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H. M. BASCOM

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ELAPSED TIME INDICATOR

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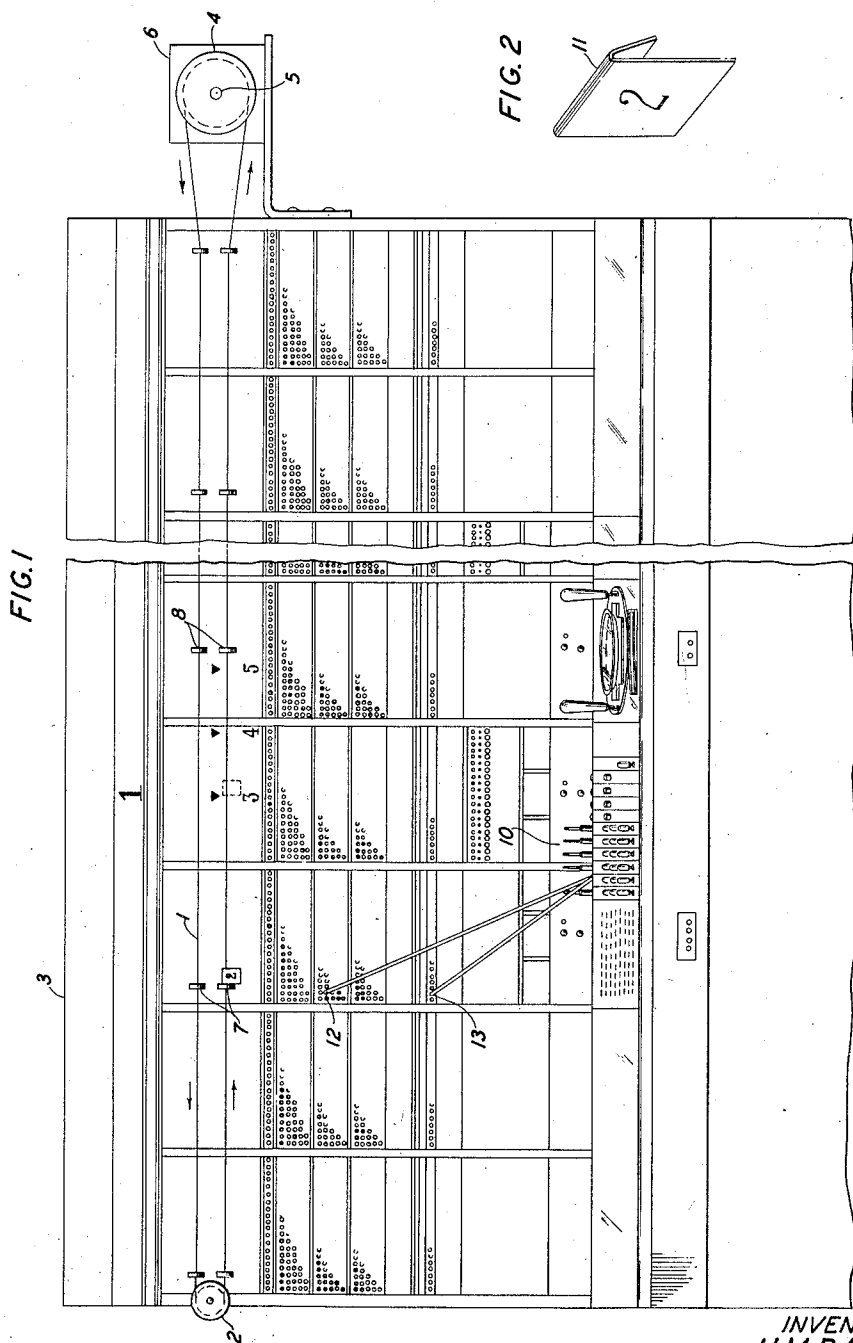
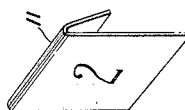


FIG. 2



INVENTOR
H. M. BASCOM

BY *A. H. H. H. H. H.*

ATTORNEY

UNITED STATES PATENT OFFICE

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ELAPSED TIME INDICATOR

Henry M. Bascom, New York, N. Y., assignor to
Bell Telephone Laboratories, Incorporated,
New York, N. Y., a corporation of New York

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1 Claim. (Cl. 161—19)

This invention relates to improved time indicating devices whereby predetermined intervals of elapsed time are indicated and is particularly useful in connection with toll switchboards whereby an operator is enabled to visually determine the elapse of predetermined intervals of time (for example, three, four or five minutes) following the start of a toll conversation.

The arrangement of the invention is extremely simple, inexpensive, and reliable, and simplifies the operators' efforts in notifying calling subscribers that they have reached the end of the initial charge period but, however, is not intended for use in detecting the ultimate charge to be made which will be computed in the usual manner by means of a calculagraph or similar timing mechanism.

The object of the invention is to indicate, with reasonable accuracy for the purpose, the elapse of predetermined intervals of time following the start of a telephone conversation.

The principal feature of the invention whereby the foregoing object is attained resides in the arrangement of apparatus illustrated in the accompanying drawing and described in the attached specification.

A feature of the invention whereby the foregoing object is attained resides in an arrangement for toll switchboards comprising an endless cable moving at a predetermined rate of speed, which cable is located above the jack multiple in the face of the switchboard on which cable at a predetermined starting point an operator can, at the start of a toll conversation, hang a small index tab or indicator which then travels along with the cable. In the travel path of the tabs appropriate markings are provided on the face of the switchboard which are so positioned that the position of the moving tabs with respect to the markings at any instant indicates its approximate travel time.

The invention will be understood from the following description and the accompanying drawing, Fig. 1 of which represents the time indicating device of the invention applied to a toll switchboard and Fig. 2 represents one form of tab suitable for hanging on the moving cable.

Referring to the drawing, an endless flexible cable 1, passes over pulley 2 mounted on the left side of switchboard 3 and over a driving pulley 4 mounted on a driving shaft 5 caused to rotate by motive power enclosed in the casing 6 mounted at the right of the switchboard, which casing may contain an electric motor and suitable speed reduction means, such as gears, in order to move

the cable at a desired rate of speed, as, for example four inches per minute. Supporting guides through which the cable passes located throughout the length of the switchboard, one pair at the left of each operator's position, as at 7, and another pair at the right of each position, as at 8.

Applied to the face of the switchboard below the cable, by painting, or otherwise, are markings such as the numerals 3, 4 or 5, which are so positioned with respect to the guides at the left of each position, such as 7, that any point on the lower part of the moving cable will take approximately three minutes to travel from the lower guide 7 to the numeral 3, four minutes to reach the numeral 4, and five minutes to reach the numeral 5.

Located at each operator's position are the usual pairs of cords 10 which may be designated from left to right as cord pair 1, pair 2, etc.

Fig. 2 shows one form of an indicating tab 11. Each operator's position is provided with one of these tabs for each cord pair which are correspondingly numbered as 1, 2, 3, etc.

In practice, the manner in which the invention is employed will be understood by assuming that the operator at the first or left-hand position has established a connection by means of the No. 2 cord pair between multiple jack 12 and a toll line jack 13 and that both parties to the connection are on the line and conversation is about to begin. At this moment the operator will select from the tabs at her position the one numbered 2, corresponding to the cord pair used in establishing the connection, and hang it on the lower part of the cable close to the lower left-hand guide 7 whereupon it starts to move to the right therewith. The operator may then busy herself in establishing other connections and with the start of each conversation she places a tab, corresponding to the cord pair used, on the cable. By casually observing the progress of the tabs she is aware of the approximate time that has elapsed since the start of the respective conversation and if, for example, the calling subscriber is at a coin box station the operator can, if the rules so require, so advise the caller and request the deposit of an additional coin or coins when the tab reaches the three minute marking.

Further, if the operating practice, due to an emergency, requires that it be suggested to a calling subscriber that he voluntarily limit the duration of his call to say five minutes, the operator is reminded, when the tab approaches the five-minute marking, to speak to the subscribers and

suggest that the conversation be terminated as soon as possible.

As previously stated, the device of the invention is not intended as a mechanism for determining the duration of a call for the purpose of making the charge, which will be accomplished by the usual timing devices provided at the switchboard, such as a calculagraph, but rather to provide a simple, readily visible, indication of the approximate duration of a conversation.

What is claimed is:

In combination, an operator's switchboard position, an endless cable extending across the face

of said position, means for moving said cable at a predetermined constant rate of speed, guides at the right and left of said position for supporting said cable, an index tab adapted to be loosely hung on said cable and to move therewith, one of said guides serving as a starting point at which said tab is hung on said cable, time unit marking on the face of said position in the path of travel of said tab, said marking being so located with respect to said starting point guide that the travel time of said tab hung on the cable is indicated thereby.

HENRY M. BASCOM.