

STUDENTS DEVISE QUADRIPELEGIC AID

Tongue-Touch System Built by Polytechnic Juniors

Two 18-year-old juniors at Polytechnic Institute of Brooklyn have devised a "simple, inexpensive system" that they hope will give a 12-year-old quadriplegic a chance to enjoy life.

They also hope that other victims will have the opportunity of using their system, which, they say, would enable the victims to live "enjoyable and intellectually stimulating lives."

The students are William Abikoff, of 1460 Macombs Road, the Bronx, and Arnold Steinman, 78-11 35th Avenue, Jackson Heights, Queens. Both are medical engineering students and close friends.

Their system enables the quadriplegic to use his tongue in place of hand manipulation.

A telephone head set is placed over the patient's head. The patient's tongue touches the wired mouthpiece. The tongue serves as an electric antenna that sends electric impulses into an amplifier. The increased pulse is then fed into their own invention. This is a series of "logic circuits" that are found in modern computers.

By using this tongue-touch system, the quadriplegic can operate television, radio, record a monostable multivibrator of players, tape recorder and microfilm readers, and work an

intercommunication system in the apartment, a book-page turner and, most importantly, an electric typewriter.

Young Abikoff said that "with the first few operations a person can learn. With the typewriter, he can teach."

The boys' work began when both became interested last March in the story of a 12-year-old girl who had been paralyzed from the neck down since the age of 6. The institute has withheld the name of the girl at the request of her parents.

Concerned over the difficulty that quadriplegics have in adjusting to the life they must lead, the students sought out the aid of Professor William B. Blesser, a faculty adviser, and began the mathematical computations required to devise their system.

The youths applied for a National Science Foundation Summer Education grant to enable

them to work on their project. They received \$600.

The boys, Professor Blesser said, "began literally to beg, borrow and appropriate the equipment they needed."

Seven companies from as close as Long Island City and as distant as El Monte, Calif., donated standard electronic pieces. The boys constructed their own units from the parts.

After seven months of work, the students wrote a report for the National Science Foundation entitled: "Design of a Control System for Remote Actuation." The technical language, as translated by the students, meant that a total cripple could live and be "intellectually stimulated."

The students said they would present their system to the 12-year-old girl within the next two weeks. "Just some minor details to be ironed out," they remarked.