

To be a successful engineer,  
above all you must  
know how to cut costs

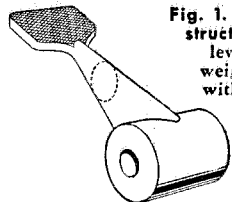
# LETTERS

## SIMPLE DESIGN CHANGE TO STEEL CUTS COST FROM \$1.15 TO 31¢

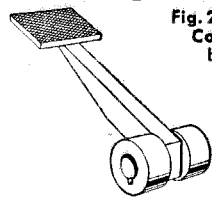
**B**EFORE any product design is accepted, the manufacturer asks, "Can it be built for less money?" Unless your designs pass this test they are likely to be rejected.

Knowing how to use welded steel gives you the advantage in developing any product for lowest cost manufacture. That's because steel is three times stronger than gray iron, two and one half times as rigid, and costs only a third as much per pound. Therefore, where stiffness or rigidity is a factor in a design, less than half the material is necessary.

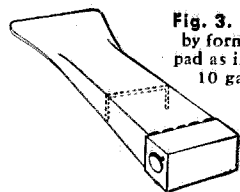
Here, for example, is how one resourceful engineer put these qualities to work:



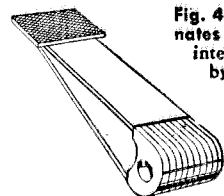
**Fig. 1. Traditional Construction.** Machine foot-lever, 10 inches long, weighs 6 pounds. Cost with broached keyway is \$1.15.



**Fig. 2. Simple Steel Design** Costs 41% Less. Can be built by the shop with only saw and shears. Weighs 2.7 pounds. Costs 68¢ complete with keyway.



**Fig. 3. Saves 53% Cost** by forming lever arm and pad as integral piece from 10 gauge metal. Weighs 2.5 pounds. Costs 54¢.



**Fig. 4. Saves 73%, Eliminates Broaching.** Hub with integral key is produced by stacking stampings in assembly. Arm is 10 gauge, brake formed and welded to hub. Cost is only 31¢. Weighs 2.2 pounds.

Back up your engineering training with latest information on welded steel construction. Bulletins and handbooks are available to engineering students by writing

**THE LINCOLN ELECTRIC COMPANY**  
Cleveland 17, Ohio  
THE WORLD'S LARGEST MANUFACTURER OF  
ARC WELDING EQUIPMENT

Fort Collins, Colorado

Sirs:

I was interested in reading the article in your November issue about the Alumni Scholar. He had a mighty fine high school record and it looks like the committee made an excellent choice in Timothy Harrington.

Without wishing to detract in the least from Harrington's honor, I believe your claim that this is the first Alumni Scholarship to a Caltech freshman is in error. It has probably been so long since one was awarded that everyone but a few former recipients has forgotten. Almost 30 years ago, however, I was fortunate enough to have received a so-called "Alumni Prize Scholarship" that paid for tuition and books the freshman year. In my case, I might never have gone to college without that break. There were others awarded in those years (I remember Robley Evans, '28, now Professor of Physics at MIT, re-

ceived one in 1924) but I do not know when they ceased. Apparently there was no stable fund to finance them as the alumni are planning now.

Congratulations to the Alumni organization, and to Timothy Harrington, from an Alumni Scholar of another generation. (Boy, how time flies!)

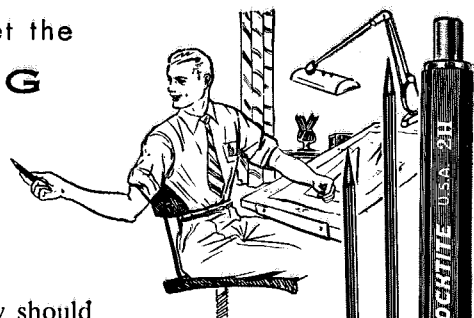
Thomas H. Evans '29  
Dean of Engineering

Colorado Agricultural  
and Mechanical College

*In actual fact, the old Alumni Prize Scholarships were quite different from the present Alumni Scholarships. The Alumni Prize Scholars used to be selected by the alumni (not by the Caltech Committee on Undergraduate Scholarships and Honors, as the present Alumni Scholars are) and the funds were based on a note signed by the donor of the scholarship.*

Now is the time to get the

## LIFE-LONG CASTELL HABIT!



Your tools of tomorrow should be your tools of today. When you graduate and start upon your own career you will find that the top engineers, architects and designers use CASTELL—either the famous wood pencil or LOCKTITE Holder with 9030 lead.

CASTELL is smoother, stronger, lays down greater depth of graphite on the drawing. It is uniformly excellent in all 20 degrees, 8B to 10H.

You study in a fine school, taught by outstanding professors. Does it make sense to work with inferior tools? Order CASTELL, world's standard of quality, from your College Store, stationer or art supply store.

