Scientific American.

NEW BOOKS, ETC.

SUBJECT LIST OF WORKS ON PHOTOG-RAPHY AND THE ALLIED ARTS AND SCIENCES IN THE LIBRARY OF THE Office Library Series, No. 2. Bibliographical Series, No. 1. 1900. 18mo. Pp. 62. Price 20 cents.

A most valuable little book worthy of a considerable sale, the arrangement is admirable.

THE AMATEUR'S PRACTICAL GARDEN BOOK. By C. E. Hunn and L. H, Bailey. New York : The Macmillan Company. London : Macmillan & Company, Limited. 1900. Pp. 250. Price \$1 Price \$1.

A volume of the "Garden Craft Series." It is a capi tal book filled with exactly the information one is always wanting to know, and it will give valuable points even on such subjects as watering plants. Both fruit and flower are considered.

MODERN HOUSE PLANS FOR EVERY BODY. For Village and Country Residences, costing from \$250 to \$8,000, including full descriptions and estimates in detail of materials, labor, cost. and many practical suggestions. By S. B. Reed, architect. New York: Orange Judd Company. 1900. Illus-Orange Judd Company. 1900. Il trated, 12mo. Pp. 243. Price \$1.

To builders this work will be valuable as a handbook of reference, and to those who intend to build a home it will prove useful.

THE GAS ENGINE HANDBOOK. A Manual of Useful Information for the Designer and Engineer. By E. W. Roberts, M. E. Cincinnati, Ohio: The Gas Engine Publishing Company. 1900. 18mo. Pp. 220.

The book deals with American practice and is filled with valuable formulas and methods of determining mechanisms and propositions. It will prove of value to those who may have other books on the subject.

FIELD TESTING FOR GOLD AND SILVER. A Practical Manual for Prospectors and Miners. By W. Hamilton Mer-ritt, F.G.S. London: Crosby Lockwood & Son. New York: D. Van Nostrand Company. 1900. 18mo. Pp. 144. Price \$1.50.

The more intelligent is the prospector in his line of work the greater chance of success he will have. There is no business where exact science is of more value. tories of electricity. 2. What per cent of the power of a Much of the literature upon the subject is worthless, but the present handy volume is one we can commend.

MODERN COMPOUNDING AND RECTIFY ING. By Charles Norton. Chicago: Foote & Solomon Pp. 89. Price \$2.50 Solomon. **190**0. 18тю.

There are many secrets in the distiller's business and many of them are given away in this book, which contains many practical formulas for producing all kinds cordials, etc. It also deals with the blending and imitating of various liquors.

AN ELEMENTARY PHYSICS FOR SEC-

Business and Personal.

Marine Iron Works. Chicago. Catalogue free. For hoisting engines. J. S. Mundy, Newark, N. J. "U. S." Metal Polish. Indianapolis. Samples free. Yankee Notions. Waterbury Button Co., Waterb'y, Ct. Write Baker Mfg. Co., Racine, Wis., about pushing any new article. Facilities excellent.

Wanted-To buy article everybody uses. Must be good seller and retail \$1. "X," Box 773, New York.

Most durable, convenient Metal Workers' Crayon is Special and Automatic Machines built to drawings on of flame, if the magnet is weaker. contract. The Garvin Machine Co., 141 Varick St., N. Y. The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 138th Street, New York.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4. Munn & Co., publishers, 361 Broadway, N. Y. IF Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway. New York. Free on application.



HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our

- Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.
 References to former articles or answers should give date of paper and page or number of question.
 Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.
 Buyers vishing to purchase any article not advertised in our columns will be trunished with addresses of houses manufacturing or carrying the same.
 Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.
- Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Minerals sent for examination should be distinctly marked or labeled.

(7951) DeF. H. asks: 1. Can a jar filled with water and covered on the outside with tin foil and having a large wire nail passed through the cork, be used in place of a Leyden jar ? A. Yes, but not an efficient one. The leakage is too great, due to the moisture on the glass. This was the first form of Leyden jar ever used. It is described in many text-books and hissteam engine would a hot air engine develop, both using the same amount of heat? A. With the same amount of fuel hot air engines develop from two to three times the power of steam engines for very small sizes. Large hot air engines have been found impracticable 3. What are the principal parts of the simplest toy hot air engine ? A. The small toy hot air engine was illustrated and described in SCIENTIFIC AMERICAN, No. 20, vol. 76, 10 cents by mail. 4. What would be the voltage and internal resistance of a cell containing a solution of bichromate of potash and bisulphate of mercury? Two plates are suspended in this solution, one-half of an inch apart, one is zinc and one carbon; both are 6 inches long, 1¼ inches ELEMENTARY PHYSICS FOR SEC-wide and 14 inch thick. They are let into the solution to ONDARY SCHOOLS. By Charles Bur-a depth of 5 inches. A. A bichromate cell has 118 volts.

ten cents each. Ganot's "Physics," last edition, price \$6, treats this subject quite fully.

(7955) C. A. P. asks: What I want to know is this: What effect has the electro-magnet on the electric arc to cause it to be extinguished in the controller and to be deflected in the arc welding s stem? A. The action in these instances is the same as if the electric current were flowing through a wire and the wire was free to turn around the electro-magnet. It would move, being attracted or repelled according to the direction of the current. In this case the current flowing through the arc is repelled till it breaks and ceases to flow, if the made by D. M. Steward Mfg. Co., Chattanooga, 'Tenn. magnet is strong; or blows the arc out into a long tongue

(7956) H. H. asks: Would you be so kind as to let me know what is the trouble with a dynamo I made like one described in SUPPLEMENT, No. 844. I made armature according to directions only I put 24 seq. in commutator and used slightly higher fields with 13 layers No. 24. It will only redden one 16 candle 53 volt lamp, at 2.500 revolutions. I have tested for short circuits. etc., but find it O. K. Please give me some information. A. Both of the changes you have made in the design of the dynamo cut down the output of the machine. We presume you have all the current it will give. The only information we can give is what you have already found out, that it is hetter to take a design well wrought out. and follow it without alteration than to alter that design, and find an inferior result. Our advice to all inquirers is not to attempt to design a dynamo unless after a thorough course of instruction in that line of work.

(7957) C. W. N. writes : I noticed in your ssue of July 28, under Notes and Queries (7924), E. R. asks: Is the gage of iron and steel wire the same as copper ? Your answer is, yes. Kindly permit me to correct you as to this impression. Iron and steel wire are gaged by the Washburn & Moen gage. Copper wire, as used for electrical purposes, is gaged by the Brown & Sharpe gage. A very small proportion of copper wire, known as copper market wire, is gaged by the Stubbs gage. A. When we answered the inquiry as to wire gages, we were aware that there are numerous gages in use by manufacturers for their products. We are not aware that these gages are limited to special metals. There are many more of these than you mention. It is Books referred to promptly supplied on receipt of an unfortunate state of affairs that it should be so. There ought to be but one gage for all purposes, and not a Washburn & Moen gage, a Trenton gage, an Edison age, a Brown & Sharpe gage, a music wire gage, a twist drill gage, etc. If a congress could be assembled to unify practice in this direction, it would be worth all it would cost.

TO INVENTORS.

An experience of over fifty years, and the prepara-tion of more than one hundred thousand applications for patents at homeand abroad, enable us to understand the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and per-sons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices, which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIRNIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS For which Letters Patent of the United States were Issued

for the Week Ending

AUGUST 28, 1900,

1	·	
ì	Acid and making same, urea derivative of	
ł	amidonapthol sulfonic, Israel & Kothe	656.6
1	Adbesive product, G. Eichelbaum	656
1	Air compressor, E. Hurn	657.0
1	Air or gas engine. R. H. Little	656.8
ł	Apparatus for removing material from below the	0000
I	surface H F Munn	656 9
1	surface. H. F. Munn Automobiles, multiple motor system for, J. Trier	657
I	Awning (2 Salanist	656
I	Awning, G. Salquist Back pedaling brake, W. E. Henry	657
I	Badge. B. Harris.	656
I	Bag. See Water bag.	000,
I	Baling press, C. Dodge	656.7
I	Baling pross I Korns	656 1
I	Band or cord tie E C Burnett	656.9
I	Basket, fisherman's frog. B. F. McCurdy	656.
I	Band or cord tie. E. C. Burnett Basket, fisherman's frog, B. F. McCurdy Batteries, charging stand and contact for stor-	000,
l	age, G. H. Condict	656.
I	Battery box, L. W. Pullen	656.
ł	Bed. folding. L. B. Jeffcott	656, 656,
ł	Bell, alarm, E. A. Newball	656.
ł	Bell, signal, C. J. E. Fleck	656.
ł	Belt and apron and carrying shaft for same, end-	
l	less feed, L. Holland-Letz	656.
l	Belt, apparel, M. Scheuer	656.
ŀ	Belt, apparel, A. Wigbard	656,
	Belt or strap fastener, driving. F. E. Whitham	656,
1	Bicycle attachment for leading bicycles, McDon-	
-	ald & Davis Bicycle frame. F. A. Wilmot	656.
1	Bicycle frame. F. A. Wilmot	656.
1	Bicycle handle bar pillar, J. S. Dikeman	656.
4	Bicycle hub and axle, F. Schmitz	656.
ł	Bicycle handle bar pillar, J. S. Dikeman Bicycle bub and axle, F. Schmitz Billiard cue fastener, W. Hess	656,
1	Bismuth from ores containing bismuth oxids,	
1	etc., extracting, J. Ranald	657,
	Blackboards, etc., composition of matter for, L.	657 (
	O'Brion	

power.	In the description of the high frequency transformer in	etc., extracting, J. Ranald	Gear mechanism. C. H. Blomstrom 657.057
power.	SUPPLEMENT, No. 1087, where it says the primary con-	Blackboards, etc., composition of matter for, L.	Gear machanism reversing C H Blomstrom 657 (56
		O'Brien	Generator. See Current generator.
THE WHY OF GRAVITY. By J. A. Allen.	sists of 14 turns of 4 does it mean that there are four	Blast and cupola lurnace, A. Keynolds	Grazing device. automatic, G. W. Davault 656.690
Alwington, Kingston, Canada. 1900.	coils side by side with 14 turns each? Is it connected as	Poilor doepor P A Doughty 556 052	Grease spot remover, J. M. Batz
	shown in the drawing submitted? A. It will work if	Book, account, J. H. Rand	Grinding mill. T. Cascaden, Jr.
Pp. 34 .		Bottle fastener. elastic milk, J. B. Kimber 656.894	Gun, magazine, B. Burton
Mr. Allen's little treatise, running, as he himself ad-	wound as you show in your diagram. But we should	Bottle, non-refillable, A. Sommerfeld 656.671	Gun sight, E. B. Tolman 656,866
	take the four wires and wind them side by side, turn for	Bottle stopper, N. G. Baldwin 656,689	Guns. single trigger mechanism for breakdown,
mits, " counter to all ordinary habits of thought," will	turn. Then wind the twine for separating the wires of	Bottle stopper, C. Marchand	W. M. Levy
probably not meet with the approval of scientists. But	••••	Bottle stopper, mucilage, C. W. Blagg	Hammock, H. Gundlach
nevertheless it deserves attention for its straightforward-	different potential between the turns.	Aino 656 876	Harrow and cultivator, combined, J. D. Magee 656,988
	(7954) J. G. W. H. asks: Please state	Box. See Hat box. Miter box. Paper box.	Harrow seat attachment, O. W. Skorkowsky \$57,035
ness and its radical independence of thought.		Brake. See Back pedaling brake. Elevator regu-	Harrow tooth. J. Kraus
	the theory and principles by which the electrical re-	lating brake. Ratchet brake. Vehicle brake.	Horvost hundle carrier Ferrall & Mani 654 584
RESILTS OF RAIN RIVER AND EVAP-	ceiver of a radiophone is governed ? Also please tell me	Branding composition, H. Gibson (reissue) 11,849	Harvester, corn, E. S. Bowker 656,714
		Brazing lamp, jeweler's, H. L. McCormack 656,654 Brick kiln, J. M. Gunkle 656,640	Harvester for peas, beans, etc., Whitney &
	whether ultra violet rays when thrown on two metallic	Brick machine. re-press, C. Chambers, Jr 656.880	Glenn
NEW SOUTH WALES DURING 1898.	joints or break in a circuit will close the circuit. A.	Brick machine, re-press, Chambers & King 656.879	Harvesting machine, corn. A. Steiner
With Maps and Diagrams, By H.	The radiophone, called formerly the photophone, de-	Brick machine, re-press. H. K. King 656,896	Hasp, W. K. Hilton 656,817
C Russell Government Astronomer	pendsfor its action upon the change in resistance of a		
dood D hill all a the star of Har	penderor ne action upon the change in resistance of a	Bridle from, machine for bending, J. Buckley 606.886 Broom, H. W. Hodge	Hat shaping machine, C. W. Young
	cell of selenium under the action of heat or light. The	Broom street I Wolf 656 696	Hat tip. L. Weisenburger
Majesty's Government in New South	theory of this action is not fully established. It appears	Bucket or pail closure. D. E. & P. B. M. Trainer. 657,045	Hay and stock rack. combined. J. H. King 656,770 Hay derrick, folding, D. H. Clark
Wales. Octavo. Pp. 235.	that the action of a candle flame upon selenium causes	Bucket. scoop, G. C. Lutber 656.987	Heading machine, C. W. Durchschlag
Wales, Octavo. 1 p. 800,	-	Buckle. combination pulley and sash, J. Brower. 556,931	Heater. See Feed water heater. Steam heater.
T	its electrical resistance to drop to about one-fifth its	Building. C. F. W. Doehring 656,951	
UNIVERSALGELD. Auf Grundlage des	former value. We do not know what relation ultra violet	Bulkhead doors, apparatus for operating, W. B. Cowles	Hobby horse and invalid's chair, combined, A.
metrischen Gewichtes und des Mo-	rays bave to this effect. Lord Rayleigh has held that	Bung. barrel, H. Strothenke	J. Branham
nemetalliomus neverialisch den Silber	Tays dave to this effect. Doru Mayleigh has held that		Hook. See Coathook. Garmenthouk.
nomeranismus, vorzugnen der Silber	there is no reason to reject the theory that the effect is	Butter etc. machine for printing A. C. Dodge 656.781	Horse check, R. T. Geer 656.960
wanrung. Eine zwanglose Plauderle	due to unequal heating of the selenium strips. The first	Butter molding and cutting apparatus, L. L.	Horseshoe, nailless, J. V. Hughes
von Karl Pamperl, 1900, Ruckerl-	photophone was invented by Prof. Graham Bell. Illus-	Mivelaz	Hose coupling, A. M. Spickelmier
herebei Graz (Oesterroich) Authoria	photophone was invented by 1100, Granam Den, 11105	Cable banger, C. E. Beard	Hot air furnace, G. Thomson
Talian	trated articles on this subjectare to be found in the Sci-	Cactus burner, L. W. Snowden	
Edition.	ENTIFIC AMERICAN SUPPLEMENT, Nos. 270, 271, 281, 283,	Caisson, W. H. McFadtlen 656,850	(Continued on page 158)

	157
Camera, photographic, C. A. Wiley Can. See Sheet metal can.	656,798
Cane mill, U. B. Sullman	656,904
Capstan, F. S. Manton Car coupling, W. E. Alexander Car coupling C. Bickmeier	
Car coupling, J. Kelso Car coupling, T. Kleimeter	656,844 656,984
Car coupling. automatic, J. Munton Car door, J. Van Slyke Car door fastaner. Smith & Delano	656,868
Car, freight, W. A. Caswell. Carbon brush, W. A. Markey.	657,021 656.652
Capstam, F. S. Manton Car coupling, W. E. Alexander. Car coupling, J. Kelso Car coupling, J. Kelso Car coupling, J. Kelso Car coupling, T. Kleimeler Car door fastener, Smith & Delano Car, freight, W. A. Caswell Cardons et B. Bick Cardone et B. Bick Carding engine under screen, J. F. White. Case. Be Card case. Caster support, G. D. Clark Casting apparatus, metal, W. J. Patterson.cg,	656,925 656,871 656,632
Caster support, G. D. Clark Caster support, G. D. Clark Casting apparatus metal, W. J. Patterson 657	656,628
Casting metal. W. J. Patterson	069.001070
Centrifugal machine, L. J. Taylor. Chain, H. J. Straker	656.891
Churn, Rister & Wood Cigar rolling board. S. A. Shelly	657,008 657,013
Clamp. See Pipe clamp. Rail clamp. Cleaner. See Boiler cleaner. Flue cleaner.	000,001
Clevis, W. P. Hendon Clothes drier, S. V. Douglas	656,690 656,693 656,905
Clothes pin, J. F. Matthews	656.724 656,853
Coal and ores, apparatus for treating, J. Kenevel.	W. 656,893 656,688
Kenevel	656,991 656,763
Conveyer, endless. Acklin & Patterson Corn shield. M. Straussberg	667.048 656,862
Corn shield M. Straussberg. Corset, apparei A. H. Wade. Corset cover, H. G. Steely. Cotton press, R. R. Pace. Coupling. See Car coupling. Hose coupli	656,913 656.754 657,028
Coupling. See Car coupling. Hose coupli Pipe coupling. Thill coupling.	iig.
¹ Cover for cooking utensils, C. H. Pimlott ¹ Cover for cooking utensils, C. H. Pimlott ¹ Crank pins and eccentrics, quartering and tu	nas 656,855 656,855 rn-
 Coupling. See Car coupling. Hose coupling. Pipe coupling. Thill coupling. Coupling for vehicles, wagons, etc., B. K. Thor Cover for cooking utensiis, C. H. Pimlott Crank pins and eccentrics, quartering and tu ing machine for, L. H. Morgan Crusher See Sod crusher 	656,903 len 656,799
Cuetip, T. Reminger Cultivator, L. C. Young	656,702 656,920
Current generator, alternating, C. S. Bradley. Curtain fixture, H. M. Stevenson. Curtain pole attachment. E. Platte	656,806 657.014 656,856
Cusbion filling and shaping device, F. L. Myer Cuspidor, R. Carson	18. 656,995 656,939
ing machine for, L. H. Morgan. Cross tie and rail fastening, metallic, A. B. Al Crusher, See Sod crusher. Cutetin, T. Reminger Cultivator, L. C. Young. Currein fasture, H. M. Stevenson. Curtain fasture, H. M. Stevenson. Curtain fole attachment, E. Platte. Cuspidor, R. Carson. Crocle saddle, J. Nord. Damper regulator and ventilator, combined, L. Kinz Damper regulator and ventilator, combined, L. Kinz Disinfectant, Mortimer & Williams. Disinfectant, Mortimer & Williams. Disinfectant, Mortimer & Williams. Disinfectant, Mortimer & Williams. Distor and grading machine, automobile. G. Bunnel. Door shutting device. hydraulic, M. Paldassy Draft regulator, W. B. fowler. Drawers. apparel, J. R. White. Drier. Bee Clothes drier. Drye and making same, blue anthrarufin, R. Schmidt Dre du making same, blue anthrarufin, Schm	F. 656.895
Dental impression cup, H. D. Osgood Detector bar, W. H. Higgins Disinfectant. Mortimer & Williams	$\dots 657,002$ $\dots 656.974$ $\dots 656.992$
Display receptacle, H. T. Loomis Ditching and grading machine, automobile,	656,723 M.
Door, J. M. Leaver	741, 656.772 657,017
Door shutting device, hydraulic, M. Paidassy Draft regulator, W. B. Fowler Drawers approximately R. White	656,699 656,959 656 916
Driver. See Clothes drier. Driving apparatus, W. J. Le Barron	656,965
Dye and making same, blue anthrarufin, R. Schmidt Dye and making same, blue anthrarufin, Schm	E. 656,669
Dye and making same, blue chrysazin, R.	E. 636,670
Schmidt Dye and making same, blue chrysazin, Schm & Tust	656 730
Dye and making same, blue tetrazo, Bammann Davidis. Dye and making same, orange, F. Scholl Dye and making same, violet colton. R. Demi Dre and making same, violet colton. R. Demi Dre and making same rollow of Scholl	n & 656,619 656,858
Dye and making same, violet colton. R. Demi Dye and making same, yellow, F. Scholl	ith. 656,631 656.867
Dye and making same, yellow, f. Scholl Dye and making same, yellow azo, F. Scholl Dye, blue-red substantive. J. Bammann et al. Dye, brown, Herzberg & Hansmann	656.620 657.064
Dye, brown, Herzberg & Hansmann Dye, reddish-brown, Herzberg & Hansmann Dyestuff and making same, azo, J. Bammanr al	657,065 1 et 656.621
Electric furnace. W. Borchers Electric motor, E. A. Henry	656,930 656.972
Electric motor suspension, G. Gibbs656, Electric switch, R. H. Wappler Electric switch, fluid operated, C. A. Eck	636, 656.636 656.870 656.716
Electric motor suspension, G. Gibbs	656,716 656,650 656,680
Electrical outprobes, treating porous mate used for, W. A. Markey Electrical translating devices, means for c trolling energy delivered to, H. W. Leona Electrolysis apparatus, P. Schoop Elevator regnisting brake, automatic, H. Gra Elevator safety device, T. Lebiedzinski Embroidering machine attachment, J. Grubn	, 656,651
trolling energy delivered to, H. W. Leona Electrolysis apparatus, P. Schoop Elevator regulating brake, automatic, H. Gra	rd. 656,821 657.012 .ves 656.638
Elevator safety device, T. Lebiedzinski Embroidering machine attachment, J. Grubm End. worner, J. Grubm	657,026 an. 656.967
Embroidering machine attachment, J. Grubn End gate, M. Warner. End gate fastener, H. Keller Engine. See Air or gas engine. Locomotive	656,915 656,720 en-
Engine starting mechanism, explosive, C.	н.
Blomstrom Engraving machine, C. Chevalier	657,055 656,940 656,932

ONDARY SCHOOLS. By Charles Bur-	a depth of 5 inches. A. A bichromate cell has 118 volts.	AUGUST 28, 1900,	gine. See Air or gas engine. Locomotive en-
ton Thwing, Ph.D., (Bonn). Boston :	Its internal resistance is at the most a fraction of an	AND EACH BEARING THAT DATE.	Engine starting mechanism, explosive, C. H.
Benjamin H. Sanborn & Company.	ohm. This varies with the strength of solution and		Blomstrom
1900. Pp. 371.	changes as the solution becomes exhausted. The bisul-	[See note at end of list about copies of these patents.]	Equalized BA. Brown. Chevalet 656,352 Envelop. H. Trenchard, Jr. 657,018 Equalizer, three-horse, J. F. Steward. 657,033 Exbaust bead, Marauville & Warden. 656,359 Extractor. See Fence post extractor.
Prof. Thwing has prepared a text-book which occu-	phate of mercury is used to amalgamate the zincs and		Envelop. H. Trenchard, Jr
pies a unique position. It is not too elementary, nor is	does not affect the action of the cell directly.	Acid and making same, urea derivative of	Exbaust bead, Maranville & Warden
it too advanced for the usual secondary school. The	(7952) W. T. C. writes: 1. I have a 75-	amidonapthol sulfonic, Israel & Kothe 656,646 Adbesive product, G. Eichelbaum	Extractor. See Fence post extractor.
author tells ns in his preface that he has endeavored to		Air compressor. E. Hurn	Eveglasses, L. F. Adt
do away with those "limitations under which teachers	watts dynamo and wish to run it with storage batteries;	Air or gas engine. R. H. Little	Eyeglasses. J. J. Clairmont
work, both as to specific preparation for the work of	how many will it take? A. To run your dynamo as a	surface. H. F. Munn	Evebars, making forked, W#S. Bidle
teaching physics and still more as to material equip-	motor with a storage battery, you will require half as	Automobiles, multiple motor system for, J. Trier 657,046	Feed roll. F. Goetz
ment." How well he has succeeded can be determined	many cells as the voltage of the current. 2. Which is	Awning, G. Salquist	Feeding live stock, manger for, I. Morris
only by those who have practically used his work in the	the best adapted for the purpose? A. For so small a	Badge. B. Harris	Fence post extractor, F. Morganthaler 656.747
	machine you can use any storage battery. Several good	Baling press. C. Dodge	Firearm. W. V Bleba 657.062 Firearm rear sight. E. B. Tolman. 656.867 Fire secape, portable. J. C. Scott. 656.732 Fire extinguisher, A. C. Badger. 656.873
class-room. From the scientific standpoint, at least, the	ones have been advertised in our columns. 3. Can I	Baling press J Kerns 656 483	Fire escape, portable, J. C. Scott
book certainly leaves nothing to be desired.	charge the same with the dynamo when belted to a	Band or cord tie. E. C. Burnett	
DYNAMOMETERS AND THE MEASURE-	power, and how long would it take? The dynamo is	Batteries, charging stand and contact for stor- age, G. H. Condict	Derby
MENT OF POWER. By John J. Fla-	series wound. A. The little machine will charge the	Battery box, L. W. Pullen	Derby
ther, Ph. B., M. M. E. Second Edition.	cells by allowing 21/2 volts to a cell in charging. We do	Bed, folding. L. B. Jeffcott	Furnace. See Blast and cupola furnace. Elec-
Revised and Enlarged. New York :	not know how long it will take.	Bell, alarm, E. A. Newball. 656,851 Bell, signal. C. J. E. Fleck. 656,763 Belt, and apron and carrying shaft for same, end-	Gage. See Raker gage. Work gage.
John Wiley & Sons. London: Chap-	(7953) W. G. asks: 1. Can the static	Belt and apron and carrying shaft for same, end- less feed, L. Holland-Letz	
man & Hall, Limited. 1900. Pp. 394.	motors described in the SCIENTIFIC AMERICAN of Feb-	Dolt appared M Schoner 655 608	Garment hook, L. V. Stickney
12mo. $Price $3.$	ruary 25, 1899, and August 11, 1900, be used with an in-	Belt, apparel, A. Wigbard 656,918 Belt or stran fastener, driving, F. E. Whitham 656,757	Gas generating device, gasolene, S. Joseph 656,892
-	duction coil? A. We think they may be. Try it and	Bicycle attachment for leading bicycles, McDon-	Gas. making acetylene, E. S. Titus
The author has presented in convenient form for the	see. That is quicker than writing about it. 2. Is the	- ald & Davis 656,998 Bicycle frame F A Wilmot 656 735	Gases, igniting body for automatic ignition of
use of technical students and engineers a description of	voltmeter and ammeter doscribed in SUPPLEMENT, No.	Bicycle handle bar pillar, J. S. Dikeman 656.950	Gate. See End gate. Safety gate.
the construction and principles of action of the various	1215, to be used with alternating current? A. No. 3.	Bicycle hub and axle, F. Schmitz	Gates at predetermined intervals, appliance for automatically actuating farm, W. G. Cocke-
types of d namometer employed in the measurement of	In the description of the high frequency transformer in	Bismuth from ores containing bismuth oxids, etc., extracting, J. Ranaid	rill
power.	0	Blackboards, etc., composition of matter for. L.	Coar machanism reversing (2 H Rightsom 657 (66
	sists of 14 turns of 4 does it mean that there are four	O'Brien	Gear mechanism. reversing. C. H. Blomstrom
THE WHY OF GRAVITY. By J. A. Allen.	coils side by side with 14 turns each? Is it connected as	Blind fastener, S. A. Lewis	Grazing device. automatic, G. W. Davaut 656.802
Alwington, Kingston, Canada. 1900.	shown in the drawing submitted? A. It will work if	Boiler cleaner, P. A. Doughty	Grinding machine, E. B. Roth
P p. 34.	wound as you show in your diagram. But we should	Bottle fastener. elastic milk, J. B. Kimber 656,894	Gun, magazine, B. Burton
Mr. Allen's little treatise, running, as he himself ad-	take the four wires and wind them side by side, turn for	Bottle, non-refillable, A. Sommerfeld	Gun sight, E. B. Tolman
mits, "counter to all ordinary habits of thought," will	tuse the four wires and while them side by side, turn for	Bottle stopper, C. Marchand	W. M. Levy
probably not meet with the approval of scientists. But	turn. Then wind the twine for separating the wires of	Bottle stopper, N. G. Baldwin 656,689 Bottle stopper, C. Marchand 656,689 Bottle stopper, mcliage, C. W. Blagg. 656,795 Bottle stopper, mucliage, C. W. Blagg. 657,051 Bottles, flasks, etc., manufacturing, C. Boucher, 657,051	Hanmock, H. Gundlach
nevertheless it deserves attention for its straightforward-	different potential between the turns.	Aine	W. M. Levy
ness and itsradical independence of thought.	(7954) J. G. W. H. asks: Please state	Box. See Hat box. Miter box. Paper box.	Harrow seat attachment, O. W. Skorkowsky \$57.035
	the theory and principles by which the electrical re-		Harrow tootb, J. Kraus
RESULTS OF RAIN, RIVER, AND EVAP-	ceiver of a radiophone is governed ? Also please tell me	Branding composition, H. Gibson (relise) 11849 Brazing lamp, jeweler's, H. L. McCormack	Harvester, corn, E. S. Bowker
ORATION OBSERVATIONS MADE IN	whether ultra violet rays when thrown on two metallic	Brick kiln, J. M. Gunkle 656.640	Glenn
NEW SOUTH WALES DURING 1898.	joints or break in a circuit will close the circuit. A.	Brick machine. re-press, C. Chambers, Jr	Harvesting machine, H. Brackebush
With Maps and Diagrams. By H.		Brick machine, re-press. H. K. King	Harvesting machine, corn, A. Steiner
C. Russell, Government Astronomer.	pendsfor its action upon the change in resistance of a	Brick press, Simpson & Redfield	Hat box, J. J. Cannan
1900. Published by authority of Her	cell of selenium under the action of heat or light. The	Broom, H. W. Hodge	Hat tip. L. Weisenburger
Majesty's Government in New South	theory of this action is not fully established. It appears	Bucket or pail closure. D. E. & P. B. M. Trainer. 657,045	Hay and stock rack. combined. J. H. King 656,441
Wales. Octavo. Pp. 235.	that the action of a candle flame upon selenium causes	Bucket. scoop, G. C. Lutber	Hat box, J. J. Cannan
	its electrical resistance to drop to about one-fifth its	Buoket or pail Cesure, D. E. & P. B. M. Trainer, 657,015 Bucket, scoop, G. C. Luther, and Sash, J. Brower, 556,397 Buckle, combination pulley and sash, J. Brower, 556,391 Building, C. F. W. Doehring, Bulkhead doors, apparatus for operating, W. B.	Water heater.
UNIVERSALGELD. Auf Grundlage des	former value. We do not know what relation ultra violet	Bulkhead doors, apparatus for operating, W. B.	Hoby horse and invalid's chair, combined, A. J. Branham
metrischen Gewichtes und des Mo-	- rays have to this effect. Lord Rayleigh has held that	Cowles	Hoisting device. J. Laurgen
nometallismus, vorzüglich der Silber	there is no reason to reject the theory that the effect is	Burner. See Cactus burner. Butter. etc. machine for printing, A. C. Dodge 656,781	Hook. See Coatbook. Garmenthouk.
wahrung, Eine zwanglose Plauderie	due to unequal heating of the selenium strins. The first	Butter molding and cutting apparatus L L	Horse check, R. T. Geer
von Karl Pamperl. 1900. Ruckerl-	photophone was invented by Prof. Graham Bell. Illus-	Mivelaz	Hose coupling, A. M. Spickelmier
berghei Graz (Oesterreich). Author's	trated articles on this subjectare to be found in the Sci-	[Cable banger, C. E. Beard	Hot air register, G. Auer
Edition.	ENTIFIC AMERICAN SUPPLEMENT, Nos. 270, 271, 281, 283,	Cactus burner, L. W. Snowden	(Continued on page 158)