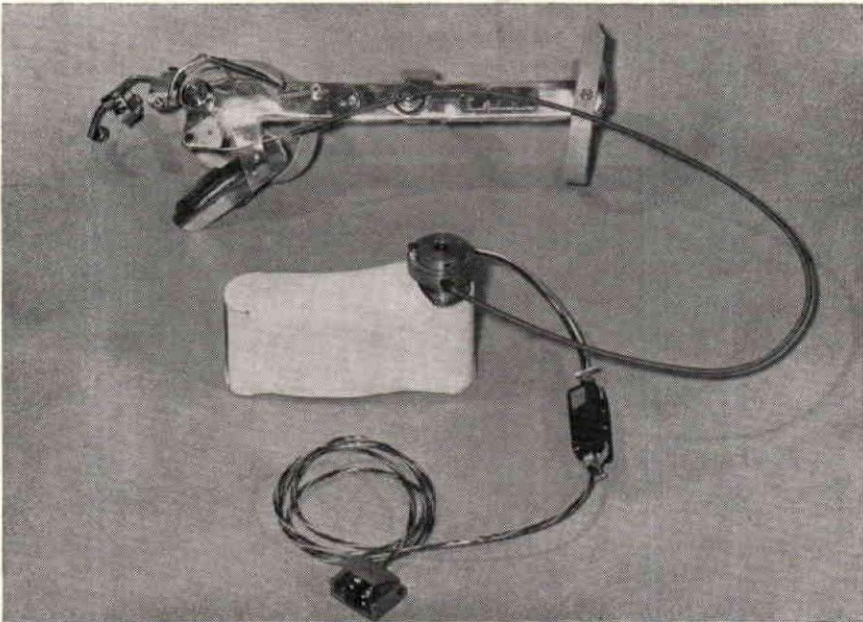


## The Electric Hand Splint\*

By A. KARCHAK, JR., J. R. ALLEN, V. L. NICKEL, R. SNELSON\*\*

A new source of power has been successfully applied to the flexor hinge hand splint to provide the patient with functional prehension. The power supply can be any 12-volt direct current source. The activator is a miniature permanent magnet gearhead motor. Since the hand splint is driven by a standard prosthetic cable and housing, both the actuator and the energy storage are remote from the hand splint itself and can be placed at any convenient location. The control is a unidirectional three-position switch that can be activated by any extremity movement requiring a force of 2 ounces and a range of motion of 5/16 inch.

The battery should be carefully selected to provide the patient with the maximum capacity at the minimum cost. A patient in an electric wheel



Flexor hinge hand splint is cable driven, powered by a direct current motor and battery pack. The hand splint is controlled by a unidirectional switch that is connected to the motor-battery pack by an in-line plug which also serves as an off-on power switch for the entire unit.

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chair would require no additional power source since the wheel chair batteries can provide adequate power for both mobility and the hand splint. Patients in standard wheel chairs can place a battery rack on the chair and purchase a standard 12-volt automobile battery and charger which are very economical. The ambulatory patient would require a rechargeable nickel cadmium battery with at least a 1.2 ampere hour capacity whose geometric shape and weight make it easy to carry. These batteries generally require special chargers since the charging rate can be critical.

The chief advantage to the electrical power source is its availability and storage efficiency. Comparison of the electrically driven splint with a carbon dioxide power splint of equal weight showed that the electrical splint would produce approximately ten times as many grasping operations as the compressed gas splint before recharging of the power source was necessary.

An additional advantage of the electric splint is its superior reliability. Approximately thirty of these splints have been fitted on both out patients and permanent hospital patients and to date very little maintenance has been required. Replenishing a storage battery is as close as the nearest electrical outlet and can be accomplished in any home.

## AOPA MEMBER EXHIBITS IN LEBANON



AMIN K. HAJJ at Middle East Surgical Conference in Beirut, Lebanon. Mr. Hajj appears here with a patient wearing a PTB prosthesis, at the exhibit at which Mr. Hajj was invited to display prosthetic and orthotic developments. The display was sponsored by the Lebanon Chapter of the American College of Surgeons. Mr. Hajj, who heads the prosthetic and orthotic department of the American Hospital in Beirut, reported that a number of surgeons were much interested in the prosthetic developments for A/K and B/K amputees.