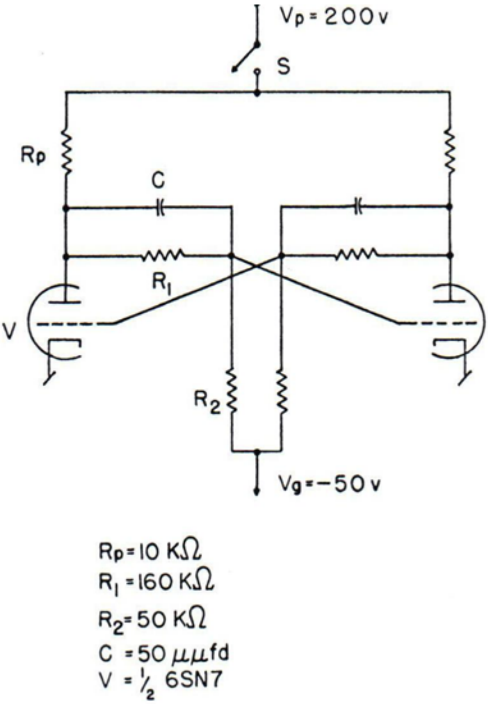

FIG. 1.

In this way we may obtain a finite random series of A and B which are statistically independent. One series produced by the aid of a flip-flop is given below:

AABAABBABBABBBABBAABABABBABAABABABBAA
BABABBBBBBBBABBBABAABBB.

Let $\{Y_k\}$ be the sequence of k pairs of elements of $\{X_{2k}\}$ such that $Y_i = X_{2i-1}, X_{2i}$, where $1 \leq i \leq k$. Omitting in $\{Y_k\}$ all elements of the form AA and BB we obtain a third sequence whose elements are the pairs AB and BA only, denoted in the following by 0 and 1 respectively.

Let $p_j(\mathrm{A})$ and $p_j(\mathrm{B})$ denote probabilities that j-th switching on of contact S set flip-flop in state A or B respectively and suppose that $p_j(\mathrm{A})$ and $p_j(\mathrm{B})$ are asymmetric, say $p_j(\mathrm{A}) > p_j(\mathrm{B})$. Supposing that the flip-flop does not change its properties during two successive switchings, we may write

(1) $$p_{2i-1}(\mathrm{A}) = p_{2i}(\mathrm{A})$$

(2) $$p_{2i-1}(\mathrm{B}) = p_{2i}(\mathrm{B}).$$

From 1 and 2 we have

(3) $$p_{2i-1}(\mathrm{A}) \cdot p_{2i}(\mathrm{B}) = p_{2i-1}(\mathrm{B}) \cdot p_{2i}(\mathrm{A}).$$

Because

(4) $$p_{2i-1}(\mathrm{A}) \cdot p_{2i}(\mathrm{B}) = p_i(0)$$