



A. S. Aloe Company

CIVIL ENGINEERS' AND
SURVEYORS' INSTRUMENTS
ARCHITECTS' AND DRAUGHTSMEN'S
MATERIALS AND SUPPLIES

ALOE BUILDING.

ESTABLISHED 1860
CABLE ADDRESS 'ALOE'

St. Louis, Mo.

TO---
ENGINEERS,
ARCHITECTS,
DRAFTSMEN.

At an opportune time comes this folder to
your desk ---

--- offering for 60 days only, money-saving
prices on specialties you need and use daily.

Now is the time to buy!

And when you buy from Aloe, who for over 60
years --- since 1860 --- has supplied Engineers,
Surveyors, Architects and Draftsmen with instruments
and equipment, you are sure of straightforward
dealing. Our direct-by-mail, money-saving service,
has gained over 50,000 of these men as regular
customers.

You may be certain of quality in our goods.
Everything you buy from this folder, bears our
Ironclad Guarantee of Perfect Satisfaction or your
money back.

And ---

--- whether your order is big or little it
gets immediate attention --- shipped the same day
received.

We urge you ---

GRASP THIS CHANCE!

--- and save money.

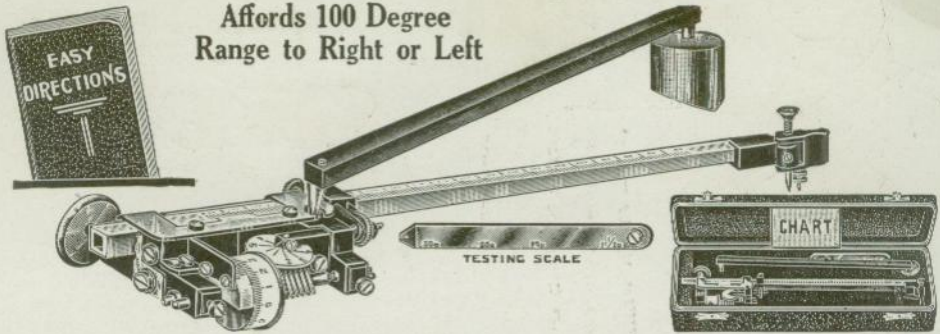
Sincerely yours,

A. S. ALOE COMPANY.

OF THE ENGINEER, ARCHITECT

Coradi Compensating Planimeter

Affords 100 Degree Range to Right or Left



For All Uses of The Highway and Mining Engineer

No longer need the highway or mining engineer laboriously go through the procedure of computing areas of rights of way, cuts and fills. Or, check quarterly reports of coal mined or to be mined in each heading, etc. The instrument here shown does it all—quicker, easier and more accurately. An indispensable aid to the busy engineer.

This planimeter—the compensating type which by measuring a diagram with the pole first on the left and then again on the right side of the tracer arm and taking the mean of both readings, making possible the correction of any error due to mechanical variations—is now standard equipment with practically every state highway department.

Affords Reading Mean Height of Indicator Diagrams

Its range, adaptability and usefulness are wide. The completeness of its mechanical construction, as it is emphasized permits of finding the mean height of indicator diagrams, easily accomplished by merely adjusting the tracer arm to the length of the base with pole arm removed. All readings are computed in square inches, centimeters, acres, etc., according to the unit of the plan used.

Its construction is simple. In this compensating planimeter the pole arm is held in the wheel carriage of the tracer arm containing the vernier and dials, by a pivot which ends in a steel ball, forming a secure ball joint with the carriage. This construction gives the tracer arm an angular motion of 180 degrees in either direction, thus affording a much greater range than in ordinary planimeters.

Chart Simplifies All Preliminary Adjustments

Table of Settings. Tells (1) scale of plane to be measured; (2) customary tracer arm lengths; (3) values of the vernier units for various lengths of tracer arm; (4) constants corresponding to the tracer arm lengths.

Scales	Position of the vernier on the tracer bar	Value of the unit of the vernier on the measuring roller	Constant	
1" = 50'	344.8	40 □	0.008 □	23574
1" = 25'	323.4	30 "	0.010 "	23788
1" = 20'	269.9	20 "	0.0125 "	24854
1" = 10'	250.1	10 "	0.015 "	—
1" = 5'	216.5	5 "	0.020 "	—
1" = 2 1/2'	109.6	2 1/2 "	0.040 "	—

Circumference of the measuring roller = 2.37606

With this chart before you all preliminary adjustments necessary to all settings are easily and quickly ascertained and you are able to place the instrument and begin work at once.

With Testing Scale

The Testing Scale, which is included, affords the desirable advantage of testing the exactness and the adjustments of the planimeter, simply by describing a circle with testing scale and repeating the operation with the planimeter and comparing both circles. Thus errors in adjustment are easily rectified.

Easy to Use

No profound knowledge is required to secure accurate results with this instrument. Included is a book of instructions, explaining minutely all adjustment and applications of the instrument. This book together with Test Chart enables you to begin work at once.

Remarkable Accuracy

An instrument that is to serve the many purposes as pointed out above and possible only by the Coradi Planimeter, of course, is worthless unless its computations are of unflinching accuracy. With this instrument with its features of checking, errors are rendered almost impossible.

Prices

Made of German silver with brass fittings Complete in plush-lined case with Test Scale, Book of Instructions, and Test Chart.
 No. MC4E5956—Coradi Compensating Planimeter, complete as described \$31.50
 No. MC4E5957—Same, but with adjustable tracer arm for measuring areas of unusual size..... 35.00

1819-21-23 OLIVE ST.

THESE EVERY-DAY NEEDS

Big Offer On Tracing Paper!

Finest Quality—Makes Perfect Blueprints

Per Roll **\$3⁵⁰** 20 Yards

Packed in Strong Cardboard Tube



This tracing paper serves the same purpose as tracing cloth, and will considerably lower the costs of your tracings. Will not buckle under any kind of conditions. Suitable for water colors, pen and ink, or pencil. It makes clear, sharp blueprints. Even when three or four erasures are made, ink will not spread on the erased surface. Comes packed in strong cardboard tubes with tin ends.

- No. MC4E5226—Aloe Tracing Paper, 30 inches wide, 20-yard rolls, per roll \$3.50
 No. MC4E5257—Same, 36 inches wide, 20-yard rolls, per roll.... 4.00
 No. MC4E5259—Same, 42 inches wide, 20-yard rolls, per roll.... 4.50

“Ideal” Adjustable Drawing Table

ONLY **\$12⁰⁰**

Best Table For Price
In America

Adjustable in Height And
From Vertical to Any Tilt

This low-priced, practical drawing table has been made in response to a wide demand and it is used by engineers, architects and many of the leading schools and colleges throughout the United States. Made of well-seasoned, selected hardwood and is adjustable in height from 30 to 40 inches. Strong and rigid. Top can be tilted from a vertical to a horizontal position. Drawing board can be locked in any position desired by means of thumb nut and a rod which runs through the center of cross-bar. Board is guaranteed not to warp and will give satisfaction.

Selected
White
Pine
Board



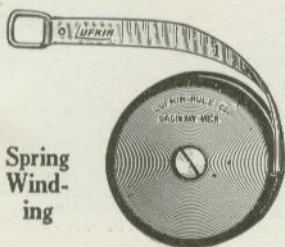
Will
Not
Warp

- No. MC4E6149—24x32 inches..... \$12.00
 No. MC4E6150—32x42 inches..... 16.00
 No. MC4E6152—36x48 inches..... 19.50
 No. MC4E6154—36x60 inches..... 22.00

Pocket Steel Tapes For All Uses

Our pocket tapes are the most convenient ones you can find anywhere. They are all made with the spring winding device. All you have to do to wind them up is to press a small button and the automatic spring winds them up in a hurry. Tapes are made from the finest steel ribbon. Markings are plain and easy to read. In round edge nickel-plated cases.

No. MC4E5483—72 inches long, marked inches and 16ths, one side only, 1/4 inch wide..... \$1.10
 No. MC4E5487—72 inches long, marked inches and 16ths, one side, 10ths, 100ths, other side 1/4 inch wide..... 1.10
 No. MC4E5488—Steel Ribbon “Only”, for above tapes, 72 inches long..... \$0.75



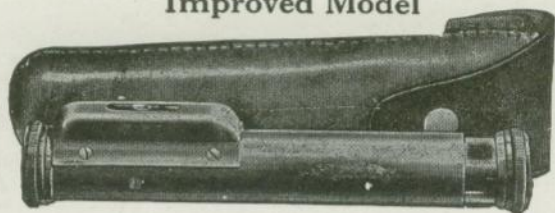
Spring
Wind-
ing

60 DAYS ONLY!—REDUCED PRICE

Only \$4⁰⁰ Locke's Hand Level

Improved Model

The Highest Grade and Most Accurate Hand Level Made



Far Superior To Others Sold at a Higher Price

For rapid first surveys, and work where an estimate is desired rather than absolutely accurate results, this well-made Locke hand level will be of great value. With this level surveyors or engineers can get approximate results which will be of great help to the engineers who do the follow-up work. Has a draw to the eyepiece, which enables the user to get a quick focus. The

level bubble is reflected and can be seen on a mirror while looking through the telescope. Both ends of the telescope are closed and all dirt and dust is kept out. The cross-wires are adjusting and the glasses are perfect. Leather carrying case with belt loop.

No. MC4E5633—Locke's Hand Level, bronze, with leather carrying case \$4.00

\$1⁵⁰ For This \$5⁰⁰ U. S. Standard Compass

The Official Army Instrument

Luminous Jeweled Needle

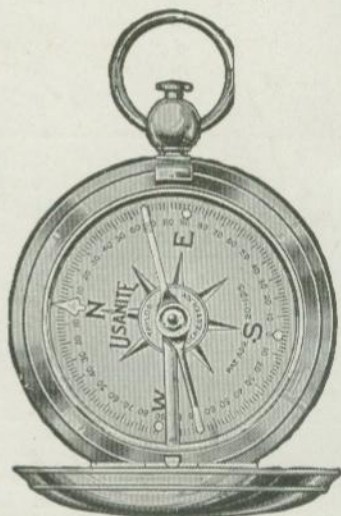
Automatic Stop Lift

A startling bargain! Grasp this chance! Genuine U. S. Army Standard Compass here offered at an unprecedented saving! This is the chance of a lifetime to equip yourself with a first class compass at less than its regular cost price to us. Don't pass up this opportunity. Don't wait too long. When this supply is exhausted there will positively be no more at this price. Get yours now.

Easily Read at Night as by Day

The regular "Usanite" Compass made by the Taylor Instrument Company. Finest construction. Jeweled needle with north and south points radium illuminating, the former always showing the brighter. Cardinal points on silvered metal dial similarly illuminous with "N" designated by an arrow head. Automatic stop lift. Beveled glass crystal. Thin model, white metal hunting case.

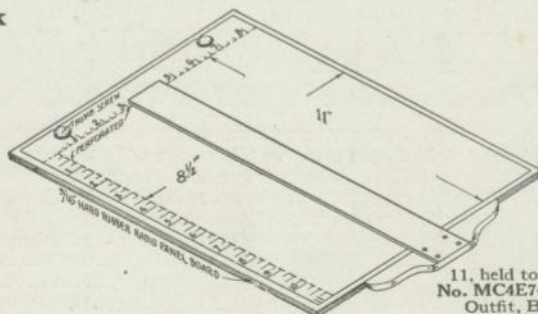
No. MC4E5649—U. S. Army Standard "Usanite" Compass, a regular \$5.00 value, while they last.....\$1.50



Handy Drawing Pad Outfit

For Rough Quick Drawings, Tabulations

Architects, surveyors and engineers will find this to be a handy drawing pad outfit for rough, quick sketches, tabulations, etc. Compact, convenient and economical. They will use it daily for this class of work. Schools have even found it particularly adapted to many uses of pupils.



Comprises Drawing Board T-Square, 50 Sheets

Comprises a hard rubber board, 9x12 inches. All Celluloid "T" Square. Also 50 sheets white drawing paper, each with a side and end scale divided 6, 8, 10 parts to the inch and perforated along end and side so that when sheet is detached it remains standard size 8 1/2 x 11, held to board by thumb-screws.

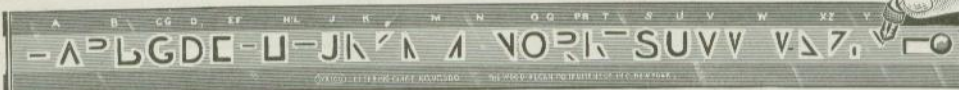
No. MC4E7475—Drawing Pad Outfit, Board, T-square, 50 sheets, complete.....\$6.00

No. 2E7458—Extra Pad of 50 sheets for above, per pad.....\$1.50

LE . . . IT WILL PAY YOU

Wrico "New Era" Lettering Device

Perfect Lettering—Faster, Better—Simple
Easy to Use



An Indispensable Aid to The Busy Draftsman

With the advent of the "Wrico" Lettering Device a new day in lettering has dawned to the benefit of the busy draftsman whose day necessitates much lettering. Perfect lettering—faster, better—is now possible to novice or expert with the "Wrico."

No longer do you laboriously pencil then ink in lettering on drawings, plans, etc. You accomplish both in one operation and amazingly faster and better with this wonderful device. After one trial it becomes indispensable.

Heavy or Light

The fac-simile reproductions here shown demonstrate the vertical gothic style, the most commonly used letter by draftsmen, in the six most commonly used degrees of boldness ranging from the very black face as lettered with pen No. 2, to the very light face with pen No. 7.

Sample of The Beautiful Lettering It Does

ABCDEFGHIJKLM

Lettered with Pen No. 2

ABCDEFGHIJKLM

Lettered with Pen No. 3

& 1234567890

Lettered with Pen No. 4

& A B c 2 3 4 \$

Lettered with Pen No. 5

NO VCN 140 IS USED ONLY

Lettered with Pen No. 6

ABCDEFGHIJ & 123456789

(Used only with Pen No. 7)

Speed Accuracy

The modern draftsman, through the lack of time, pays too little attention to appearance of his lettering. Use the Wrico and there is no sacrifice of appearance for speed and time economy. The Wrico is so simple and easy to use that it enables a new pride in the irksome task.

Affords Perfect Lettering By Novice or Expert

No experience is required to produce perfect lettering. Consists of transparent celluloid strip, perforated to form guides by which letters are made, and grooved on under side so that it may be moved from one character to another without smearing the ink.

GUIDES

- No. VCN 90—3/32 in. high, alphabet, figures. \$4.00
- No. VCN 120—1/2 in. high, alphabet, figures. 4.00
- No. VCN 140—9/64 in. high, alphabet, figures. 4.00
- No. VCN 175—.175 in. high, alphabet, figures. 4.00
- No. VC 240—1/4 in. high, affords alphabet only . . . 3.25

NOTE: The above guides can be furnished for Slanting Lettering if desired at the same price.

PENS

- No. 2 very heavy line, each \$2.00
- No. 3 heavy line, each 2.00
- No. 4 medium line, each 2.00
- No. 5 fine line, each 2.00

Some characters are made in a single motion; some by means of shift button at end, which permits moving device the proper distance to complete the character. No "filling-in." A separate guide is provided for each style and size lettering.

GUIDES

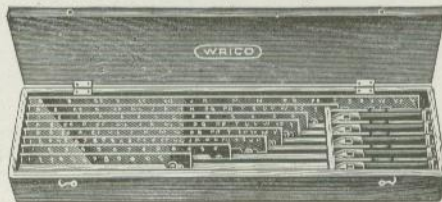
- No. VN 240—1/4 in. high, affords figures only . . . \$2.75
- No. VC 350—3/8 in. high, affords alphabet only . . . 3.75
- No. VN 350—3/8 in. high, affords figures only . . . 3.25
- No. VC 500—1/2 in. high, affords alphabet only . . . 4.25
- No. VN 500—1/2 in. high, affords figures only . . . 3.75

PENS

- No. 6 fine line (used only with guides No. 140 and No. 175) \$2.00
- No. 7 very fine line (used only with guides No. 90 and No. 120) 2.00

Wrico Set No. M

Many draftsmen prefer the Wrico Lettering Guides complete in a set for convenience, hence our assembly of the Wrico Set No. M, which meets all practical demands.



The Price Complete

Complete with Pens from No. 2 to 6, inclusive, and all Guides except VCN 90 and VCN 120, all in mahogany box. (For straight, slanting lettering, state which.) \$35.10

SAINT LOUIS, MO.

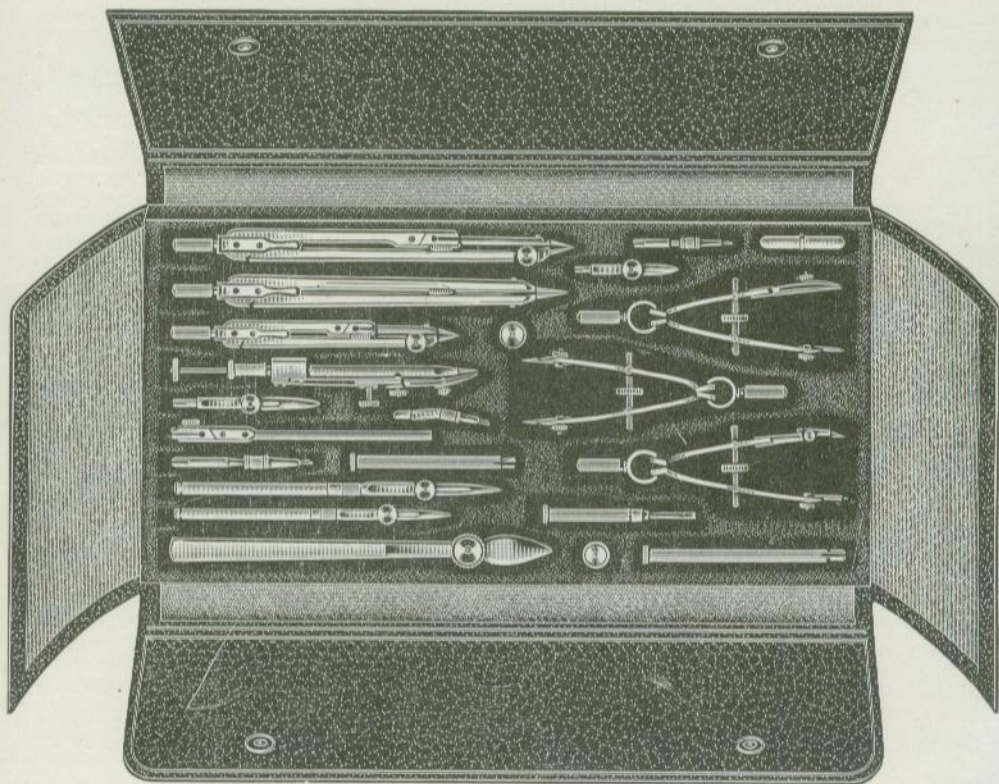
BARGAIN OPPORTUNITY!

Imported Precision Drawing Set

SPECIAL PRICE **\$15⁰⁰** DURING SALE!

Regular \$35.00 Value!

In Flexible Genuine Leather Case



Regular Price Everywhere **\$35.00**

Here Is What You Would Pay If You Bought Them Separately

6-inch Swedish Pen	\$2.50	6-inch Divider	\$3.75
4 1/4-inch Ruling Pen	2.20	3 1/4-inch Center Screw Divider	3.00
5 1/2-inch Ruling Pen	2.50	3 1/4-inch Bow Pencil	3.25
Drop Spring Bow Pen and Pencil	5.00	3 1/4-inch Bow Pen	3.50
Intermediate sized Compass Box	6.50	Silver Center Pen, Key and Lead Box..	.75
6-inch Compass with parts.....	7.50	Genuine Flexible Leather Case.....	2.50

\$42.95

No. MC4E3045—Our Price Complete, While They Last. **\$15⁰⁰**

Bought At Low
Rate of Exchange

GRASP THIS CHANCE

Never Again
Such An Opportunity

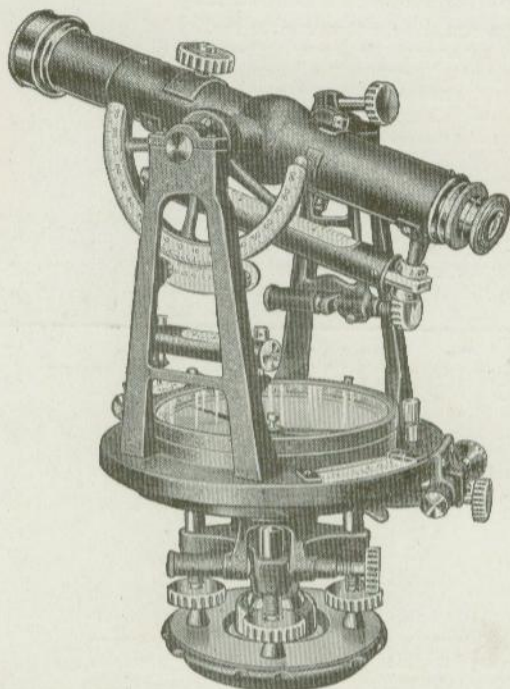
FIELD—YEAR-END CLEAN-UP!

Aloe's Engineer's Transit

Specially Designed for Fast Work and Hard Usage

\$25⁰⁰
BRINGS IT
TO YOU

**FREE
TRIAL**



—
Accuracy
Adaptability
Low Cost
—

—
Light
Convenient
Standard
—

Meets Demands for All Classes of Work

For preliminary surveys, fast and hard usage the light yet strong Aloe's Engineer's Transit fully meets every demand. It is of the same exacting construction as all our Engineer's Transits and is recommended as reliable for a great variety of work. Its accuracy, convenience in carrying and proven ability to stand up satisfactorily under severe usage have made this transit especially popular with engineers, surveyors, etc.

The Aloe's Engineer's Transit while moderate in price, is a high quality specially designed instrument for the purpose it is to serve, hence you will find it adapted for many engineering and surveying uses. Although capable of distant focusing it can also be used for close work emphasizing its versatility. No desirable features have been overlooked in its design to make it a standard instrument of precision.

Distinguishing Specifications

TELESCOPE—9-inch achromatic erecting, dust cap and sunshade, Object glass $1\frac{1}{4}$ -inch, magnifying power 24 diameters. Rack and pinion for focusing. Eye piece with improved screw for focusing stadia hairs. Sensitive $3\frac{1}{2}$ -inch spirit level under telescope. Clamp and tangent screw to telescope axis.

VERTICAL ARC—4-inch diameter, graduated to half degrees and numbered in quadrants. Vernier reading to one minute.

HORIZONTAL CIRCLE—5-inch diameter to half degrees and numbered with two rows of figures in opposite directions from 0 to 360. One double vernier placed at 30 degrees from line of sight and reading to one minute. Vernier covered with polished glass. Clamp and tangent screw and two sensitive plate levels.

COMPASS— $3\frac{1}{2}$ -inch needle, hardened and tempered steel. Compass ring graduated to half degrees, numbered from 0 to 90 each way. Variation plate, new designed movement, special locking device.

LEVELING HEAD—Phosphor bronze. Solid construction, four substantial leveling screws. Shifting plate with $\frac{1}{8}$ -inch shift.

WEIGHT—Instrument, 9 lbs.; solid leg tripod, 7 lbs.

Light, Easily Carried About

Because of its lightness, the Aloe Engineer is a great favorite. It weighs only 9 pounds; with tripod only 16 pounds. The lightness of the instrument is a great asset when the ground is mountainous or rugged.

Accuracy and Precision

The transit is standard, of superior construction throughout, sturdy, perfect working, accurate, affording complete satisfaction out on the job. Behind every transit we sell is our ironclad guarantee of mechanical perfection or your money refunded.

Easy Terms—Prices

Just \$25.00 brings it to you on a 30-day trial. If perfectly satisfied pay the balance in 10 equal monthly payments. Comes complete in mahogany-finished case, with sunshade, plumb-bob, magnifying glass, adjusting pins, solid leg tripod. Easy terms may be arranged if desired.

No. MC4E5849—Aloe's Engineer's Transit, with Vertical Arc..... **\$200.00**
10% discount for cash or C. O. D.

TO GRASP THIS CHANCE!

Lufkin Metallic Woven Tapes

Waterproof Coating Prevents Stretching

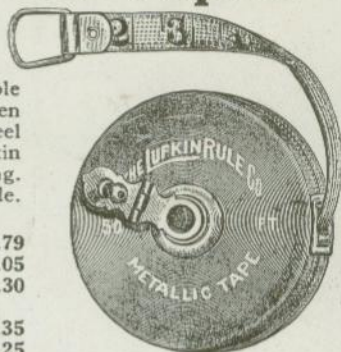
Lufkin Metallic tapes are the most accurate and reliable metallic tapes made. They are made from high-grade linen threads, woven together with 16 strands of fine, strong steel wire. This makes a tape that is flexible and strong. Lufkin metallic tapes are coated with a special waterproof covering. Cases are hard leather, with brass handles. Tape $\frac{1}{8}$ inch wide.

With Case

No. MC4E5469—25 ft. long, 10ths or 12ths\$2.79
 No. MC4E5471—50 ft. long, 10ths or 12ths..... 4.05
 No. MC4E5473—100 ft. long, 10ths or 12ths..... 6.30

Without Case

No. MC4E5475—25 ft. long, 10ths or 12ths, tape only, no case. 1.35
 No. MC4E5477—50 ft. long, 10ths or 12ths, tape only, no case. 2.25
 No. MC4E5479—100 ft. long, 10ths or 12ths, tape only, no case 4.23

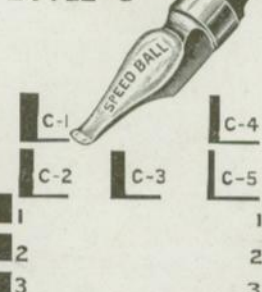


“Speedball” Lettering Pens

STYLE-A



STYLE-C



STYLE-B



The “Speedball” is the fastest and most easily operated broad-stroke pen in the world. Style A with square terminals. Style B round terminals produce stroke of uniform width drawn in any direction—up strokes, down strokes or laterals. Style C affords close imitation of the finest small brush work. Ink-flow automatically controlled by reservoir fountain and tip retainer over extreme point of bent-up section which forms marking point.

This exclusive feature of the “Speedball” prevents any excess flow of ink or color which occurs in most broad stroke pens. To fill, simply dip pen in the ink. They will work in India Ink or diluted opaque water color.
 No. MC4E7385—Box of 5 Pens, one of each size, either Style A, B, or C. \$0.50
 No. MC4E7386—Box of 12, all one size, Style A, B, or C. 1.00
 No. MC4E7387—Text Book on Modern Pen Lettering, 50 pages, illustrated. .75

Stapling—Perfect, Easy, Quickly!

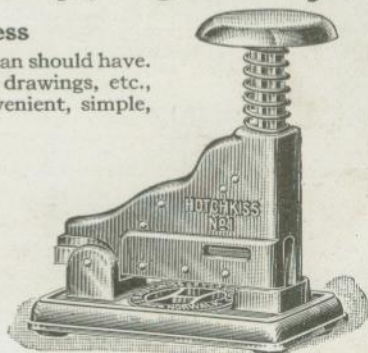
The Simplified Hotchkiss Staple Press

An unusually handy device every architect and draftsman should have. For neatly fastening together blue prints, groups of drawings, etc., the Hotchkiss Staple Press comes to his aid, affording convenient, simple, quick and efficient means of accomplishing this need.

Will Fasten 2 to 25 Sheets

The device is automatic feeding holding twenty-five staples, and in one operation severs the staple, stamps it through the sheets and crimps the ends secure. Fastens as few as two and as many as twenty-five sheets of blue prints or drawings at one time.

No. MC4E7231—Hotchkiss Staple Press as described, complete with 25 staples.\$3.25
 No. MC4E7231A—Extra staples for the above, 500 packed in a box, per thousand.50



YEAR-END CLEAN-UP!

Only

\$39⁰⁰

Direct Reading Jeweled Anemometer

Made By Short & Mason, England



Short & Mason, of London, England, are the foremost makers of anemometers in the world. This superior instrument is used for the registering of the velocity of the wind in mines, tunnels, flues, furnaces and public buildings. The measurements are taken by a sensitive fan, the revolutions of which are recorded on a dial.

Zero Setting Device

Fitted with the famous zero setting device, which enables the setting of the hands back to zero after each reading, thus simplifying the taking of many readings. It is made from the finest materials and has the jeweled movements, which insure perfect readings. Has direct reading device, so that no calculations are needed to determine the results.

No. MC4E5615—Tycos American Anemometer, 4-inch., 4 dials, reading to 100,000 ft. \$39.00



Rolling Parallel Brass Rules



Aloe

Accurate—Durable—Frictionless

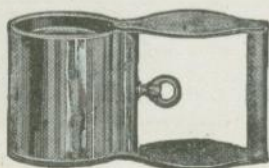
These Rolling Parallel Brass Rules are the heaviest and best made. They are especially accurate on large maps or other work where a heavy rule is needed. The metal guard over solid steel axle serves as a convenient handle when moving rule. Made of highest grade brass with lacquered finish. The wheels are knurled, which gives them a firmer grip on the paper.

The plate has beveled edge base. There is no friction on the rollers. Each rule has a simple adjustment. For mine work, etc., this rule is an absolute necessity. One of the most popular parallel rules on the market.

- No. MC4E5787—Rolling Parallel Brass Rule—12-inch, 32 ounces. . . . \$15.00
- No. MC4E5788—Same, 18-in., 54 ozs. 22.00
- No. MC4E5789—Same, 24-in., 72 ozs. 25.00

Coddington Pocket Magnifier

Clear
Optical
Glass
Lenses

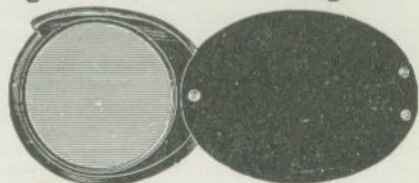


Nickel
Plated
Metal
Case

Coddington Magnifiers are easily carried on your watch chain for convenience and come in handy many times. Lenses magnifying between 6 to 10 times, are best clear optical glass. Holder is made of brass.

No. MC4E7468—Coddington Magnifier,
3/4-inch diameter. \$2.00

Engineer's Pocket Magnifiers



Many times an engineer needs a pocket glass to get the exact reading of a transit, protractor or aneroid and many other uses. This small glass is exactly what he needs.

- No. MC4E7476—Pocket Magnifier, single lens, 1-inch diameter. \$1.00
- No. MC4E7478—Pocket Magnifier, single lens, 1 1/2-inch diameter. 1.50

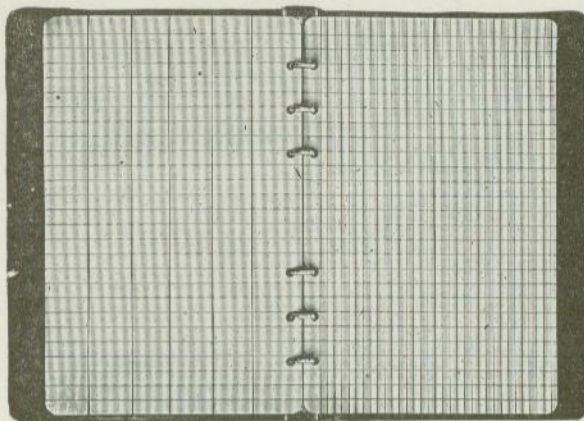
THAT YOU USE DAILY IN THE

Loose-Leaf Leather-Bound Engineer's Field Book The Practical Outdoor Record

\$2⁰⁰

Regular
Price
\$4.00

Stiff
Backs for
Writing



Guards
Against
Loss of
Records

Transit,
Level, or
Cross
Section
Rulings

Convenience and Utility

This excellent and practical field book is used and recommended by engineers everywhere, for its convenience and utility.

Every evening whenever you return from the field of your work you can readily remove from this book the valuable records or drawings you have made and file them safely away. This will safeguard you against losing them or having them soiled or ruined, which might easily happen if you put them in an ordinary book and took it afield with you every day.

Stiff Desk-Like Covers

Stiff covers and fly leaves form an excellent writing base even when book is held in hand. Covers of durable imitation leather. Special heavy fly leaves are an ample protection for sheets in book.

Easily Refilled

Leaves readily inserted or taken out singly or in numbers. This permits records to be put away for safe keeping. They can again be put back into book when you wish to take them with you.

Pocket Size

This field book is ideal for level, transit work and plotting. Sheets for all these purposes are supplied to fit this binder, a handy pocket size measuring $4\frac{3}{4} \times 7$ inches. With 6 nickel plated rings affording the handy loose-leaf system. This is the most excellent and practical field book for engineers owing to its convenience in size and utility.

Excellent Quality Paper.

Furnished with a high-grade paper especially adapted to this type of work. This book fills a long-felt need among engineers for a pocket record book which can be carried about and constantly used for recording data, drawings, sketches, etc. Durable, handy for engineers.

- No. MC4E5353—Loose-Leaf, Leather-Bound Engineer's Field Book, complete (state what ruling is wanted) with one set of sheets... \$2.00
- No. MC4E5355—Set of sheets for refilling furnished in Cross-Section, Level, or Transit, Rulings, 50 Sheets... .50
- No. MC4E5358—Transfer Binders for Loose Leaves..... .70

"Paragon" Mounted Drawing Paper For Mine Maps

This is the well known "Paragon" Drawing Paper, backed with a high-grade muslin. Just the thing for mine maps or maps where the paper will be subjected to rough wear. This paper will not wear out even when handled rough or exposed to the weather. It will not shrink, as it is airdried and well seasoned. Nowhere else can you buy a paper that is mounted on high-grade muslin, and will stand the wear that this paper will, for the same price. Another sample of what Aloe is offering in the way of real bargains for engineers, draftsmen and surveyors.



"HEAVYWEIGHT"

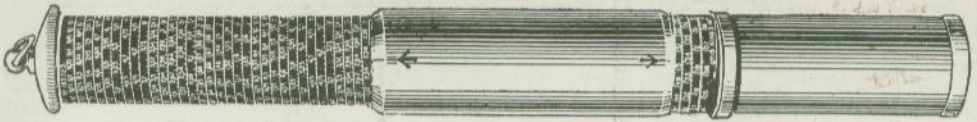
FINELY GRAINED SURFACE

Prices

	10 Yd. Roll	Per Yd.
No. MC4E5075— 36 in. wide...	\$16.00	\$1.95
No. MC4E5077— 42 in. wide...	19.50	2.35
No. MC4E5079— 58 in. wide...	28.00	3.50
No. MC4E5081— 72 in. wide...	35.00	4.40

FIGURE FAST—ACCURATELY!

The Otis King Calculator

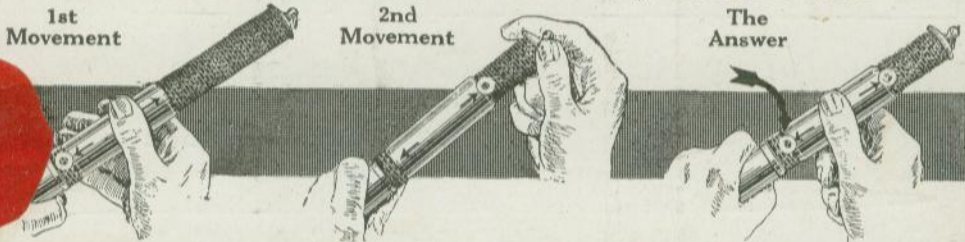


Simpler and Easier to Use Than a Slide Rule

This Calculator affords a simple means of solving rapidly and accurately almost every kind of calculation dealt with by professional and business men. Multiplication, division, percentages, proportion, all are done by the simplest of operations. Previous use of mathematical instruments is not necessary in becoming adept at the use of this calculator. You learn to use it at once.

For calculations involving a constant factor (such as basis prices, the conversion of lbs. to kilos, foreign currencies to domestic, and vice versa) the Otis King Calculator is of exceptional value. Where one factor is repeated throughout a set of problems, the instrument may be set to the constant term and the answer to each problem found by one movement of the Indicator only.

Indispensable To Every Professional, Business Man



Given the problem: What is the cost of 132 articles at 15c per dozen? First, set bottom arrow to 15 on bottom scale. Second, set 12 on top scale to top arrow. Third, move top arrow to 132 on top scale, and read answer, \$1.65, at bottom arrow.

Countless other types of problems may be solved with the calculator: the yield on stock purchased at any price, the cost of goods per cwt. purchased at foreign currency, interest for any period and rate, and any power or root.

Accurate Results to 4 and 5 Decimal Points

The calculator consists of two metal tubes, the smaller (Cylinder) rotating and sliding within the larger (Holder). Spiral scales are mounted on each, while a third tube forms a tubular Indicator.

The 3 parts are inseparable, and being made of metal throughout, there is no possibility of warping. Results accurate to more than five significant figures are easily read with absolute certainty.

Often Eliminates 2 and 3 Slide Rule Operations

The open spiral scales are 66 inches long, yet when closed the calculator measures but 6 inches. On each of the scales are marked 1650 divisions, roughly 5 times the number on a 10-inch slide rule.

The length of the scales make for corresponding accuracy, and the design of the scales frequently reduces the number of operations involved in a series of calculations, thus saving considerable time.

Model "K"—Made in Two Models—Model "L"

In Model K, the Holder has a scale graduated from 1 to 9.99. The Cylinder has a scale graduated from 1 to 99.99. Equivalent to a slide rule 66 inches long.

In Model L, the Holder has an antilogarithmic scale, from 1 to 9.99. The Cylinder has an antilogarithmic scale from 1 to 99.99. Each model has the same Indicator.

Easy Directions Included

A few minutes' consideration of the instructions issued with each Calculator is sufficient to enable you to obtain accurate results. Its effectiveness is equaled by its simplicity. Anyone can become familiar with it after a small amount of use.

Prices

The scales are photographically reproduced, and the surface is extremely waterproof. Case is flexible leather. "Fits in vest pocket." No. MC4E7460—Otis King Calculator, Model K or L (state which) in Morocco Case with Instructions. \$10.00

We Are Exclusive Distributors for the United States

ALOE EXPERT REPAIRING OF TRANSITS, LEVELS, ETC.

Instruments repaired by us come back to you like new, no matter the make. Our work is unexcelled even by the manufacturers of the respective Transit or Level. Also our prices are the lowest and our service the quickest. Just place instrument in its case, then in an outside box. Put your name and address on outside and a note, specifying the repairs, with the instrument. Try our work for greater precision.

USUALLY LOW FOR QUICK SA

"Listo"—The Perfect Colored Checking Pencil Always Sharp—No Wasting of Leads As In Other Pencils



Made of Listolite—Center Turn—Extra Leads In Cap

The perfect colored checking pencil—easy to use, perfectly balanced, easily carried in pocket, economical, no wasting of lead—it is always sharp.

Loaded with the famous Listolite leads, a special tinted lead for coloring drawings, marking and checking blue prints, etc. Users appreciate its unusual quality.

Superior Leads—A Great Saving

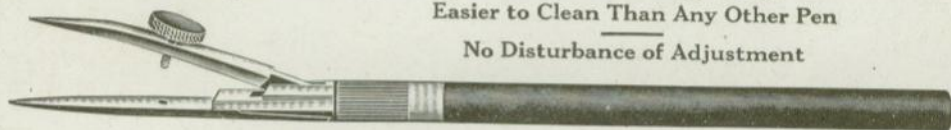
Barrel is made of metal in corresponding color to the leads contained, with the improved center turn mechanism unusually convenient to adjust the lead. Of extreme simplicity.

No. MC4E7238A—"Listo" Colored Checking Pencil, with 6 leads, in your choice of Red, Blue, Yellow, White, Sepia, Black, Green and Indelible...\$0.75
No. MC4E7239—12 "Listo" Leads (in tube, state color wanted)..... .15

Imported Spring-Hinge Ruling Pen

Easier to Clean Than Any Other Pen

No Disturbance of Adjustment



Especially Made For Fine Work

You will appreciate the advantages and convenience which this superior imported ruling pen offers in your work. Its most prominent feature is the spring hinge which enables you to thoroughly clean both points of the pen without in the least disturbing the adjustment of the two points when they are brought into position again.

You can easily regulate the distance between the blades by the adjusting screw, which is threaded into the movable blade. Spring holds movable blade open for cleaning.
No. MC4E2982—4½-in. Spring Hinge Ruling Pen with Ebony Handle...\$2.00
No. MC4E2983—5-in. Spring-Hinge Ruling Pen with Ebony Handle... 2.25

Imported Spring-Clip Ruling Pen



A good quality adjustable ruling pen. Release spring and blades open for easy cleaning, snap it back and they close to former adjustment.

Made of German silver with ebony handle. Length 5 inches. Excellent, convenient.
No. MC4E3034—5-inch Spring-Clip Ruling Pen, Imported, each.....\$1.75

Handy Accurate Vest Pocket Slide Rule

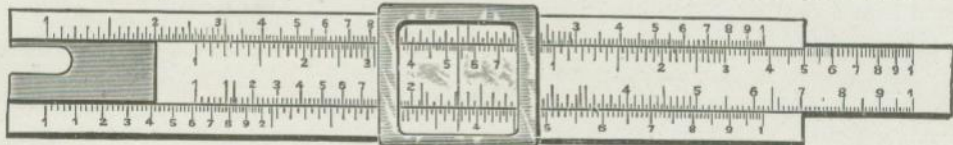


Illustration Shows Actual Size

This "lightning" calculator is indispensable to engineers, draftsmen, architects and contractors. With it you calculate more quickly and accurately your problems out on the job than in the office on paper.

Only 4 inches long and 3/16 inch thick. Made of mahogany. Scales are engine divided on white facings. Will do all that larger rules will do up to two decimal places.
No. MC4E6083—Vest Pocket Slide Rule—\$1.95

COMPANY

S ON ENGINEERING NECESSITIES

Mine Spads At a Big Saving! Better Than You Can Make

Incomparably better and cheaper than the old style out-of-true home made mine spad. And at the low prices we here are offering true spads they demand first consideration. They are made from special rolled steel and will not corrode. Used exclusively by: Consolidation Coal Co., American Coal and Coke Co., and others.

NON-CORROSIVE

The holes are absolutely centered. Made in the three standard sizes and shapes. Nos. E5773 and E5775 are made to drive in wooden plugs, while No. E5777 is made to drive into the roof of the mine.

ONLY
\$1.00
A GROSS



E5773



E5775



E5777

	Per Gross
No. MC4E5773—Mine Spads, 1¼ inches long, non-corrosive.....	\$1.00
No. MC4E5775—Same, 2 inches long.....	1.15
No. MC4E5777—Same, 2½ inches long.....	1.25

Precision Brass Plumb-Bobs With Screw Caps and Removable Tool Steel Points

Short Neck



No. E5751

After experimenting many years we have at last found the perfect brass plumb bob. The two most popular styles here shown—short neck and long neck—are the results of our experimentation. They are made from the very highest quality brass, polished, with points of tool steel, that are removable. Short neck bob is standard among engineers and surveyors everywhere. The long neck bob is, however, demanded by many, being especially adapted to work requiring a heavy bob with a shape that offers little resistance to the wind.

Long Neck

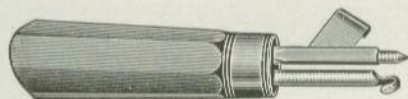


No. E5759

No. MC4E5751—Brass Plumb Bob, short neck, steel point, screw cap, 5 oz.....	\$1.20
No. MC4E5751A—Same, 8 ounce.....	1.50
No. MC4E5751B—Same, 10 ounce.....	1.90
No. MC4E5751C—Same, 12 ounce.....	1.50
No. MC4E5751D—Same, 16 ounce.....	2.90
No. MC4E5759—Brass Plumb Bob, long necks, steel point, screw cap, 6 ounce.....	1.25
No. MC4E5759A—Same, 8 ounce.....	1.50
No. MC4E5759B—Same, 10 ounce.....	1.90
No. MC4E5759C—Same, 12 ounce.....	2.25
No. MC4E5759D—Same, 16 ounce.....	3.00

Surveyors' Timber Scribe

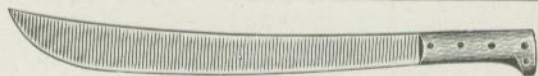
Surveyors, engineers, foresters, know the many advantages of a Timber Scribe for marking stations on trees and other designating field marks. This device is sturdy and will withstand hard usage. Made of steel with wooden handle.



No. MC4E5778—Timber Scribe, 7 inches long \$1.50

BUSH KNIFE

A sturdy Bush Knife or Machete for surveyors, especially efficient in cutting of shrubs, under brush, etc.



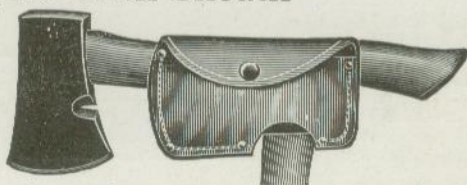
VERY HANDY

Blade of spring steel, 22 inches long; handle 5½ inches long; weight 1¼ lbs.

No. MC4E5779—Bush Knife or Machete \$2.75

Engineer's Hand Axe With Sheath

Every engineer in the field should carry his own hand axe. The convenience of carrying and the many uses of the one here shown makes it most desirable. Comes with sheath that easily fits onto the belt out of the way. You will use it daily for cutting small trees, under brush, pointing, driving stakes, etc. Made of Alloy Tool Steel. Weighs about 2 lbs.



No. MC4E5780—Engineer's Hand Axe with Sheath, complete..... \$2.25

FOR 60 DAYS ONLY!

"Perfection" Metal Adjustable Curve Ruler

\$3⁷⁵



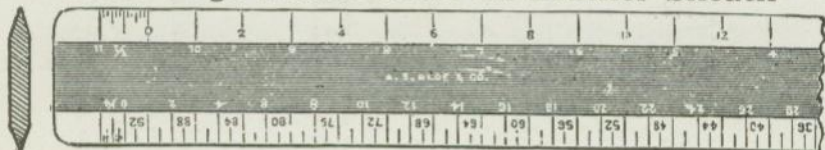
Retains Any Desired Curve

This adjustable ruler for drawing of irregular curves combines every form of curve in one and can be instantly adjusted and retains any desired form. One of the most practical rulers made, as it has straight ruling edge. Recommended by draftsmen, architects, etc. Meets a long-felt want. Made with ruling edge of thick, flat band

steel, connected with center of pure, flexible lead, wrapped with strong, flexible wire. Will last for years. Well made, neatly finished and handsomely nickel plated. Thirty inches long.

No. MC4E6038—"Perfection" Metal Adjustable Curve Ruler, 30 inches long \$3.75

White Edge Pocket Scale In Leather Sheath



A handy, popular Vest Pocket Scale, in leather case, for engineers, surveyors and architects. Boxwood, six inches long, less than one inch wide with white celluloid edges. Double beveled as shown. Accurately divided, clear and distinct with rounded corners.

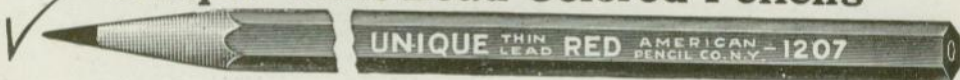
For Engineers and Surveyors

No. MC4E6008—Pocket Scale, 6-in., in leather case, divided 10x20x30x50 parts to the inch, complete..... \$1.50

For Architects, Etc.

No. MC4E6010—Same, but divided $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, $1\frac{1}{8}$, $1\frac{1}{2}$ and 3 in. to the foot. \$1.50

Unique Thin Lead Colored Pencils



Excellent for Marking Blue Prints, Layouts, Etc.

The "Unique" is the first thin lead colored pencil ever produced. It has a lead of small diameter, the same as ordinary writing pencils, affording colored pencils which are adaptable to many new uses. Draftsmen need this pencil for marking blueprints, making layout sketches, etc. For bookkeeping, checking, making charts, maps, graphs, correcting notes, and countless other uses, the Unique Pencil draws a fine, accurate line, and is much more efficient than any other.

Unique Colored Pencils are made by the American Lead Pencil Co., the manufacturers of the well known Venus and Velvet Pencils. They are easily sharpened, are light in weight and can be erased, advantages everyone appreciates who has used the old type colored pencils. They may be had in dozen lots of one color, or in assorted colors.

No. MC4E7288A—Unique Thin Lead Colored Pencils. Blue, Red, Green, Yellow, or White. State color; per doz. \$0.90

Kern One-Piece Tool Steel Ruling Pen



Here is a ruling pen that every draftsman will like. Perfect lines of different thickness can be drawn with it.

Liberal Supply of Ink

The nibs are so arranged that they will hold a liberal supply of ink. One filling will

last a long time. The blades are made from English tool steel. The handles are aluminum, and the thumb nuts and threads are made of German silver.

No. MC4E2964—Kern Ruling Pen, 5 in. long.....\$1.75

Drafting Room Magnifying Glass



This glass was made to meet the need for a good drafting-room magnifying glass. Lens is clear and perfect. Ebony handle.

Nickel rim protects lens from scratching. No. MC4E7472—Drafting Room Glass, $2\frac{1}{2}$ -inch diameter.....\$2.25

AND DRAFTSMAN PRICED UN

The New "Chicago" Mine Tape

Especially Adapted to Damp Mines



Graduations on the Brass Sleeves Not Affected By Dampness or Sulphur Water

This is the tape you want for work in damp mines. The insistent demand for a mine tape made of the best possible steel, with the graduations stamped on brass sleeves, securely soldered to tape, is responsible for this new construction by the manufacturers of the world-famed "Chicago Tapes". This tape is also unaffected by sulphur water. It will give a lifetime of service.

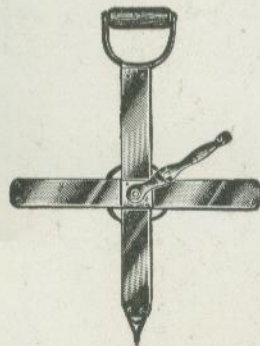
This tape undoubtedly surpasses any other of its kind on account of the high class material used in its construction and the knowledge and experience of these manufacturers in the production of chain tapes. It can be furnished in all widths from $\frac{1}{8}$ inch to $\frac{1}{2}$ inch. Style "X" graduated every foot with end feet in tenths. Style "Y" graduated every 5 feet with end five feet every foot, end feet in tenths.

In The Desired Lengths and Graduations

Tapes furnished with extra graduated foot on first of both ends and with extra steel for hand-hold at no additional charge. Tapes

furnished with blank space on ends unless otherwise specified. Always be sure to state how tape is wanted.

Length	Style "X"	Style "Y"
No. MC4E5503—100 feet	\$11.00	\$ 7.50
No. MC4E5508—200 feet	21.00	13.50
No. MC4E5509—300 feet	31.00	19.50
No. MC4E5512—500 feet	51.00	31.50
No. MC4E5513—100 link	10.00	7.00



New "Spade Handle" Metal Tape Reel

Improved Large Winding Handle and Pointed Shoe

Specially Adapted For Steel Tapes Over 100 Feet Long

A great convenience as well as a necessity for long steel tapes, preventing kinking and rendering their employment easy and without loss of time. Accommodates steel tapes of $\frac{3}{16}$, $\frac{1}{4}$ and $\frac{5}{16}$ in. widths. In ordering simply state width of tape and length. Made of steel with wooden handle.

Will Not Take a Tape of $\frac{1}{8}$ -inch Width

- No. MC4E5464—"Spade Handle" Reel, for 200-foot Steel Tapes \$4.00
- No. MC4E5464A—Same, for 300-foot Steel Tapes 5.00
- No. MC4E5666—Same, for 500-foot Steel Tapes 6.00

A. S. ALOE