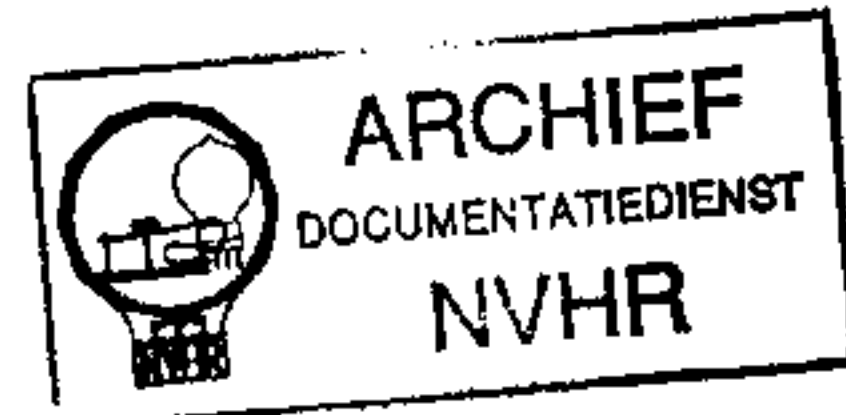


INSTRUCTION MANUAL

Ned. Ver. v. Historie v/

for the

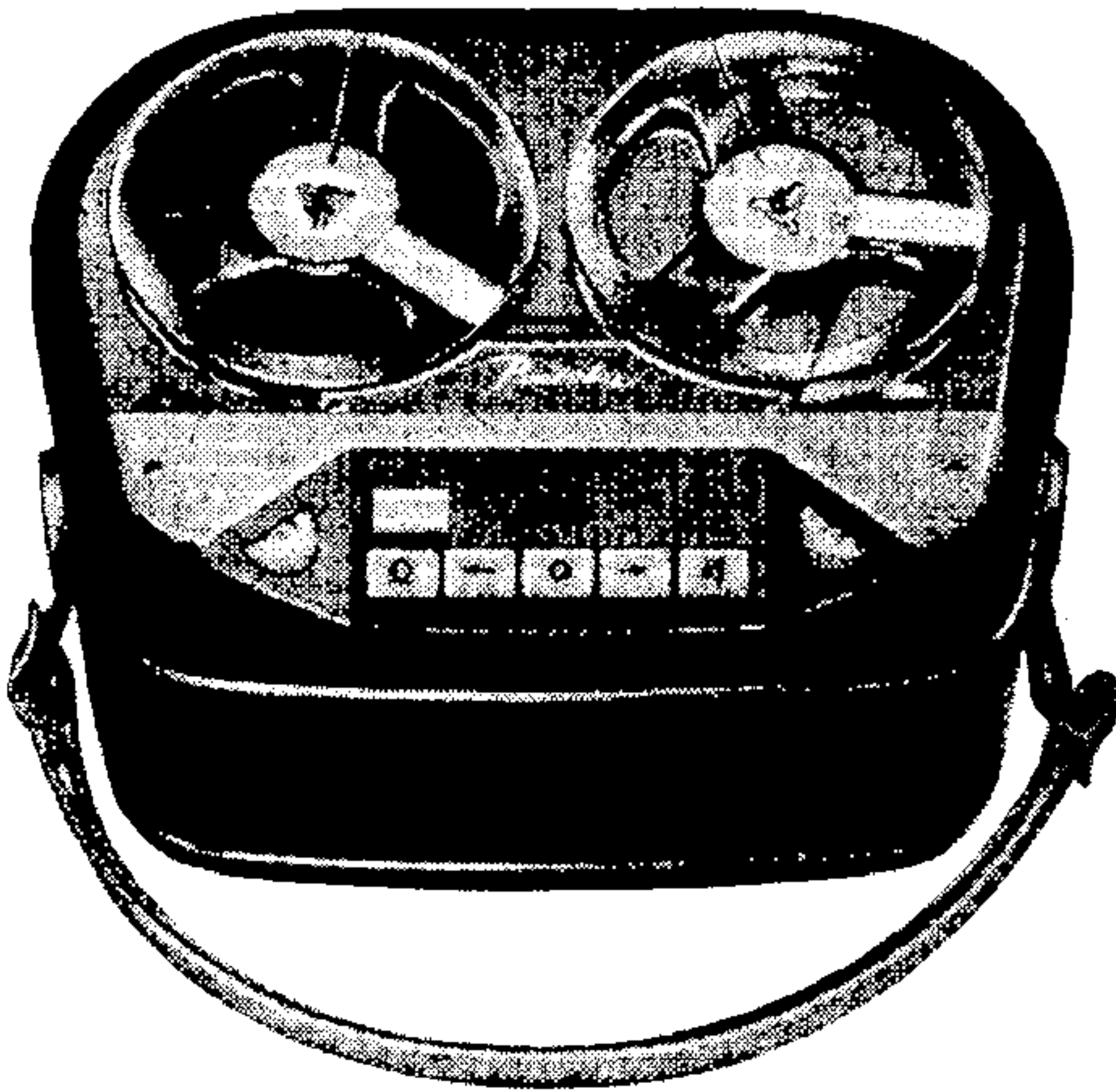


Butoba

PORTABLE TAPE RECORDER

TYPE MT 5

FOR BATTERY OR MAINS OPERATION



The "Butoba" tape recorder, type MT5, has an attractive shape and is a lightweight portable which can be operated by either battery or mains current.

Normally, the instrument is supplied fitted with a battery holder, i. e. for battery operation. For mains operation, the mains converter, listed as an optional extra, is required.

Now you would like to get acquainted with the merits of this tape recorder. In your own interest, let us therefore advise you to study the following instructions as thoroughly as possible.

Although this machine is really very simple to operate, there are a few points which must be strictly adhered to.

A. BATTERY OPERATION

1. The batteries (8 unit cells of 1.5 V each) have to be fitted by you.
2. To do this, turn holding-down screw "B" anti-clockwise (use a coin or similar). This will free the battery holder so that you can remove it.
3. Take care to fit the batteries in accordance with the sketches on both sides of battery compartment.

Attention: If batteries have been fitted uncorrectly the tape recorder will not operate and fuses may blow. (See fig. 2).

4. For the battery holder to be inserted correctly, pin "A" must fit into hole "A" in the holder. (See figs. 2 and 4). Press the battery holder well into position and tighten screw "B" well.

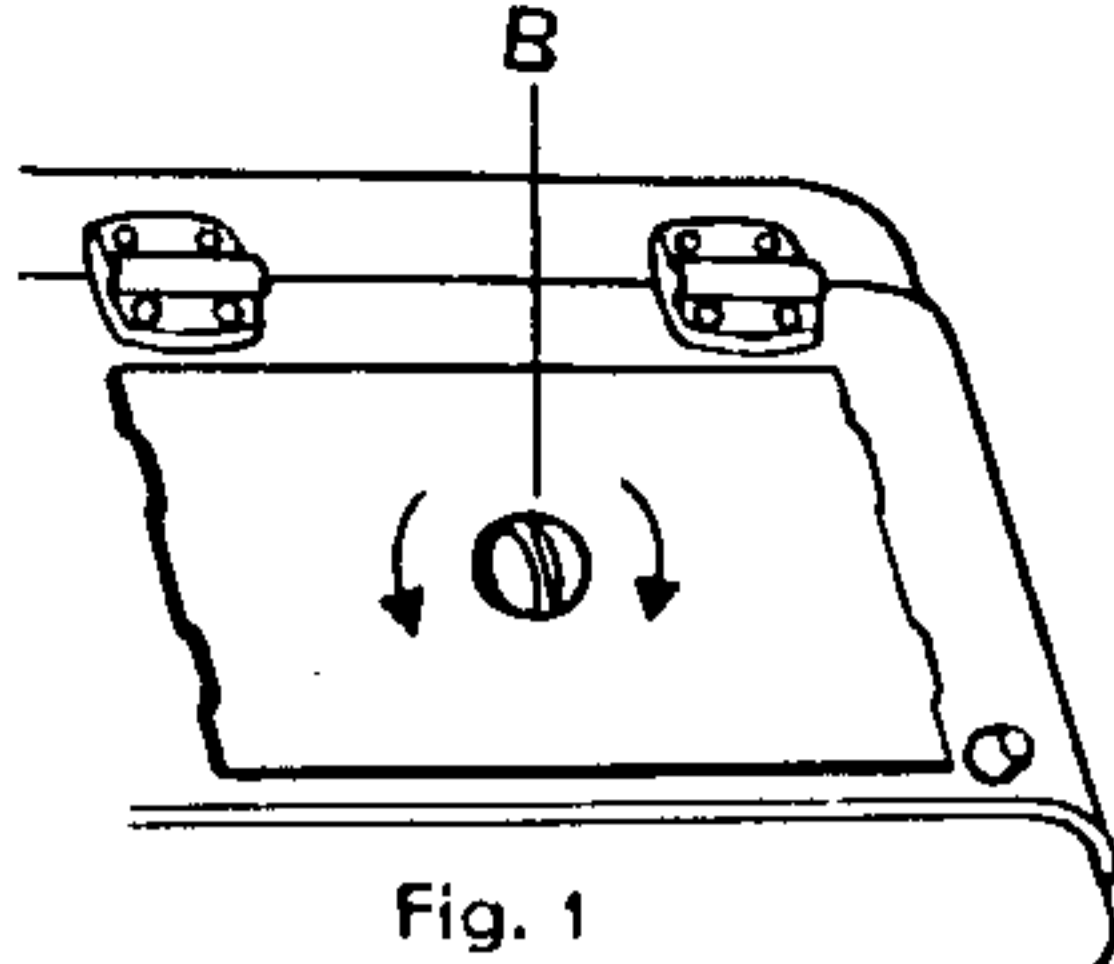


Fig. 1

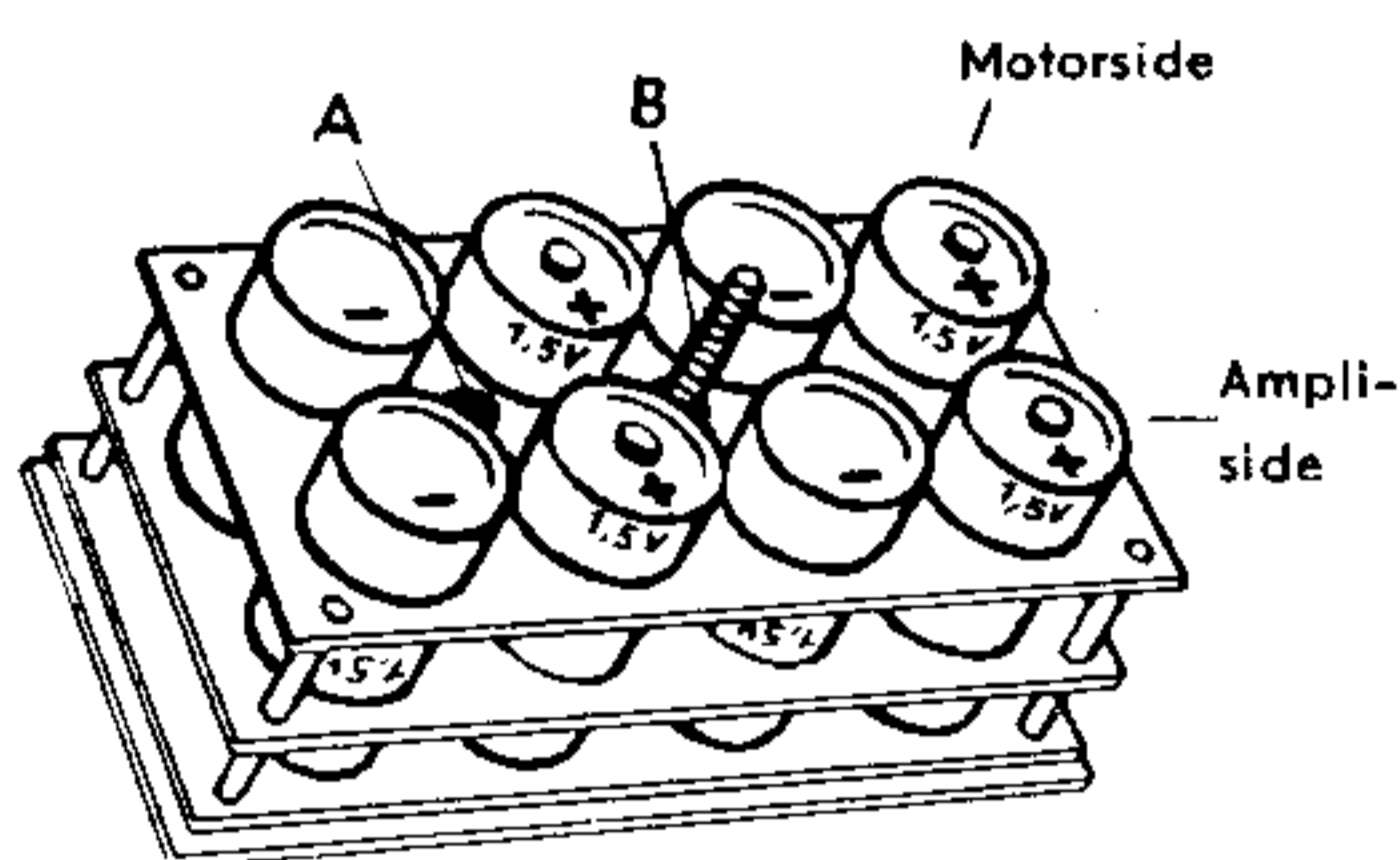


Fig. 2

B. MAINS OPERATION

Attention! Machine may be connected only to radio sets working on a. c. current or batteries.

1. Remove the battery holder.
2. Compare the voltage to which the converter has been set with the mains voltage; adjust if necessary.
The converter is set to 220 V when supplied.
3. For readjustment turn voltage selector "C" see fig. 3. The mains converter will work at the voltages shown on the selector dial and at frequencies of 50-60 c/s.
4. For replacing the fuse of the mains converter (0.2 A) remove the protective cover. (Undo screws "D" and "E" beforehand).
5. Mains converter will only fit home one way. Tighten holding-down screw "B" well.
6. Insert plug into mains socket.
7. Pull plug from mains socket if recorder is not used further, to switch off mains converter.
8. The machine may be connected to a car battery (6V) only when the mains converter has been fitted. Upon request a connecting flex will supplied with one end

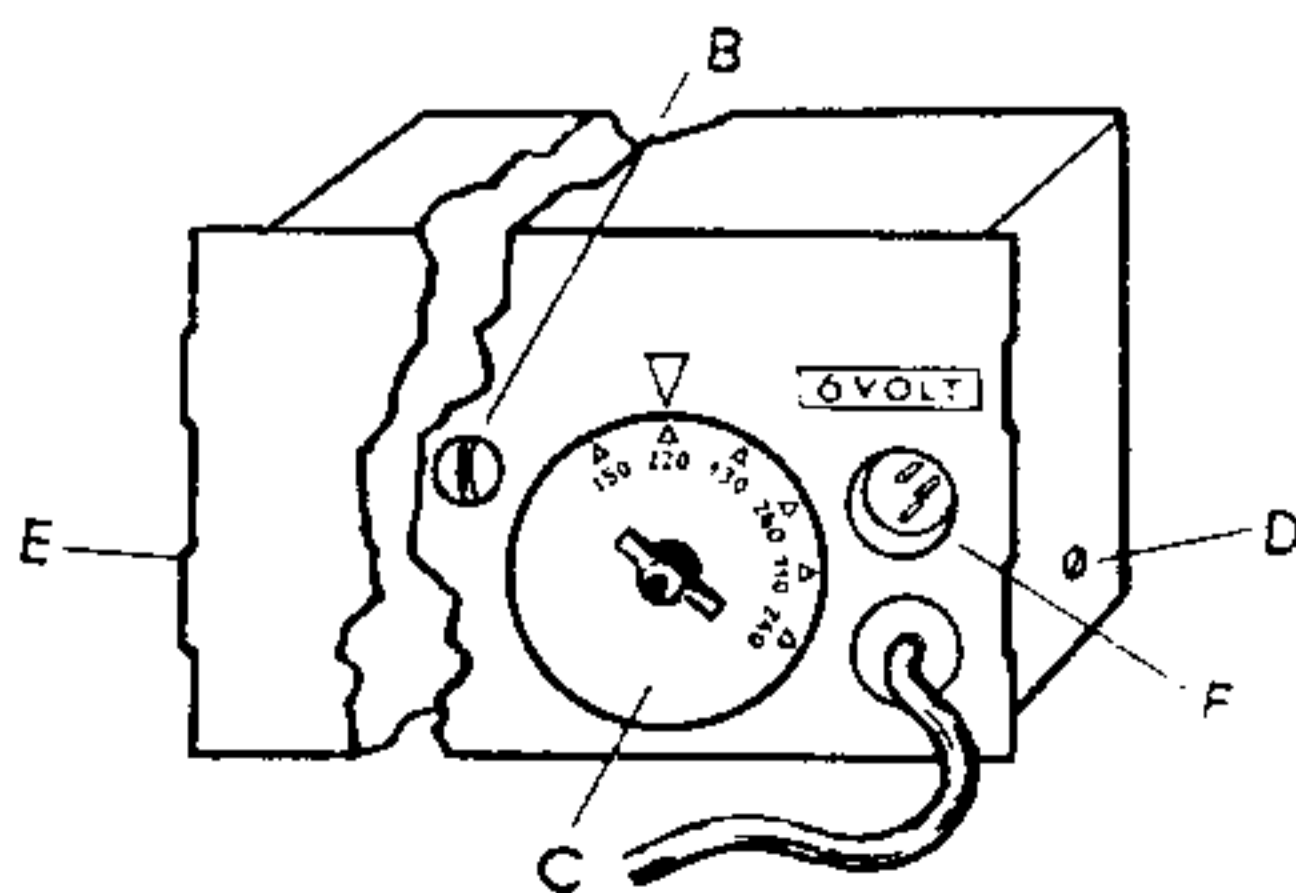


Fig. 3

bare and wires marked "positive" and "negative", the other end fitted with a three-pin plug.

Plug the three-pin plug into socket "F" in the mains operated machine.

- The fuses (amplifier 0.5 A, motors 0.8 A) are held in clips on the underside of the battery box and are easily accessible. They can only be replaced with the battery holder, or the mains converter respectively, removed.

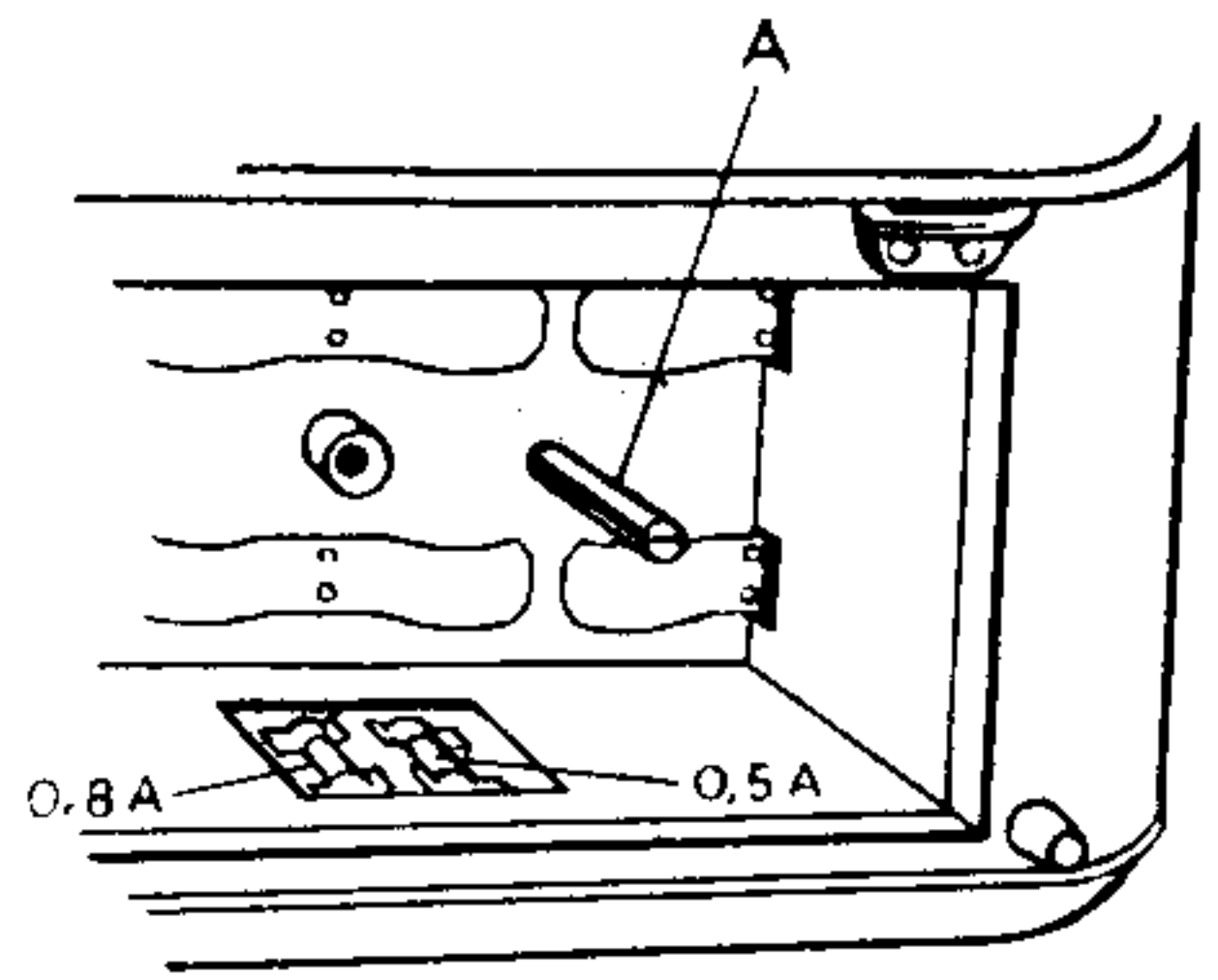


Fig. 4

C. THE PUSH-BUTTON KEYS

- The stop-key, symbol "O", must be depressed fairly hard so that the lock of the quick-start lever engages.

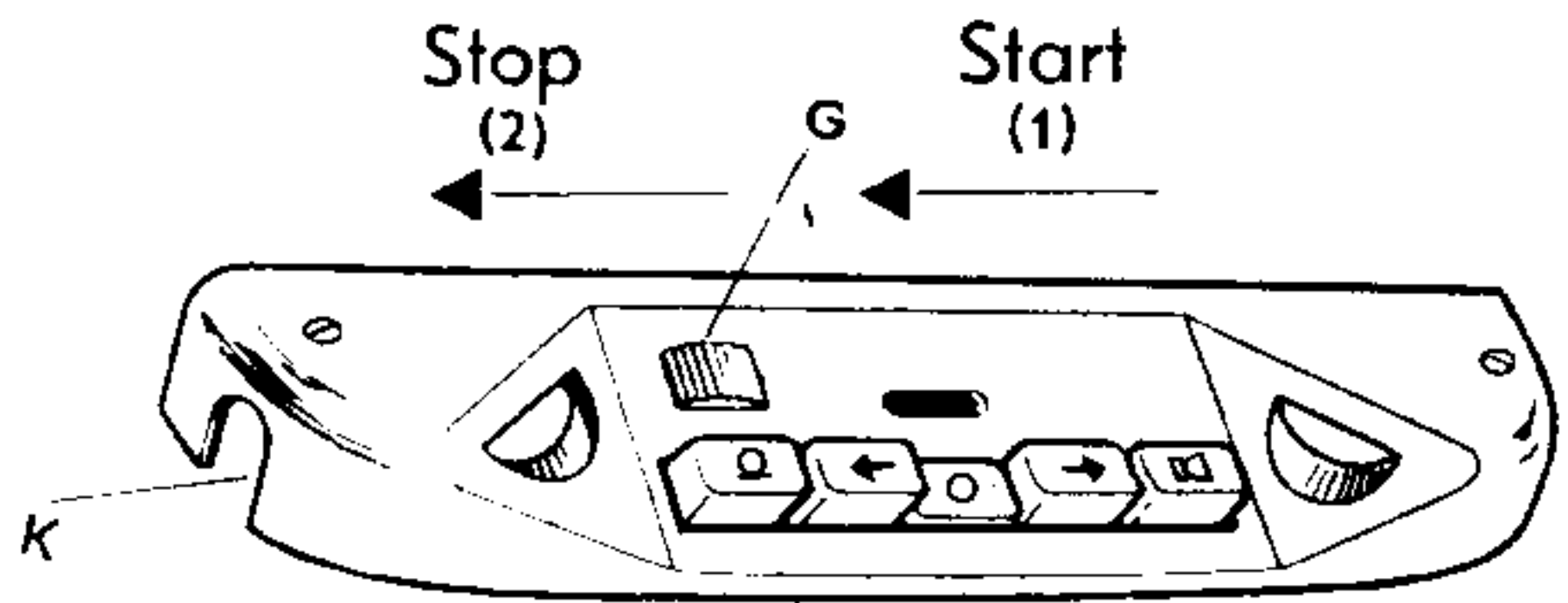


Fig. 5

- Recording key - symbol "O"
- Playback key - symbol "☞"
- Fast wind key - symbol "→"
- Fast rewind key - symbol "←"
- Amplifier only (depress recording and playback keys simultaneously)
- Start-stop lever "G" (Pos. 1 = Start, Pos. 2 = Stop).
- Before operating a new key, stop-key "O" should always be operated.

D. THREADING THE TAPE

- Check that key "O" has been completely depressed, since only then can the tape be threaded.
- Place the empty reel on the rotating table (on the right) and press down, taking care that the three-slotted centre hole fits correctly. A small leaf spring holds the reel in position so that the machine may also be worked in the upright position.
- Place the full reel on the rotating table on the left side and press down.
- Slip the tape into the guide slot and wind it into the empty reel for a few turns. The brakes should be released by pressing the Playback key "☞". Make sure that the tape lies correctly in the recesses of the two guide pegs. (See fig. 6)

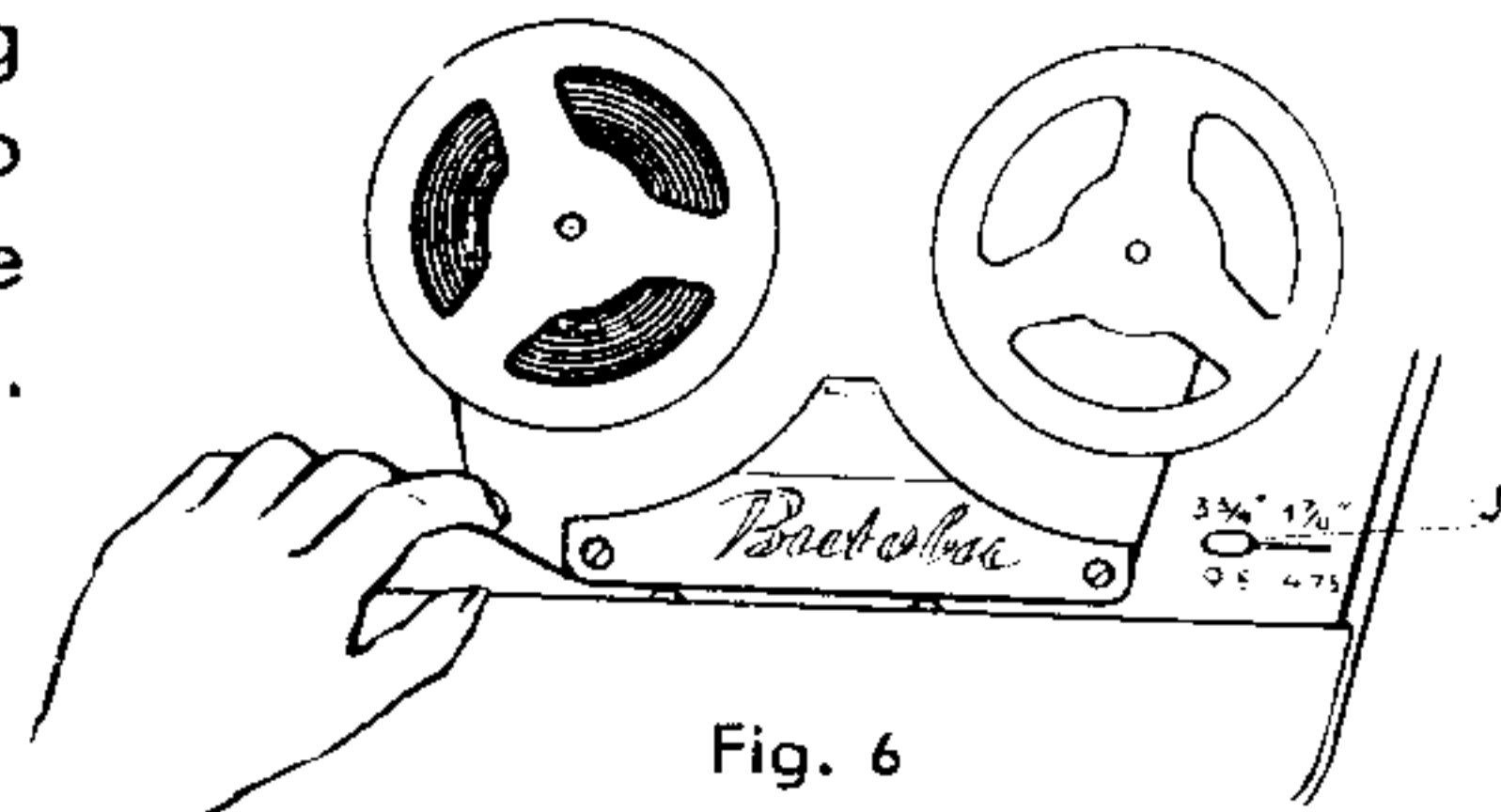


Fig. 6

- When one track of the tape has been completed, take the reels off and turn them over such that the other of the twin tracks is in the working position.

E. TAPE COUNTER CLOCK

By means of the tape counter clock, in conjunction with the fast-wind and -rewind mechanism, any point on the tape can be quickly located.

- When beginning a new tape, set the clock to "12 o'clock".
- If later on you want the point which was recorded or played back at "12¹⁰ p. m.", just wind or rewind the tape until the clock shows that time again.

F. SETTING THE SPEEDS

- 9.5 cm/sec = 3³/₄ in/sec (50 - 13,000 c/s) for first-class recording/reproduction of speech and music: -

Push lever of switch "J" to the left, see fig. 7.

- 4.75 cm/sec = 1⁷/₈ in/sec (60-5,000 c/s) for good recording/reproduction of speech: -

Push lever of switch "J" to the right, see fig. 7.

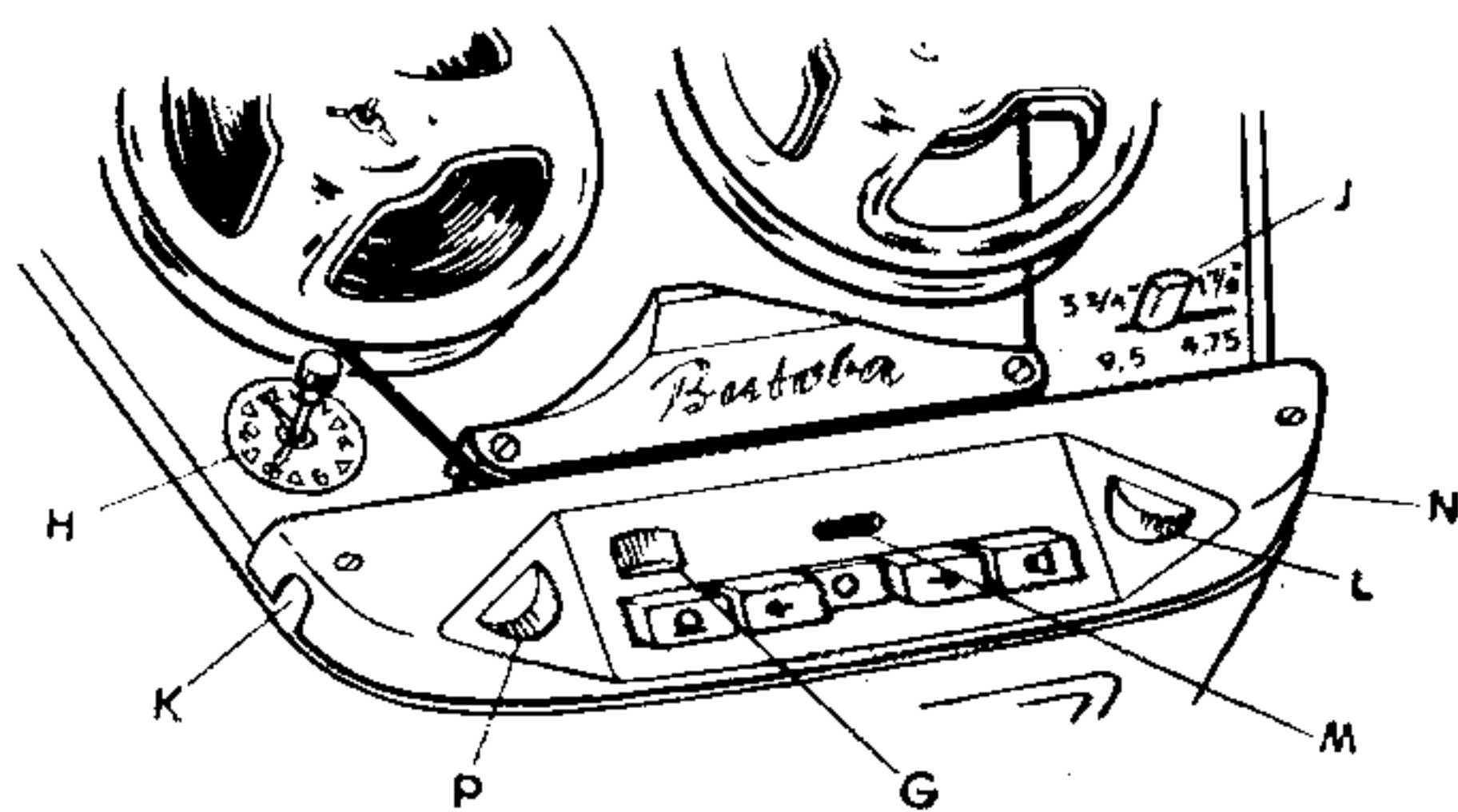


Fig. 7

G. RECORDING

- Using the microphone

- Plug microphone plug into socket "K".
- Set tone control "L" to high pitch.
- Press recording key "O".
- Adjust magic eye indicator "M" (by turning recording-level control) so that line does not fade out at loud passages yet still flickers at soft passages.

- Shift start-stop lever to the left, see fig. 7.

Note: Fade-out of magic eye = signal too strong.

No flicker = weak or no signal.

- Direct recording from radio.

- Plug one end of the standard connection lead into socket "N" and the other into standard socket "Tape Recorder" (diode output) at the radio set.
- Monitoring is possible by connecting a special headphone (200 Ω) to either socket K or N (terminals 3-2).

c) Former types of radio sets should be fitted with a special connection (record/Playback) for tape recorders.

Other recording operations are the same as with microphone.

3. Recording of telephone conversations.

a) Insert plug of telephone adaptor into microphone socket "K".

b) Attach suction cap of adaptor to telephone housing (find out optimum position).

Other operations as with microphone.

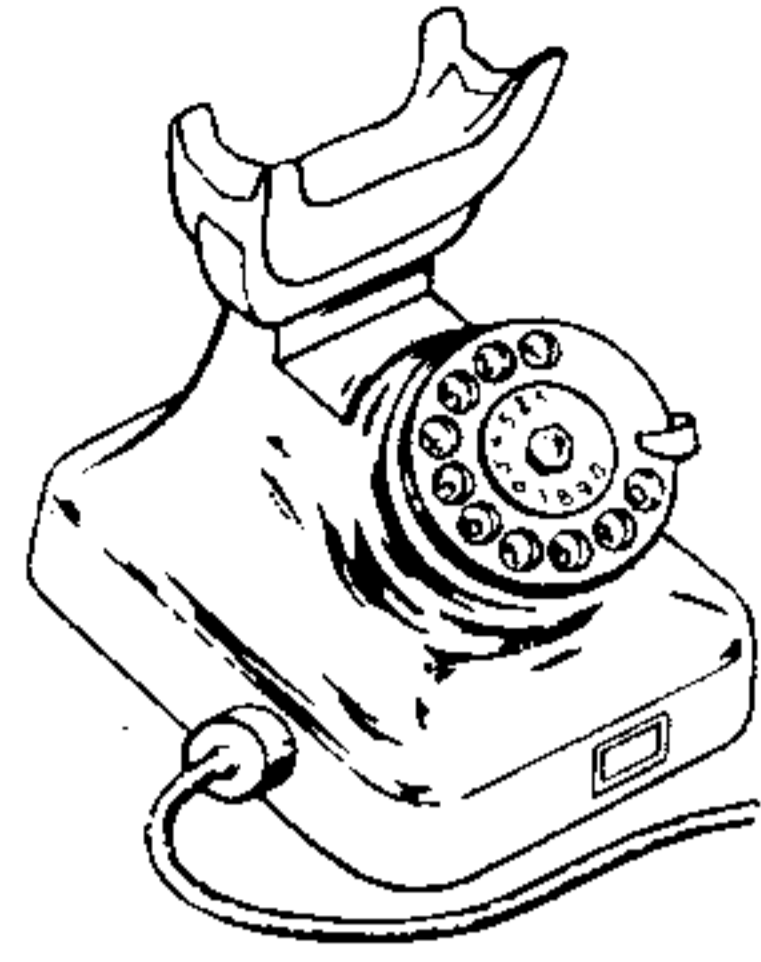


Fig. 8

H. PLAYBACK

1. Immediately available via the built-in elliptical loudspeaker. Best sound distribution is obtained with machine standing upright.

a) Press playback key "⏮" and release start-stop lever "G"

b) Adjust sound volume by turning knob "P", see fig. 7.

c) Regulate tone control by turning knob "L", see fig. 7.

2. Through radio set (recent type).

a) Plug one end of standard connection lead into socket "N" and the other into socket "Tape Recorder" at the radio set.

b) Press playback key "⏮".

c) Release "start-stop" lever "G" (Pos. 1).

d) If wanted, built-in speaker can be disconnected by loosening all push-button keys (all keys in upward position). This will be achieved by touching one key slightly.

3. Former types of radio sets should be fitted with a special connection (record/Playback) for tape recorders.

4. Amplifier only, e. g. for making announcements over the microphone:

a) Depress simultaneously recording and playback keys.

b) Insert microphone plug into input "K".

Attention: Either use close range microphone or keep microphone away from machine as far as possible in order to avoid acoustic feedback.

I. FAST WIND AND REWIND

(We suggest to take the tape out of the slot to reduce wear and battery consumption.)

1. Fast wind

a) Press key "→".

b) When reaching desired spot press stop-key "O"

2. Fast rewind

a) Press key "<".

b) When reaching desired spot press stop-key "O".

Please note that winding and rewinding uses up a comparatively large amount of battery current. When machine is not in use, do not forget to press stop-key "O" completely home. Otherwise batteries will be flat sooner than expected.

Keep the machine in a stable position during recording/playback. This will enhance its performance.

3. If unit is not in use for some time, batteries should be disconnected, speed set to $1\frac{7}{8}$ " and "Stop" button depressed.
4. On carrying cases with zipper, the shoulder strap can be removed. For this reason, only one single strap is to be used for both recorder and carrying case.

Changing the strap: Press down end of strap, move upwards and hang out.

SPECIFICATIONS

1. Double track system, international standard
2. Tape speeds: $3\frac{3}{4}$ and $1\frac{7}{8}$ ips.
3. Playing time: 2x1 hour ($3\frac{3}{4}$ ips.)
2x2 hours ($1\frac{7}{8}$ ips.)
4. Push-button operation: Recording; Reproduction: fast Forward and Rewind, Stop.
5. Tone and volume control
6. Microphone impedance: 200 Ohms, input voltage: 200 μ V
7. Radio input impedance 100 kOhms, radio output 200 Ohms, approx. 100 mV
8. Frequency range:
50 - 13000 cps. ($3\frac{3}{4}$ ips.)
60 - 5000 cps. ($1\frac{7}{8}$ ips.)
9. Noise level: 40 db
10. Output (speaker): 1,2 W
11. Volume-level indicator through magic line
12. 7 Transistors: (OC 603, OC 75, OC 71, OC 76 = 2 pcs., 2 x OC 74)
2 diodes: (OA 81 = 2 pcs.)
1 valve: (DM 71 = magic line)
13. Batteries: 2 x 4 flashlightcells
1,5 V each = 6 Volt
for motor and 6 V for amplifier.
14. Converter: 110 - 260 V, 50-60 cycles or car-battery (6 Volt)
15. Number of motors: 2
16. Computer
17. Life of batteries: 20-40 hours
18. Dimension of case: $9\frac{1}{4}$ "x 12"x 6"
19. Weight, including batteries: 12 lbs