

**U.S. SKI-TROOPER'S
HAND TOOL DOES 4 JOBS**



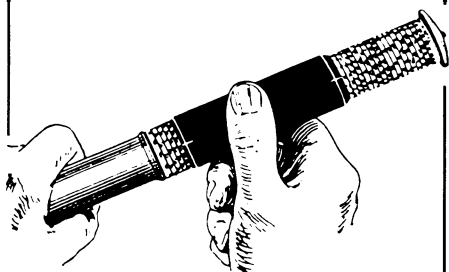
One of the most practical tools you can own or give as a gift! Ideal for hobbyists, mechanics, do-it-yourself repairmen, fishermen, boating enthusiasts, etc. No looking for 4 tools that could be misplaced. Everything on this beautifully chrome plated "handyman," 4" diamalloy adjustable crescent-shaped wrench, 6" slip joint wire cutters, pliers and screwdriver combined. Write gift boxed.

Only \$5.65 ea., 3 for \$14.50, 6 for \$24.00 ppd.

MEREDITH SEPARATOR CO.

Dept. YSN, 310 West 9th St., Kansas City, Mo. 64105

**HOW TO GET ACCURATE
SLIDE RULE RESULTS**



**SWITCH FROM A 10 INCH
TO A 66 INCH SLIDE RULE**

The Otis King's 66" scales bring amazing accuracy to calculating. It gives reliable results to four or even five significant figures! Has C, D and L scales . . . gives 5 place logs.

Patented spiral construction packs three 66" scales into easy-to-read pocket size calculator. Only 6" closed, 10" open. Easy to learn and use. Full instructions provided.

Lifetime chrome steel construction. Can't warp or break. No fragile glass cursor. Ideal for lab or field use. Gives fast, precise answers to your important calculations.

**Money unconditionally refunded
if not completely satisfied.**

WHY NOT SOLVE YOUR CALCULATING PROBLEMS TODAY? Just \$18.95 ppd.

Calculator Co.

Box 593, Lakewood, Calif.

CALCULATOR COMPANY—Dept N
Box 593, Lakewood, Calif. 90714

Please send me _____ Otis King
slide rule(s) at \$18.95 each on a satisfaction guaranteed basis.

Name _____

Address _____

City/State _____

(In California, add 5% sales tax.)

QUANTUM THEORY

**Interference
still a puzzle**

**Particle theory of light can't
explain interference patterns**

One of the paradoxical points of modern quantum theory is its declaration that light is a wave and a stream of particles at the same time. It requires that all optical phenomena be explicable on either basis.

One phenomenon, double-slit interference, is not. If coherent light beams pass through two nearby slits and fall on a screen, a pattern of dark and light fringes appears. On a wave basis this can be explained by saying that wave trains from each slit arrive at a point on the screen either in or out of phase with each other according to the distance each has gone from its slit.

But if one thinks of light as a stream of photons, then how does an individual photon, which presumably passes through only one slit, know that the other slit is there and that it may not go to certain spots on the screen? Physicists thought that if they reduced the light intensity until they could count individual photons, they might see how each one made its choice.

When they did, nothing explanatory happened. The experimenters threw up their hands and said that the only possible quantum explanation is that one photon went through both slits and interfered with itself.

Paradoxical as the single-photon explanation seems to be, it is easier to take if the light beam originates in a single source and is split in two on its way through the optical system. If two independent sources are used and two separate beams maintained, it is very difficult to imagine how one single photon could ever have been in both beams.

Despite the persistent suggestions, nevertheless, that the experiment be tried with independent beams, until lasers came along this was not feasible; there was no way other than using a single source for getting coherent beams.

But with the development of lasers, the two-beam experiment could be tried, and it has been. Drs. R. L. Pflieger and Leonard Mandel of the University of Rochester did and found no new result. They conclude a bit helplessly: ". . . it would seem to be impossible to describe each photon as being in both beams at once. Nevertheless to some extent this is the conclusion to which we are driven. . . ."

HALF HULL PLAQUE KIT



SCHOONER YACHT "AMERICA," Mahogany, \$15.50 hull length 19", scale 3/16". Complete kit includes machine carved 3/4" hull, backboard, screws, fittings (eagle, trailboard, seats), wood material, decking, plans, instructions.

FINISHED HALF HULL PLAQUE, All mahogany, four coats of varnish. 1 x 3 name plate included. \$39.95 ppd

Send for booklet "JACKSTAY," an excellent guide for model builders, \$2.50 ppd.

ILLUSTRATED CATALOG OF KITS & FITTINGS 40¢.

R. NICOLETTI SHIP MODEL KITS Dept. 85
52 Marine St., City Island, New York 10464

OUTER-SPACE MAP



Giant 42"x33", 8-color space map shows our entire solar system and each planet's orbit, size and distance relationship to the sun and earth.

Only \$1.00 Postpaid.

CHESPA SALES

P.O. Box 117-5N

Barrington, N.J. 08007

**Doctors Trim 2 Inches
Off Flabby Waists!**

German doctors at the famous Max-Planck Institute have discovered an instant-workout method that can reduce waistlines in 30 days. Called "Isometric Contractions," one 60-second daily workout can reduce waistline fast. 10 simple exercises can put the whole family in shape fast. No sweat, strain or tiring repetitions. Acclaimed internationally by physiologists, coaches, athletes. Results guaranteed. Free, illustrated information. Write AWARD-WINNING ISOMETRICS, 37 Centuck Station, Yonkers, N. Y. 10710.

WRITERS

Sixth Printing

Enrich your style through Herbert Spencer's and Edgar Allan Poe's classic principles that have influenced many of the world's great authors. Indispensable for writers eager to get published! Send \$1.00 to Pageant Press, Dept. SN 101 5th Ave., New York 3



ASTRONOMY

For You Each Month!

Enjoy SKY AND TELESCOPE magazine, devoted to astronomy and space science. Profusely illustrated. Observing and telescope making departments, monthly planet and star charts. Subscription in U.S.: \$6.00, 1 year; \$11.00, 2 years. Sample copy 60 cents.

SKY AND TELESCOPE Dept. SNL
Cambridge, Mass. 02138

The
amazing
grill that
revolutionized
charcoal
cooking!



THE ONLY CHARCOAL GRILL WITH:

- Instant starting • Amazing charcoal economy
- Adjustable firepot • Instant heat control
- Folding legs for fireplace use plus many other unique features. Priced from \$32.95.

For details and free cook book write:

CURTIS COOKER CORP. Dept. 7704

45 Exchange St., Rochester, N. Y. 14614