

Acustica

for experimental sound-producers and loud-speakers

One of the fundamental thoughts behind this composition is expressed in the actual invention of the sound-sources: new instruments as self-evident supplement to currently existent sound-makers (together with experimental acoustical equipment, the manipulation of which presupposes a diverse musical faculty).

Some examples:

Castanette-Keyboard with a scale of diameters from $1\frac{4}{5}$ " to $7\frac{1}{5}$ " which can be "tuned" by means of double-bass pegs in the action-tention (with the result that even deep-sounding castanettes will sound clearly when played extremely quickly);

two sets of **Bull-Roarers** (one with an aerodynamic profile, the other out of plain pieces of wood), which are wielded by hand and worked by twisted rubber band.

Nail-Violin, a form of the idiophonic friction-instrument invented in the mid-18th century, with 16 iron rods of equal width but of different lengths (between $2\frac{1}{25}$ " and $16\frac{4}{5}$ "; temperature $^{15}\sqrt{8}$) which vibrate transversally when played with a cello or double-bass bow;

Roundpeg-Violin, a version of the nail-violin (9 wooden sticks between $3\frac{23}{25}$ " and 3'; temperature $^8\sqrt{9}$);

Scabella, clapper-sandals worn by Ancient Roman choir-leaders, but fitted with a hinge in the middle of the sole, so that the performer can achieve audible results with the minimum of effort;

Hinged-board (Crepitacolo), a flat piece of wood with various handles attached which the iron parts hit according to the force with which it is shaken back and forth (a new version of the original church bell);

five-tongued **Ratchet** with common crankshaft, the cogwheel frequency of which is tuned in five stages, so that the loudness of the noise can be influenced by altering the tongue-setting;

Pick-ups and Diaphragms in as many forms as possible (other than the usual ones), in order to explore the devious route to higher sub-fidelity: e.g. plastic funnel and mouth-cavity, knife-feather and ukelele, sandpaper and drawing pin, matches with and without box;

Cross-blower for the timbre-modulation of the pages of a book;

Balloons as resonators for wind instruments and as (regained) air-supply in the production of oral processes;

Pipe-branch, a piece of narrow hose approx. 130' long with connections (on the ends of which organ pipes [mixtures] and penny-whistles are attached), which is fed by a compressed-air cylinder of 27 cubic feet capacity (an "aerophone" for collective use, where only generously-minded players can play together: should one of the performers divert the air-current for himself alone, all the others will be made silent);

Gas blow-lamp, to produce vibrations in pipes, the fundamental frequency of which is reached by altering its total length;

Mutes for wind instruments with built-in loudspeakers which permit a perfect diaphony with the simultaneous playback from the tape recorder of the blown notes;

Megaphones, likewise with built-in loudspeakers (also to be used by contestants, in which case power-saving cassette-recorders are switched on to drown the puny volume of the official side);

Humming-loudspeaker (the German term "Summenlautsprecher" derives both from "Summe" = sum and from "summen" = to hum), the diaphragm of which is worked on with various articles during the performance (so that the loudspeaker becomes more of an instrument than an actual loudspeaker).

The work consists of two—almost separate—plans; one constitutes the playback of a 4-track tape recorder with a fixed sequence, whereas the second derives from the playing of 2 to 5 musicians which can be varied from performance to performance in the construction of acoustic material and in the manner of interreaction. I have deliberately avoided combining both plans as I have always had the impression—also in my works which display similar problems—that the attempt to weld together electronic and instrumental music is more wishful thinking on the part of the listener than acoustical reality. (On the other hand, this blending is immediately attainable if the total sound comes from the loudspeaker).

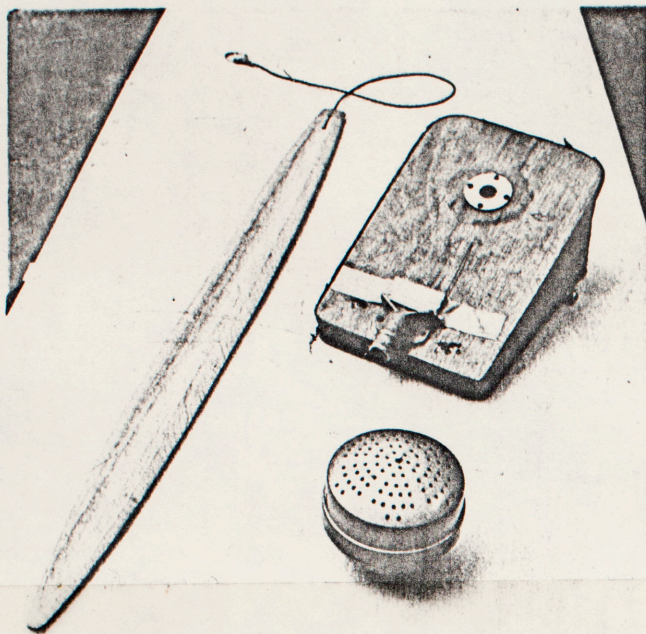
The four-track tape was produced in Winter of 1969 in the electronic music studio of West German Radio, Cologne (WDR). The recording consists of purely electro-acoustically produced material as well as recordings of instrumental and vocal sounds which were not manipulated. (Apart from the instruments, the voices of Alfred Feussner and William Pearson are to be heard).

The point of departure for this tape-composition was to compound as homogeneously as possible, two categories of sounds, dissimilar in the nature of their production (a combination which seemed to me over-simplified when produced by means of a metamorphosis of the concrete recordings by filtering, ringmodulation, alteration of the tape playback). It should rather be achieved by similar treatment of instruments and electronic sound-production.

The similarity between the procedure in the composition of the electronic material and the way in which I set instruments and their playing-function, made a mechanical transformation—mechanical since electrical, but worked by hand—of the recording unnecessary.

The instrumental part of the work was written on approx. 200 filing-cards, in the top right-hand corner of which the relevant main-instrument is indicated by a symbol. Neither the order of the cards nor the manner of ensemble are specified—every action is, however, exactly predetermined. The performers always decide the point of their entries; this freedom demands, however, a perfect mastery of text and context. Thus the performers achieve more than a mere reproduction of their parts, as they incorporate influences from one another in their playing as if they were audience of themselves.

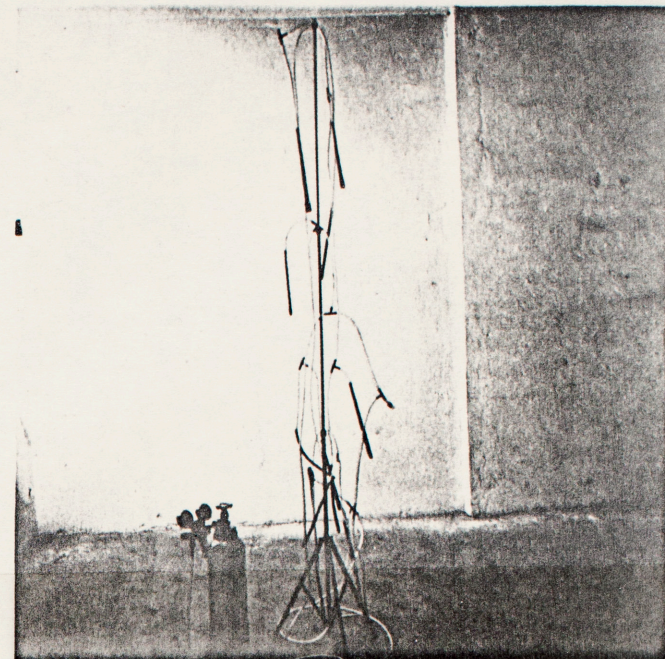
ACUSTICA, one of my most extensive works of recent years, is written in memory of Alfred Feussner, my early-departed friend.



SCHWIRRHOLZ / BULL-ROARER / PLANCHETTE RONFLANTE
BLASEBALG / BELLOW / SOUFFLET
KIPPSIRENE / TUMBLER SIREN / SIRÈNE EN ÉQUILIBRE



LAUTSPRECHERDÄMPFER
LOUDSPEAKER MUTE
SOURDINE HAUT-PARLEUR



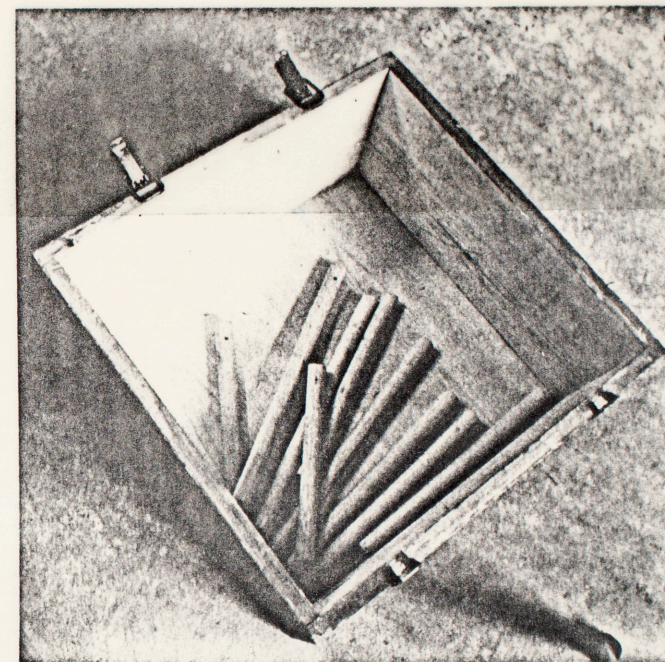
PFEIFENAST UND PRESSLUFTFLASCHE
WHISTLE-TREE AND COMPRESSED-AIR CYLINDER
ARBRE A SIFFLET ET BOUTEILLE D'AIR COMPRIMÉ



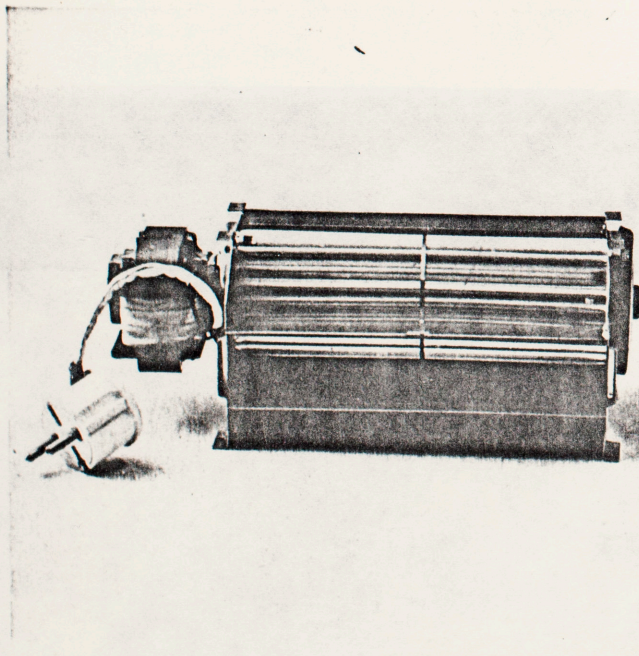
LUFTBALLON
BALLOON
BALLON



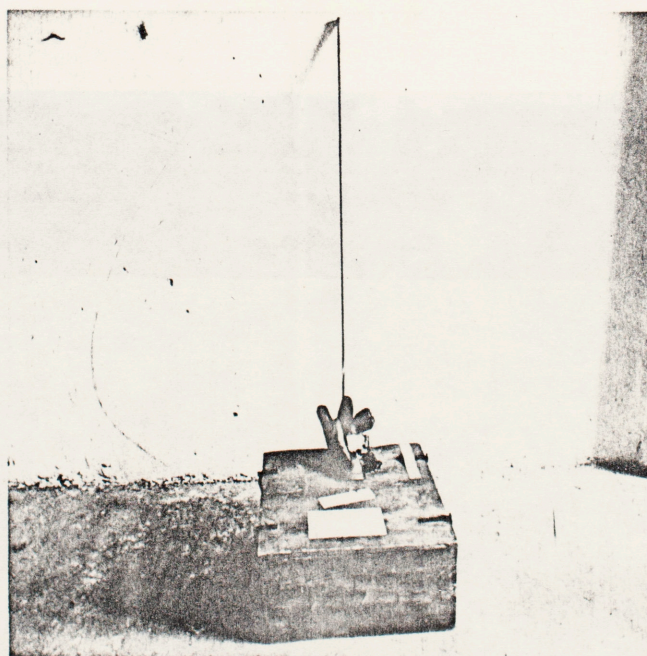
LAUTSPRECHER-MEGAPHON
LOUDSPEAKER-MEGAPHONE
MÉGAPHONE HAUT-PARLEUR



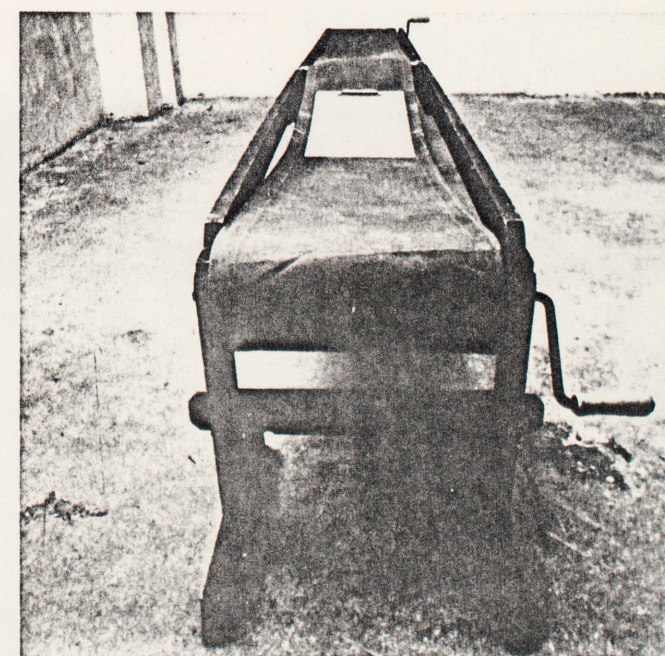
PANXYLO UND RESONANZKASTEN
PANXYLO AND RESONATOR-BOX
PANXYLO (BAGUETTES EN BOIS) ET BOITE DE RÉSONANCE



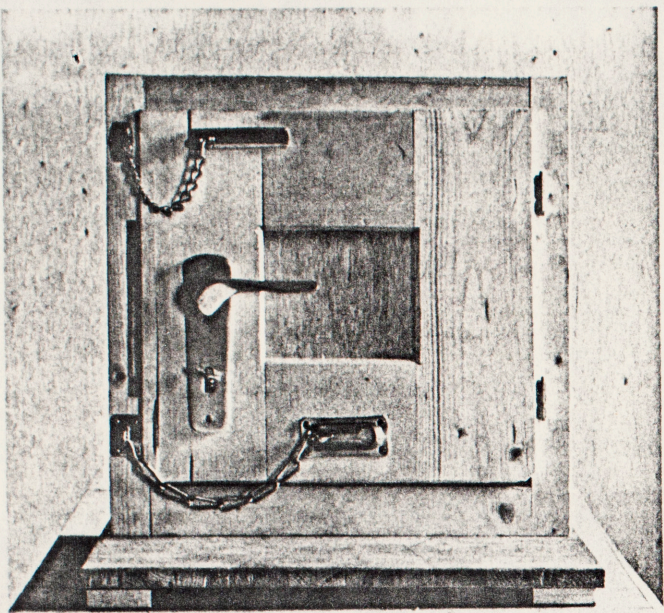
QUERSTROMLÜFTER
LATERAL VENTILATOR
VENTILATEUR A COURANT D'AIR TRANSVERSAL



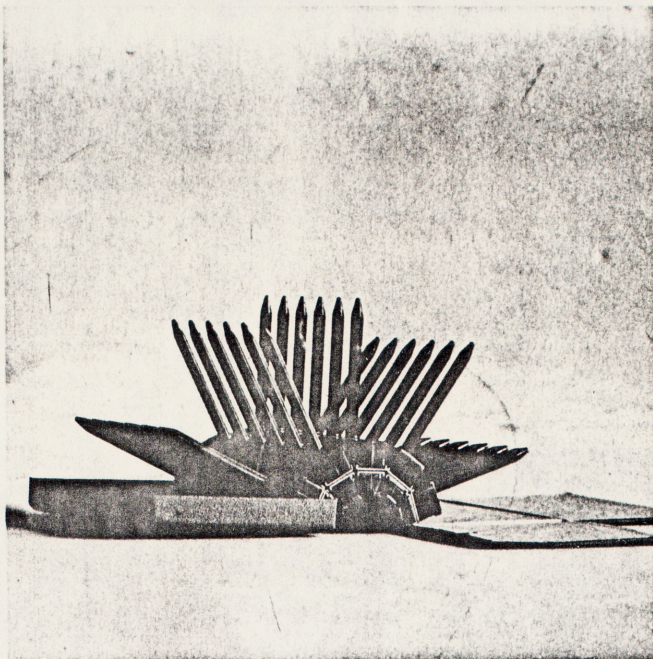
HOLZSTAB, KOLOPHONIIERTER HANDSCHUH UND RESONANZKASTEN
WOODEN STICK, GLOVE IMPREGNATED WITH RESIN,
AND RESONATOR-BOX / BAGUETTE EN BOIS, GANT IMPRÉGNÉ DE
COLOPHONIUM ET BOITE DE RÉSONANCE



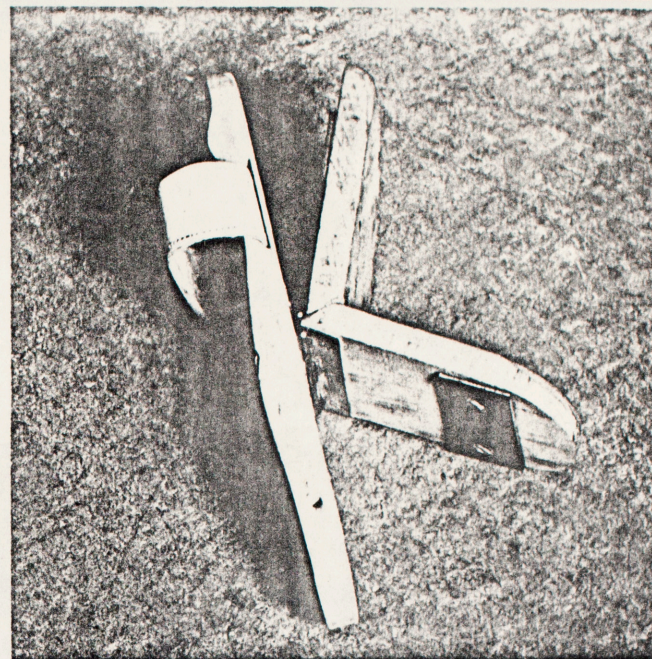
FÖRDERBAND (FÜR INSTRUMENTE)
CONVEYOR BELT (FOR INSTRUMENTS)
TAPIS ROULANT (POUR INSTRUMENTS)



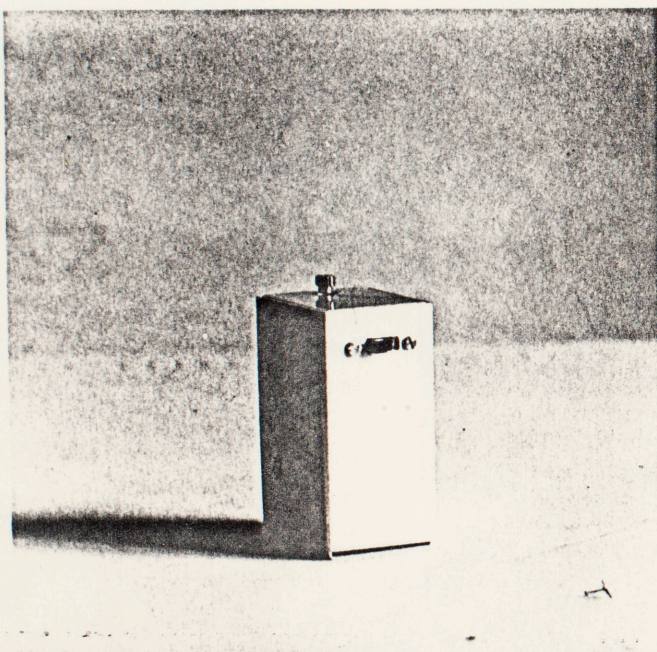
KLEINE HÖRSPIELTÜR
 MINIATURE DOOR (FOR RADIO PLAYS)
 PORTE MINIATURE (POUR PIÈCE RADIOPHONIQUE)



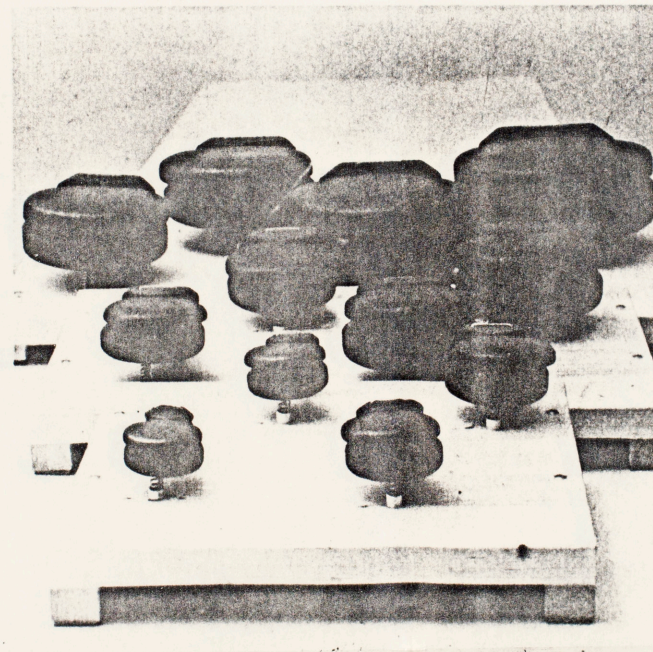
PLASTIKNAGELDOSE
 PLASTIC NAIL-BOX
 BOITE DE CLOUS EN PLASTIQUE



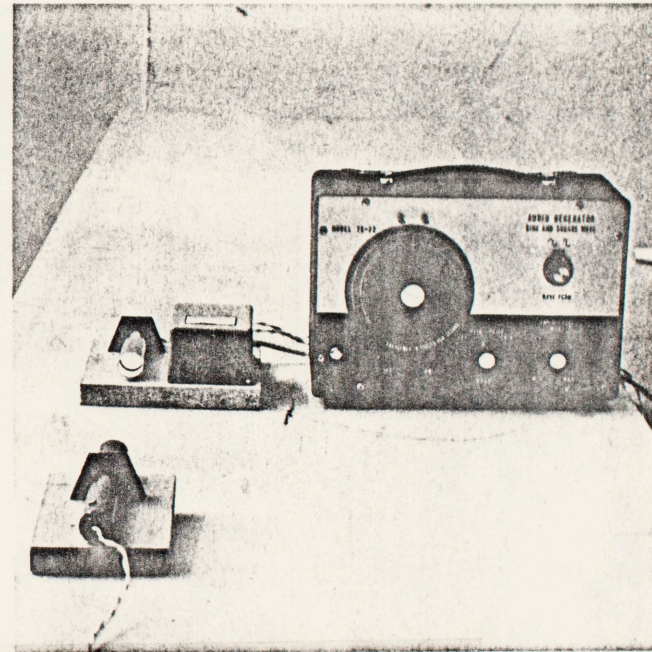
SCABELLUM



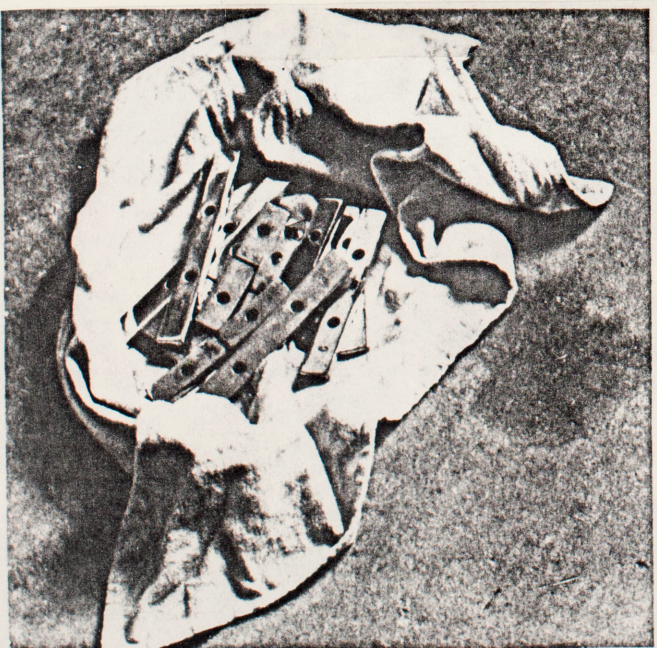
ZAHNRAD (BATTERIEMOTOR)
 COG-WHEEL (BATTERY-DRIVEN MOTOR)
 ROUE DENTÉE (MOTEUR A BATTERIE)



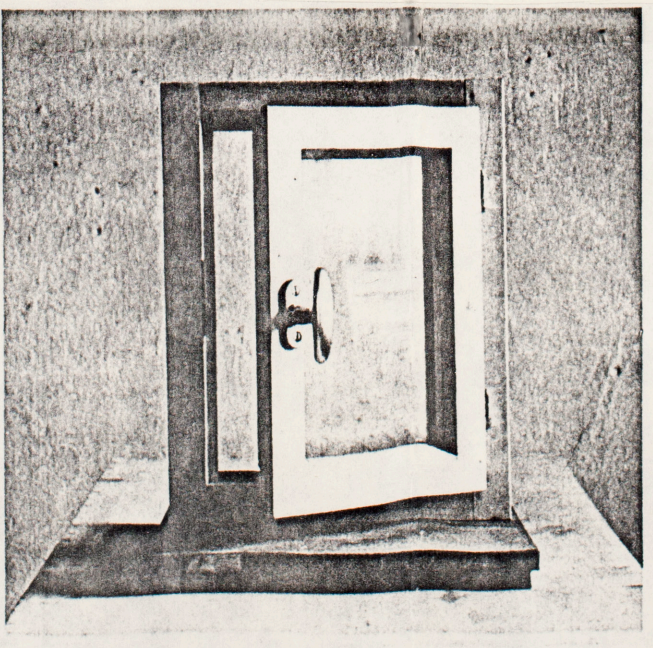
KASTAGNETTEN-TASTATUR
 CASTANET KEYBOARD
 CLAVIER DE CASTAGNETTES



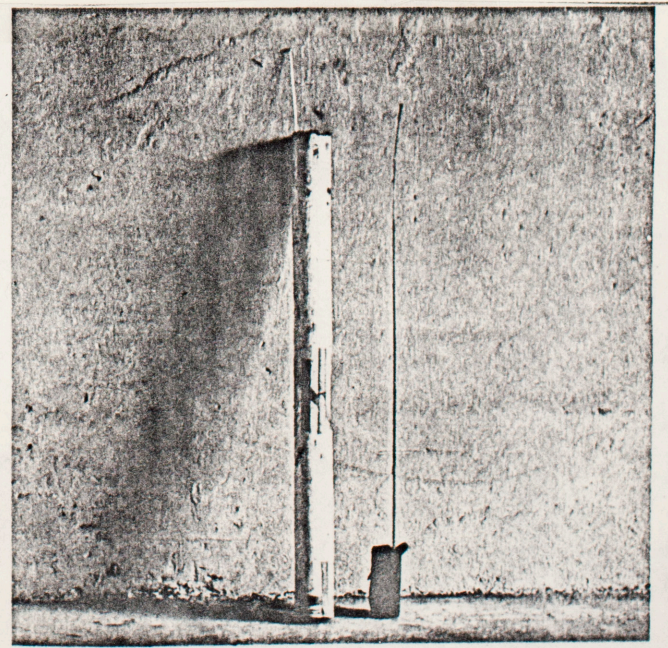
FOTUZELLEN UND RC-GENERATOR
 PHOTOCELLS AND AUDIO GENERATOR
 CELLULE PHOTOÉLECTRIQUE ET GÉNÉRATEUR DE SON



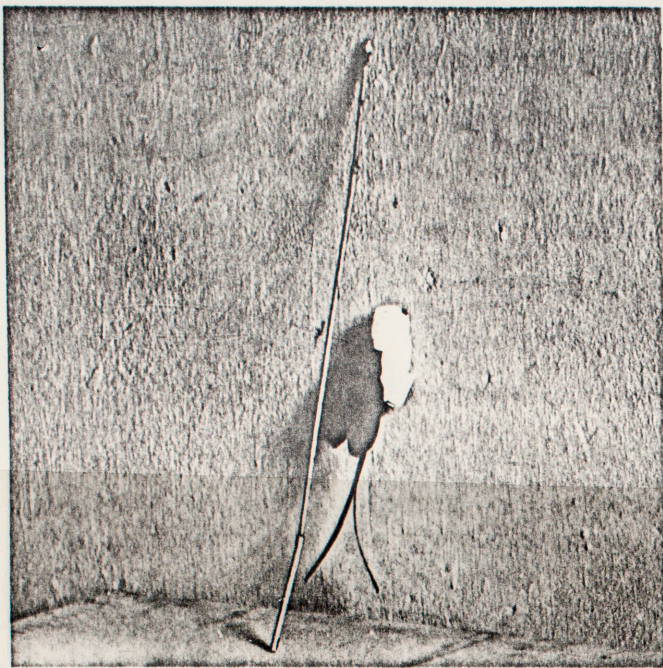
GLOCKENSPIELTASTEN
 GLOCKENSPIEL KEYS
 TOUCHES DE GLOCKENSPIEL



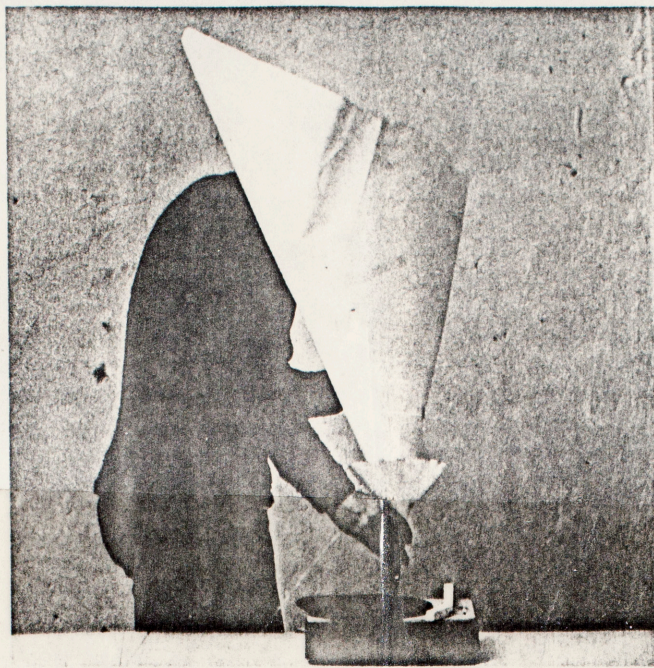
KLEINES HÖRSPIELFENSTER
 MINIATURE WINDOW (FOR RADIO PLAYS)
 FENÊTRE MINIATURE (POUR PIÈCE RADIOPHONIQUE)



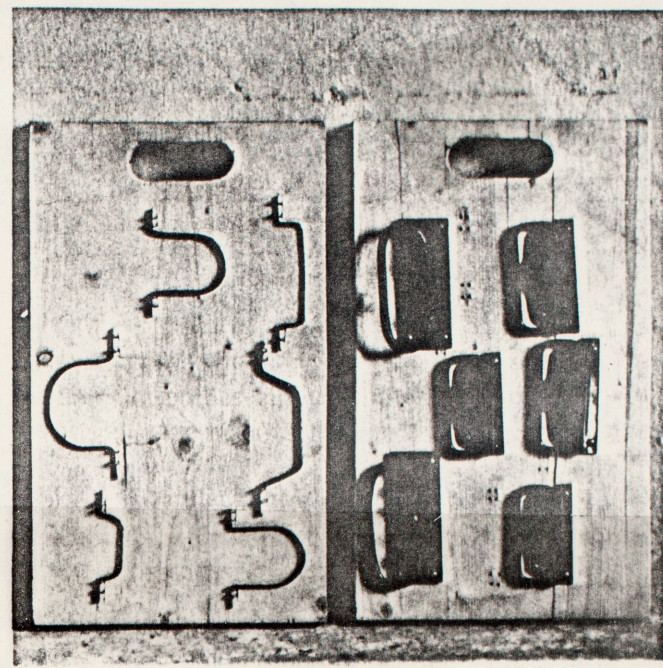
WALKIE-TALKIE UND KARTONROHR
 WALKIE-TALKIE AND CARDBOARD TUBE
 WALKIE-TALKIE ET TUBE EN CARTON



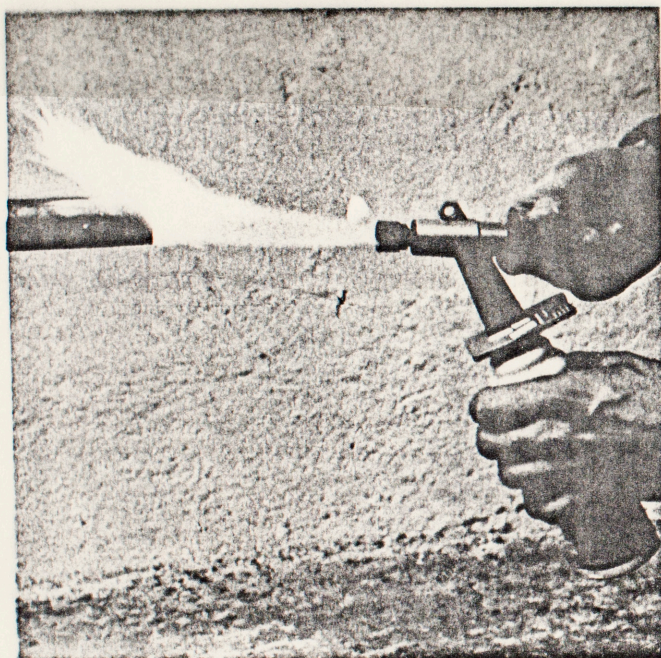
SCHWIRROGEL
HUMMING-BIRD
OISEAU RONFLANT



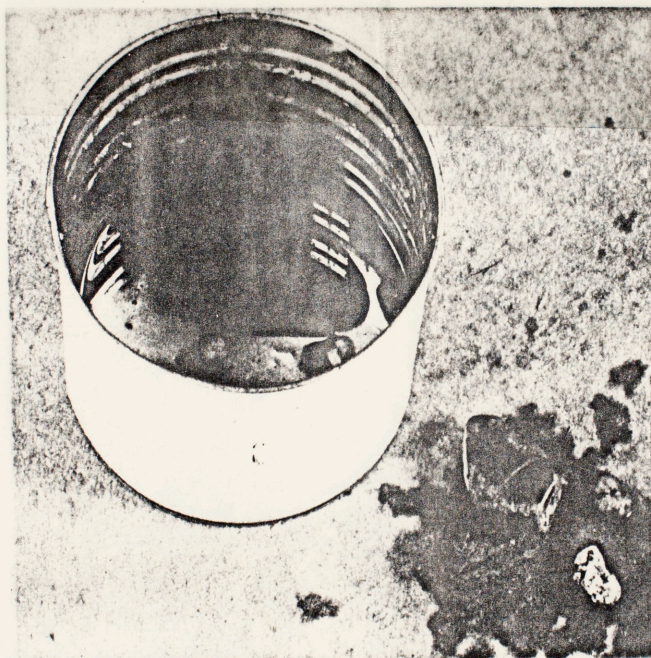
SCHALLPLATTE, MESSER (TONABNEHMER)
GRAMOPHONE RECORD, KNIFE (PICK-UP)
DISQUE, COUTEAU (PICK-UP) ET ENTONNOIR DE PAPIER



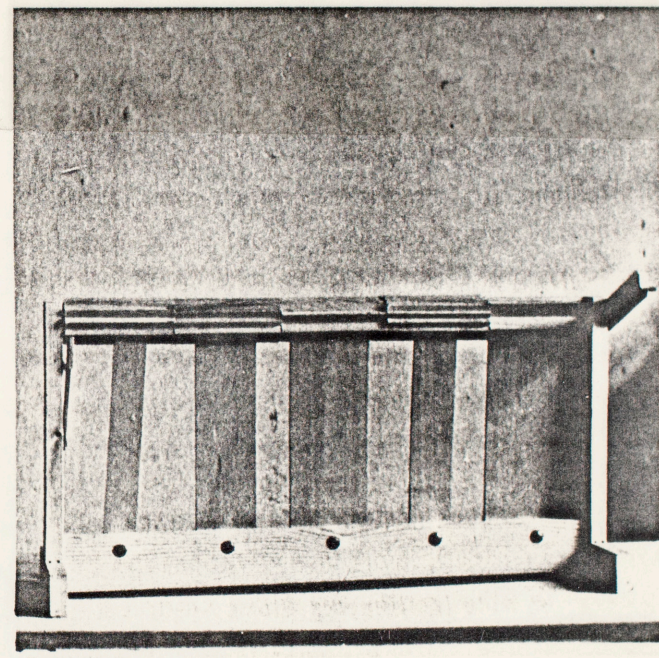
ANGELBRETT (CREPITACOLO)
HINGED BOARD (CREPITACOLO)
PLANCHE A POIGNÉES (CREPITACOLO)



GASLÖTBRENNER UND METALLROHR
GAS BLOW-LAMP AND METAL TUBE
LAMPE A SOUDER A GAZ ET TUBE EN MÉTAL



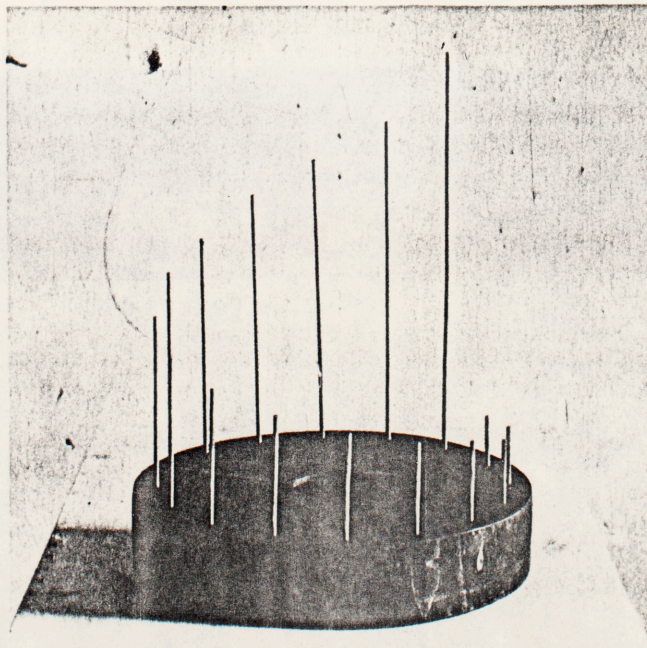
STEINE UND WASSEREIMER
STONES AND PAIL OF WATER
PIERRES ET RECIPIENT MÉTALLIQUE AVEC DE L'EAU



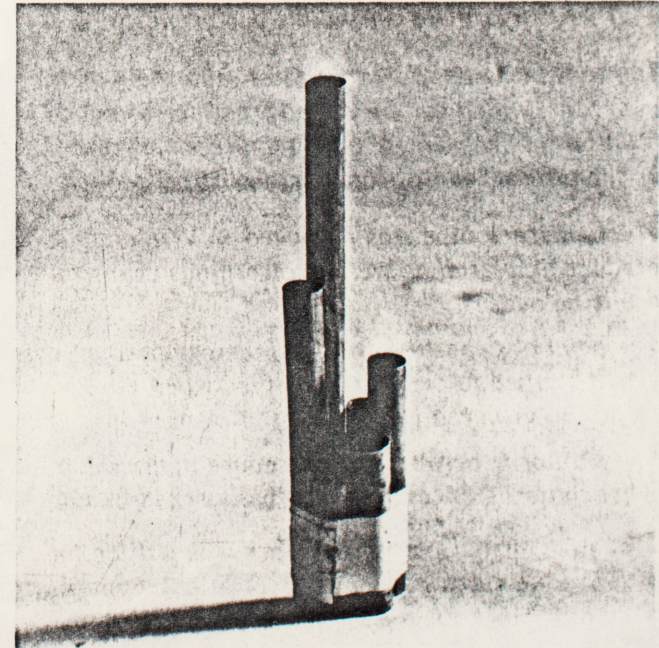
FÜNFZÜNGIGE RATSCHEN
FIVE-TONGUED RATCHET
CRÉCELLE A CINQ LAMELLES



DONNERBLECHE
THUNDERSHEETS
PLAQUES DE TONNERRE



NAGELGEIGE
NAIL VIOLIN
VIOLON DE FER



PANROHR
PAN-PIPES (METAL TUBES)
PANROHR (TUBES MÉTALLIQUES)