



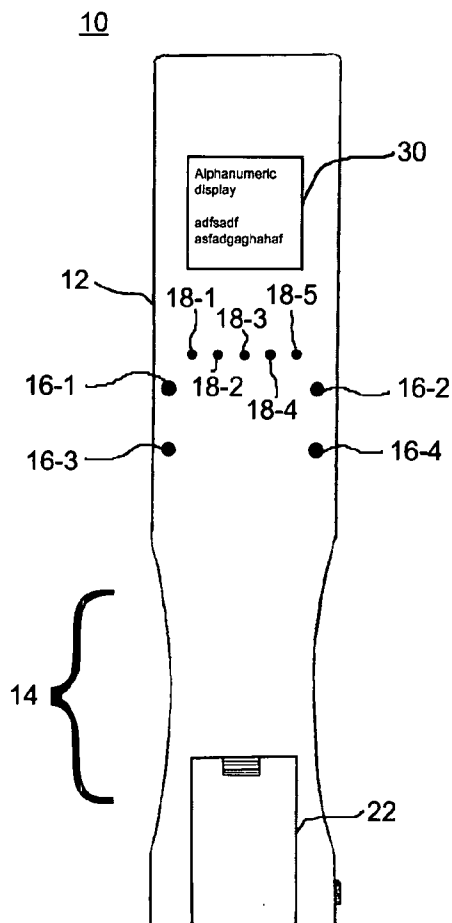
US 20070276449A1

(19) **United States**(12) **Patent Application Publication**  
**Gunter et al.**(10) **Pub. No.: US 2007/0276449 A1**(43) **Pub. Date: Nov. 29, 2007**(54) **INTERACTIVE TRANSCUTANEOUS  
ELECTRICAL NERVE STIMULATION  
DEVICE**(52) **U.S. Cl. .... 607/46**(75) Inventors: **M. Lee Gunter**, League City, TX (US);  
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**Hugh R. Kress****ARNOLD & FERRERA, L.L.P.****2401 Fountainview****Suite 630****Houston, TX 77057 (US)**(73) Assignee: **Med-Lectric Corporation**(21) Appl. No.: **11/153,814**(22) Filed: **Jun. 15, 2005****Publication Classification**(51) **Int. Cl.**  
**A61N 1/04** (2006.01)(57) **ABSTRACT**

A wireless, handheld electrical therapy device delivers electrical pulses to a treatment area of a patient. In one embodiment, the device comprises a microcontroller-based pulse generator circuit selectively operable in a plurality of therapeutic modes. The device comprises an ergonomic housing adapted to be comfortably grasped by a user. A plurality of electrodes are disposed on a surface of the housing. In operation, a user brings the electrodes into contact with a patient's skin at a location on the patient to be treated. Electrical pulses are delivered between the electrodes, thereby electrically stimulating neural tissue at the treatment location. In one embodiment, the device is operable in a manual mode wherein the user selects from among a plurality of therapeutic regimens each corresponding to a set of predetermined operational parameters. Among the variable operational parameters are pulse amplitude, frequency, duration, damping, and shape. In another embodiment of the invention, the device is operable in an automatic mode wherein electrical conditions at the skin surface are periodically sensed and the operational parameters automatically adjusted to achieve optimal therapeutic effectiveness.



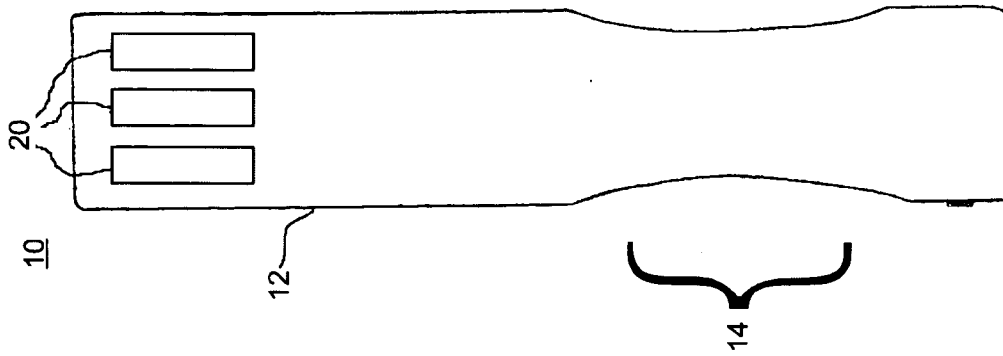


Figure 1c

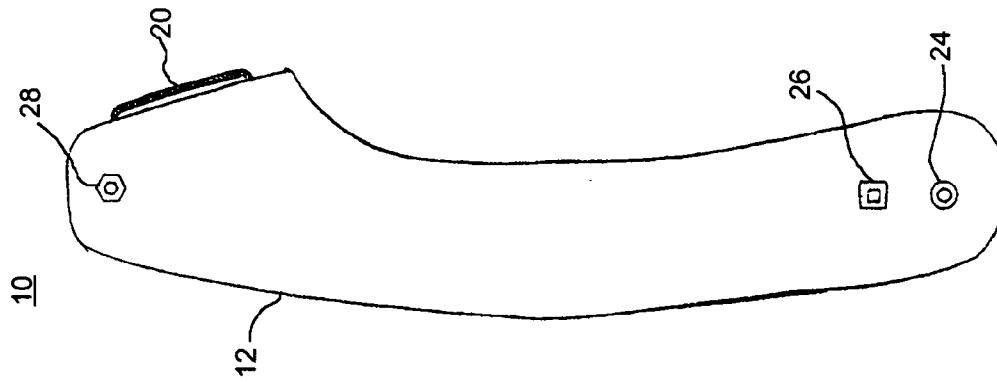


Figure 1b

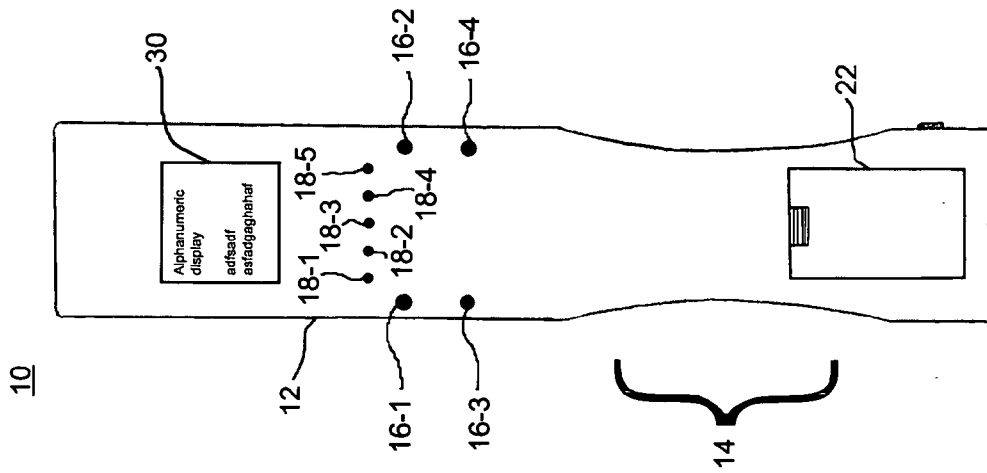


Figure 1a

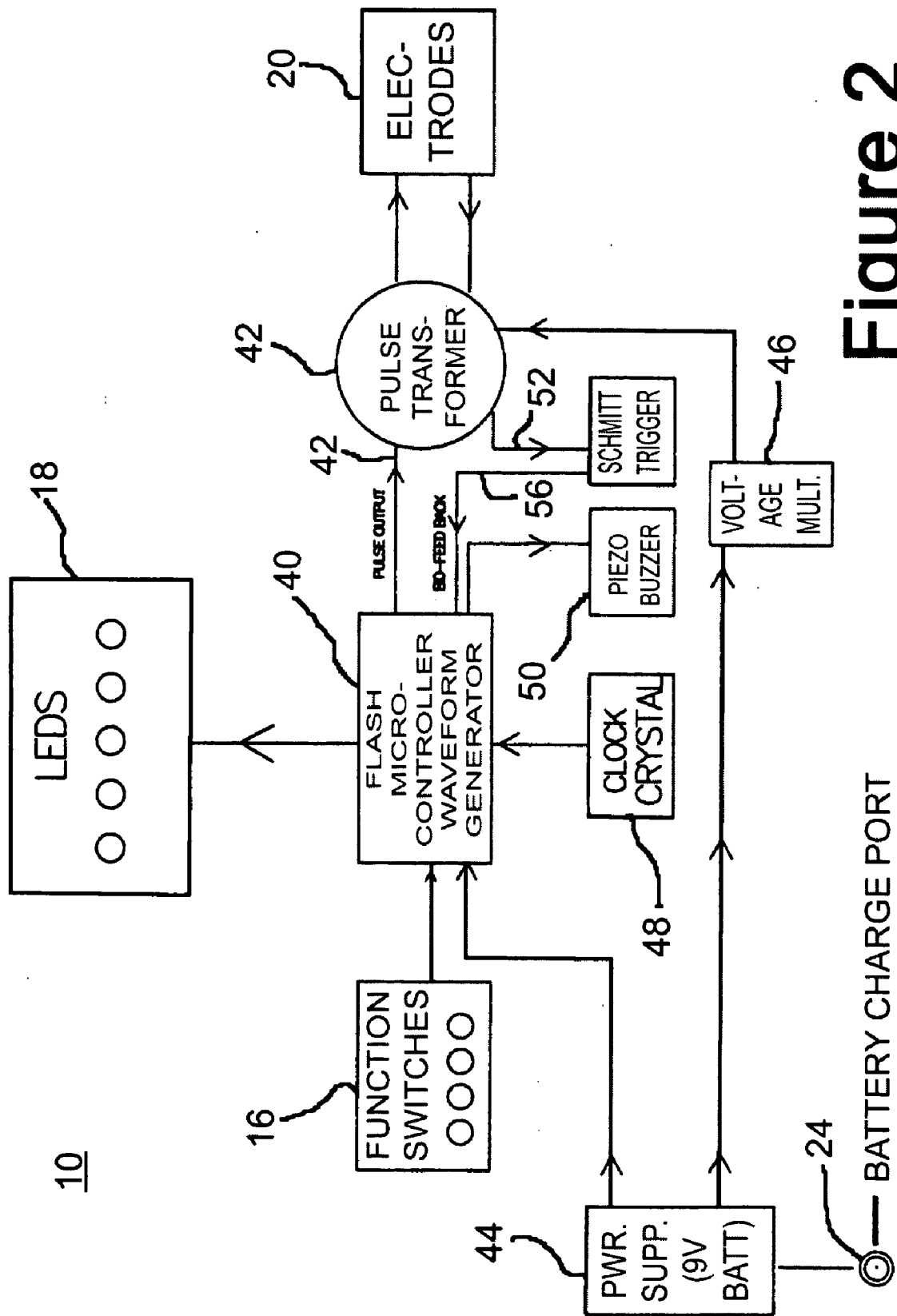
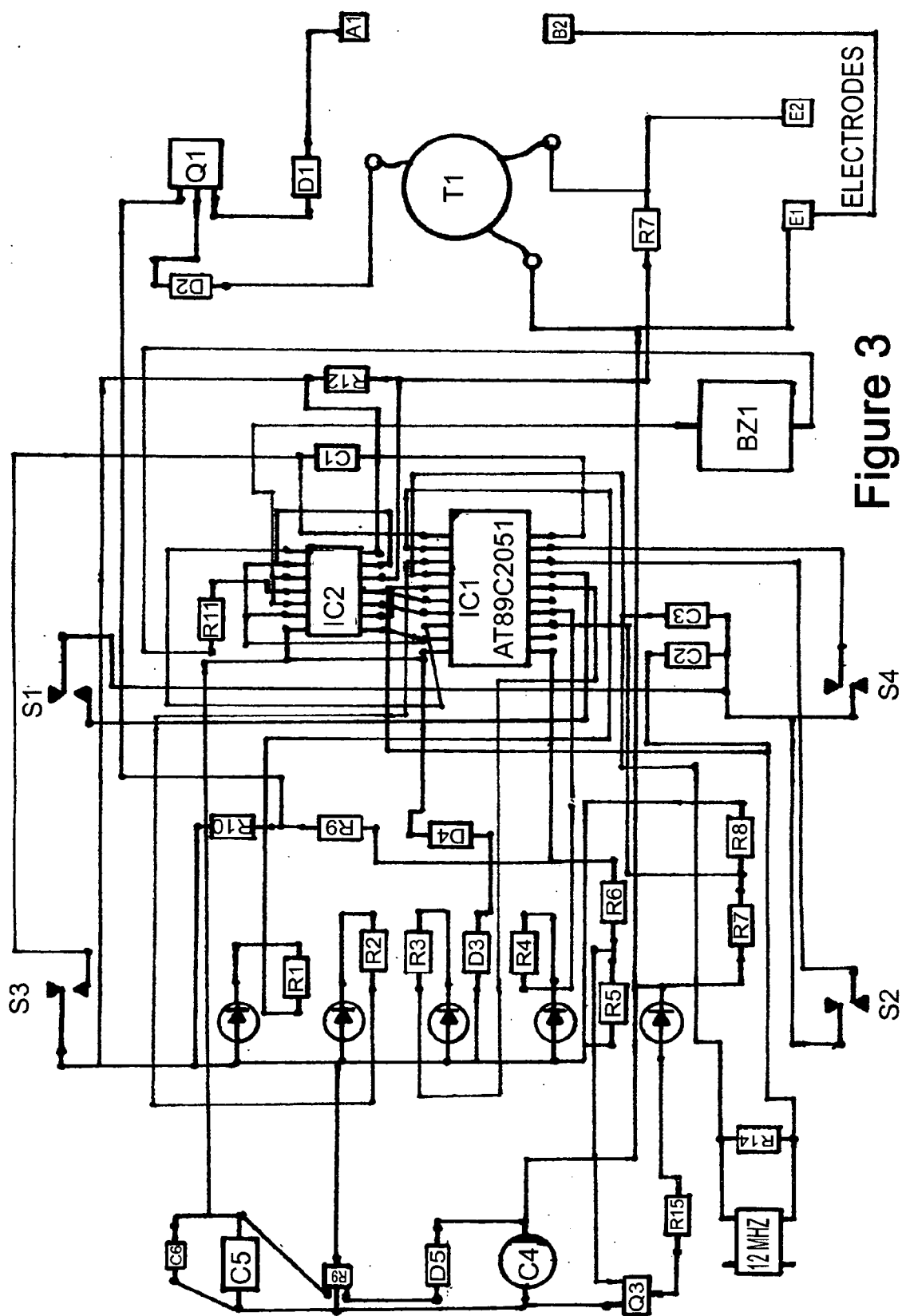
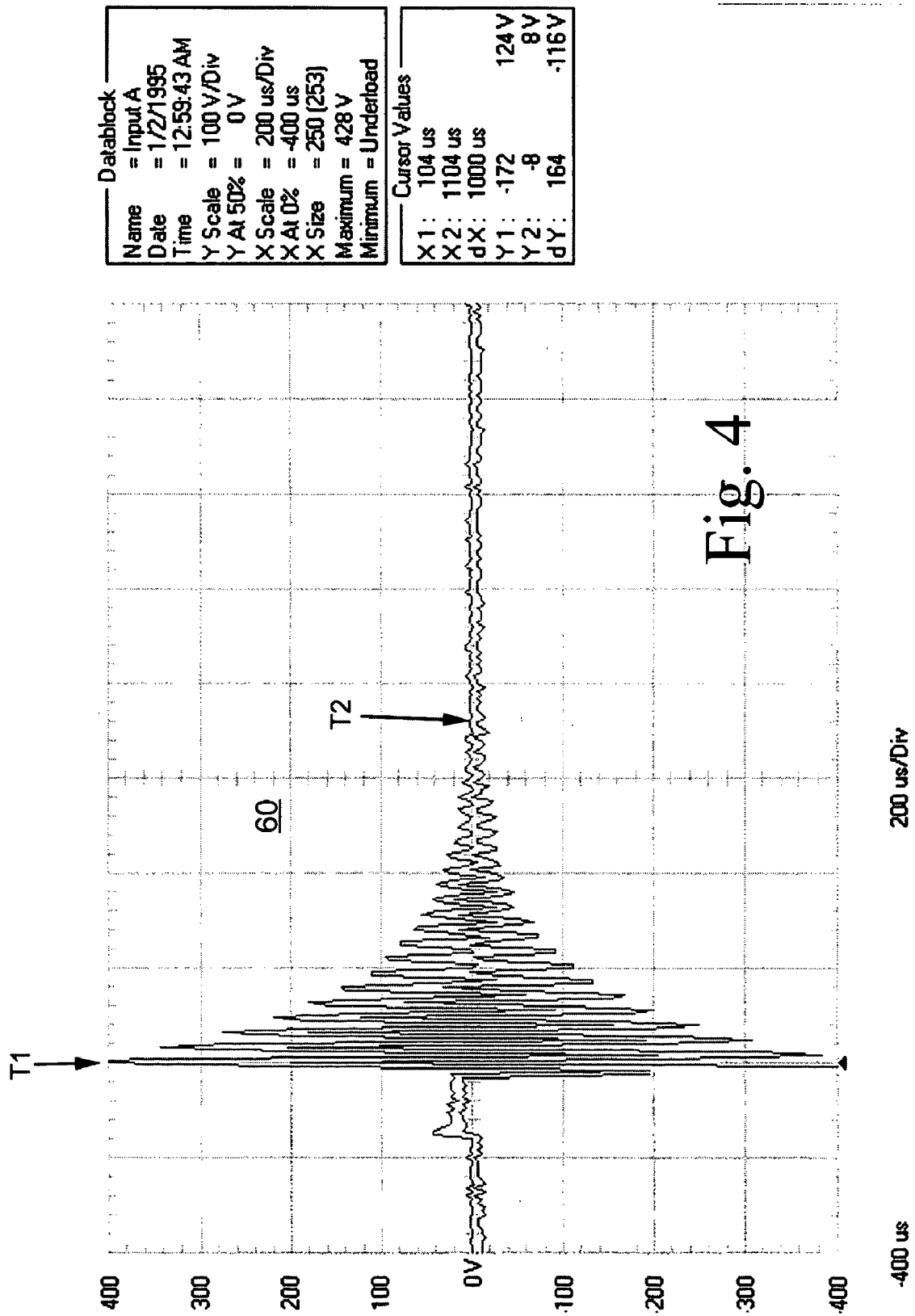


Figure 2





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