Ray Grott, MA, ATP, RET

- Director, Rehabilitation Engineering Technology (RET) Project at San Francisco State University

RET Project

- Providing technology for people with disabilities since 1992
- Offices in San Francisco and Berkeley
- Work with public & private agencies, companies, and individuals

Ray Grott, MA, ATP, RET, Director

Ronny Gaal, ATP, RET, PE

Isa Palmer, B.S.

RET Project

- Technology evaluations
- Worksite accommodations
- Custom design, modification, fabrication
- Equipment set-up, troubleshooting
- Training, support, follow-up

Setting the Stage for Designing AT

- Overcome attitudinal barriers
- Know about the end user's needs and abilities
- Collaborate
  - The user as "expert"
  - Promotes acceptance & use of chosen solution
  - Helps in case results are disappointing
- Avoid dictating solutions

Problem Solving Methodology

- Identify the problem (stated vs. actual)
- Analyze the problem and situation
- Research what has been done
- Generate, evaluate, & select solutions
- Implement solutions / Iterative process
- Follow up

Problem Solving Methodology: Problem Analysis

- Desired goals and tasks
- Individual's abilities
- Environment
  - Physical
  - Social
  - Economic
- Personal preferences
- Anticipated changes

Problem Solving Methodology: Implementing Solutions

- Test with consumer
- Training
- Follow-up

Cost Hierarchy of Technology Solutions

1) Existing mainstream product

2) Existing specialty product

3) Custom modification of existing product

4) Custom design and fabrication from scratch

Why is custom work needed?

- Individuality is the nature of disability
- World is designed for able-bodied
  - Built environments
  - Equipment
  - Work activities / tasks
- Off-the-shelf products do not solve all problems

Guidelines for Success with Custom Technology

- KISS
- Don’t over-engineer the solution

FRESNO STATE
BULLDOGS

Keeping it Simple: How could I…

- Enable a wheelchair rider to pick up stray video tapes from the floor?

BLOCKBUSTER
VIDEO

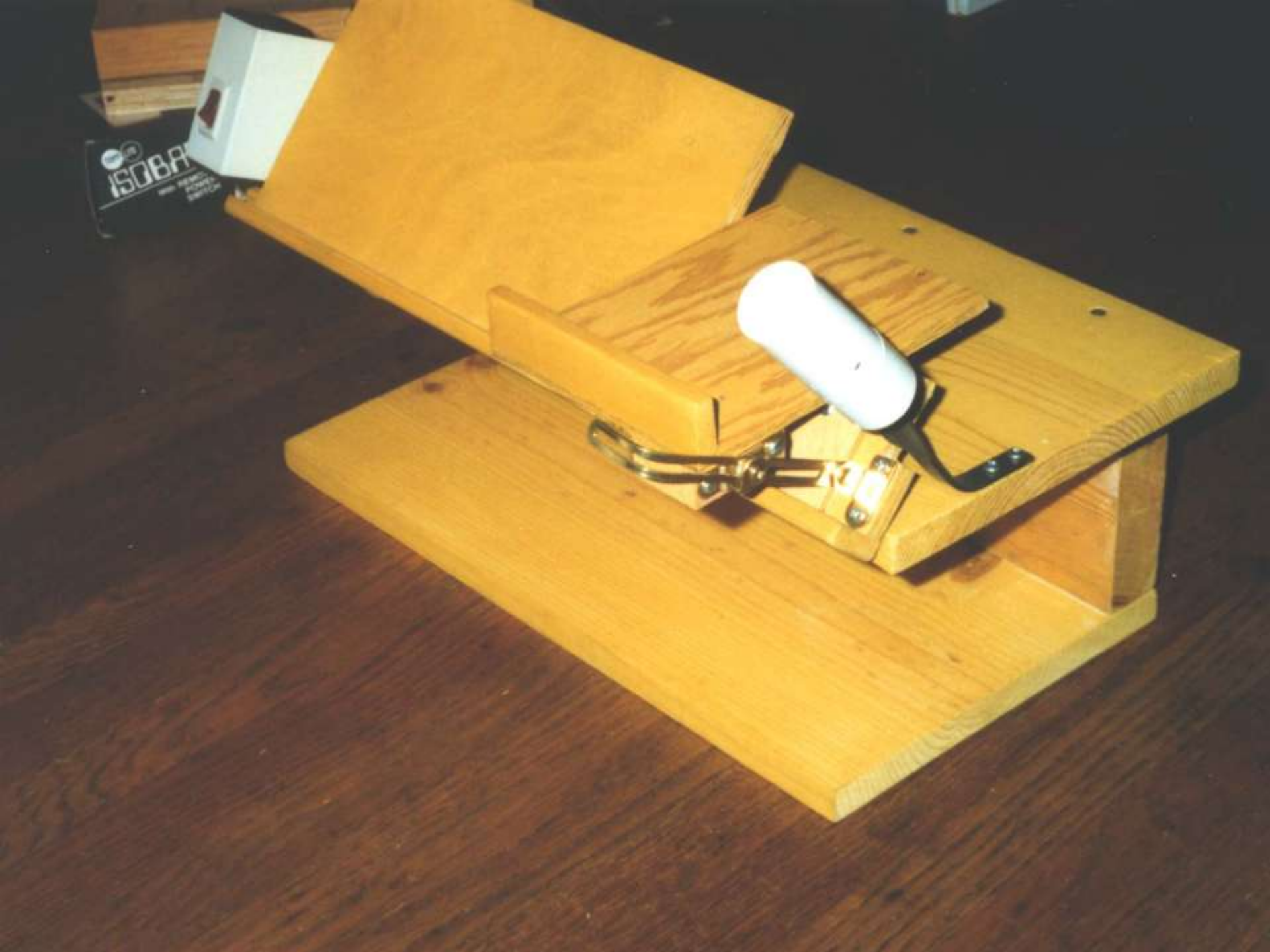
$2.50

Guidelines for Success with Custom Technology

- Build to fit AND make it adjustable

  “Make it adjustable or make it again.”

I BELIEVE!



Guidelines for Success with Custom Technology

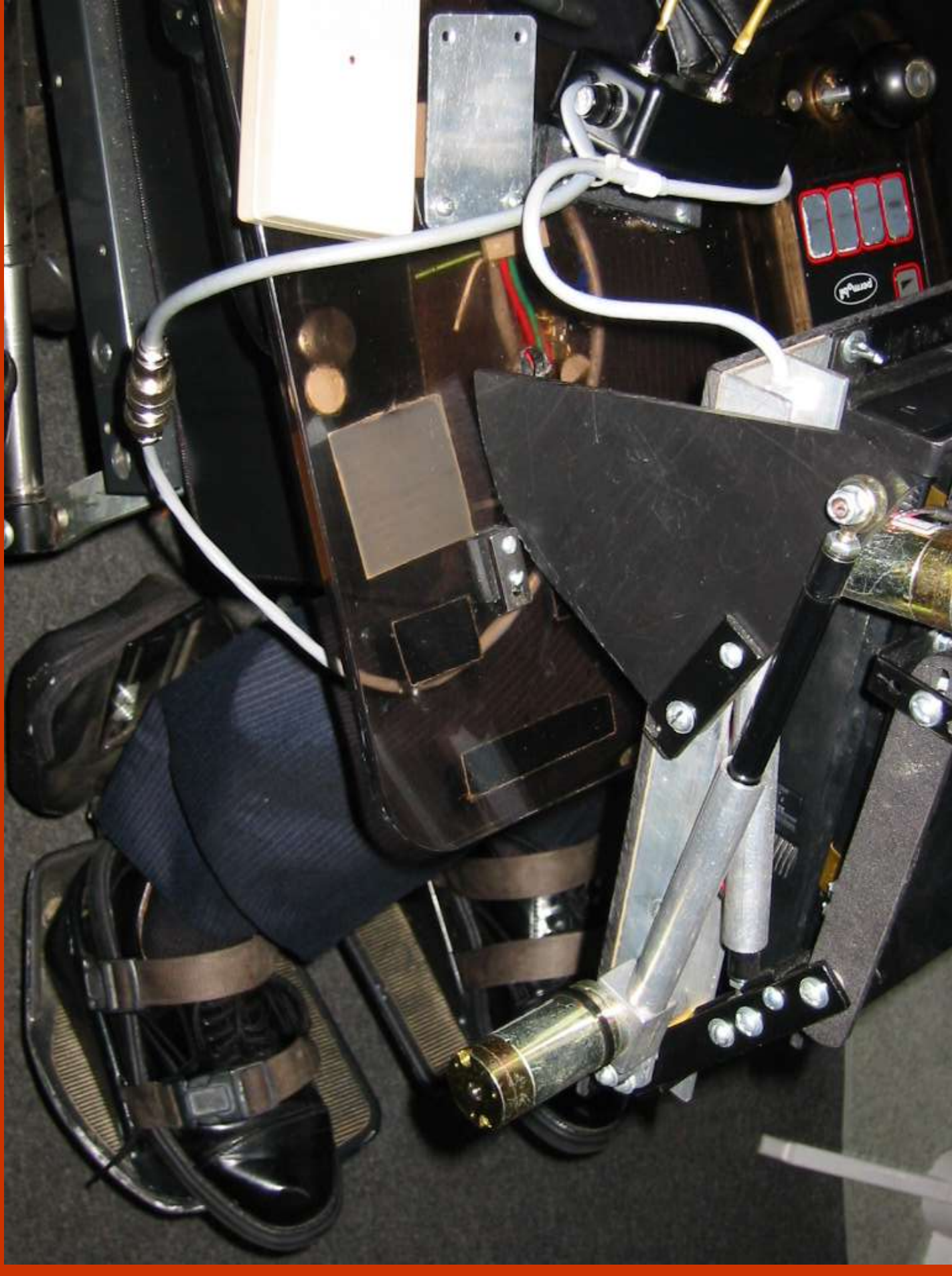
- Expect the unexpected
- The more involved the technology, the more room for failure.

CHANGE FORM

10A

DELL

Inspiron
7000

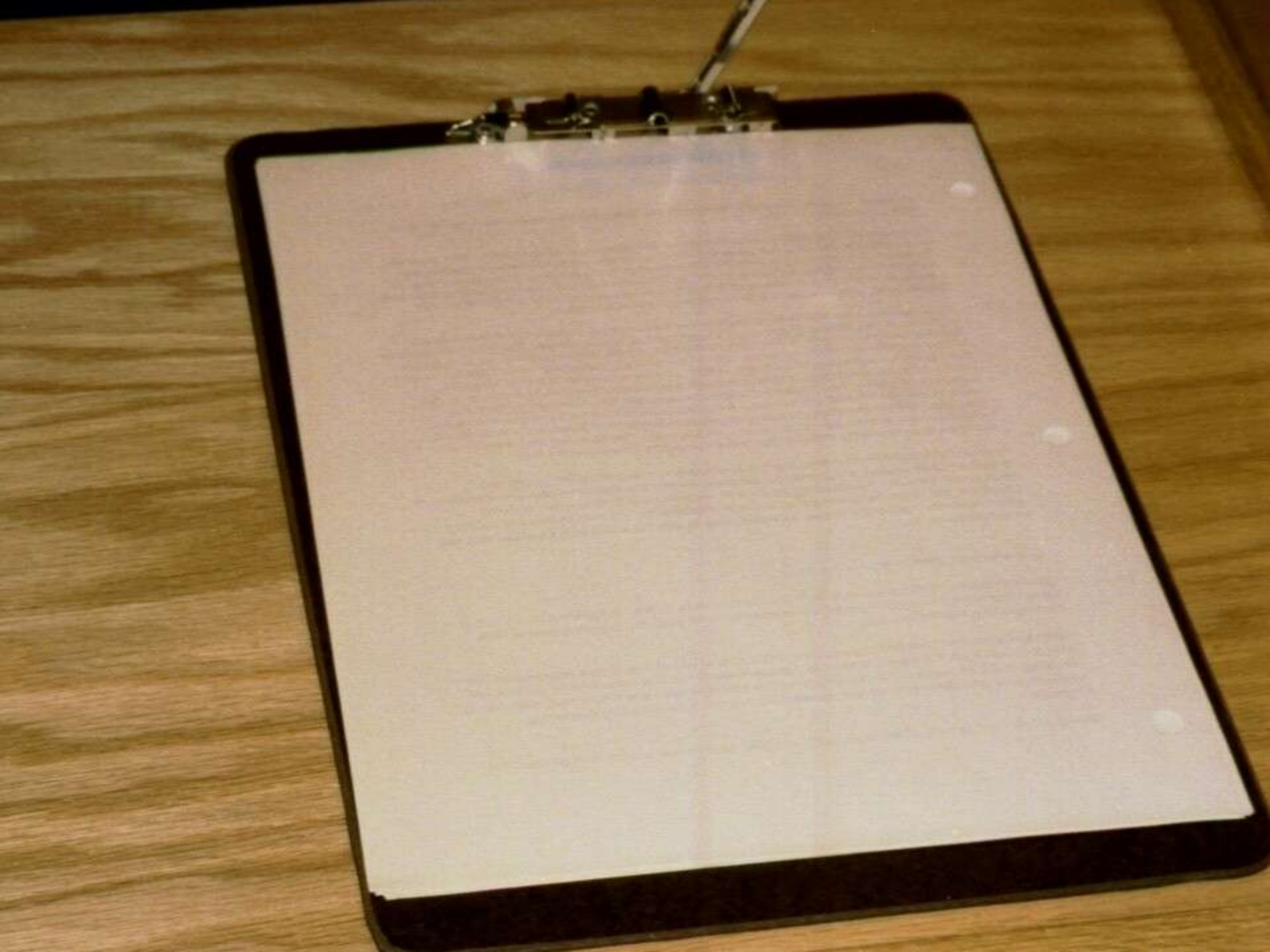


More Examples from the Field

How could I…

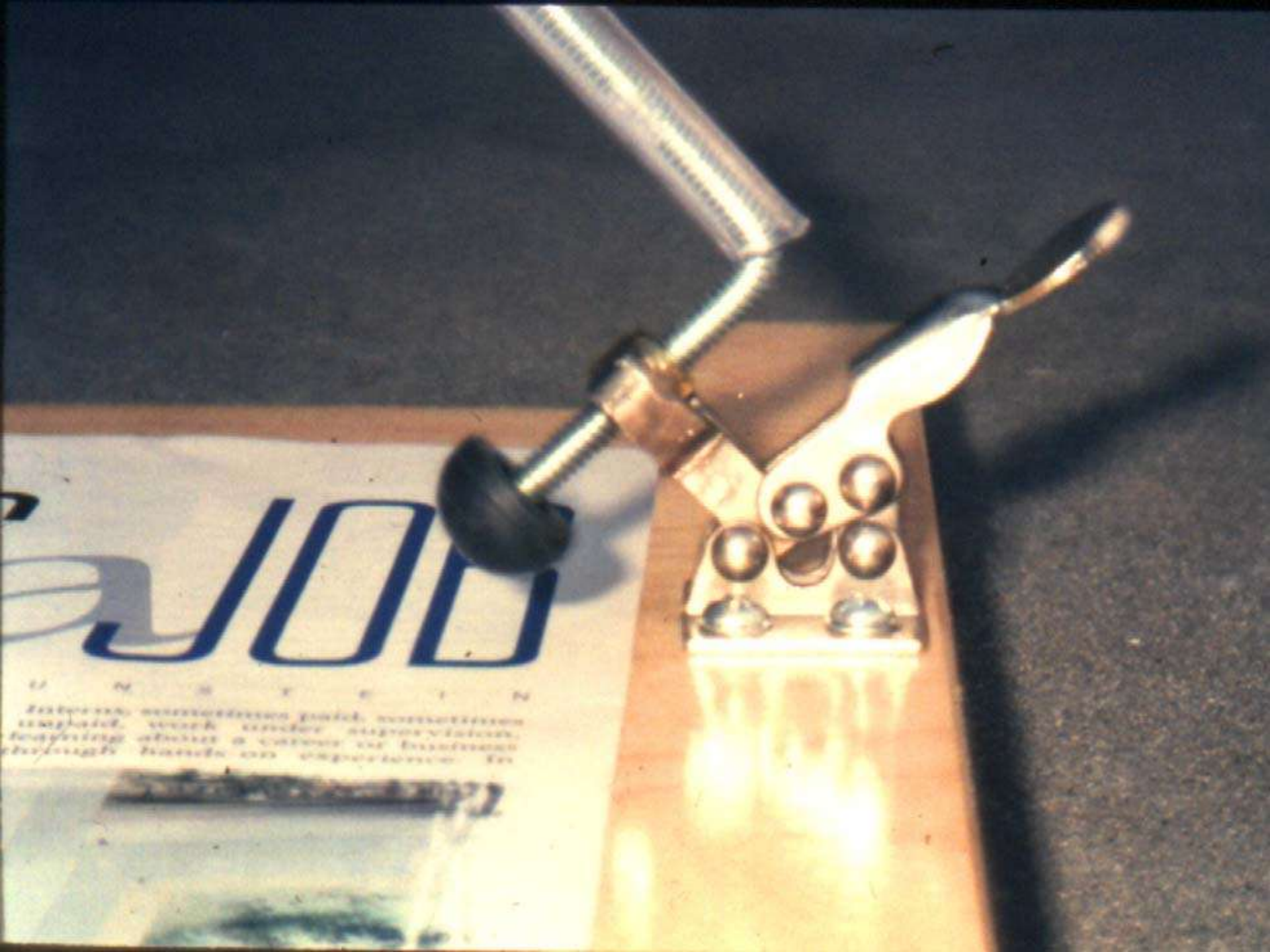
- Accommodate a receptionist with one functional hand?

INTERRUPTS



B. Preliminary Research
The preliminary research conducted by Wang (1992, 1994a, 1994b) asked whether, how, and under what conditions do injury control messages have the potential to portray people with disabilities in a stigmatizing way.
Anthropological interviews were conducted with a total of 80 subjects drawn equally from three groups: people with disabilities, college students enrolled in a health education curriculum, and practicing health educators. Two injury prevention advertisements were introduced into the study design as projective devices to prompt spontaneous responses to real injury prevention campaigns.
Among people with mobility disabilities, study eligibility criteria was guided by those used by
March
2002

QUICK GRIP



FINDING a JOB

How could I…

- Accommodate a medical records clerk with limited use of one hand?

How could I…

- Accommodate an office worker with arm weakness who rides a powered wheelchair?

SOINS DENTAIRES

CAROL 14/3 90C (UL) WATER RESISTANT SJOOW CSA (-40C) FT-2 P-7K-12033 MSHA MADE IN USA 300V

MADE IN USA 300V

(-40C) FT-2 P-7K-12033 MSHA MADE IN

CAROL 14/3 90C (UL) WATER RESISTANT SJOOW CSA

Speaker's Office of Member Services
SOMS FOR DEMMIES
A Reference for All of Us!

OFF

Good
supports the
Immune System
Contra Costa Mosquito
& Vector Control District
BANANAS

How could I…

- Give an office worker with spastic cerebral palsy independent access to papers?

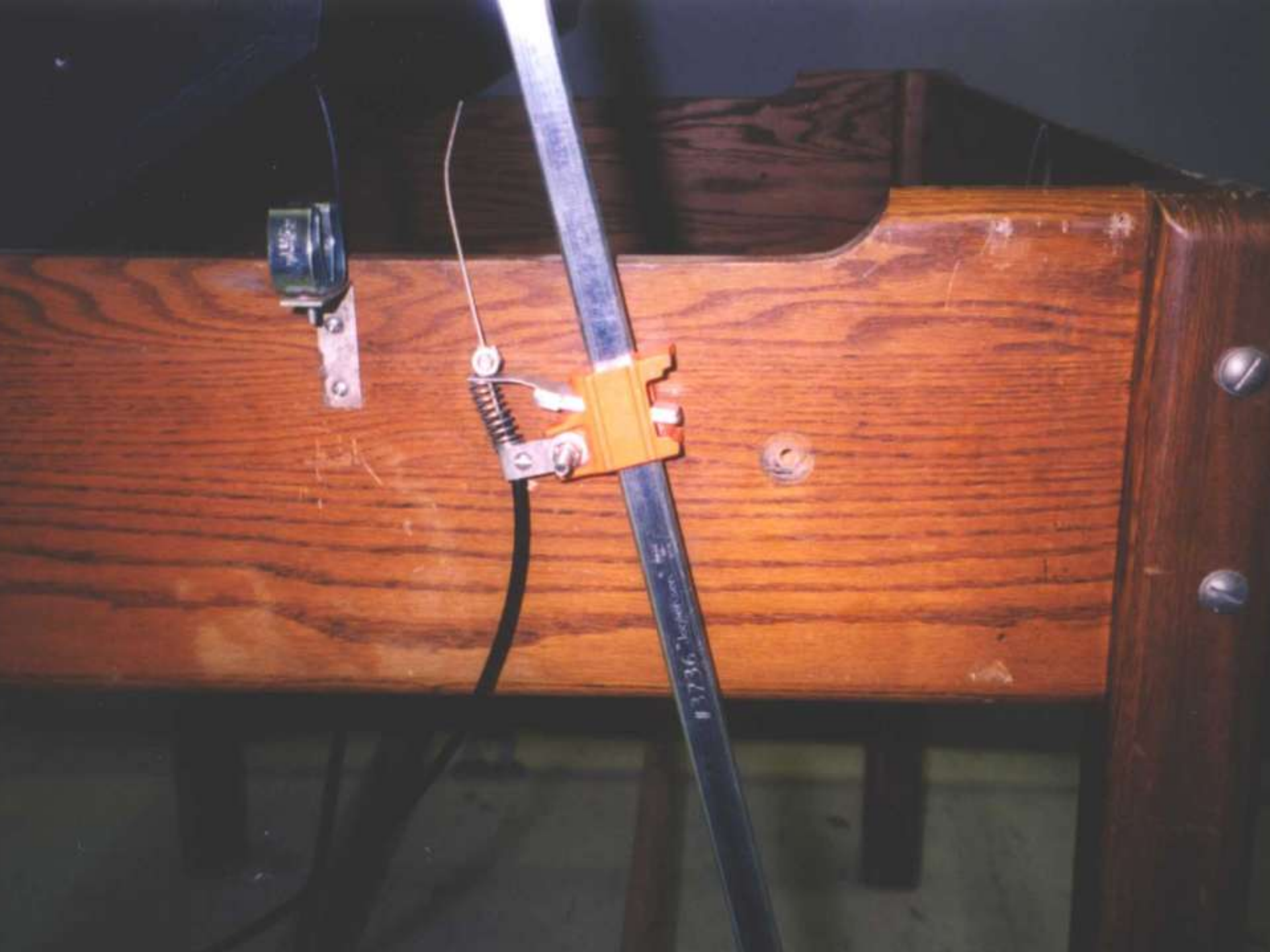
How could I…

- Accommodate a computer user who types with a mouthstick?

DATADESK
Pioneer

How could I…

- Accommodate a photographer with a back injury to view her slides?



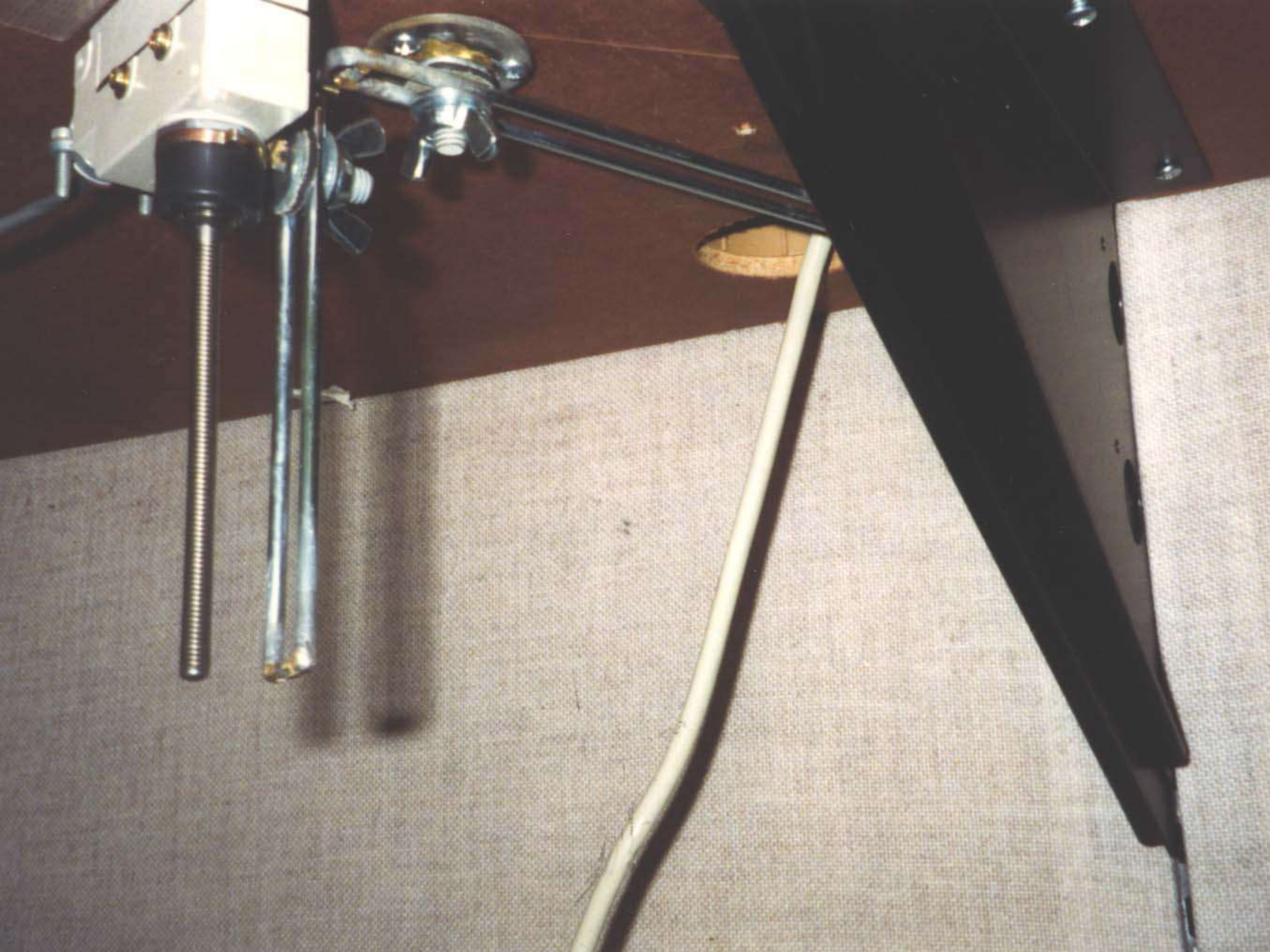
How could I…

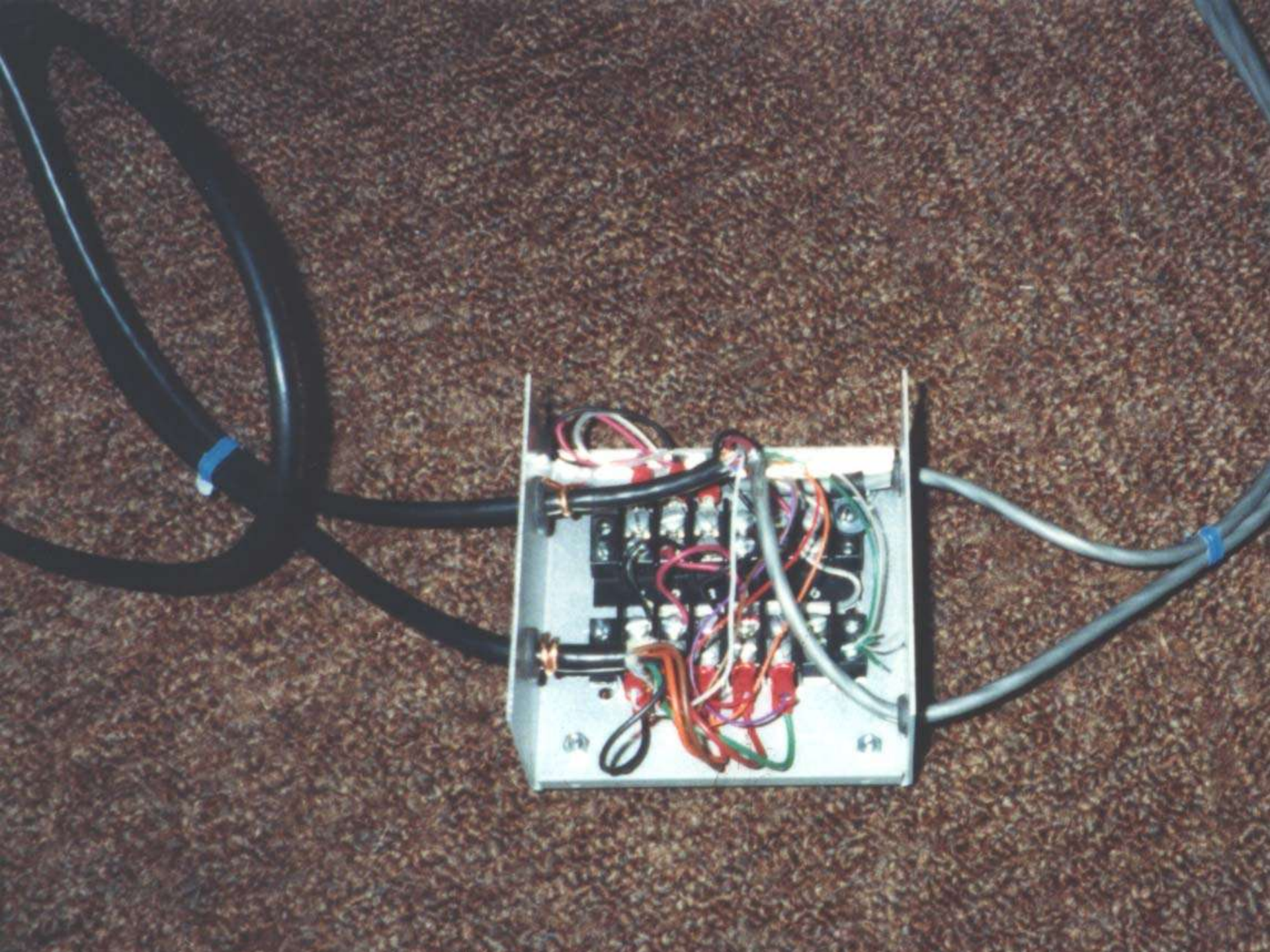
- Accommodate a movie theater ticket-taker with one functional hand?

How could I…

- Help a doctor with reduced hand strength use a stethoscope?

More Examples – Simple & Complex





Assistive Technology: It’s all about the people

INTERRUPTS