as the Waring system, his name has obtained wide corrency among suburban residents. He himself, on page
215 says that the term "Waring system "is a misnomer 215, says that the term "Waring system " is a misnomer.
He says that it would be better to call it Mr. Field's sys He says that it would be better to call it Mr. Field's sys
tem. But the author's qualifications for speaking of sew tem. But we author's qualifcations for speaking of sew
age, sewageirrigation and sewage farms givethe book an especial value and a peculiar timeliness at the presen day, when suburbsare known to offer so important a feld for the work of the sanitary engineer. An excellent in-
Cavalry Life in Tent and Field.
By Mrs. Orsemus Bronson Boyd.
By Mrs. Orsemus Bronson Boyd.
New York: J. Selwin Tait \& Sons.
1894. Pp. 376 . Price, cloth, \$1.
This excellent account of cavalry life in the American army will, no doubt, make interesting reading formany. The prefacealone, describing the trials of Captain Boyd, scribes a curious episode in West Point life. In the ap pendix, written by Richard H. Savage, the same episode is referred to, and the infamous persecution to which as
a boy the authoress' husband was subjected at Wes Point is described. Not the least interesting part of the book is Mrs. Boyd's description of her own life in
the field and the trials which she has been obliged to go the fiela,
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win Tait \& Sons Pp 346. J. Sel
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## SCIENTIFLC AMERICAN

BUILDINGEDITION
SEPTEMBER, 1894.-(No. 10\%.)
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An elegant plate in colors, showing a Colonial residence at Portchester, N. Y., recently completed views and floor plans. An attractive design. Mr. Plate in colors, architect, Portchester, N. Y
Plate in colors showing a residence recently completed for R. H. Robertson, Esq, at Southampton,
L. I. Two perspective elevations and floor plans L. I. Two perspective elevations and floor plans
A picturesque design and an admirable model a seashore cottage.
tect, New York City.
3. Residence of Frederick Woollven, Esq., at Rosemont, Pa. Two perspective elevations and floor plaris. A neat design in the Colonial style. Cost complete $\$ 4,800$
$\mathbf{P a}$
A. A cottage at Roger's Park, nll, recently erected for Edward King, Esq. Two perspective elevations Maher, architect, Chicago, Ill.
5. Cottage at Hollis, L. I., recently completed for the German-American Real Estate Co. Two perspec tive elevations and floor plans. Cost complete $\$ 3,200$. Mr. Edward Grosee, builder, same place.
Perspective elevation with ground plan of Saint Perspective elevation with ground plan of Saint
Gabriel's Chapel, recently erected at Hollis, L. I. A unique and most excellent plan for a smal chapel. Cost complete $\$ 6,500$. Mr. Manly N. Cutter, architect, New York City.
Two perspective elevations and an interior view, also
floor plans, of a residence recently erected at
Orange, N. J., for Homer F. Emens, Esq. Mr. rank W. Beall, architect, New
Perspective elevation and floor plans of
cently erected at Flatbush, L. I., for F. . Lotlage $\mathbf{T}$ Esq. Cost complete $\$ 4,600$. Mr. J. C. Sankins architect and builder, Flatbush, L. I.
residennee at Yonkers, N. Y., recently cómpleted for Mrs. Northrop. A very unique design for a
hillside dwelling. Perspective elevation and floor hilside dwelling. Perspective elevation and foor plans. Messrs.
New York City
10. Club House of the Sea Side Club, Bridgeport, Conn. A good example of Romanesque style. Perspective
elevation and floor plans, also an interior view. Mesers. Longstaff \& Hurd, architects, Bridgeport, Conn.

1. A residence at Hinsdale, Ill., recently erected for C.
E. Raymond, Esq., at a cost of $\$ 7,000$ complete. Perspective elevation and floor plans. Mr. J. H. Shannon, architect, Hinsdale, III.
2. The Castle of Bonnetable. Half page engraving.
3. Miscellaneous Contents : Tne irrigation of law illustrated with two engravings.- Viaduct for stree railways, Cincinnati, Ohio, illustrated.-The fireproof building construction of the New Jersey
Wire Cloth Co., illustrated.-Silvester's remedy against dampness.-Palmer's "Common Sense" frame pulley.-"The Old Hickory Chair," illus-rated-An improved hot water heater, illustrated. -The Caldwell Tower, illustrated.-The American Boiler Co.-The "Little Giant" floor clamp, illus-trated.-The Akron air blast furnace.-Laundry glaze.-The " Piqua " metallic lath, illustrated. The scientifc American Architects and Builders 25 cents. Forty large quarto pages, equal to about 25 cents. Forty large quarto pages, equal to about
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| :--- |

(6248) W. S. F. writes: In a late num ber of the SCient ific American, vol. 70, page 86, there was published a formula for solidifying petroleum,
pressing into block and baking it. This product was in tended for burning, and it was stated that it had many dvantages over coal. I followed out the formula, an got the oil in a solid state. On baking it, however, it al
crumbled to pieces, rendering it of course moft to handle or transport it, and on burning it a very dense, black smoke was emitted. Will you please give me some advice on this subject ? A. Possibly you baked at too high a temperature orfor too long a time. Try the addition of wast and clay.
(6249) E. J. asks how to get the gear of ide the number on the targe or crank shaft sprocket by the number on the driving wheel sprocket and multiply diameter of the driving wheel by the quotient.
(6250) L. V. H. says: Will you give me a formula for sticky flypaper? A. Resin 1 pound, mo-
lasees $33 / 2$ ounces; linseed oil $31 / 2$ ounces. Boil until thick lasees 33/2 ounces; linseed oil $31 / 2$ ounces. Boil until thick
enough. 2. Also how to treat old files with acid, so nough. 2. Also how to treat old files with acia,
they will be partly useful again? A. Boil the fles in trong soda and water to clean off all grease, oil or gum part, water 4 parte; the length of time being less on fine files, as your experience may suggest. 3. Will you also tate if there is any difference in the working power of a windmill, in hot or cold weather, the barometer pressure nhere would be little if being the same at each trial ? A.
${ }^{\prime}(6251)$ H. C. S. asks how to make a stage dimmer for 30 or 40 lights alternating current. A.
Use No. 6 or 7 wire made into a coil with a movable laminat.d core. The size required depends on the fre-
(6252) S. T. W. asks for a receipt for making a cement that will cement paper, canvas or leather Scratch the face of the pulley with a rough file thoroughily, so that there are no bright or smooth places Then swab the surface with a solution of nitric acid, 1 part; water, 4 parts; for 15 minutes; then wash with tough ghe water. Having prepared a pot of the best ounce of a strong solution tannic acid, oak bark, or glue; stir quickly while hot and apply to the of thic pulley as convenient, and draw the paper as tightly as possible to the pulley, overlapping as many folds as may be required. By a little management and moistening of the paper, it will bind very hard on the pulley when ry, and will not come off or get loose until it is wo t. Use strong hardware wrapping paper
(6253) W. L. S. says: Please let me knowwhatis the best thing to use on collars, cuffs, and
shirts to make them stiff and glossy. A. Starch shirts to make them stiff and glossy. A. Starch, 1 ounce; parafine, about 3 drachms, white sugar, tablespoonfar, with' soft water into a thick, smooth paste, add nearly or quite a pint of boiling water, with the salt and sugar disyolved in it, and, having dropped in the parafin, boil for
sor
at least half an hour, stirring to prevent burning. Strain
the starch-and use while hot. Sufficient bluing may added to the water, previous to the boiling, to overcome
the yellowish cast of the starch, if necessary. Sperma ceti may be used in place of paraffin. Starched linen ca iron. . 20 H. T. T says: Will you kindly (6254) C. H. T. says : Will you kindly tive for charcoal drawing ? A. 2 tablespoonfuls of rice
boiled in 1 pint or $13 /$ pint $^{\text {pint }}$ water; strain, and pass the drawing quickly through the liquid; use a large fla liquid.
(6255) G. W. C. says : Will you please give me the formula of a solution to remove corns? A.
Caustic potassa, 1 drachm ; alcohol, 1 fluid ounce. Mix Caustic potassa, 1 drachm; alcohol, 1 fluid ounce. Mix,
in a stoppered phial, and agitate until solution is comin a stoppered phial, and agitate until solution is com-
plete. The corns are either moistened with the above or a small piece of lint, or rag, of the size of the corn, taken, particularly with the last one, that the liquid doe not touch the surrounding parts.
(6256) J. G. R. asks: 1. How many bic feet of hydrogen and how many cubic feet of oxy with a battery of 3 volts or 10 volts ? A. The gases genrated depend on the amperage, not on the voltage directly. The voltage of course is concerned as being the ause of the amperage, the latter depending on the volt ge and the resistance of the circuit. 2. If water is de composed by passing steam through red hot iron tubes, is
the oxygen free or will the oxygen unite with the iron A. The oxygen unites with the iron, and hydrogen onl is evolved. 3. If water is heated to such a degree that it will decompose through heat only, will not the misture of gas unite with a terrific explosion as soon as they are liberated (because the heat is over its kindling point) A. The gases will unite when the temperature falls below the point of dissociation. They may however be separated to some extent by diffusion through a porcelain dia-
phragm. 4. Is a living milk white raccoon more valuable than when of common color ? A. We should imagine so es some menagerie or dealer in wild animals.
(6277) F. W. W. asks : 1. With a curwill lift 1000 pounds. That is, the size of helix and of core, and size of wire. A. You should say " potential of 500 volts"-a volt is not a unit of current. A magnet core wo inches thick and two feet long would answer. Wind with 20 or 30 layers No. 24 wire; use at least 20 pounds wire. For magnetic traction calculatlons and other Suppose a bar of soft iron were to be placed so as to rest as an armature upon two or more electro-magnets, would the bar become a magnet throughout its length of n distance between magnets. If so, how far apartma he magnets be placed and retain uniform power of mag net throughout length of bar? A. By placing two north
or two south poles in contact with the bar, you can esshow some polarity, but the center will show the most 3. At what distance from such a magnet would its power be available? You will confer a favor by answering the rapidly. At an inch the attraction would begreatly re
(6258) J. N. P. asks how to separat old from rubber and the materials to use. It is pure ubber, used to clean from my work waste gold leaf, that I use. A. We would suggest metallic mercury to plate might be used. Scrape off the amalgam from time time, distill off the mercury, and gold will be left.
(6259) W. J. H. asks what effect an innuctive load has upon the speed of a Shallenberge
neter, such as is used in houses on incandescent ligh ircuits. Westinghouse A. C. system. A. The Shallen berger meter indicates the amperage of the current Anything which reduces the current will reduce its speed.
(6260) H. S. B. asks: What is the poential neceessary to cause a spark of $1 / 8$ iuch ? A. Per
haps 12,000 volts. No really reliable figure can be give (6261) C. B. W. asks : 1. How much No. 26 magnet wire is required to give 50 ohms resist-
nce ? A. Allow $2: 35$ feet to one ohm. Multiply the has desired by this, and the product givesthe feet17.5 feet in your case. 2. How many lamps are require to be placed in a circuit to have a motor run from 100 v . 10 amperes if the motor is wound for 50 volts? A. Yo required for the motor, use four 100 volt lamps in par-
(6262) W. J. W. asks: 1. Why is peroxide of manganese, also chloride of lime, placed around the carbon in the Leclanche cells \& A. To act as a depolarizer and dispose of the hydrogen which tends to ac-
cumulate on the carbon. 2. Does it make any differnce if a zinc rod is used in place of a sheet, and which is best ? A. A rod is less liable to corrode and fall into
pieces than a sheet. One is as good as the other from the electrical point of view. 3. Why is water so conductive to an alternating current, and offers such great resistance to a continuous one? A. Water is no more conductive, properly speaking, to one than to the other. 4. What is the object in having such great variations in the resistnce of telegraph instruments, being all the way from 2 o 200 ohms? A. It depends on the resistance of the line. A line of high resistance requires higher resistance
instruments. 5. Please state the number of volts and mperes generally carried on an electric street car line A. 500 volts; amperes variable, depending on the number of cars operated at once.

## TO INVENTORS



INDEX OF INVENTIONS For which Lotter: Patont or tho September 25, 1894,

## and each bearing that bate




 $50 x, 42$




