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IN THE UNITED STATES PATENT OFFICE

In re application of
 Hm. F. Friedman, et al.,
 Filed Aug. 19, 1935,
 Serial No. 36,868,
 Electrical Switching Mechanism

Div. 48, Room 5731

February 1, 1937.

Hon. Commissioner of Patents,

Sir:

Responsive to Patent Office Action dated August 21, 1936.

It is desired to amend certain of the claims as follows:

Claim 7, lines 5 and 6, cancel " gearing for driving " and
 substitute - - variable driving units for operating - -

Claim 8, last line change " gearing " to - - units - -

Claim 10, line 4, insert - - variable - - before " friction "

Claim 13, line 3, after " means " insert - - comprising
 slipping drive elements - -

Claim 14, line 3, after " including " insert - - slip-disk
 drive elements end - -

Claim 15, line 2 cancel " and " Same claim, line 3 after
 "rings " insert - - and - - Line 4, cancel " random" and substitute
 - - irregular - -

Claim 17, line 4 after " independently " insert - - and
 variably - -

Claim 18, line 3 after " means " insert - - including slipping friction drive elements - -

Claim 20, line 4, before " driving " insert - - slip-disk - -

Claim 21, line 3 cancel " random " and substitute - - any - -

Claim 22, line 3 cancel " random " and substitute - - fortuitous - -

Claim 23, line 2 before " provided " insert - - each - -

Line 3, at the end of the line after " other " insert - - and electrically interrelated - - Line 5, after " devices " insert - - whereby the contacts are caused - -

REMARKS

With respect to the view of the Examiner that applicants' system does not disclose true random operation, it is contended that true random operation is a feature of the present system and this contention is based upon the fact that the frictional drives here employed introduces a true variable factor, which arises from the slippage inherent in a drive of this character, and particularly so, by reason of the irregular movement of drive disks 14 and 14' which are caused to slide over the faces of the driven elements 16 and 16' by the action of the cam elements. This slippage factor will be more apparent when it is noted that the drive disks are caused to slide in an irregular manner toward and away from the fulcrum points or axes of the respective driven elements 16 and 16'. The slippage is further augmented by the fact that the system contemplates rotation of the two components in opposite senses. It follows that an operation which at

all times depends upon an unpredictable variable is properly to be regarded as a true random and fortuitous operation.

That part of the operation described on page 3 of the specification, comprised in the last five lines, is believed to fully support the foregoing argument ; and the intendment to introduce the variable relied upon is believed to be a clear implication from the language employed when it is considered that the inherent element of variability constitutes an essential feature of the mechanism as illustrated and upon which the asserted theory of random operation is predicated. The words " frictional effect " and " constantly varying speeds " give emphasis to this contention.

Again it will be noted that the two driven gears 2 and 2', with which drive gear 1 meshes, are provided with different numbers of teeth (see lines 8 and 9,) page 3 of the specification). This constitutes a differential gearing arrangement. It is believed that this differential arrangement will contribute or tend to contribute to the slippage effect of each friction drive, thus providing an added element of variability, which is further accentuated by the fact that an opposite rotational movement is here involved.

Admitting for the purposes of the present argument that periodicity, however remote, would result from the use of cam elements, nevertheless, each of the slipping frictional drives introduces into an otherwise complex sequence of operations true variable factors which render calculation of any period impossible. In a system of complex operations such as here disclosed and in which constants and variables are combined, the resultant must be variable and unpredictable. Thus, true random operation must of

necessity characterize a mechanism so constituted.

As to the Examiner's query with respect to claim 10, while it may be true that only adjacent contacts can be operated in succession, when the claim is considered in its entirety and the combination as now recited including the amendment introducing the word "variable", it is thought that the whole operation is clearly random and fortuitous, so that the concluding line is not inconsistent with the phrase "in a random order". In this connection, claims 7 and the dependent claims 8 and 9 have all been amended to overcome the ground mainly relied upon for their rejection.

It is thought that claim 15 as now amended, is clear of any of the citations; and the same applies to claim 18 as now amended.

As to the query involving claim 14, line 3, it is obvious that the Examiner's question relates to claim 15 since the word "its" occurs in the third line of the latter claim. The antecedent of the word "its" in claim 15 is answered by the phrase "one of said components". However, this claim 15 has been amended to clarify the meaning and is believed to be in order.

Claim 14 as amended is also thought to be clear of the art and now properly recites a true random operation in the light of the foregoing argument.

As to the question involving the word "differentially" as found in claims 19 and 20 and the same is generally true of other claims

such as 23 where the same word occurs, it is sufficient to state that the term differentially is aptly used in view of the fact that the gearing system 2, 2' and 1 effects a differential operation. In claim 23 the time variation may be said to depend upon the differential operation and is quite consistent with the use of the word "differentially" in said claim. This claim 23 has been amended to overcome the Examiner's objection on the ground of indefiniteness .

The references have been considered, but none of the three citations discloses a structure of the character called for by the claims in the form in which they are now presented. In particular, nothing in the nature of a variable or slipping drive of friction type is found in any one of these patents either alone or in any combination approximating the present invention. No detailed discussion of these patents is deemed necessary and it is sufficient to point out that those claims positively rejected on the cited art have been amended to avoid the same.

Favorable reconsideration is courteously requested in the light of the foregoing.

Respectfully submitted,

Wm. F. Friedman, et al.,

By:

Attorney