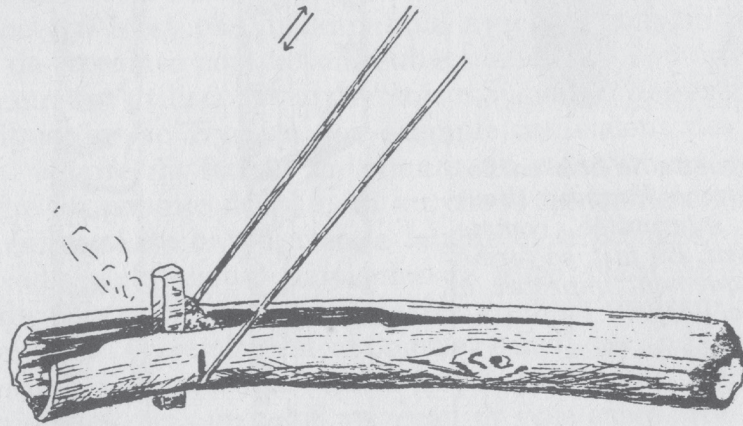


Fig. 14. — Production du feu par sciage avec une cordelette.

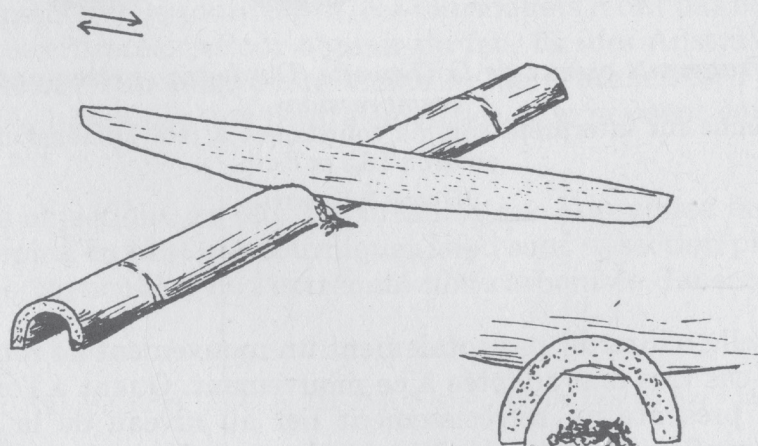


Fig. 15. — Production du feu par sciage d'une tige de bambou.





Presque tous les potiers cuisant au bois utilisent aujourd'hui des déchets de scierie ou de menuiserie. Le bois, ici trop gros pour le grand feu, est refendu à la hache.





You are all invited and welcome to...
30 March 2017 from 20h to please...
form of this residency, whatever it will be.

Milou Abel, Aurelie Adhemar, Coline...
Milly Beyerne, Tere Boeckmans, Sarah...
Tara Boudry, Tati Chien, Dorine...
Alain De Rivecourt, Arnel Fontijn, J...
Griet Hombels, May Le Thi, The...
Silvius Mispelen, Zeno Ruysschaert, D...
Karel Gijbers, Yvonne Sepulveda, M...
Shawella Challa, Charlotte Sabbe, M...
Matthe Truyen, Esther Vermeil, Victo...
Wassenhove and Dido Wouters.

Mixed Media-LUCA School of Art
Thursday 30 March 2017 from 15h
17h, Doki-Novel 51.9000 Ghent

* supported by Ghent University and Ghent City

The atelier Mixed Media from LUCA School of Art
Ghent will work for the week at 10h-18h in
exhibition and conference room 27 in
weaving factory at 17h. Artists 2017-18
will share and discuss their practice and
side a specific exhibition 17h-18h in
energetic workshop "Artists of Ghent: a
fight against loneliness"?

You are all invited and welcome to...
30 March 2017 from 20h to please...
form of this residency, whatever it will be.

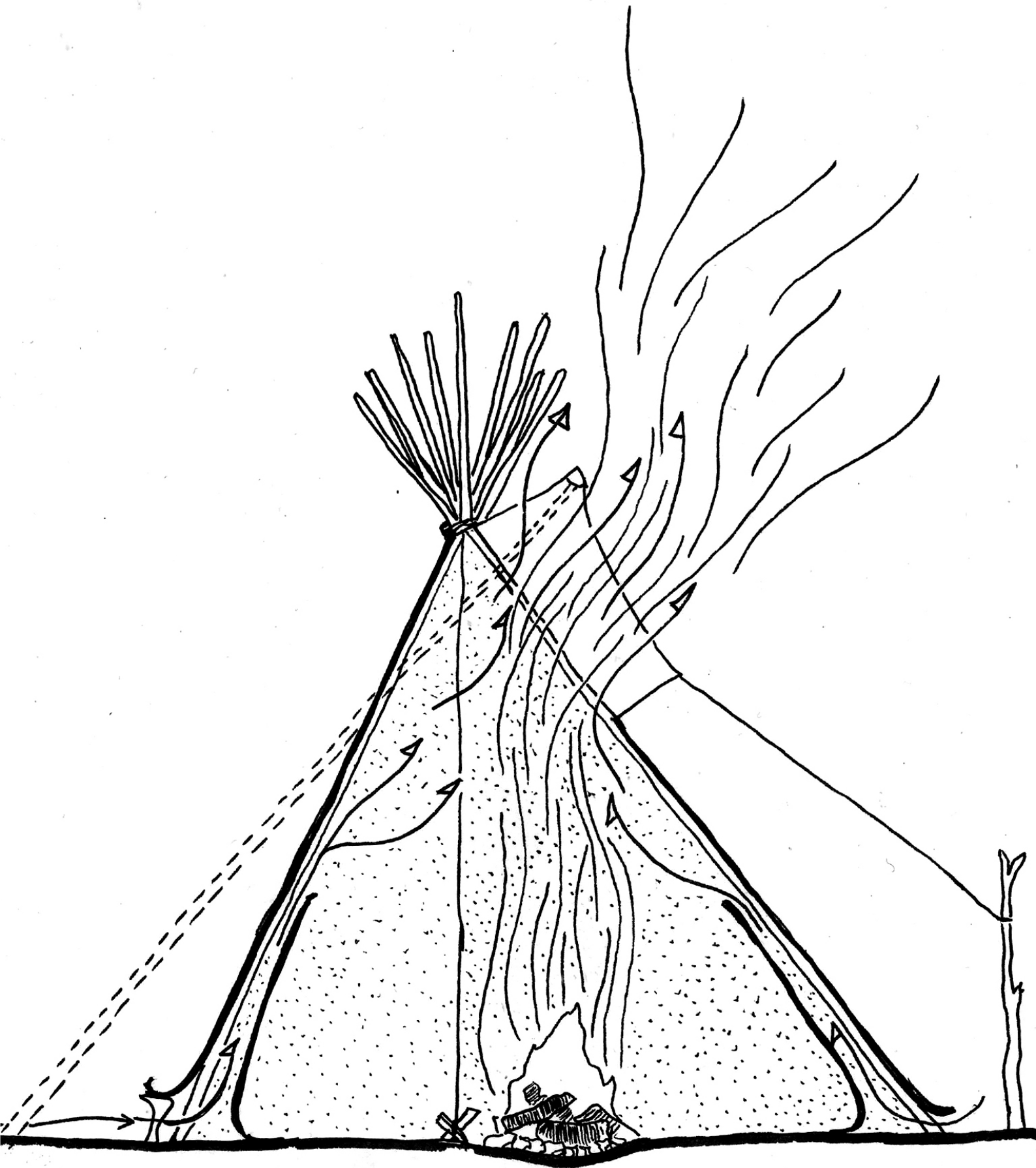
Milou Abel, Aurelie Adhemar, Coline...
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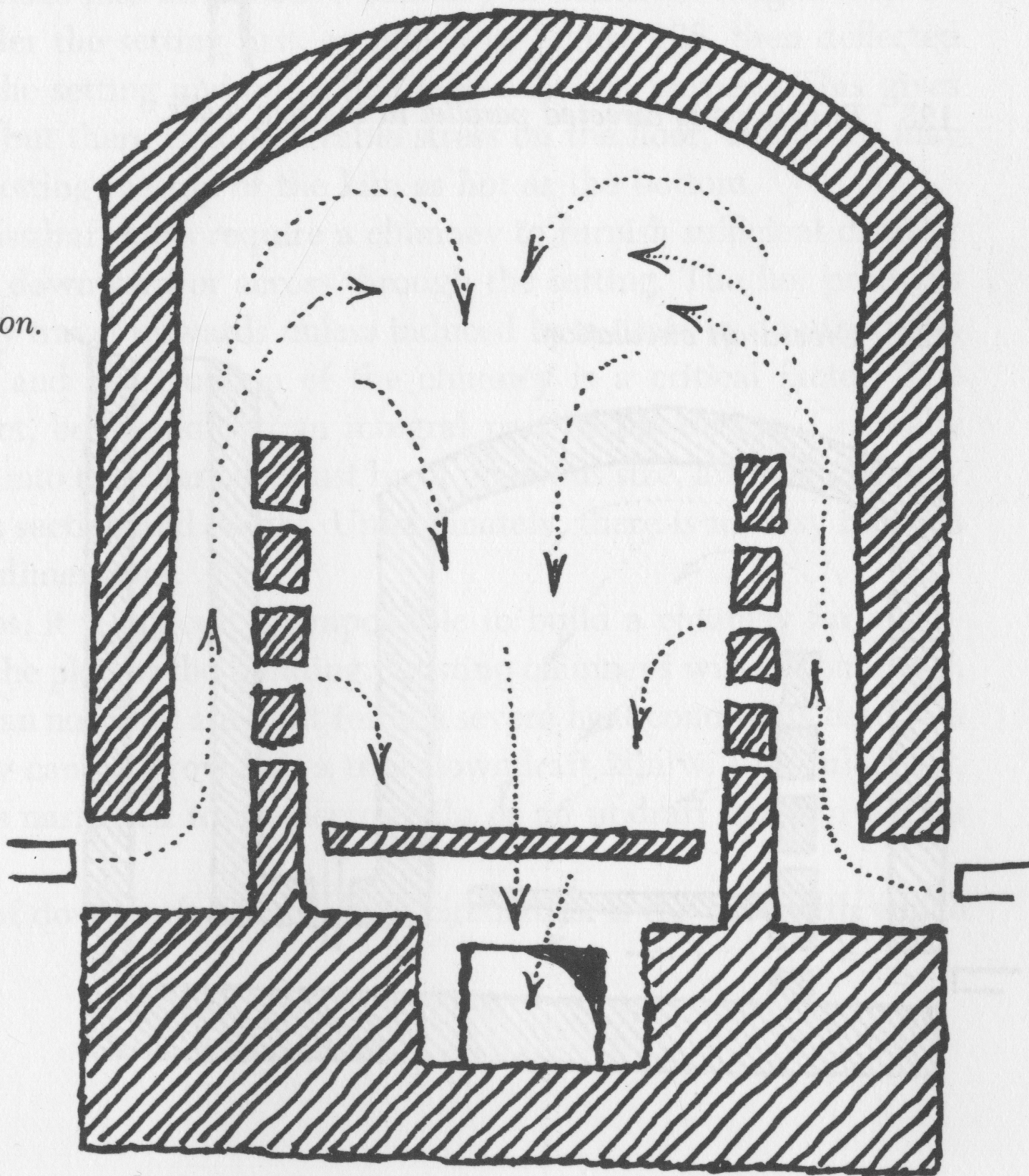
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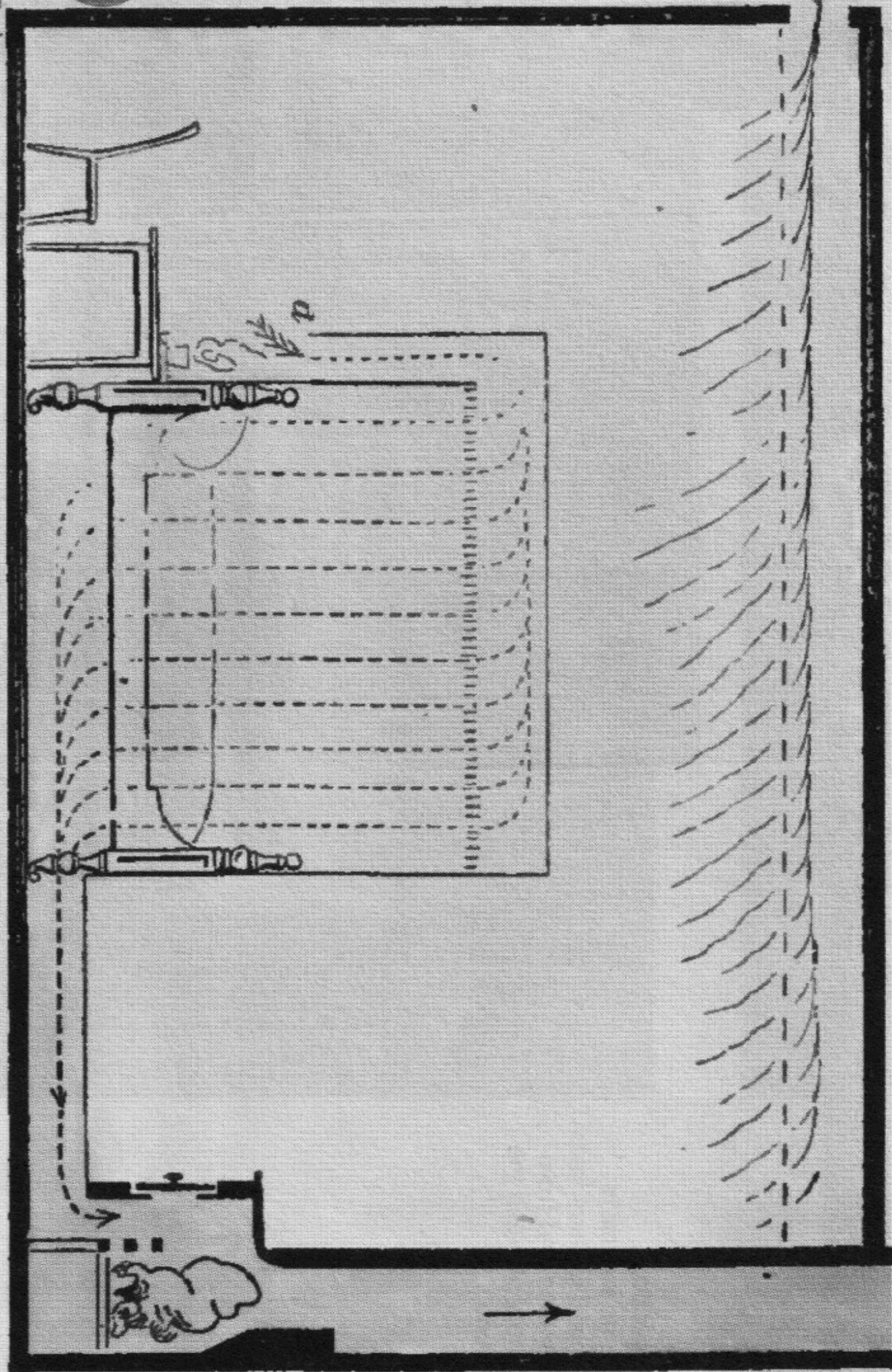




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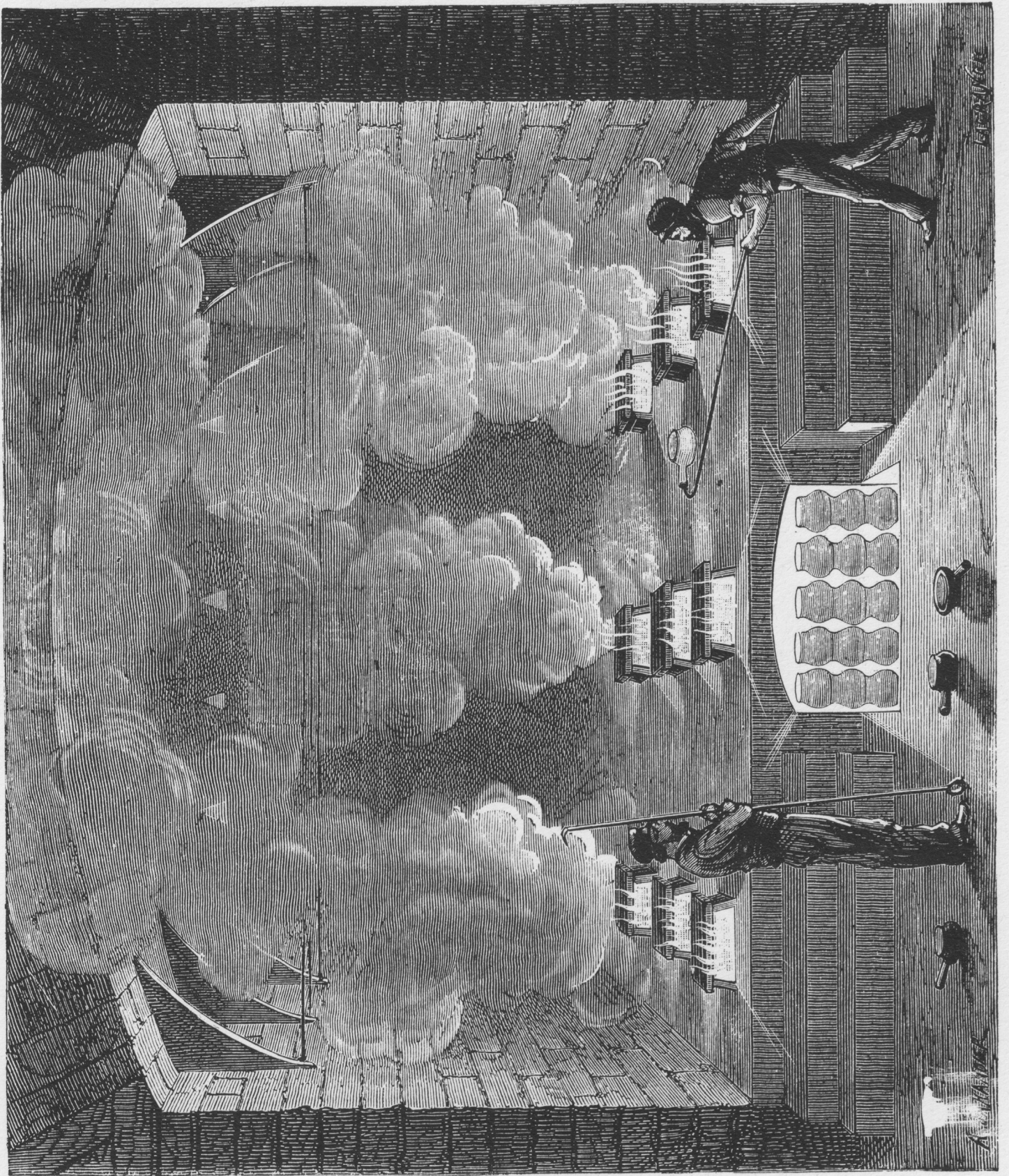


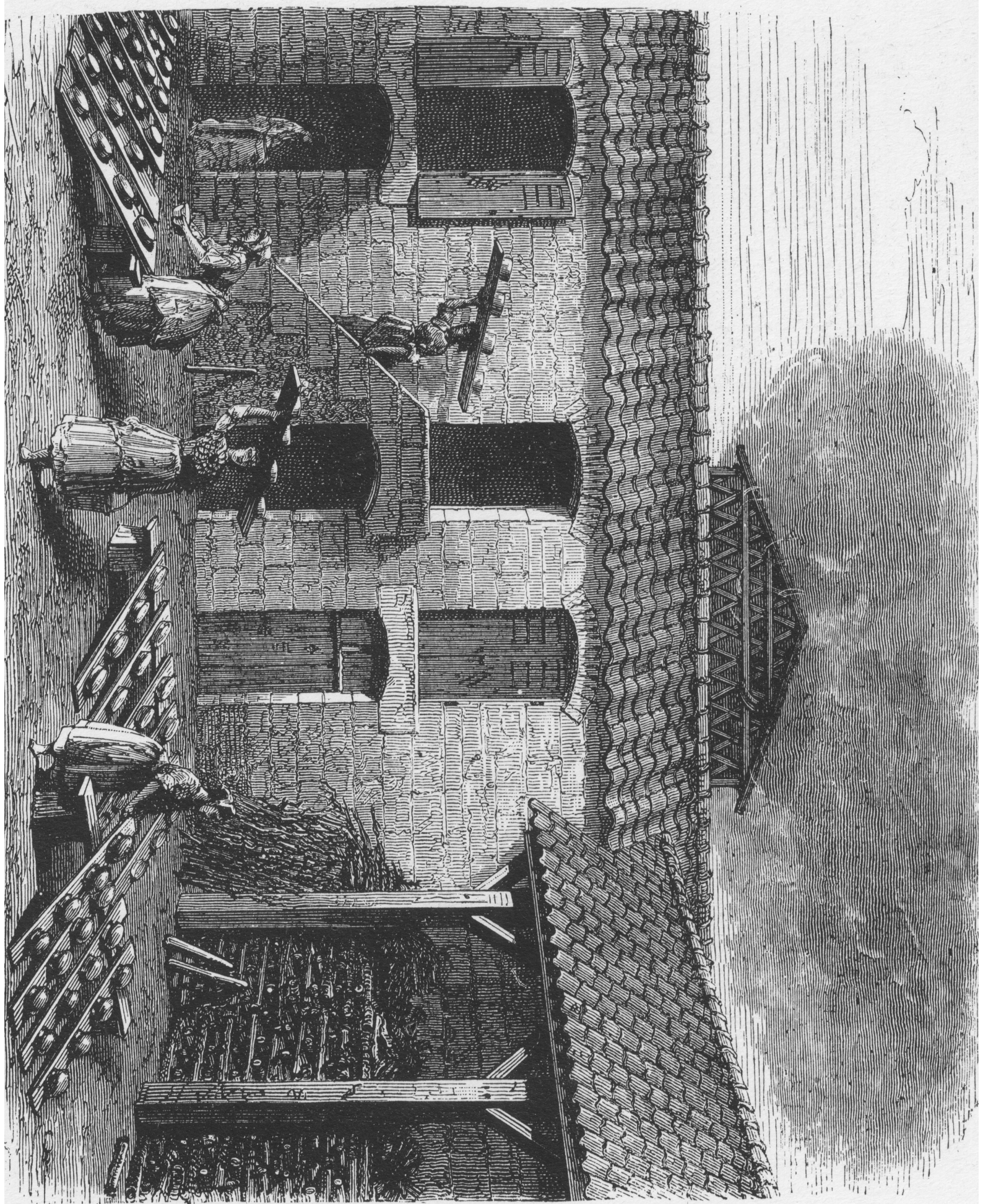












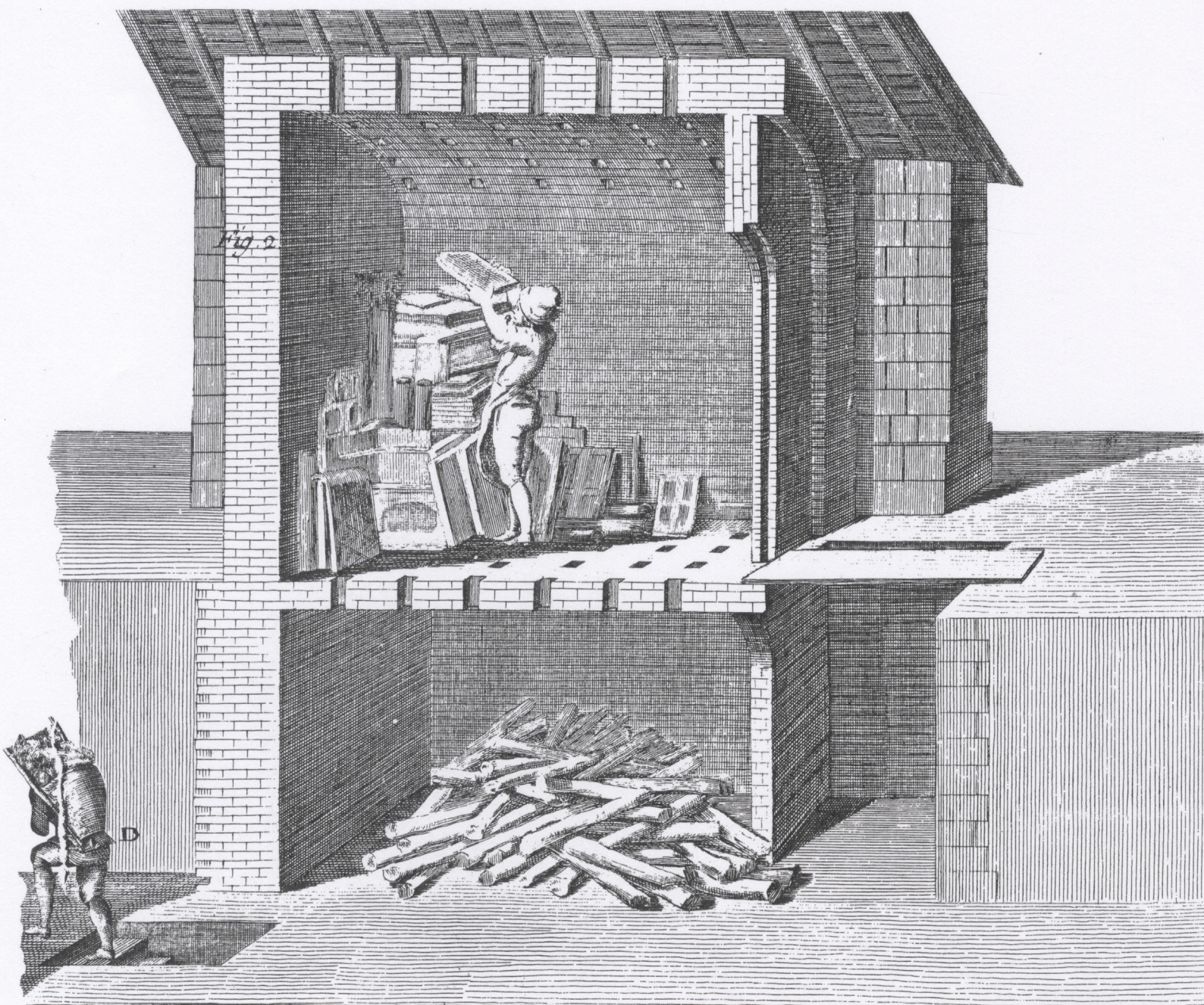


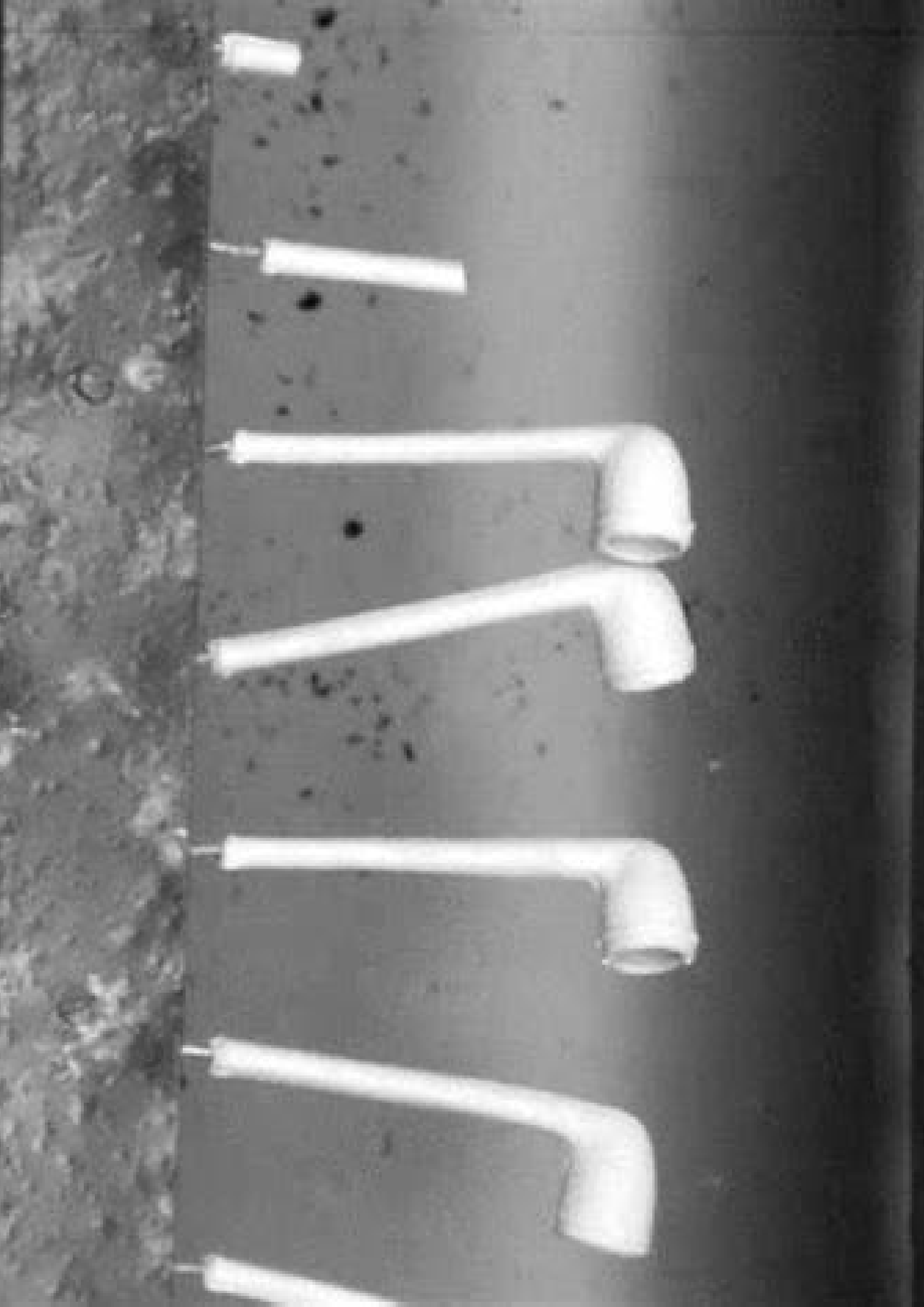
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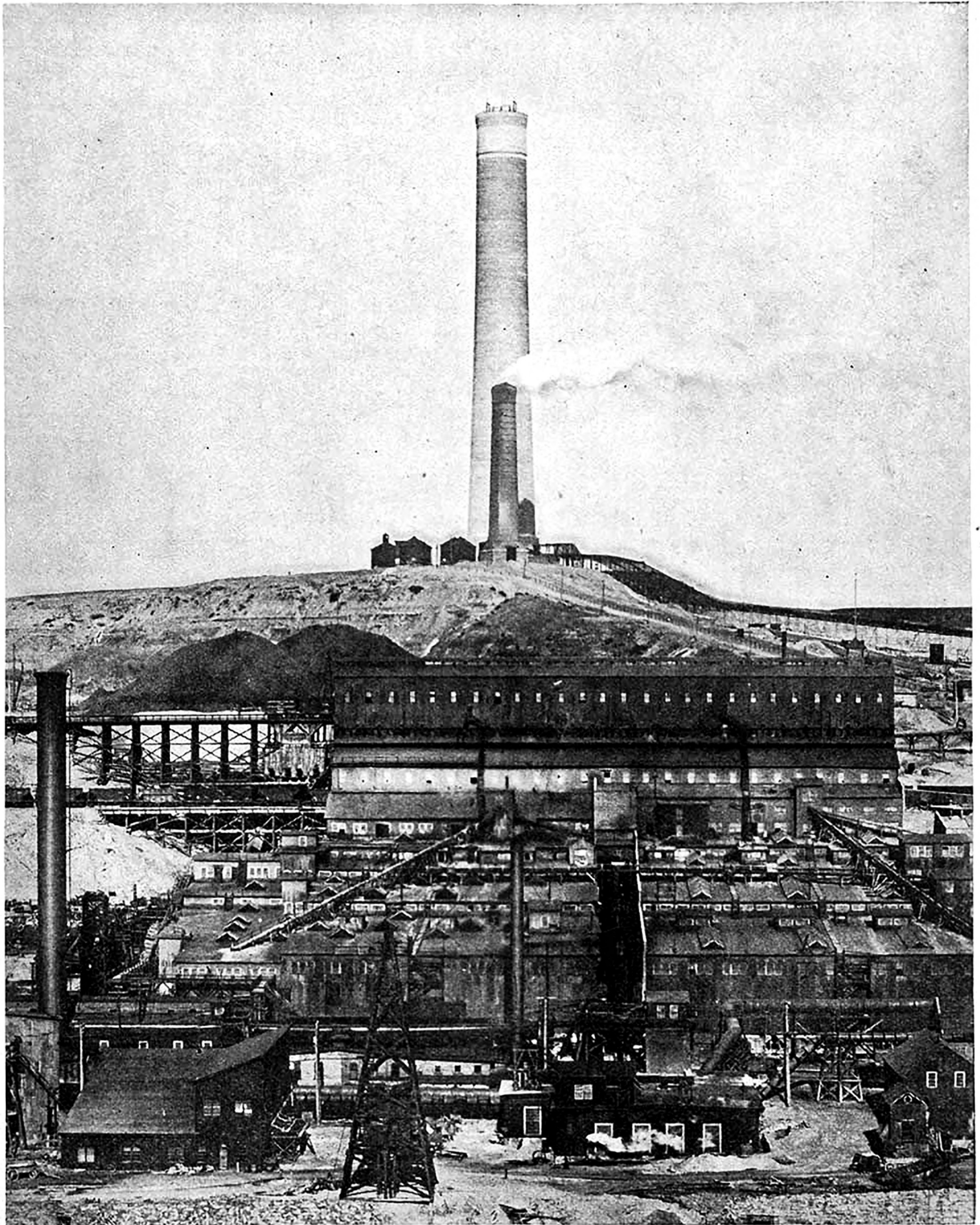




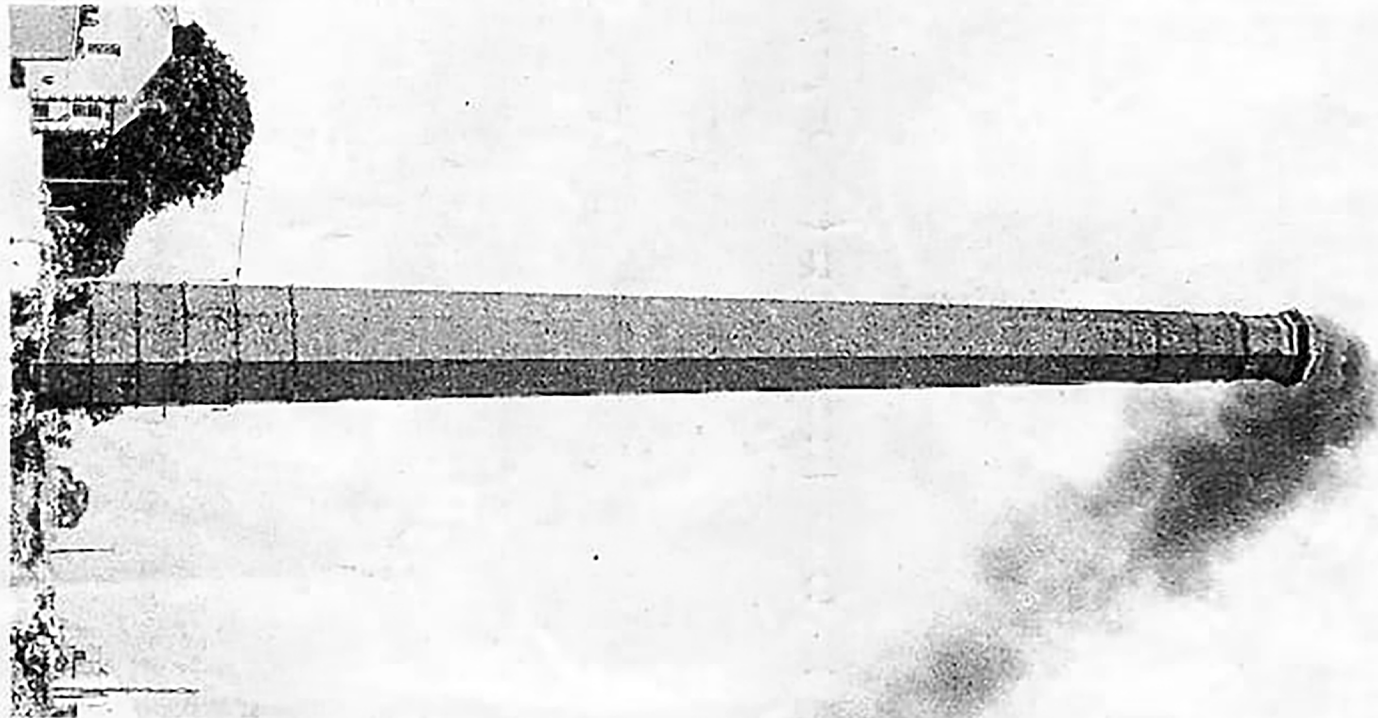
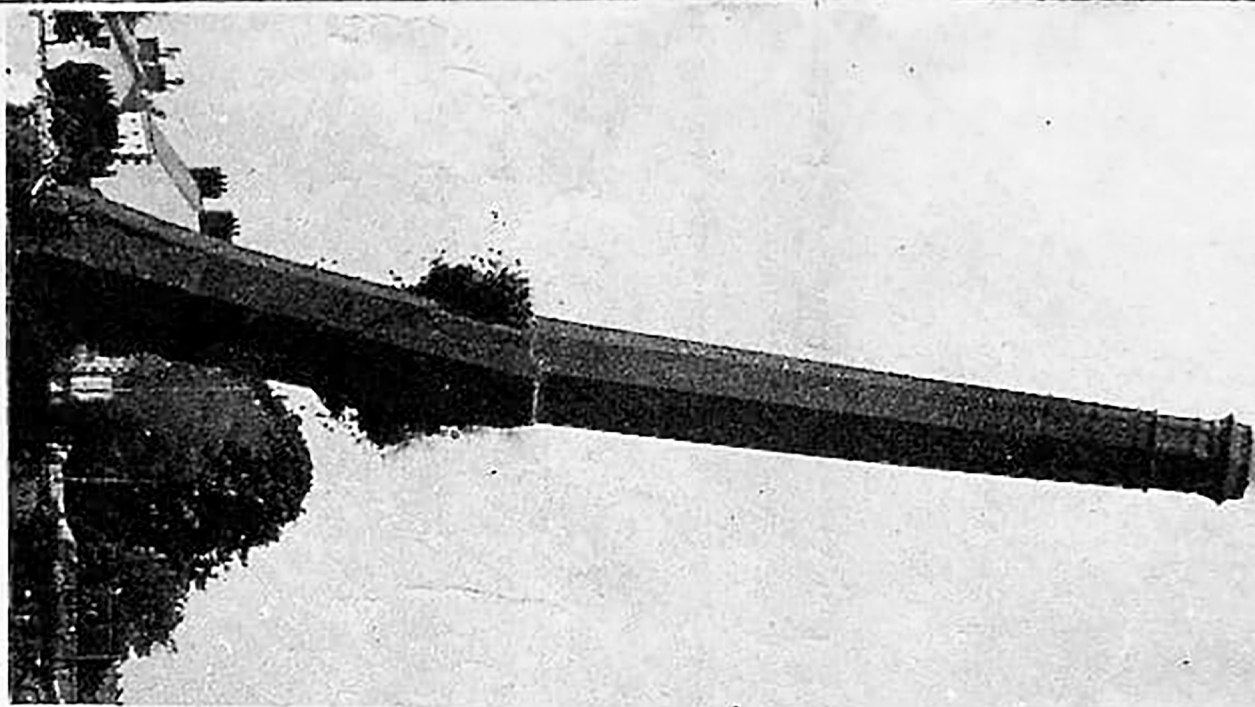
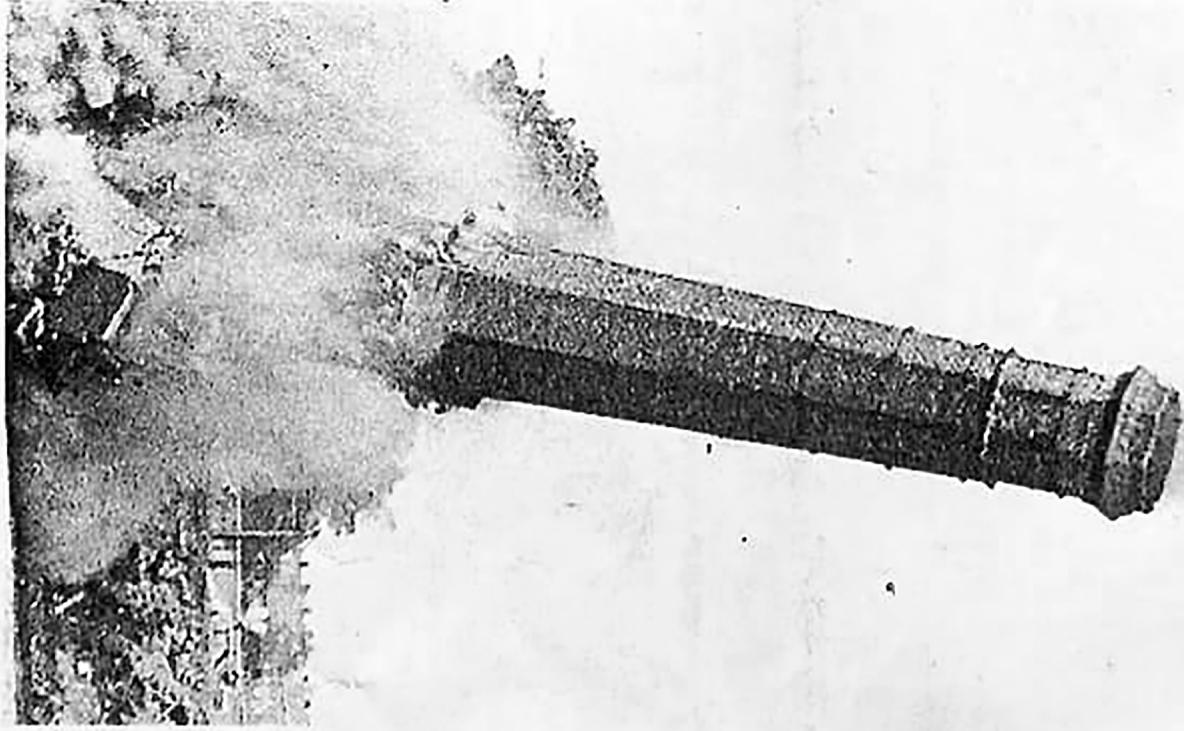




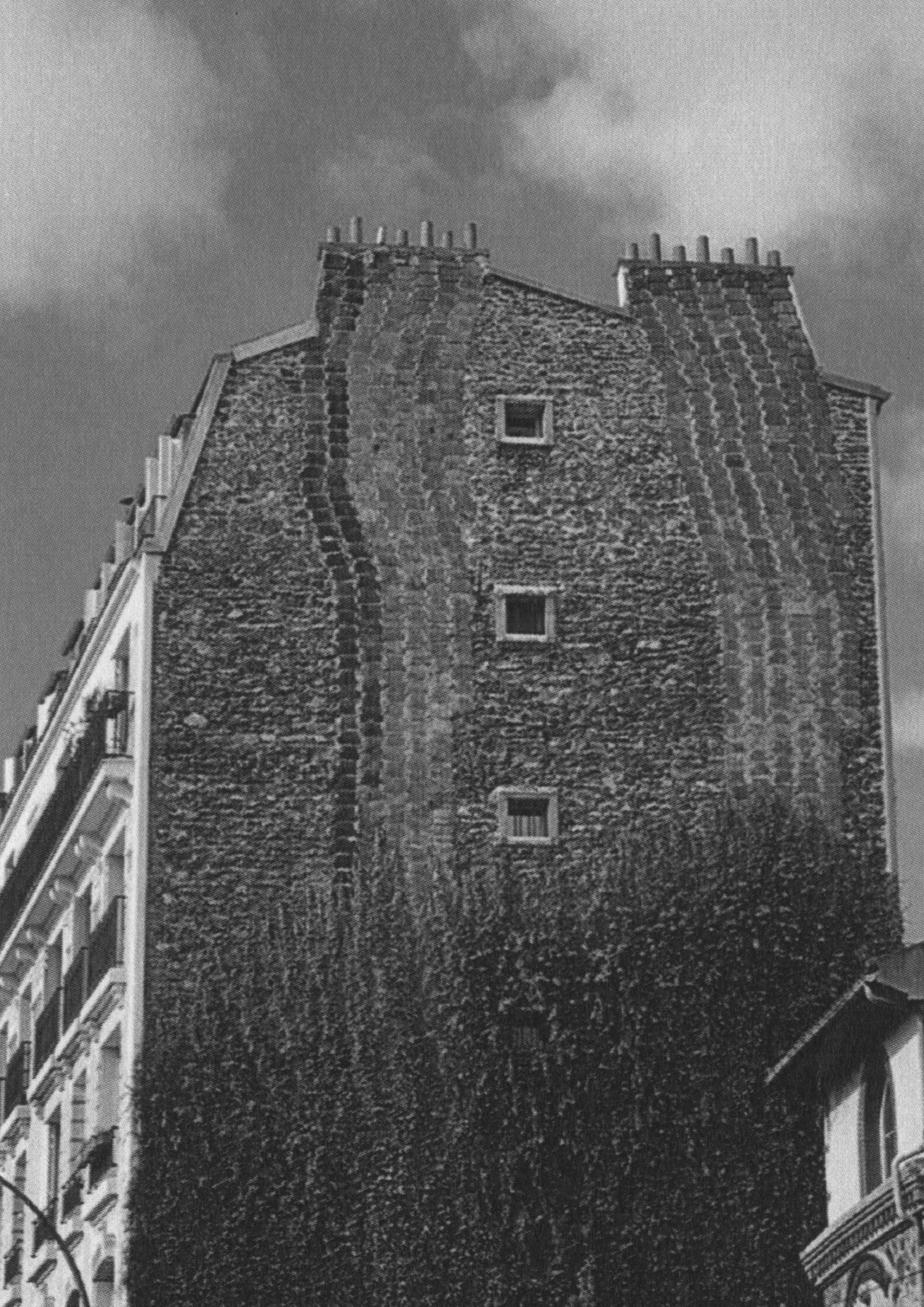




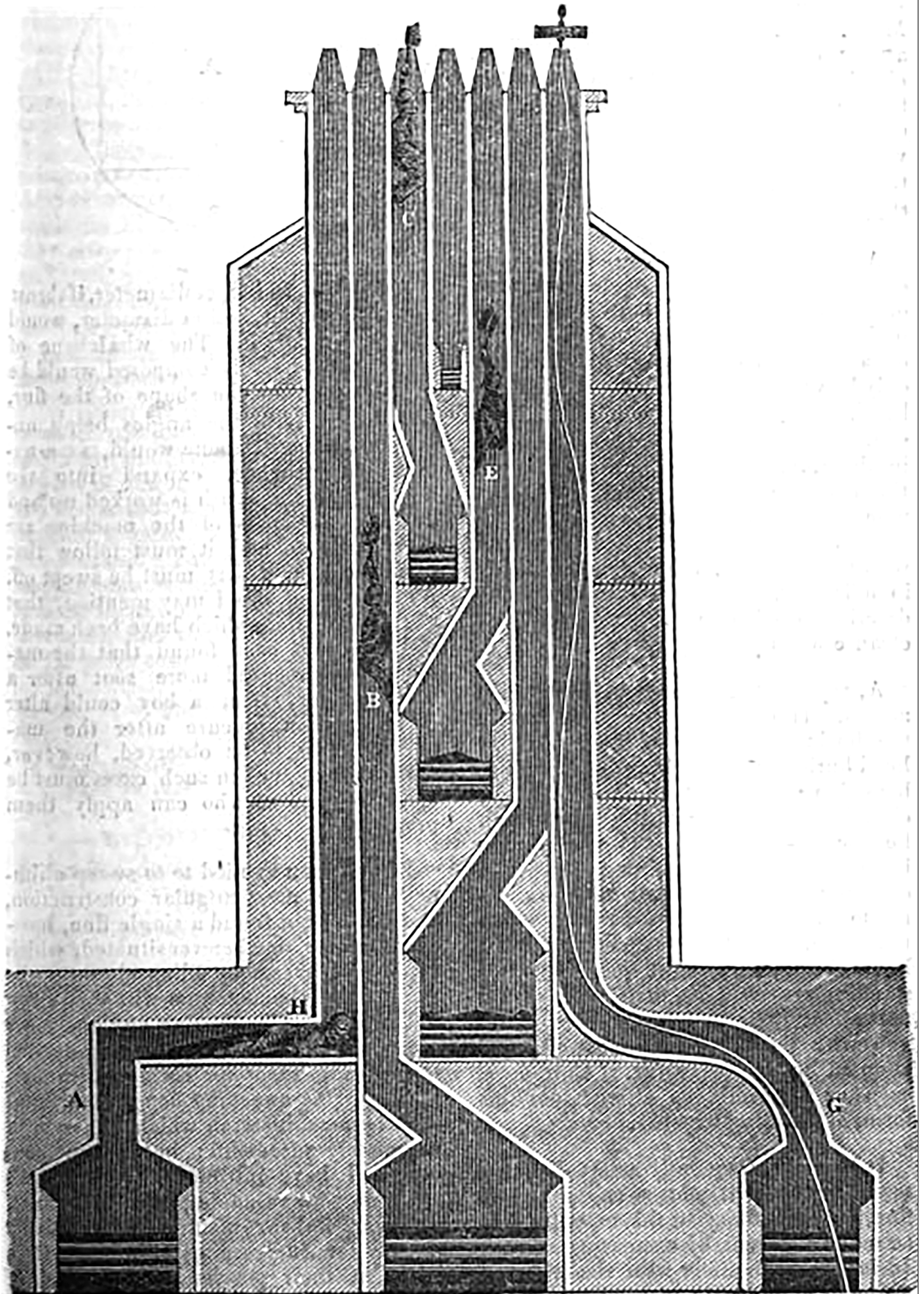
THE HUGE CHIMNEY ON THE HILL-TOP IS FAMOUS FOR ITS ENORMOUS COST—\$250,000.



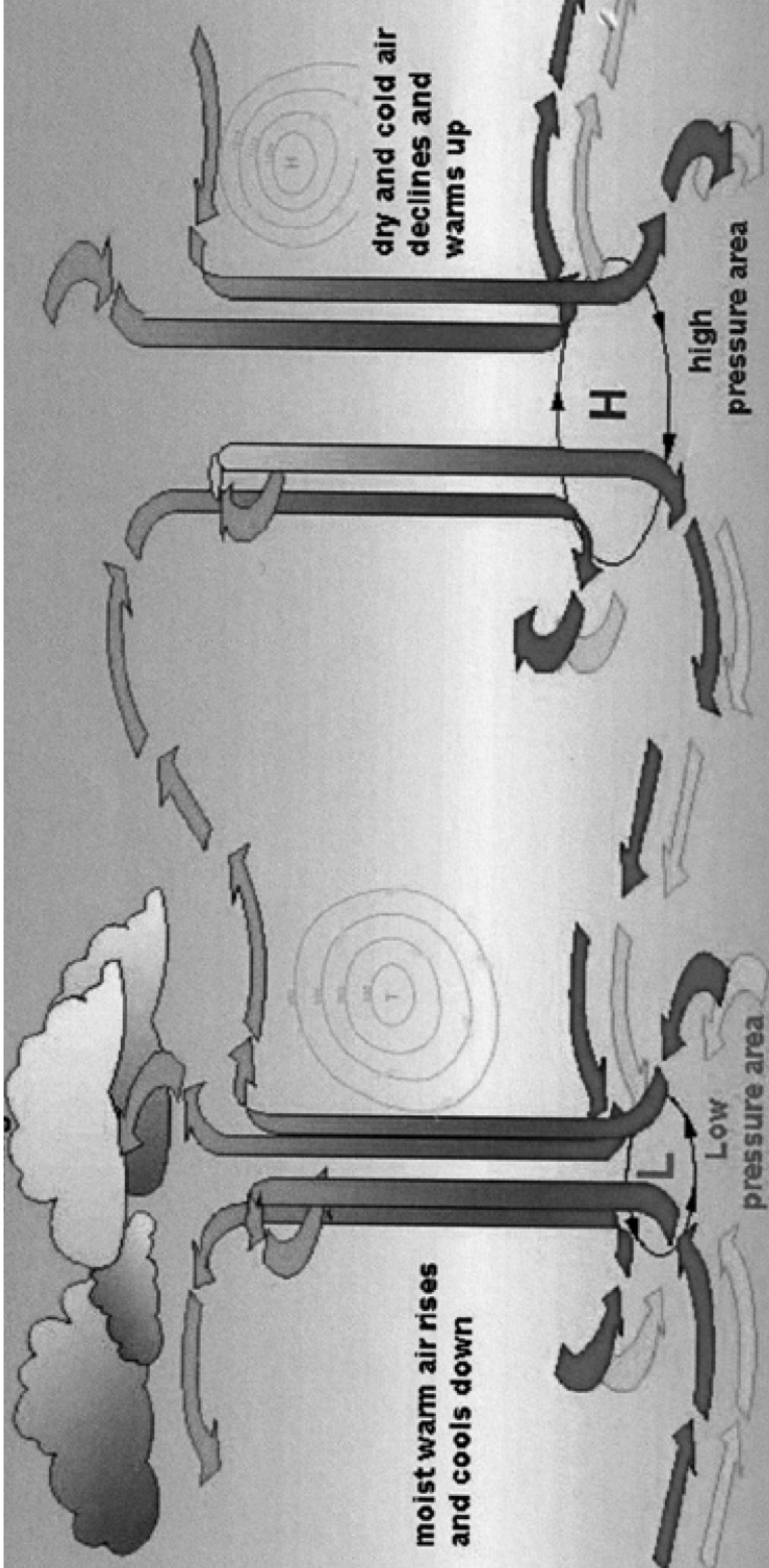




THE CONTRAST—MECHANICAL & CHILDREN CHIMNEY-SWEEPING.







dry and cold air declines and warms up

H

high pressure area

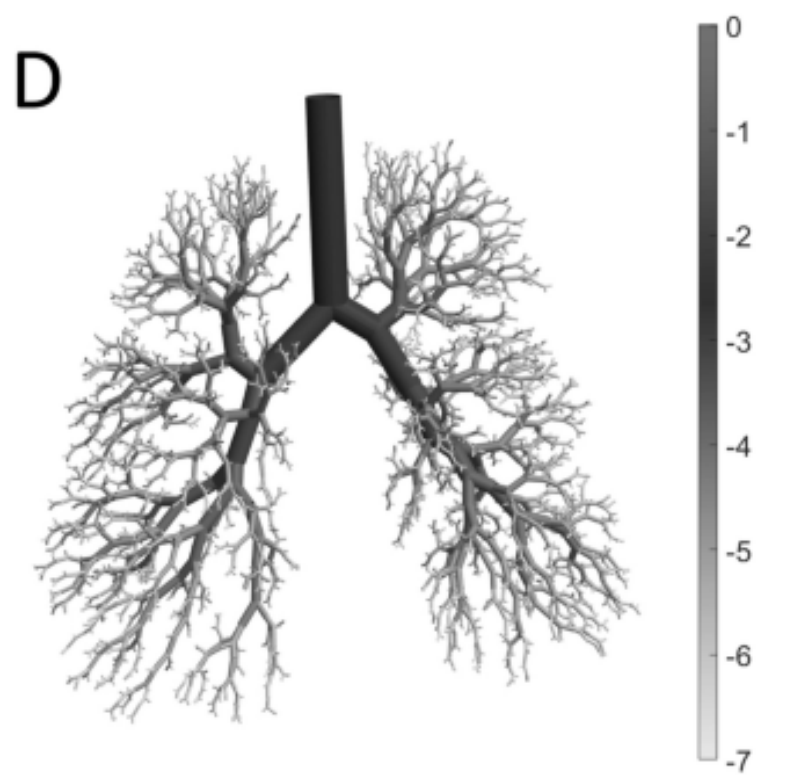
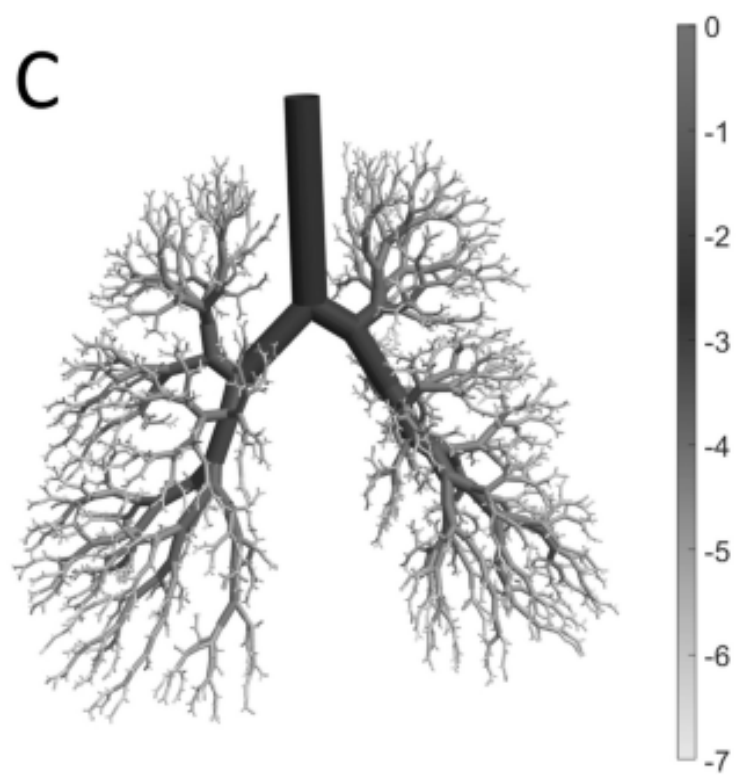
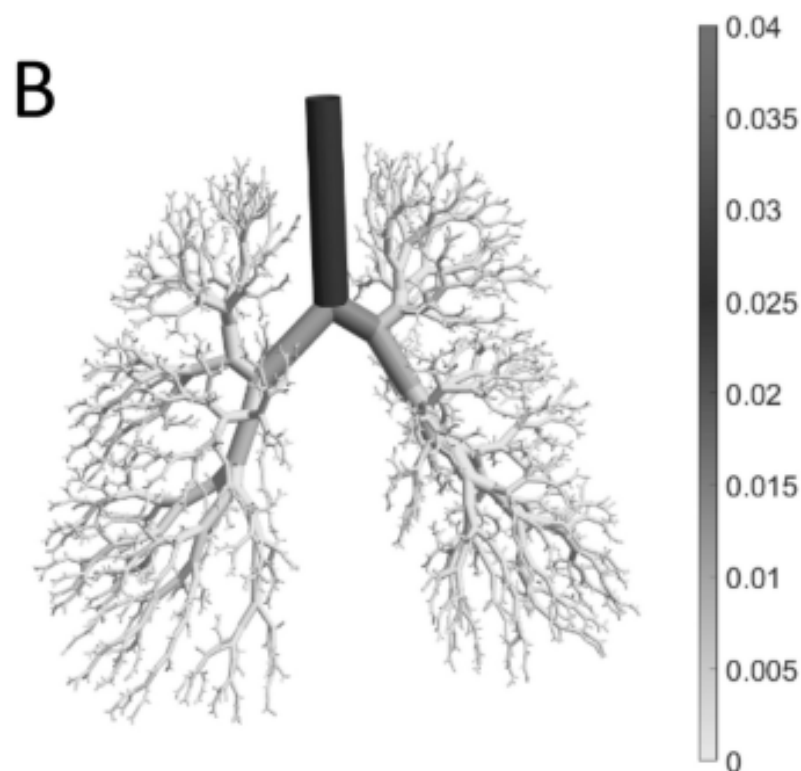
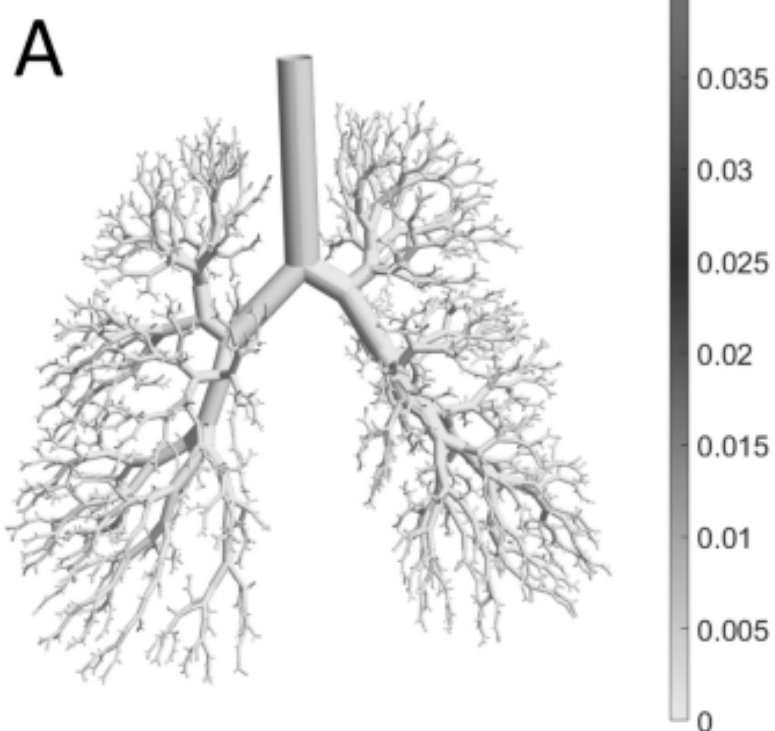
moist warm air rises and cools down

L

Low pressure area

wind blow in the clockwise direction from center.



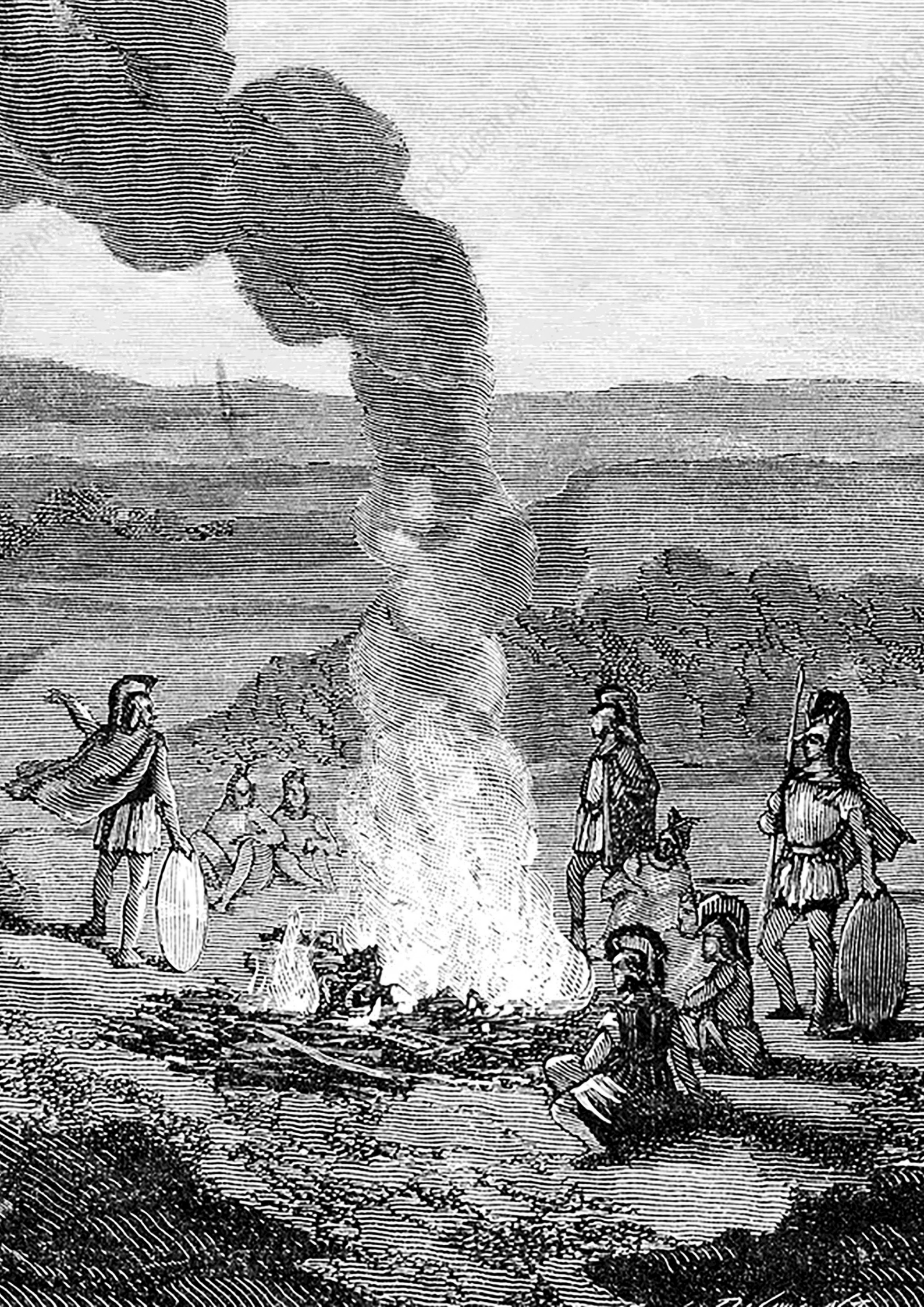


$$\frac{\partial v_x}{\partial x} + \frac{\partial v_y}{\partial y} + \frac{\partial v_z}{\partial z} = 0$$

$$\rho \left(\frac{\partial v_x}{\partial t} + v_x \frac{\partial v_x}{\partial x} + v_y \frac{\partial v_x}{\partial y} + v_z \frac{\partial v_x}{\partial z} \right) = -\frac{\partial P}{\partial x} + \mu \left(\frac{\partial^2 v_x}{\partial x^2} + \frac{\partial^2 v_x}{\partial y^2} + \frac{\partial^2 v_x}{\partial z^2} \right) + \rho g_x$$

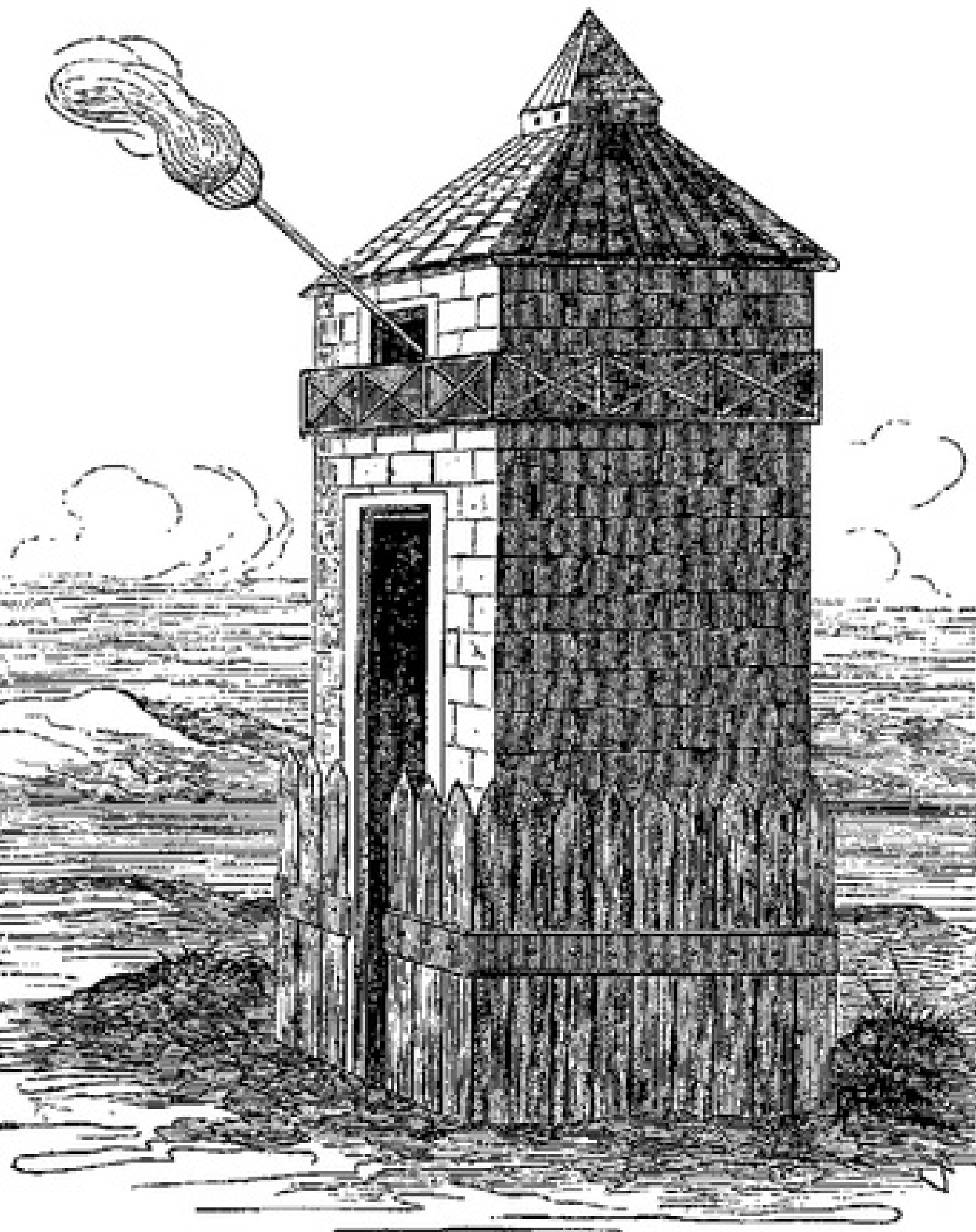
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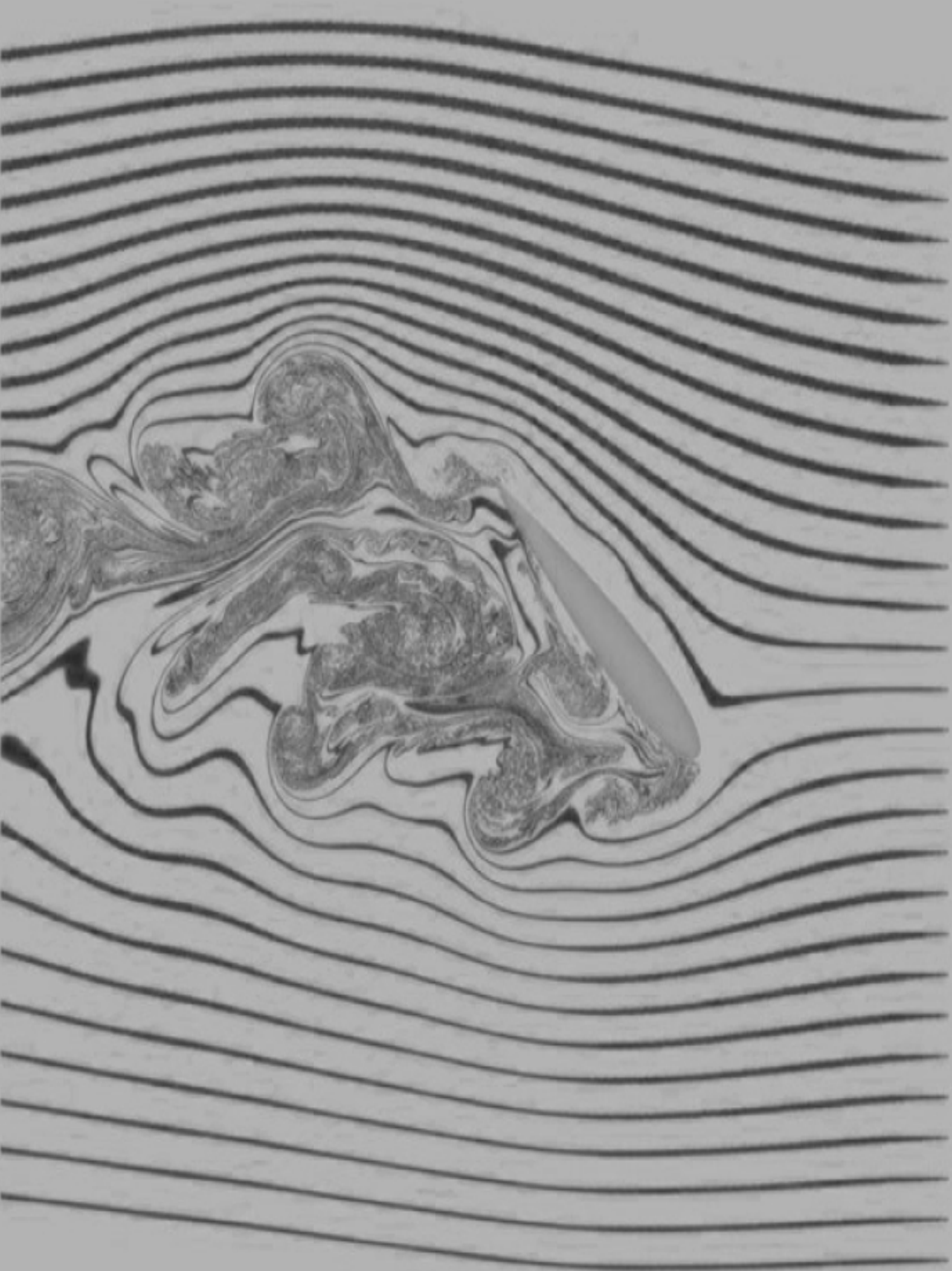
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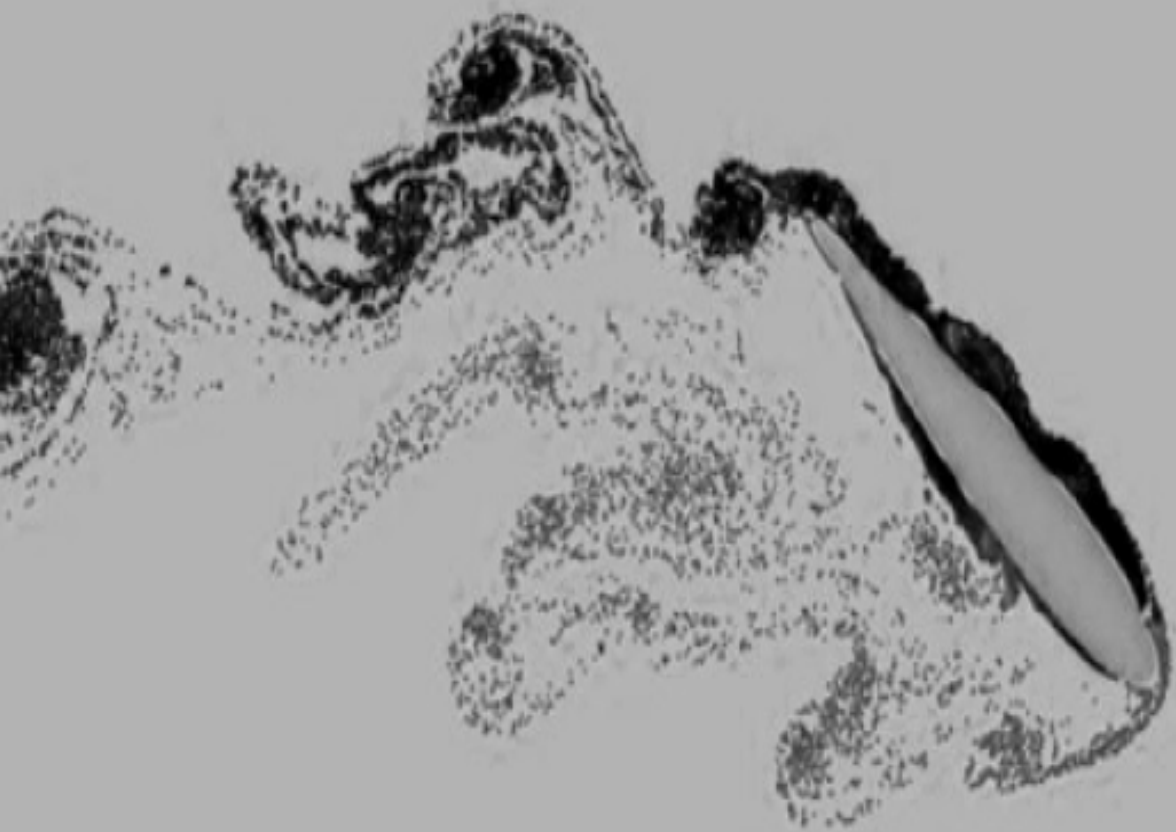


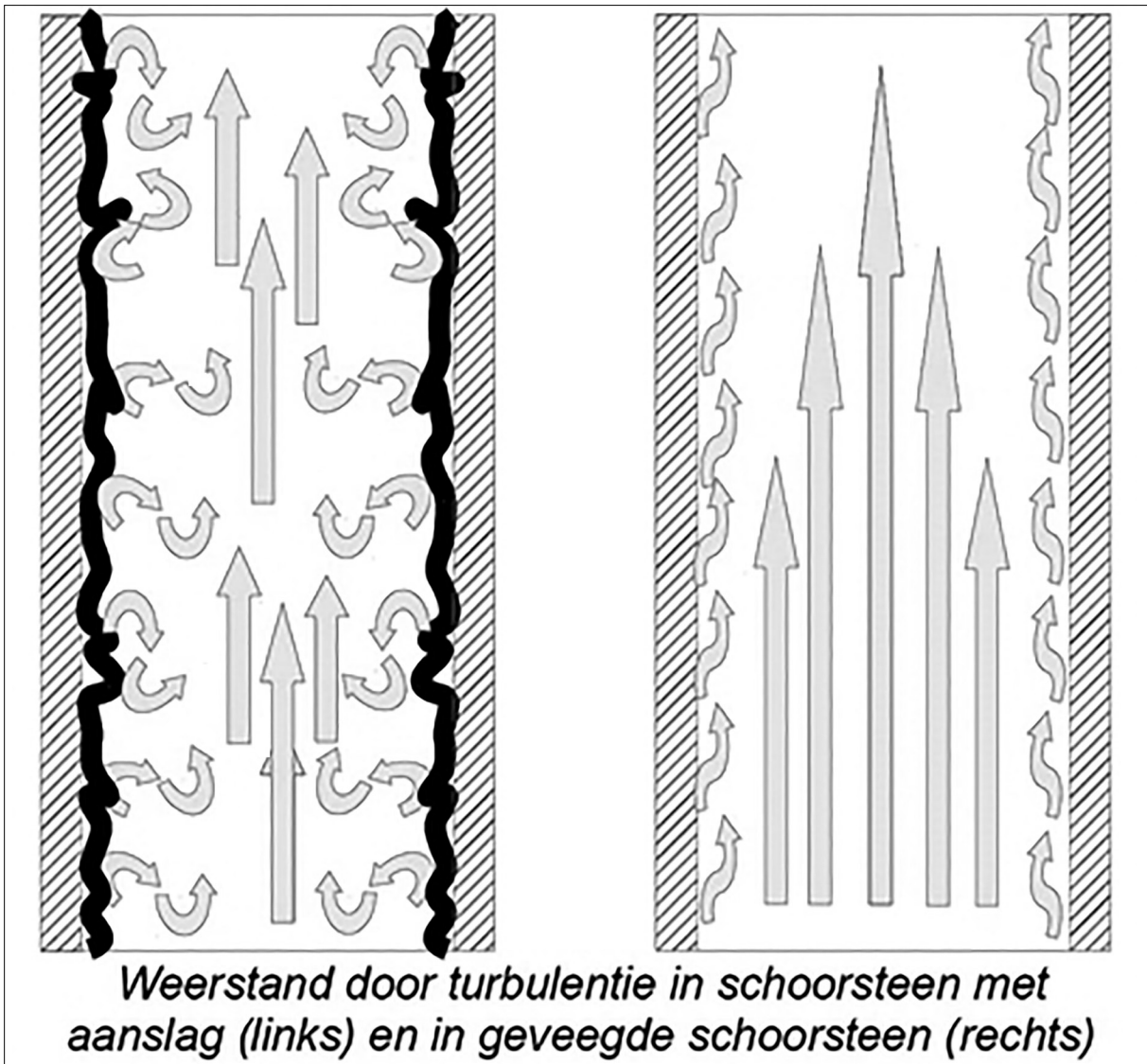


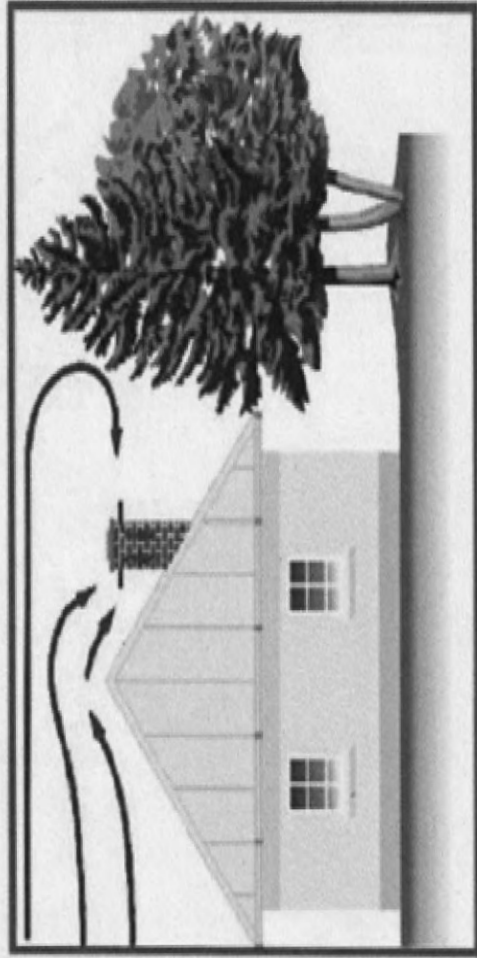




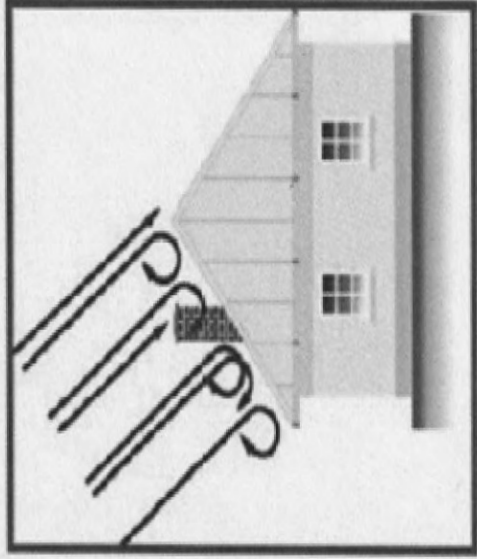




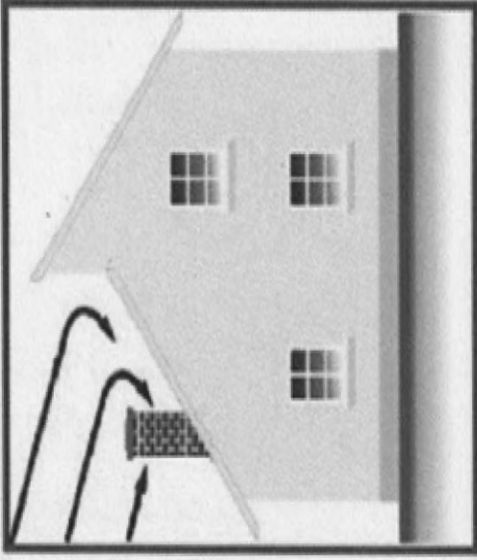




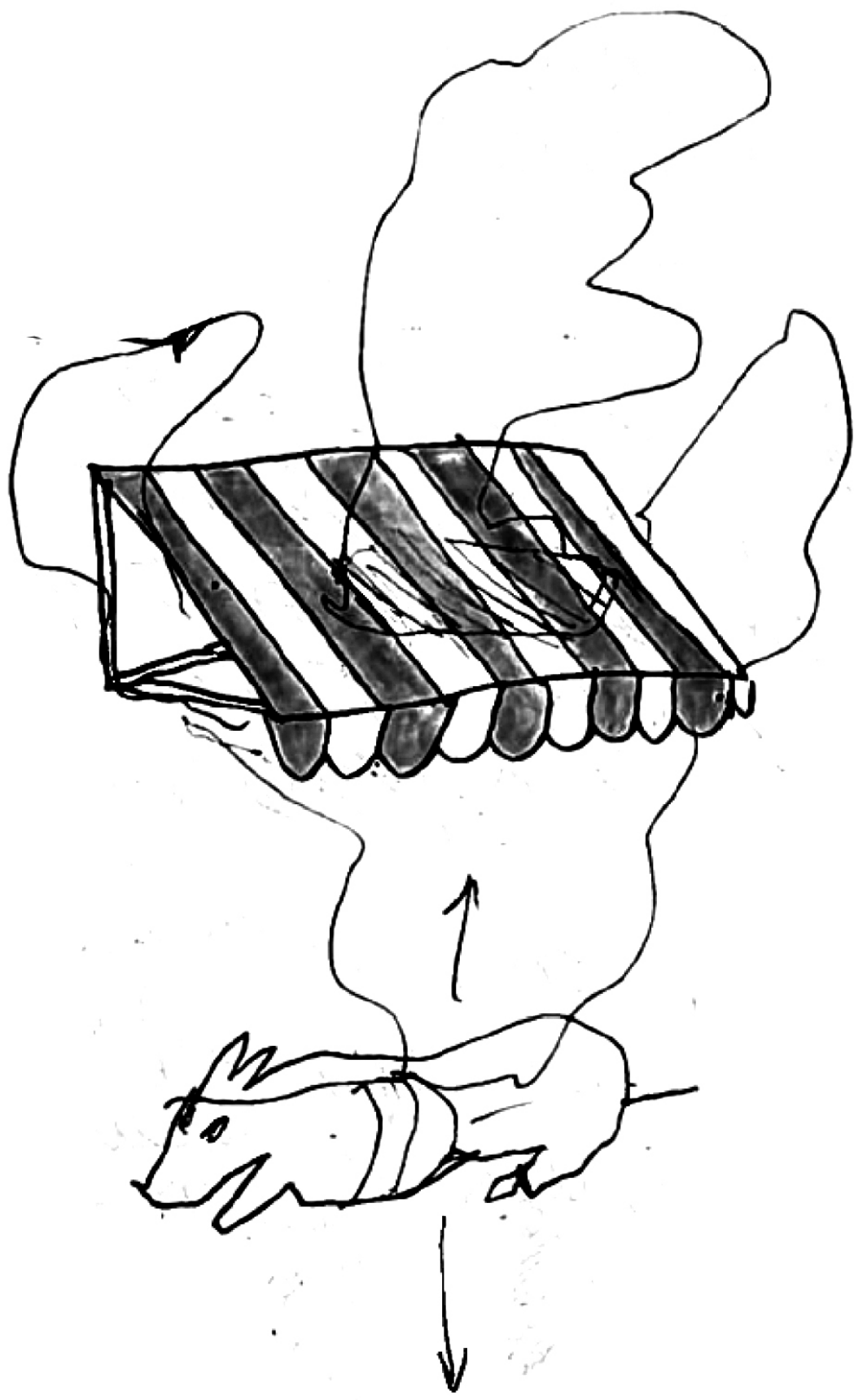
De grands arbres qui poussent près de la maison peuvent interférer avec le fonctionnement de la cheminée.

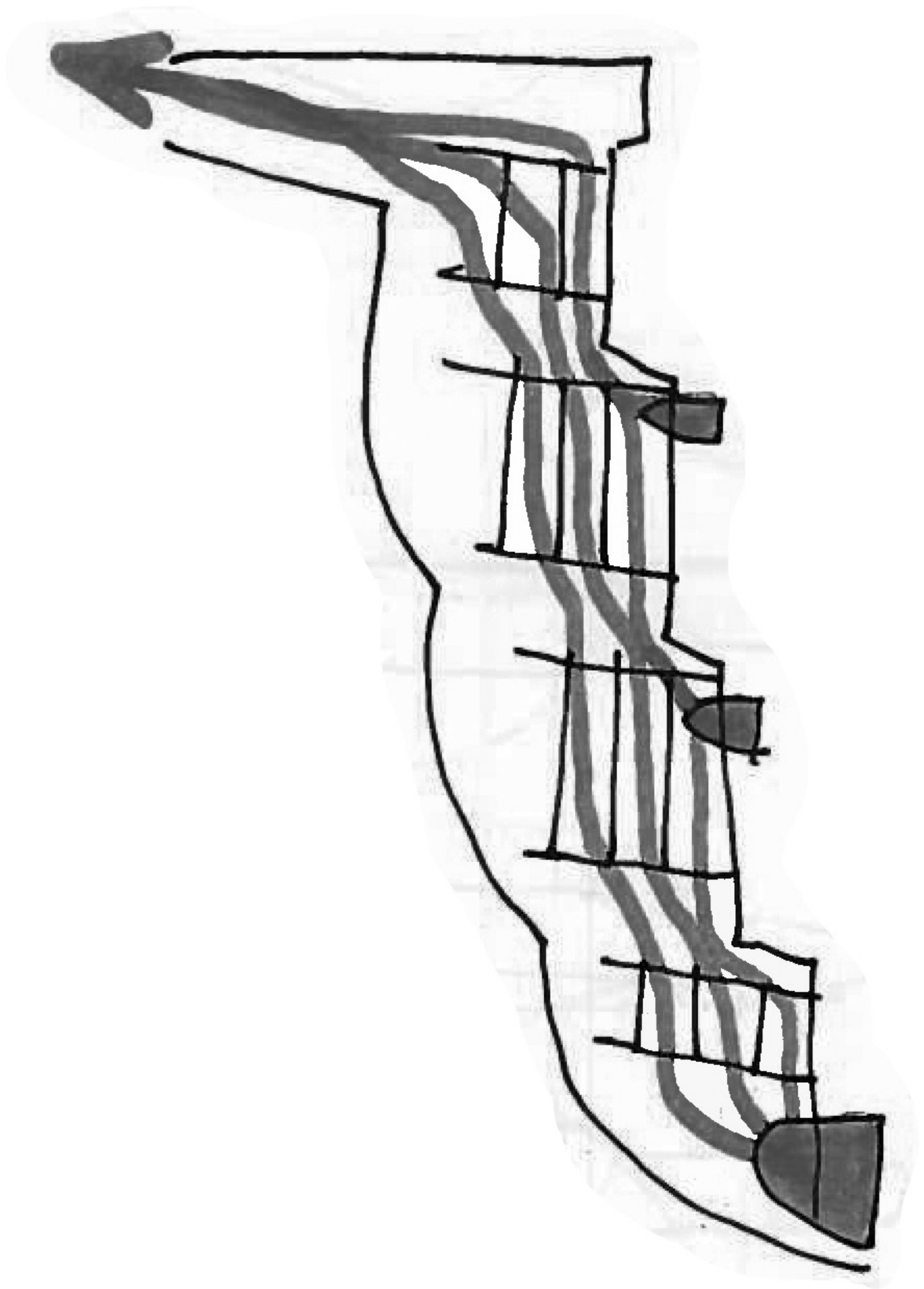


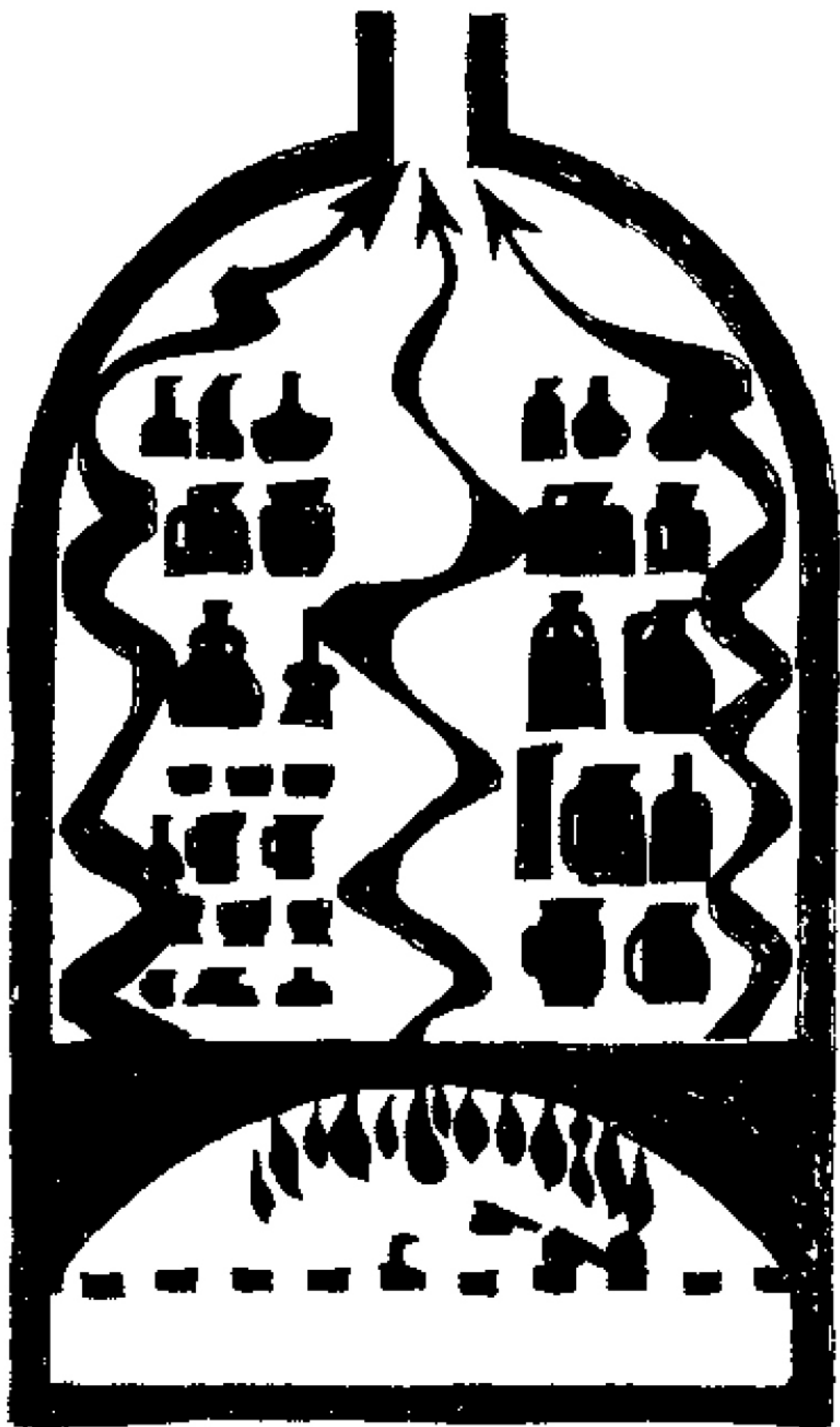
Le vent en pente peut fermer la sortie de la cheminée, bloquant le tirage de la cheminée.



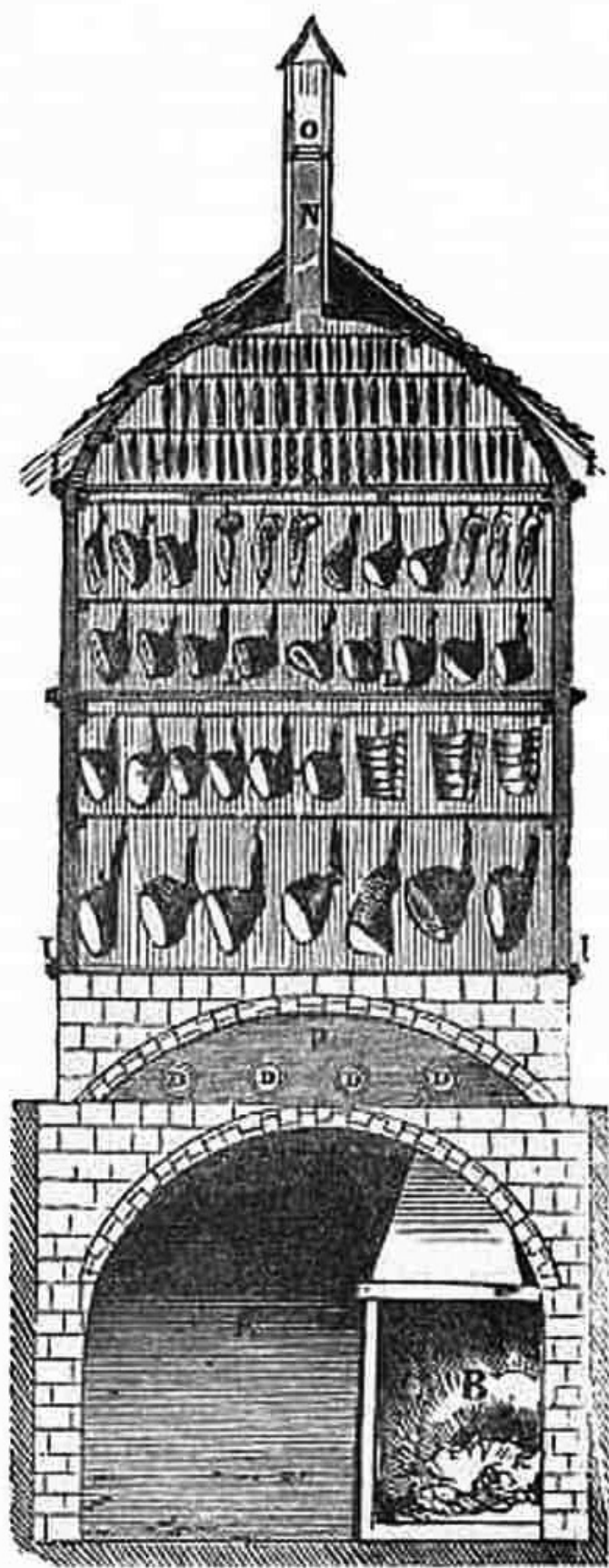
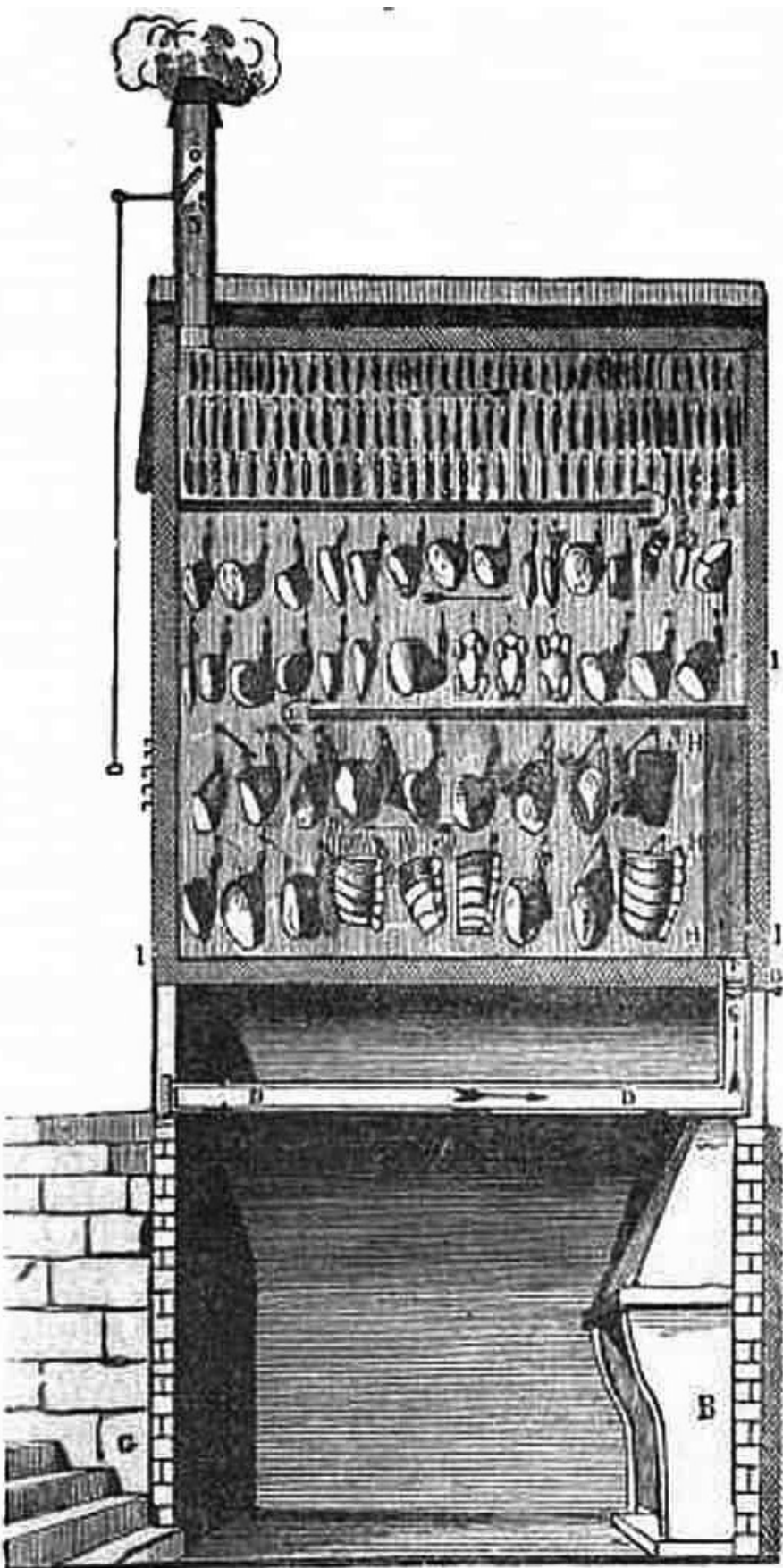
La cheminée est située trop en contrebas par rapport à l'arête du toit majeur.



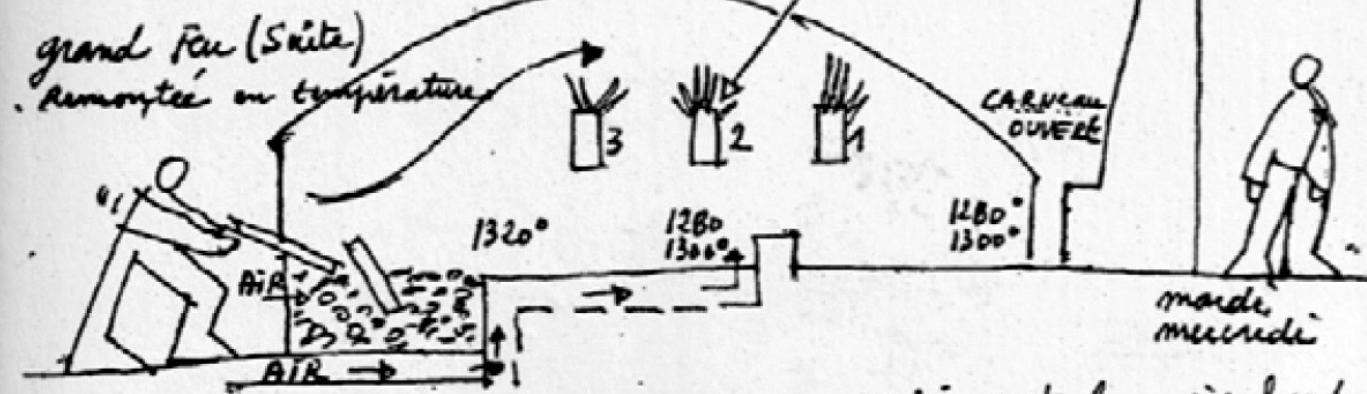
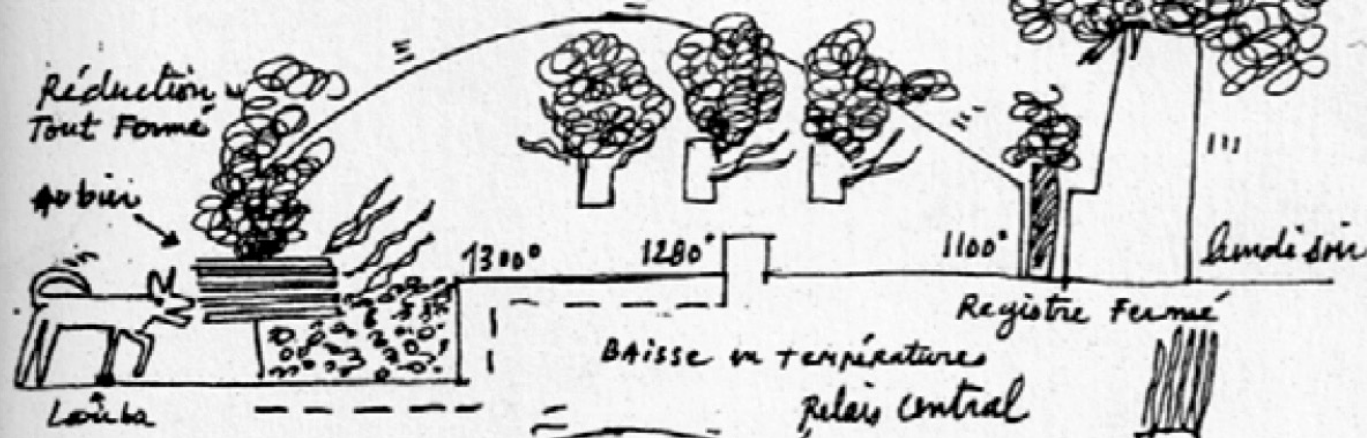
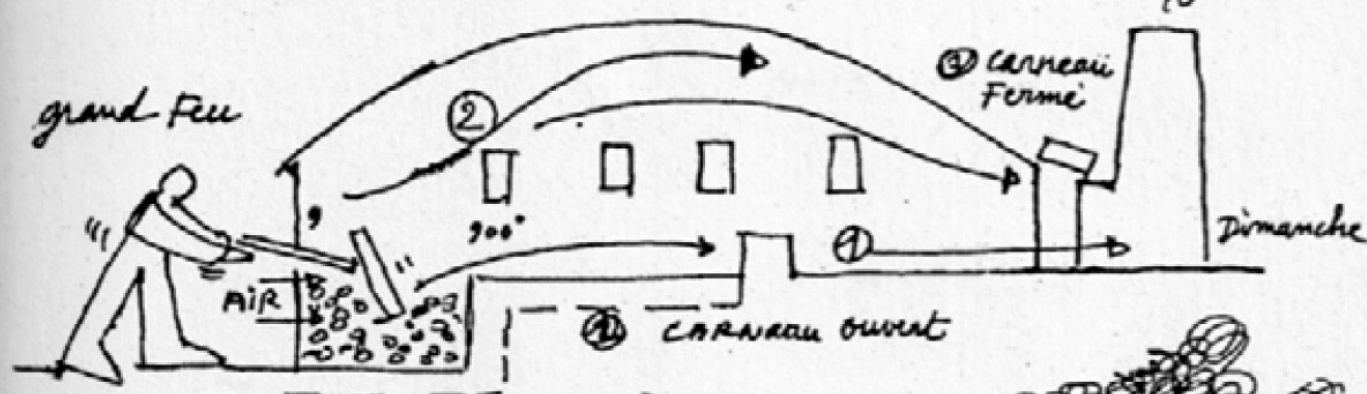
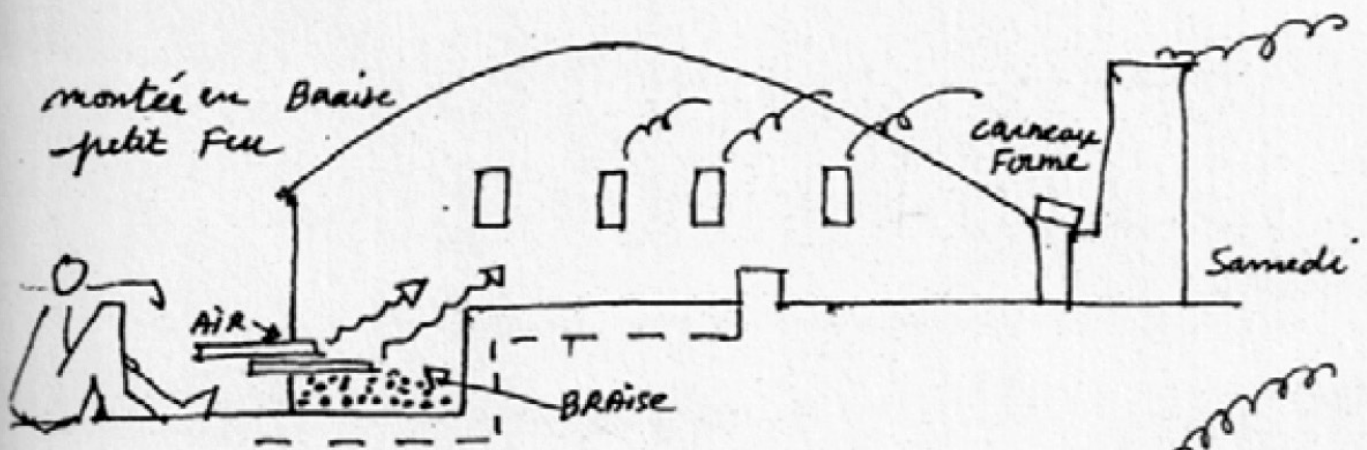








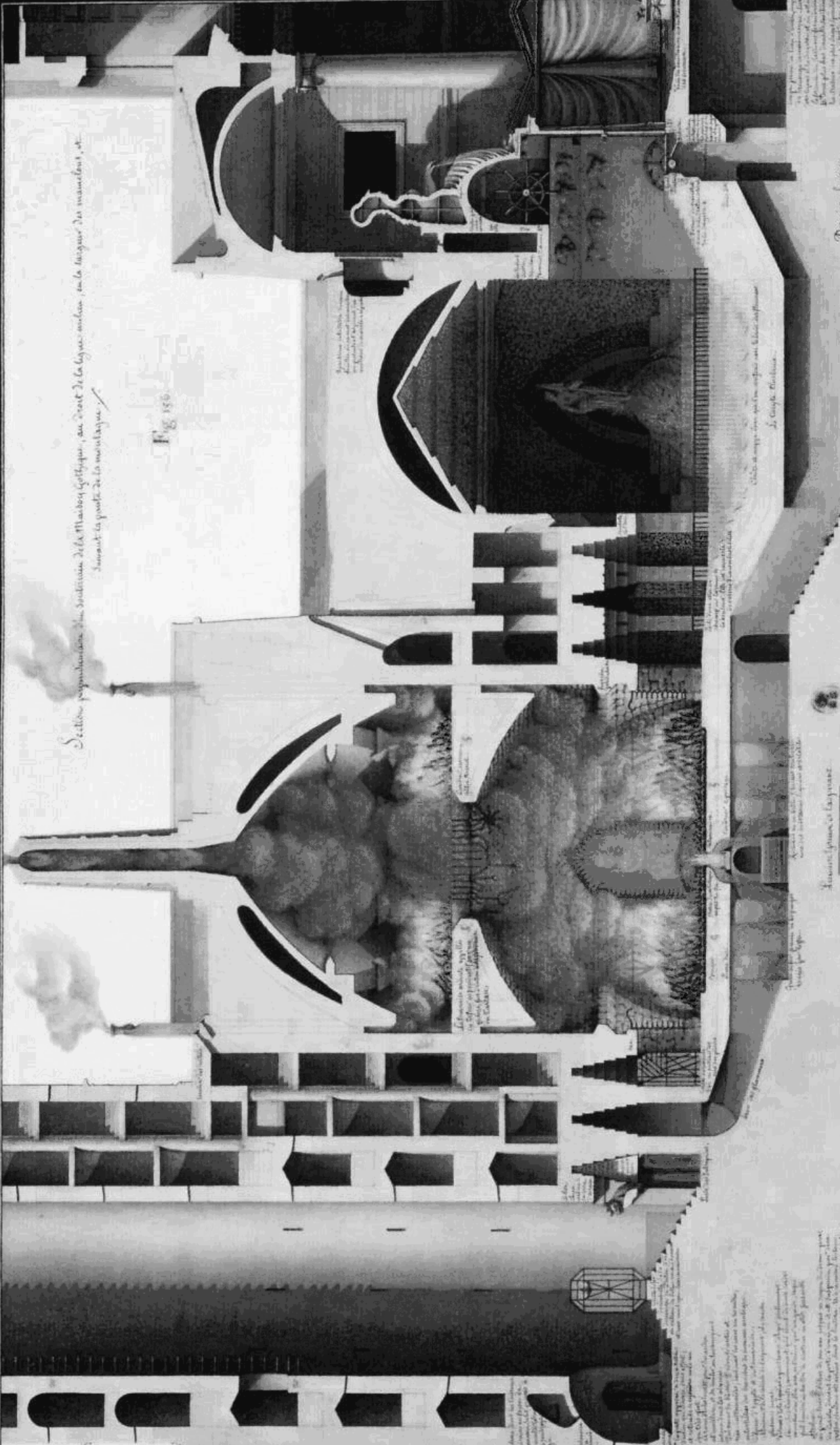




- Cuisson du Fond: 3 bois fendus par Relais central + Air chaud
- EMBRAISEMENT = Fermé devant - Chargement en charbonnettes par les Fenêtres latérales 1.2.3 - Simultanément -

Section perspective de la machine de M. de la Haye, au point de la ligne au-dessus de la machine, et
 suivant la porte de la machine.

Fig. 156



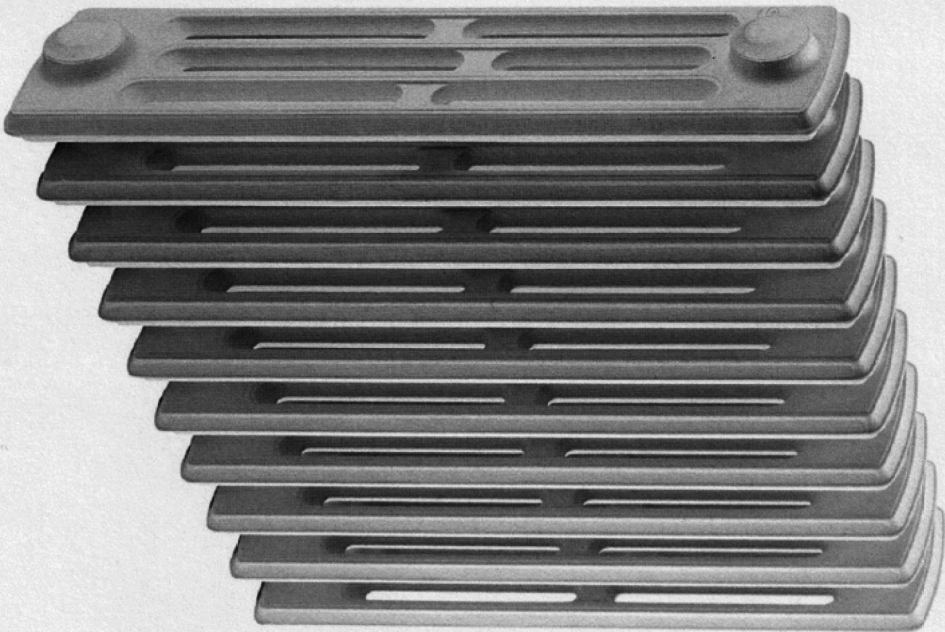
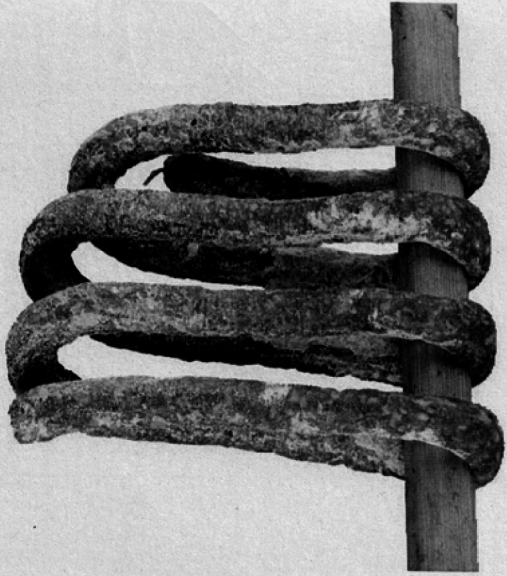
Deuxième figure.

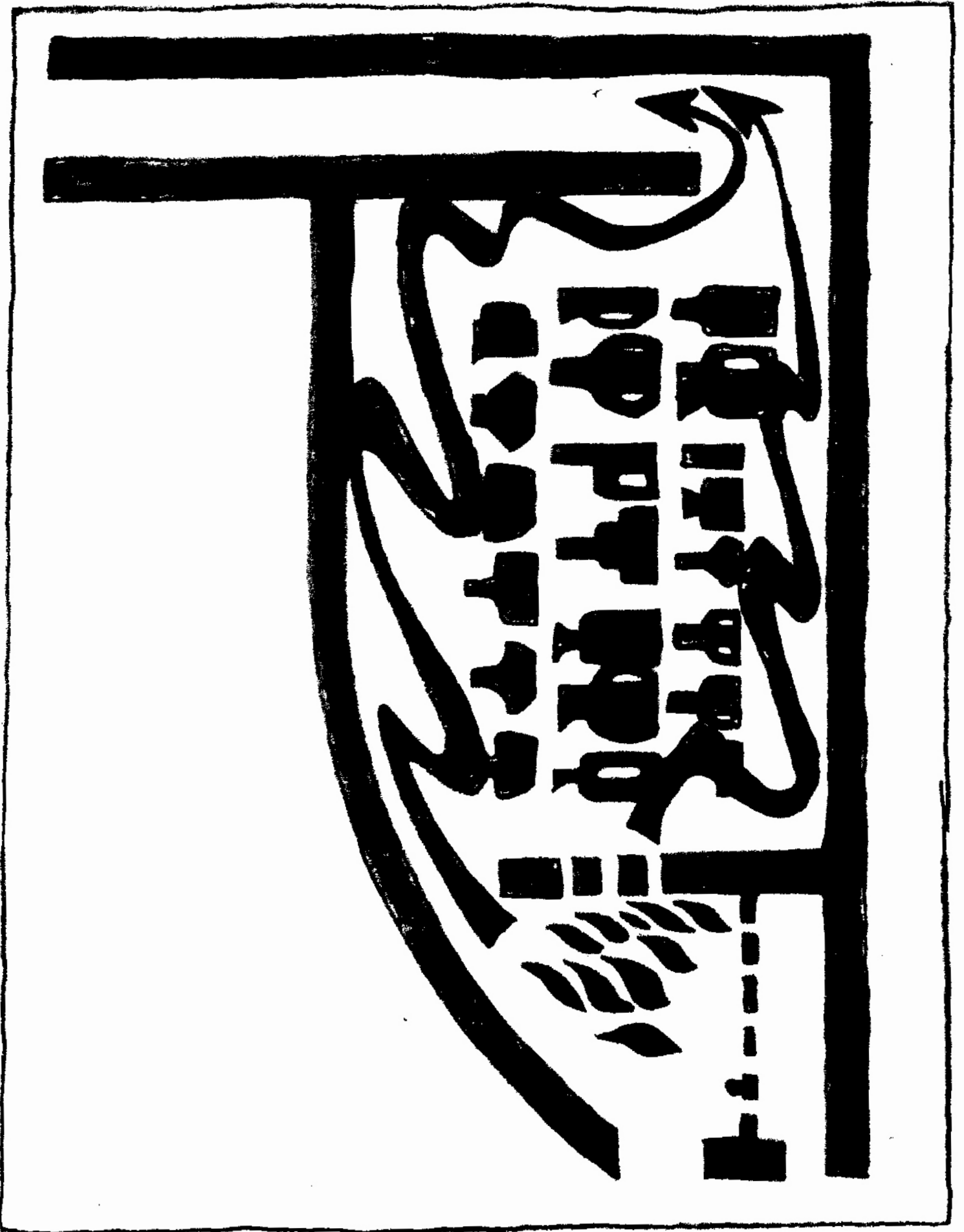
Deuxième figure.

Deuxième figure.

Le premier cylindre est le cylindre de la machine, qui est le cylindre principal, et qui est le cylindre qui imprime le caractère. Le second cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère. Le troisième cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère. Le quatrième cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère. Le cinquième cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère. Le sixième cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère. Le septième cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère. Le huitième cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère. Le neuvième cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère. Le dixième cylindre est le cylindre de la machine, qui est le cylindre qui imprime le caractère.

Les saucisses séchent
non loin de la cheminée.





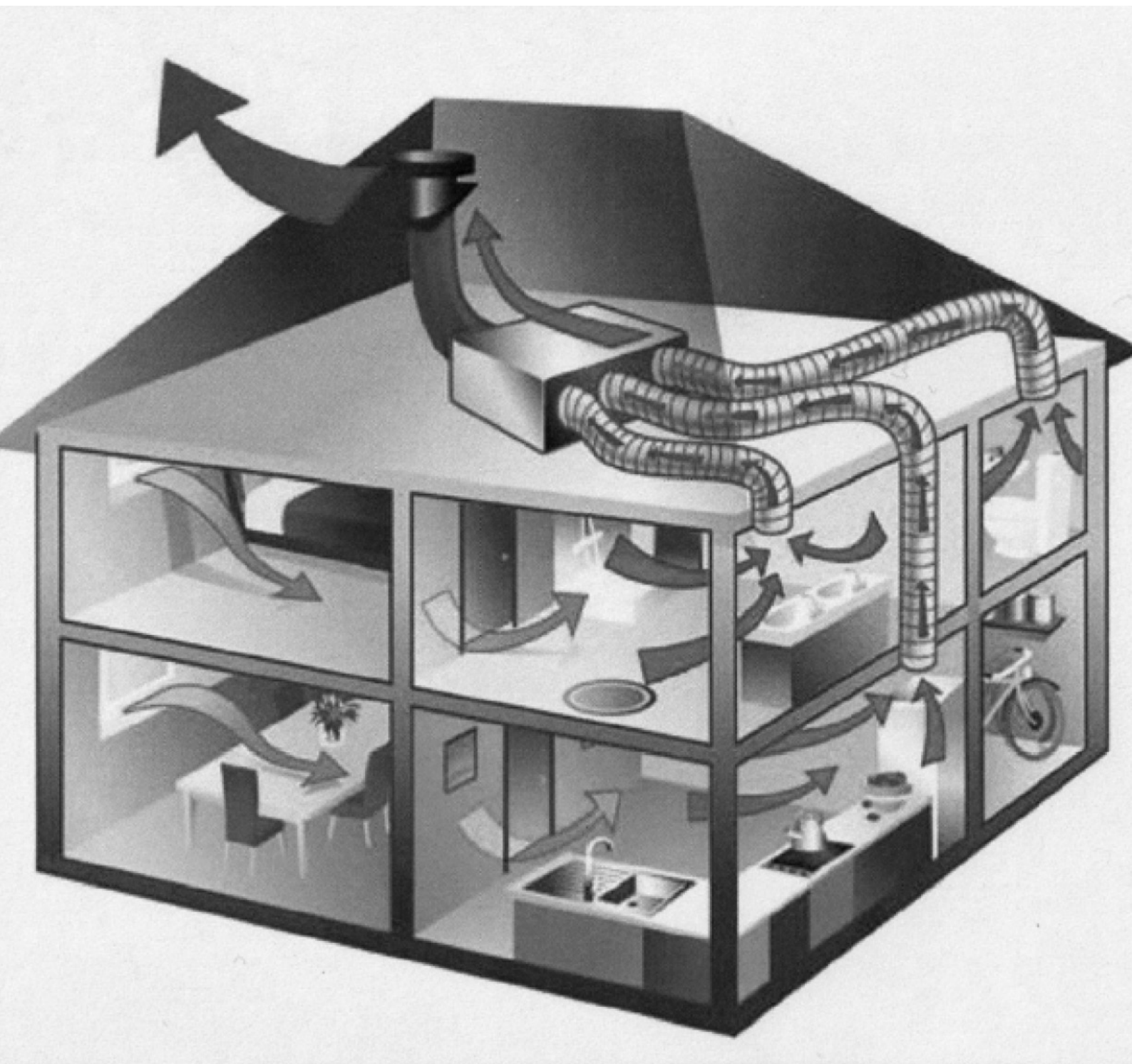
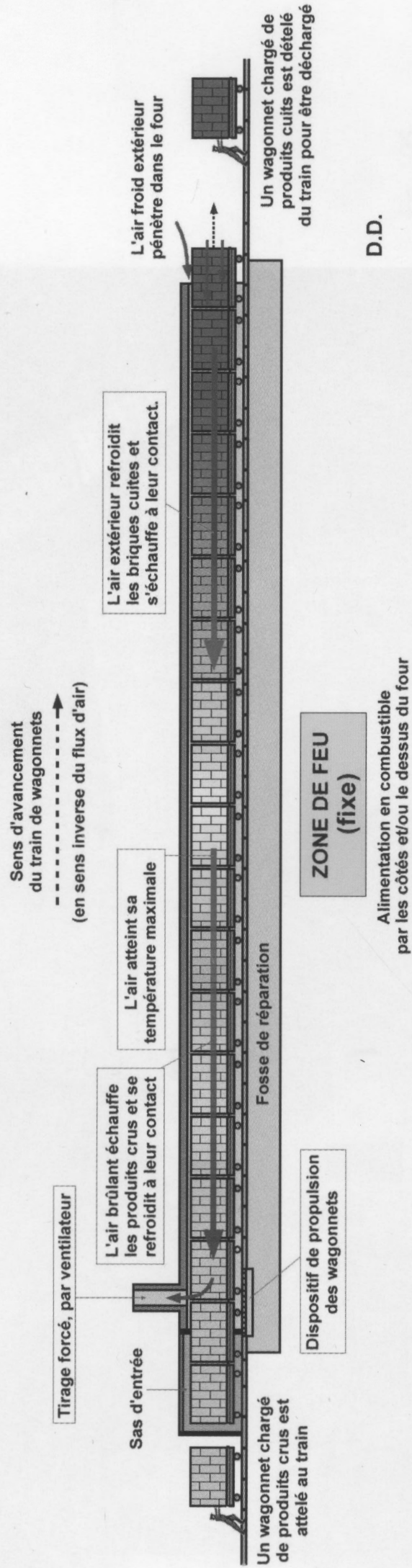


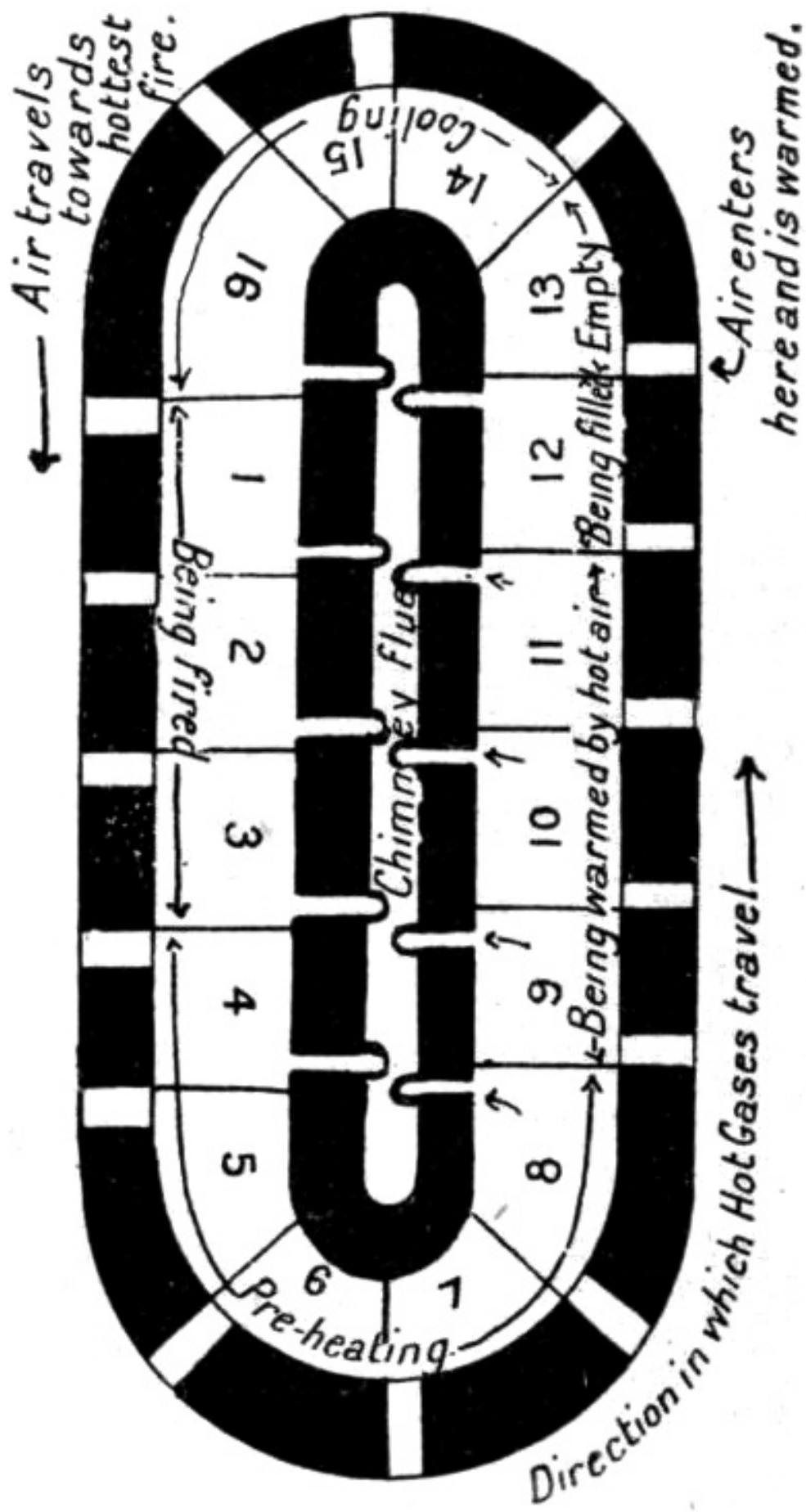
Fig. 103

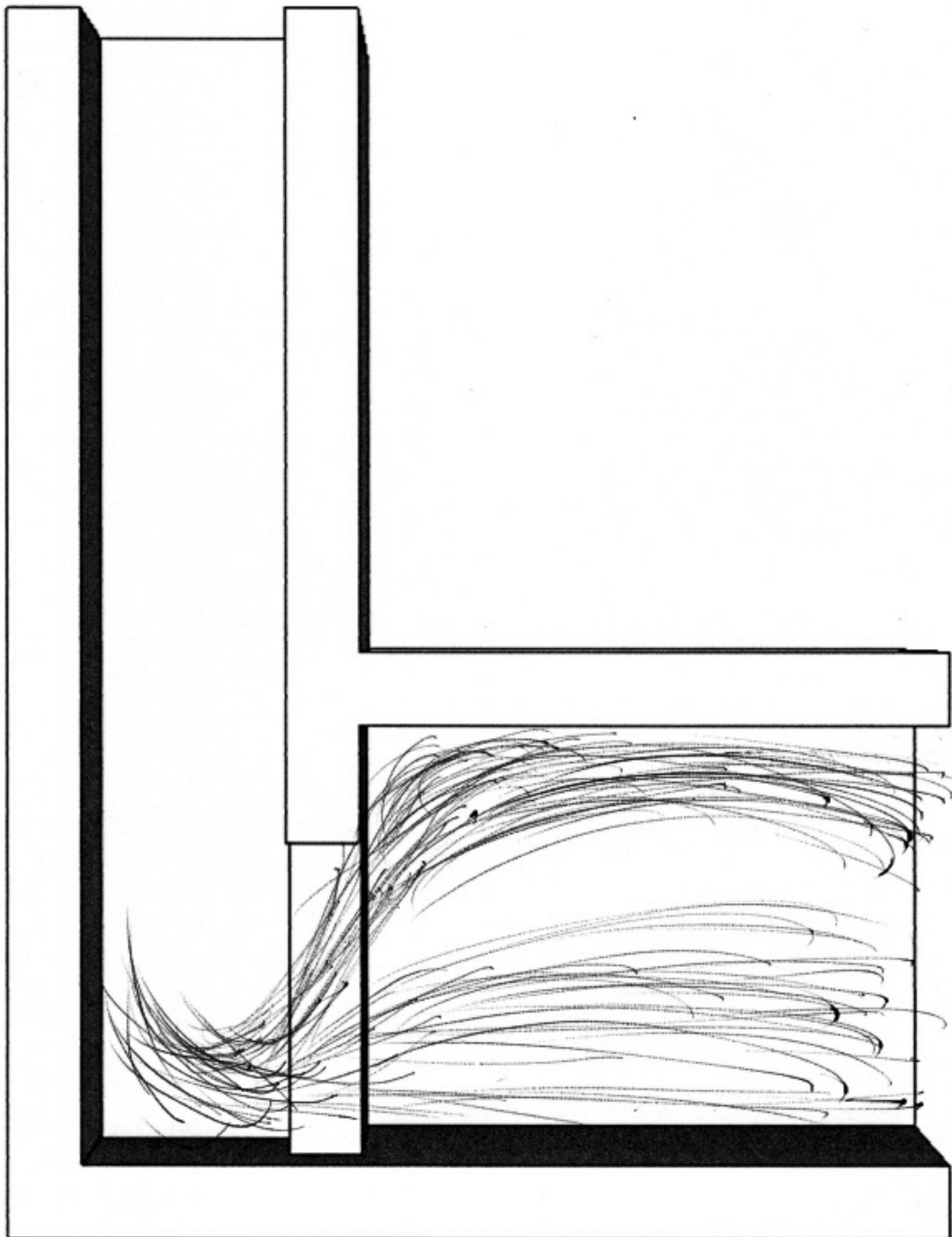
Principe de fonctionnement d'un four continu de type tunnel (le feu est fixe, la charge est mobile)

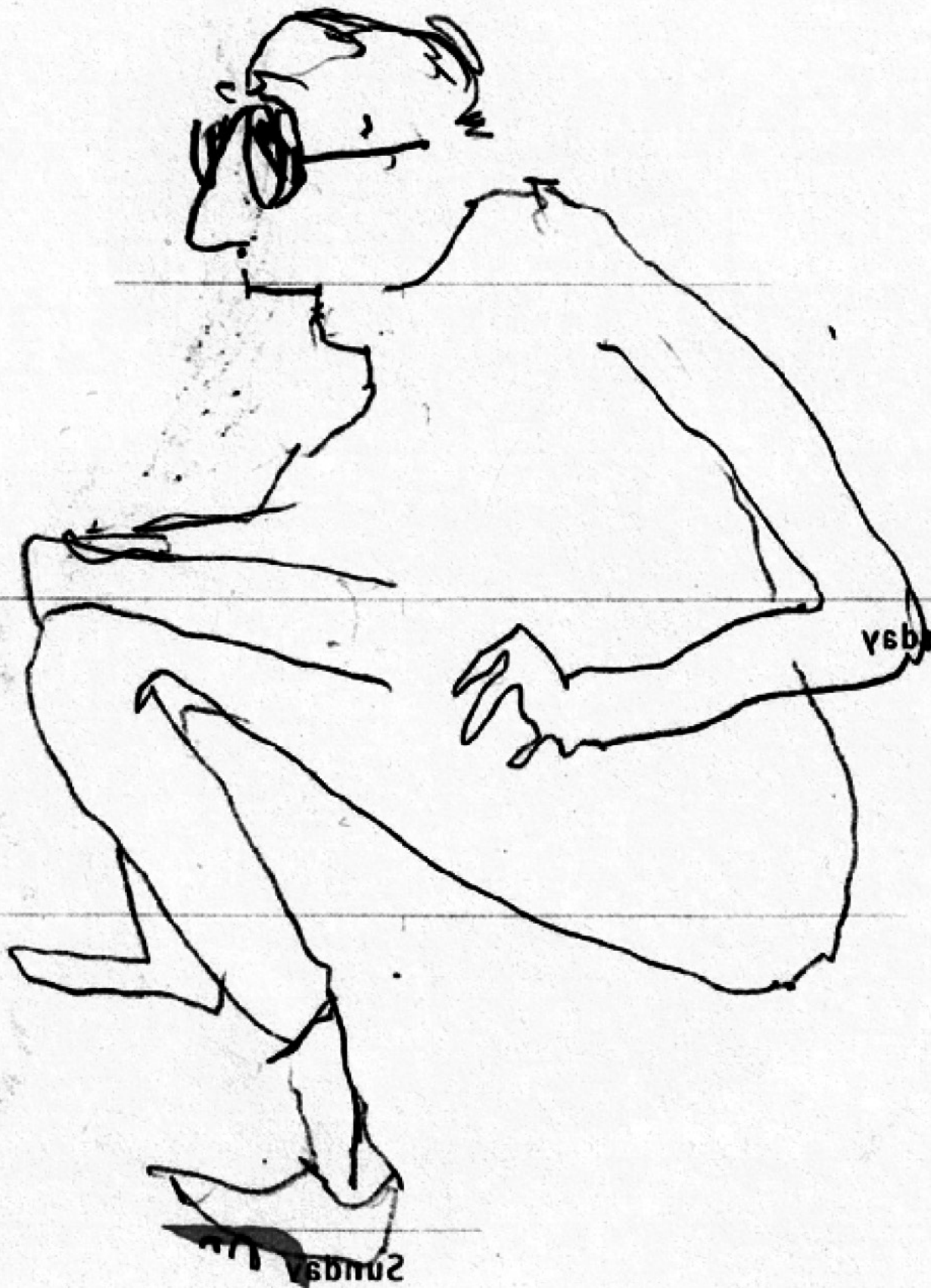
Vue en coupe longitudinale



D.D.



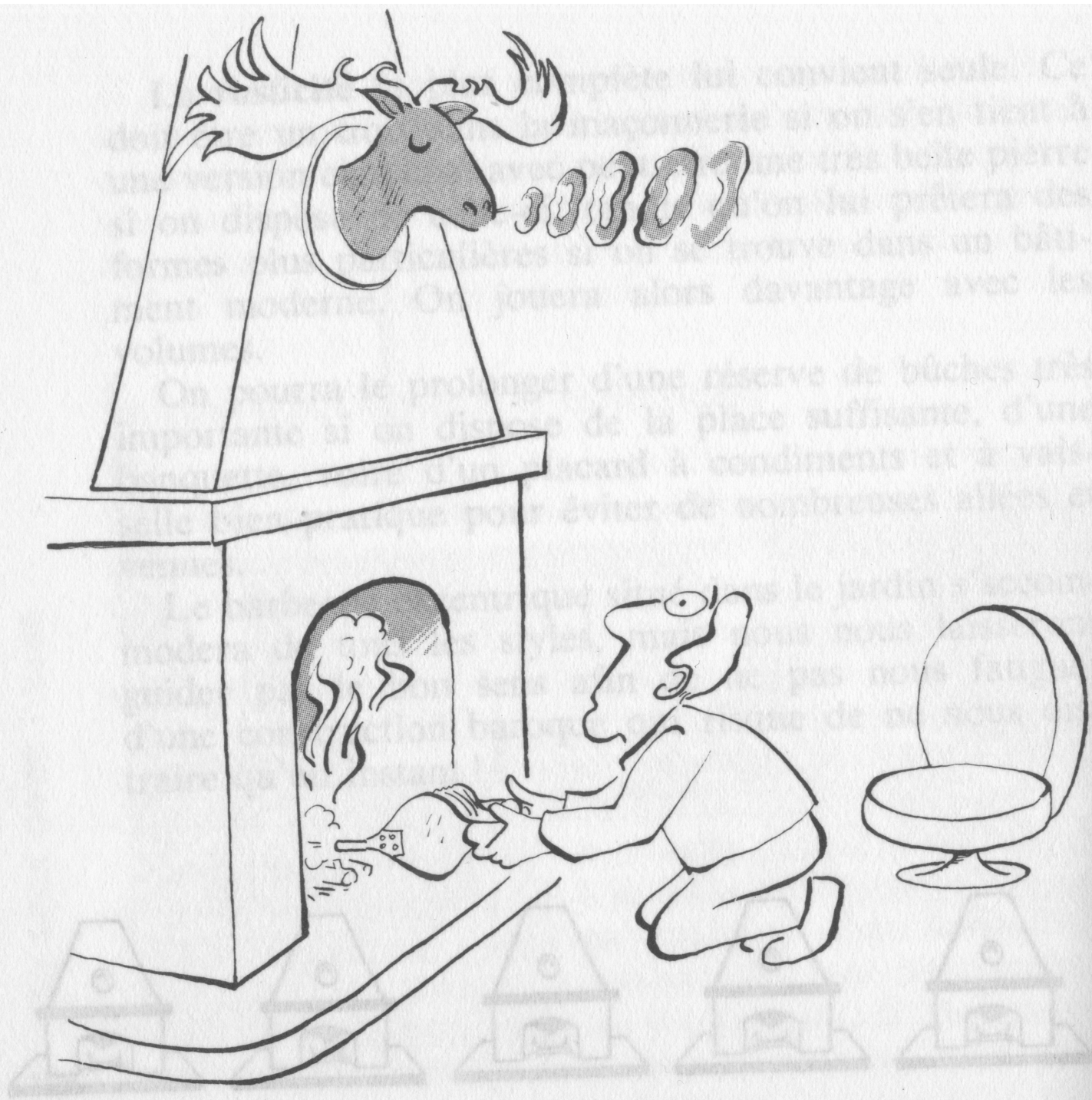


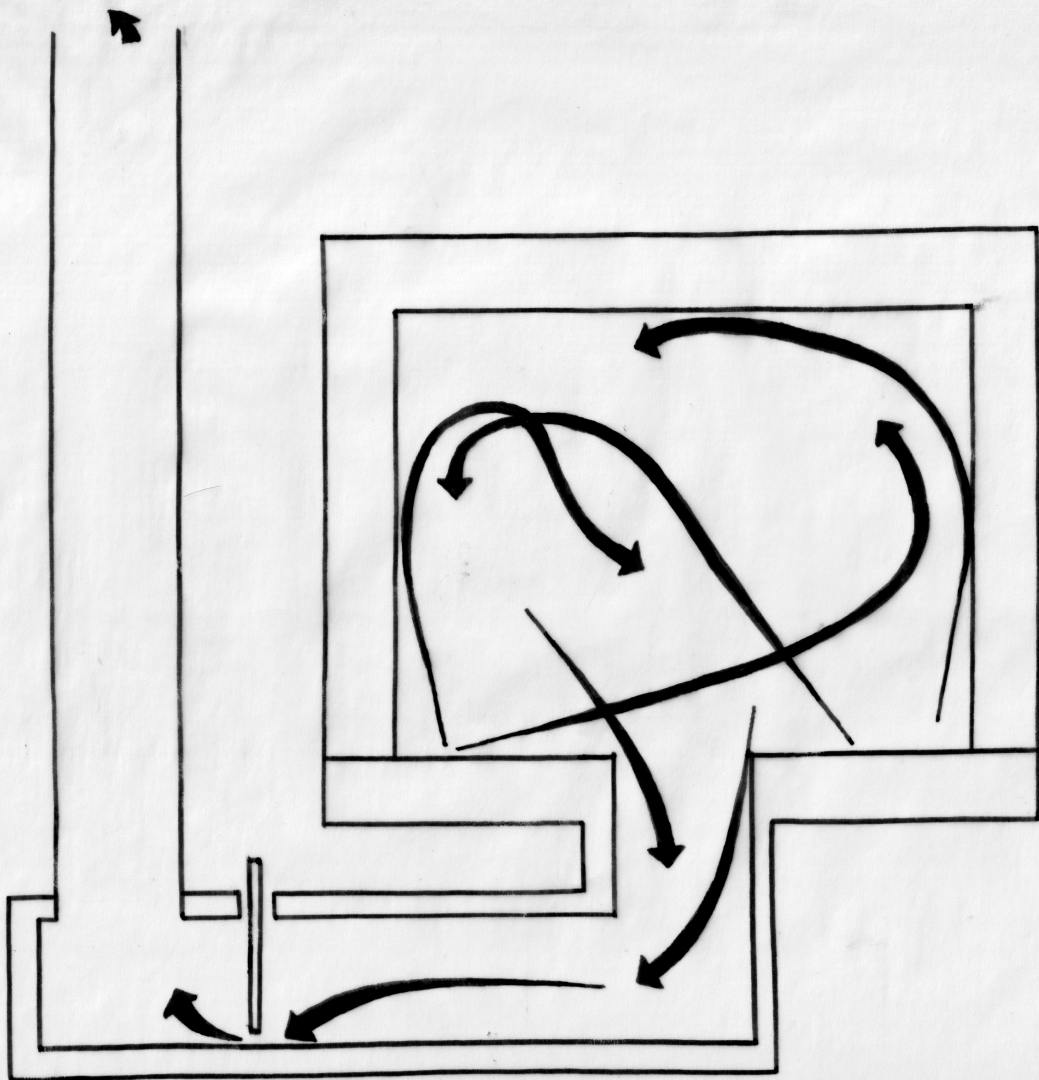


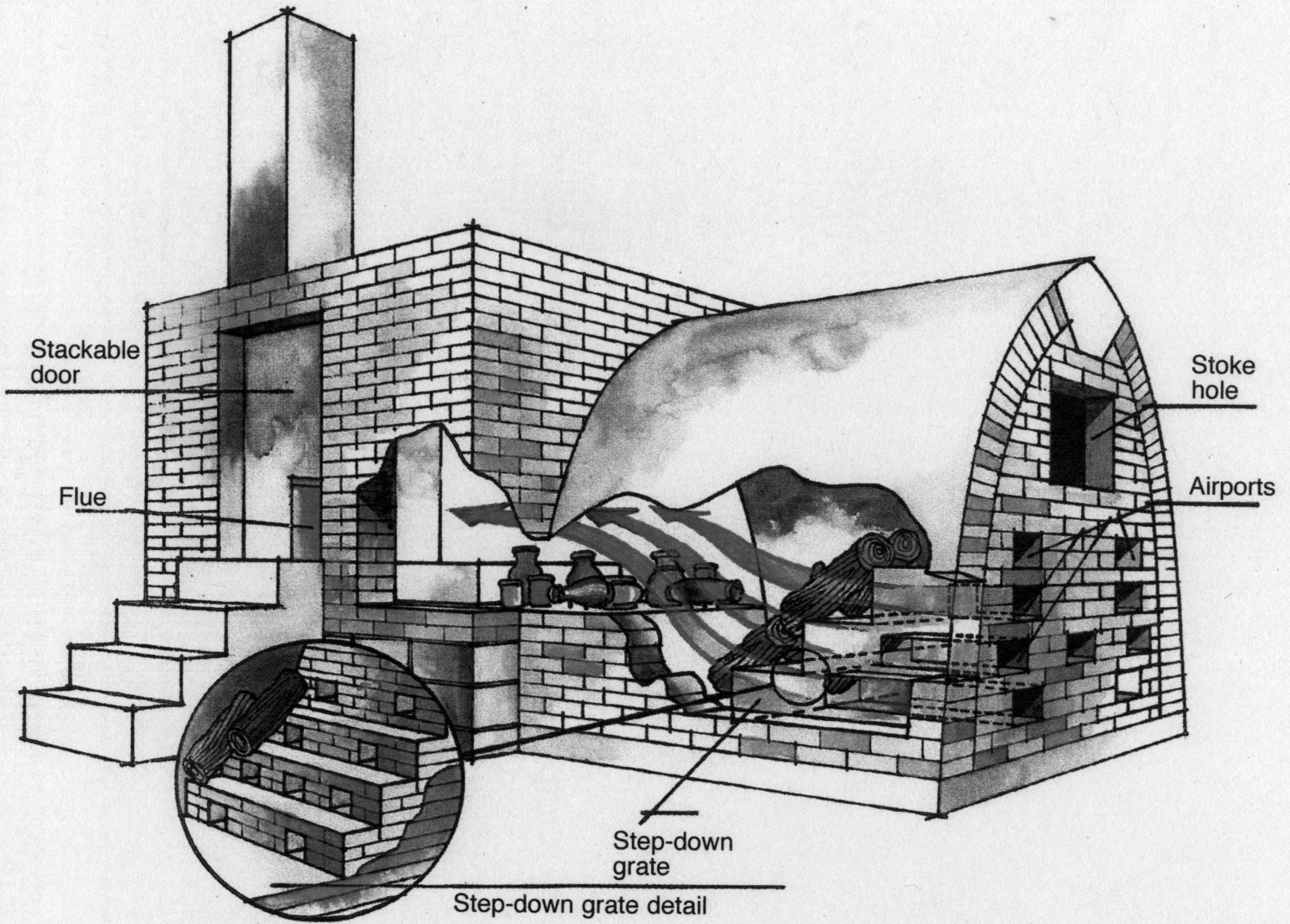
2002

Thursday
'02

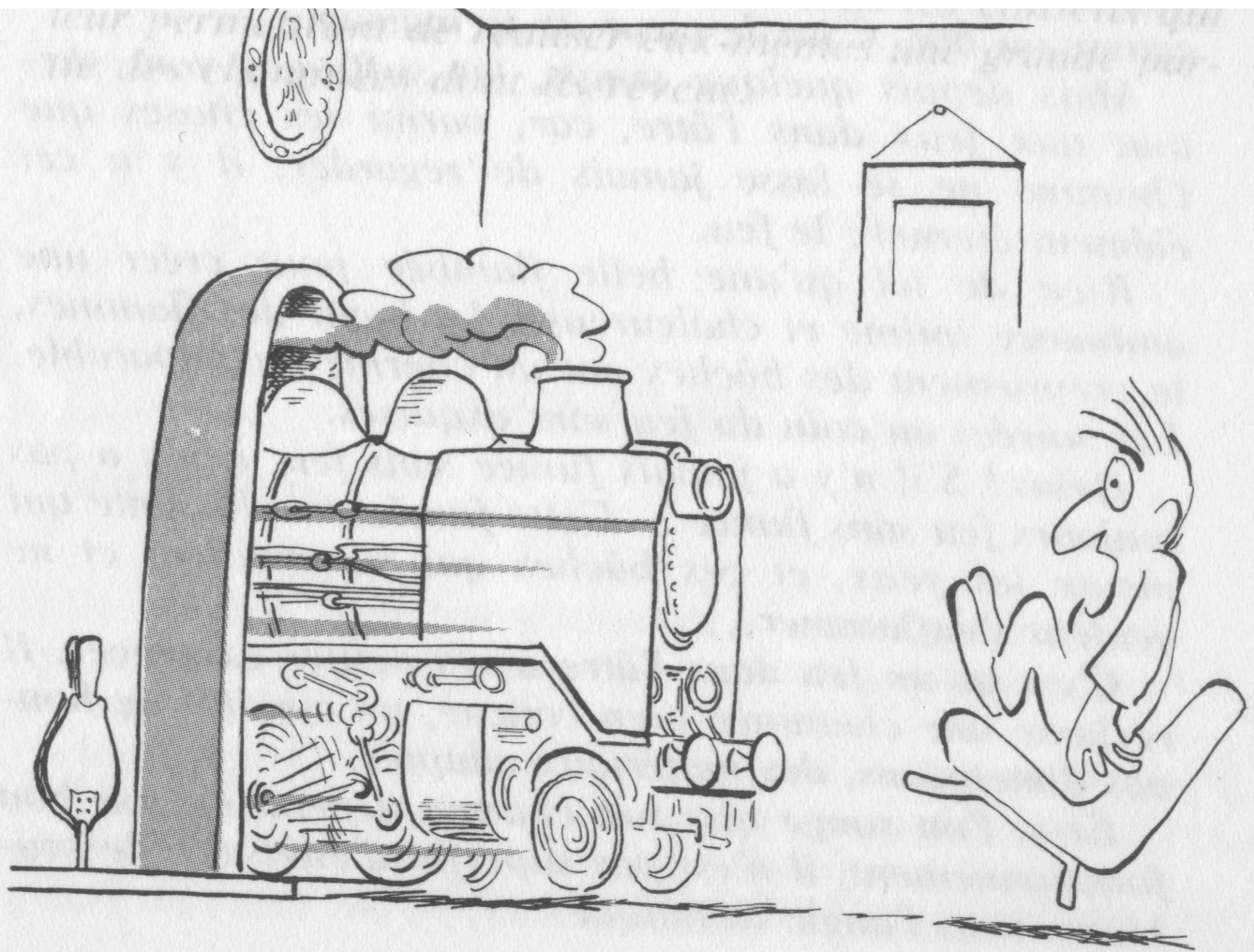
2002











1. Combustion principles of wood
Unknown
2. How to make a fire
La préhistoire du feu, C. Perès
3. My first fire game
Unknown
4. Archeological remains of first known ceramic oven at Dolni Vestonice
Unknown
5. Starting a fire
Fire as an agent in human culture (book lent to Michiel Reynardt)
6. Man starting a fire in the 19th Century
Fire as an agent in human culture (book lent to Michiel Reynardt)
7. A potter cutting wood
Pottiers et poteries populaires en France, Marc Pillet
8. Wood burning, charcoal making
Unknown
9. Men barbecuing on a wheelbarrow
Research on rising warmth with a few detours, Clementine Vaultier
10. Roel barbecuing at 019
"Anything but certain" APE book
11. A potter feeding his kiln with wood
Pottiers et potiers de Cloussat.
12. Ventilation and insulation system of a Tipi
Du bois à la cendre, vivre avec le feu, Louis Merle d'Aubigné
13. Downdraft circulation of flames in a ceramic kiln
The Kiln book, Daniel Rhodes
14. Lady in her heated hammam tent
Unknown
15. Quarantine air circulation system
Fireplace, Sébastien Marot, AMO and students
16. A potter checking the temperature in his kiln
Pottiers et poteries populaires en France, Marc Pillet
17. Smoke Jack, a device to guide smoke to the Chimney in a Rotisserie
Theatrum Machinarum Novum, Georg Andres Böckler
18. Extraction of smoke during ceramic firing. (see also 19)
Unknown
19. Outside area of Vallauris pottery house (similar to image 18)
Pottiers et poteries populaires en France, Marc Pillet
20. Filling the fire chamber before the fire
Unknown
21. The Puddler
Artwork by Constantin Meunier
22. Fire in the fire Chamber
Artwork by Oscar Tuazon shared by him

23. The kiln vault during firing
Pottiers et potiers de Cloussat
24. Carbon
Artwork by Bert Villa and shared by him
25. Pipes of Andennes
Unknown
26. Very expensive chimney
Reference from Bert Villa's Carbon archive
27. The physics of the falling chimney tower
Gabriel Varieschi, LMU Physics
28. Bottle kilns
Unknown
29. Visible chimneys conducts
Picture gleaned on Instagram
- 30.
31. Chimneys and chimney sweeping children
From Mechanic's Magazine, 1834
32. Chimney Sweepers
From the movie Mary Poppins
33. Formation and pressure in a Cumulonimbus cloud
Unknown
34. Cloud formation
From research on rising warmth with a few detours
35. The Great Fire of London of 1666
Engraving by Matthäus Merian
36. The movement of smoke through the lungs
Unknown
37. Simulating the motion of viscous fluid substances, Navier-Stoke Equation
Claude-Louis Navier, George Gabriel Stokes
38. Communication through smoking signals
Unknown
39. View into the second combustion room of a batch rocket stove with double helix
Image taken during the construction of the warmbed in Genk, as part of the project "Le Paysage Ménagé"
40. Woman looking down a chimney
The first kiln of Carol and Arthur Rosser
41. In Roman times, smoke was also used to communicate, Roman Beacon Tower
Unknown
42. Smoke simulation with vortex shedding
Simulation by Rui Tao, Hongxian Ren, Delong Wang and Xiangen Bai
43. Smoke simulation with vortex shedding
Simulation by Rui Tao, Hongxian Ren, Delong Wang and Xiangen Bai

44. Resistance by turbulence in the chimney with soot and without
Unknown
45. Principle of good draft for chimneys
From 'research on rising warmth with a few detours'
46. Smoke and fat
From 'research on rising warmth with a few detours'
47. A multi-chamber kiln
Drawing by Clémentine Vaultier
48. Drawing of an oven
Clémentine Vaultier
49. Tunnel oven
Céramique architecturale en Basse-Normandie, couleurs du temps
50. Smoking house
Engraving by Unknown Autor in Maison rustique du XIXe siècle
51. Chimney around 019
Eat this
52. Sketch of his oven by Eric Astoul
Architecture du feu, quelques fours de la Borne, Éditions ARgile, Banon
53. A Chimney building
Jean-Jacques Lequeu, maison gothique
54. Analogy between a sausage and a radiator
from research on rising warmth with a few detours
55. Drawing of an oven
Clémentine Vaultier
56. Air ventilation in a house
from research on rising warmth with a few detours
57. Tunnel oven
Céramique architecturale en Basse-Normandie, couleurs du temps
58. Drawing of a Hofmann oven,
Searle A.B, Cement, Concrete and Bricks
59. Smoking trophies
Les cheminées, construction et aménagement, bibliothèque Mara bout
60. Sketch of the flames in a batch rocket stove
Drawing by Peter van den Berg, www.batchrocket.eu
61. Flux of flames in an oven
Drawing made by Clémentine Vaultier after a drawing found in Les fours, Dossiers d'argile n°5, printemps 1990
62. Flux in a Kiln
Unknown
63. Drawing of people around a fire
Clémentine Vaultier
64. Drawing of people around a fire
Clémentine Vaultier
65. The feeling of a bad draft
Les cheminées, construction et aménagement, bibliothèque Marabout