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CPG and COM in the circuit shown in Fig. 3, the insulated coupler AT is used for multiplying voltage, which is developed through the series combination of the inductance and the vacuum tube, by amperage of current flowing therethrough. For example, in the stage PGP, the input terminal A of the insulated coupler AT is connected to the power supply side or the high potential end of the inductance L_1 and the input terminal B is connected to the cathode of the vacuum tube V_1 for picking up voltage which is developed through the series combination of the inductance L_1 and the vacuum tube V_1 , and the input terminal C thereof is connected to the low potential end of the cathode resistor for the vacuum tube V_1 as shown in Fig. 3 for picking up voltage which is proportional to amperage of the current i_1 which flows through this series combination; while output voltage which is proportional to the product of said multiplication is obtained at the output terminals F and D thereof. In the stages CPG and COM, the insulated coupler AT is connected to the respective series combination of the inductance and the vacuum tube (L_2-V_2 , L_3-V_3) in the same way as in the stage PGP, and output voltages from these three insulated couplers are added to provide a voltage which represents a national income in economic terms and the resultant voltage is delivered to the potentiometer R_{sc} as shown in Fig. 3.

Fig. 6 illustrates an example of the design for the insulated couplers BT and CT. Either of the insulated couplers BT and CT has no function of multiplication as in the insulated coupler AT and merely produces direct current voltage in the secondary circuit thereof in proportion to voltage being applied to the primary circuit thereof in a certain range, the secondary circuit being insulated from the primary circuit against direct current flow therefrom.

The basic designs of the insulated couplers BT and CT are quite similar ones, but the latter has a larger output capacity as compared with that of the former. Their basic design is also similar to that of the insulated coupler AT, but has no such circuits as V_6 and V_7 vacuum tubes circuits and the terminal C in the insulated coupler AT, and the similar explanations as for the insulated coupler AT are applicable to the functions of the insulated couplers BT and CT, excepting those for the said dispensed circuits. In the insulated couplers BT and CT, the anode circuit of the vacuum tube V_5 consists of a tuning circuit being composed of the inductance L_6 and capacitance C_{14} , of which resonance frequency is kept same as of the tuning circuit being composed of the inductance L_5 and capacitance C_9 .

Although a specific embodiment of this invention has been shown and described in the forgoing, it should be understood that various modifications and/or extensions can be made therein without departing from the scope and spirit of this invention; for example, the connections of electrical circuit as well as the devices and component parts therein can be modified and/or extended in order to improve and/or develop such electro-analog model equipment of national economic system, so as to make more complete the electro-analog descriptions of national economic phenomena.

What is claimed is:

1. An electro-analog device for a national economic system comprising first means for representing the productivity of a capital goods production group, of a consumer's goods production group and of a trading group as separate and variable electrical quantities which are inter-dependent; second means for totalling the electrical quantities to provide a total electrical quantity representing the total productivity and for dividing the total electrical quantity into two subtotal electrical quantities respectively representing savings and consumption; third means coupling said second and first means to influence the productivity representations in accordance with the subtotal electrical quantity representing consumption; and

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fourth means coupled to said second means for receiving and storing the subtotal electrical quantity which represents savings, said fourth means being coupled to said first means and distributing the stored subtotal electrical quantity to said first means as investment for controlling the productivity representations therein.

2. An electro-analog device for a national economic system as claimed in claim 1 wherein said third means is coupled to said fourth means for partially controlling the distribution of the stored subtotal electrical quantity in accordance with consumption.

3. An electro-analog device for a national economic system as claimed in claim 2 wherein said first means comprises a capital goods device, a consumer's goods device and a trading group device; each of said devices comprising resistance means providing a control for the magnitude of the electrical quantity representing the productivity therein, inertia means coupled to said resistance means providing a first supplementary control for the magnitude of the electrical quantity, and storage means coupled to said resistance means for storing portions of the electrical quantity in accordance with which storage said storage means provides a second supplementary control for the magnitude of the electrical quantity, said resistance means being coupled to said second means for supplying the electrical quantity representing productivity and further being coupled to said fourth means whereby the resistivity of said resistance means is controlled to control the magnitude of the electrical quantity.

4. An electro-analog device for a national economic system as claimed in claim 3 wherein said second means comprises a potentiometer for providing the subtotal electrical quantities representing savings and consumption.

5. An electro-analog device for a national economic system as claimed in claim 4 comprising direct current isolating means coupled to and isolating said first, second and fourth means from each other.

6. An electro-analog device for a national economic system as claimed in claim 5 wherein said resistance means is a vacuum tube comprising an anode, a cathode and a grid; said inertia means being an inductor coupling said anode to said direct current isolating means coupled between said first and second means; said storage means being a capacitor coupled to said cathode; and further comprising an electrical power source coupled to said inductor and said capacitor; said grid being coupled by said direct current isolating means to said fourth means so that the anode resistance of said vacuum tube is varied in accordance with the distribution of the subtotal electrical quantity representing savings, the distribution representing investment, the current passing through said vacuum tube as controlled by the action of said inductor, capacitor and grid representing productivity.

7. An electro-analog device for a national economic system as claimed in claim 6 wherein said third means comprises a vacuum tube coupled to said potentiometer, an inductor coupling said vacuum tube to the capacitor of said trading group device and a winding inductively coupled to said inductor, said consumer's goods and trading group devices each comprising windings inductively coupled to the associated of said inductors; said fourth means comprising a savings capacitor to receive and store the subtotal electrical quantity representing savings and distributing vacuum tubes corresponding to said capital goods, consumer's goods and trading group devices, said distributing vacuum tubes being coupled to said savings capacitor and respectively to the windings of said consumer's goods and trading group devices and of said third means whereby said distributing vacuum tubes are controlled to distribute the subtotal electrical quantity representing savings via said direct current isolating means to the grids of the vacuum tubes in said capital goods, consumer's goods and trading groups devices; and means to couple the latter said devices to make their operation interdependent.

8. An electro-analog device for a national economic system as claimed in claim 7 comprising potentiometers for coupling said windings to said distributing vacuum tubes to vary the control therebetween.

9. An electro-analog device for a national economic system as claimed in claim 8 comprising potentiometers coupled to the grids of the vacuum tubes in said capital goods, consumer's goods and trading group devices for varying the control thereupon.

10. An economic unitary group analog device which is extensible stage by stage for representing a multi-stage economic production system, comprising a capacitor, an electrical power source, an inductor and a vacuum tube connected in series with said electrical power source to form a controllable D.C. dynamic dropper circuit, said capacitor being connected to the vacuum tube, and provided with output terminals for the indication of voltage due to electrical charge in said capacitor, current flow to and from said capacitor, voltage induced by said inductor,

voltage developed between anode and cathode of said vacuum tube and the anode current of said vacuum tube; said vacuum tube comprising a grid, an anode coupled to said inductor and a cathode coupled to said capacitor, and means to vary the bias on said grid in accordance with investment; said capacitor storing electrical energy to represent inventory, said inductor providing electrical inductance to represent profit level and production inertia, and said vacuum tube controlling the D.C. anode resistance thereof to represent control of productivity.

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