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HINTS TO CORRESPONDENTS.

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 This is for our information and not for publication.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 wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

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Scientific American Supplements referred to may be had at the office. Price 10 cents each.

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Minerals sent for examination should be distinctly marked or labeled.

(6538) C. A. G. writes: I am making a chime of three whistles, the bells to be of 2 inches brass tubing, $\frac{1}{8}$ inch thick, the longest tube or bell to be 8 inches. The cap piece will extend into top of bell about $\frac{1}{4}$ inch, of course shortening air column that amount. The longest bell being the key note, I wish the others to be higher in pitch, and all to range as do, me, so, or as in key of C major, C, E, and G. I wish to know of what length to make each of the other two bells, and also about what size opening should I give the steam vent under the bells with steam pressure of 150 pounds. A. The making of a chime whistle is a matter of experiment until the relative conditions are found. Make the low tone whistle first, then use a sliding plug in the bell for regulating the tones of the other whistles. The steam slot should be about one-fiftieth of an inch opening.

(6539) J. H. M. writes: I have two nests of boilers, six in a nest, and what is the horse power of each boiler, or what is the horse power of 12 boilers? Each boiler is 47 feet 7 inches in length by 30 inches diameter. Fire box 16 feet in width by 6 feet in back. What is the cause of a set of boilers foaming when the fires are kept all the same heat, bridge wall the same height, and water enough going in boiler continually? A. If your boilers are plain cylinder boilers, without flues, they are 19 horse power each, or 238 horse power for the 12. The foaming is probably caused by driving too hard, or by bad water.

(6540) W. S. M. writes: I purpose to lay some old $2\frac{1}{4}$ inch and 3 inch pipe along both sides of the shop about 7 feet from the floor for heating purposes. Engine exhaust 4 inches. My idea is to connect with two 3 inch pipes and go down each side, which is 78 feet, and return with $2\frac{1}{2}$ inch pipes; this will use all we have got, but will return the second time if you think feasible. Or would it be better to have the exhaust discharge into one 3 inch and $2\frac{1}{2}$ inch to begin with and have no return? Size of shop 78 feet by 38 feet. A. The plan of dividing the exhaust with a 3 inch pipe and returning with a $2\frac{1}{2}$ inch pipe on each side is correct. The last ends of the return pipe should be open, so as to allow drip and excess of steam to escape freely. This arrangement prevents undue back pressure in the engine. All pipes should be laid to allow water of condensation to run with the steam to drips or to the end of the line.

(6541) J. H. asks for a rule to find strain brought on staybolts. Also how to find horse power of an engine with the indicator. How to find displacement of steamship. A. The strain on a staybolt is the whole area of plate due to any one bolt multiplied by the steam pressure. If the stays are 6 inches apart in each direction, the area is 36 inches. You will need a book on the indicator for the horse power problem. See Pray's book, "Twenty Years with the Indicator," \$2.50 by mail. The displacement is also an intricate problem. See Haswell's "Engineer's Pocketbook," \$4 by mail.

(6542) W. H. P. says: Inclosed is a twig from a Pirus Japonica bush growing in Philadelphia, which seems to be suffering from a white scale covering most of the stems, some of which are already dead and others dying. What is the remedy for this, if any? A. Answer by the Entomologist, United States Department of Agriculture.—This is the common scurfy bark louse (*Chionaspis furfuris*) found abundantly on pear, apple, etc. Spray about June 1 with dilute kerosene emulsion (1 part to 10 of water) or during winter with $1\frac{1}{2}$ pounds whale oil soap to 1 gallon of water.

TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled 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 persons 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 SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS
FOR WHICH LETTERS PATENT OF THE UNITED STATES WERE GRANTED

May 21, 1895,

AND EACH BEARING THAT DATE.

(See note at end of list about copies of these patents.)

Air brake signal, railway. E. Humbert et al.	539,430	Firearm, breakdown. G. D. Potter.	539,540	Scaffold bracket, J. A. Murphy.	539,483
Ammonia motor. Jowlow & Wrady.	539,685	Firearm, magazine. W. Mason.	539,525	Scale, spring balance computing. J. H. Swibart.	539,549
Bag. See Bicycle tool bag.		Firearm sight. A. G. Carlson.	539,470	Scholar's companion. A. M. Greves.	539,682
Bag or pouch holding apparatus. Crosson & Lipp-hard.	539,439	Fire escape, Rice & Biscoe.	539,406	Scourer. See Grain scourer.	
Baling press. J. J. Mathias.	539,583	Fire escape and tower. G. J. Decker.	539,482	Scraper, manure, for Grist.	539,509
Baling press, T. H. Thurnord.	539,730	Fire extinguisher, T. lacey.	539,483	Scraping machine for streets, etc. J. E. Porter.	539,642
Band cutter and feeder. Cronkhite & Austin.	539,730	Fire extinguisher, hand. D. O. Wilson.	539,485	Screw, capstan, J. Lines.	539,627
Barrel lifter. W. H. Lasher, Jr.	539,630	Furnace, gradual combustion. D. E. Healy.	539,771	Separator. See Gold separator.	
Barrel swing support. G. A. Hastings.	539,734	Furnace smoke-consuming apparatus. J. A. Crawford.	539,768	Sewers, pipe, etc., closure for. C. T. Bridge.	539,568
Batteries, automatic time switch for storage. W. Biddle.	539,500	Furnaces, apparatus for charging annealing. J. Waldeck.	539,658	Sewing machine for lasting boots or shoes. J. E. Jackson.	539,481
Bed, air. C. L. Jordan.	539,621	Furnaces, smoke-consuming attachment for blast. E. Warner.	539,458	Sewing machine quilting attachment. S. A. Evans.	539,614
Bed, extension. A. Beldin.	539,567	Gas, coin-free apparatus for sale of, R. T. & J. G. Glover.	539,734	Sharpening harrows or other implements. C. La Dow.	539,755
Bed, sofa. J. Boyd.	539,697	Gas engine. C. Sintz.	539,710	Shears. See Drop shears.	
Bedstead, metal. W. W. Sly.	539,597	Gas extraction and destruction of sewer. J. E. Webb.	539,459	Shears or snips. O. P. Lyon.	539,525
Bell cooler. E. Seitz.	539,705	Gas works, apparatus for manipulating lids of purifier boxes in. F. Mayer.	539,628	Sheet metal bending machine. W. C. Yates.	539,499
Bicycle bell clamp. A. A. Brown.	539,734	Gold and silver ores, apparatus for reducing. J. C. Garvin.	539,769	Sheet metal can. H. F. & G. Miller.	539,776
Bicycle luggage carrier. E. B. Powers.	539,493	Gold extender, from streams, device for recovering. I. Weil.	539,463	Shelves, adjustable support for book or other. D. E. Hunter.	
Bicycle saddle bag. E. C. Delos Olivos.	539,517	Gold separator and amalgamator, dry. H. H. Schuman.	539,459	Shingle edging and sizing machine. S. S. Ingman.	539,618
Bicycles, etc., locking device for. P. J. Krayer.	539,623	Governor gear for gas engines. Hartley & Kerr.	539,478	Shoe form or tree. N. Book.	539,722
Boiler, See Steam boiler.		Governor stop motion. R. H. Rice.	539,496	Shoe with removable calks. Dieckmann & Kollenberg.	539,611
Boiler, electrical low water indicator for. C. D. Tisdale.	539,435	Grain meter. C. A. Wever.	539,590	Sign, advertising. S. P. Ferree.	539,579
Bolts and rivets, machine for making. G. Passoni.	539,590	Grain scourer. H. C. F. Horstmann, Jr.	539,739	Signal, air brake signal. Railway signal.	
Bottle case. H. Bischoff.	539,720	Guns, gas check for breech-loading. G. Gerdom.	539,733	Signal box attachment. A. Gruner.	539,511
Bottle filling apparatus. P. Simon.	539,596	Handle. See Tool handle.		Signal transmitter, multiple. B. J. Noyes.	539,701
Bottle stopper. C. Huch.	539,429	Harness pad. J. T. Short.	539,707	Signaling apparatus. R. O. Crowley.	539,741
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Boxed wood veneer with sheet metal, machine for edging. M. A. Clemann.	539,765	Heater. See Feedwater heater.		Sled brake. I. E. Miller.	539,697
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Bracket. See Pipe bracket. Scaffold bracket. Sled brake. See Pressure brake. Rail brake. Sled brake.		Heater, D. S. Richardson.	539,447	Sluice box for tailings elevators, vibrating. E. S. Bennett.	
Bridge, W. N. Carr.	539,506	Hide splitting machine. J. E. Fairbanks.	539,472	Snow break. J. W. Calef.	
Bridges, electric safety system for railway draw. F. Deering.	539,567	Hinge, spring. P. C. Chander.	539,724	Snow or ice remover for railways. J. H. Colvin.	539,670
Bucket, self-packing and discharging. E. Barrett.	539,576	Hitch for vehicles, safety driving rein. I. A. Stewart.	539,741	Soap, deodorizing device. F. H. Milligan.	539,698
Buckle, H. Kraus.	539,521	Horse currier, tooth, borse, S. L. Allen.	539,402	Soap making and purifying. S. Rosenblum.	539,547
Building compound. G. W. Lytle.	539,654	Hoist and transfer apparatus, aerial. W. D. Sherman.		Soldering machine. C. M. Brown.	539,569
Buildings, construction for deafening. A. W. Tucker.	539,457	Hunting bucket. M. & R. Hawkins.	539,770	Spinning and twisting machine separator. G. O. Draper.	
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Button fastening. J. R. Farrell.	539,424	Hopple, G. Barton.	539,603	Spinning jenny flier. T. Finigan.	539,473
Calendering textile fabrics, machine for. E. Claviez.	539,416	Horse an team holder. F. O. Moore.	539,531	Sprinkler. See Street sprinkler.	
Calipers and dividers. Starrett & Fay.	539,759	Horse power. F. A. Sjogren.	539,552	Sprinkler, Van Horn & Yount.	539,657
Can. See Oil can. Sheet metal can.		Horseshoe cushioned. M. J. Cadden.	539,465	Stair stringers, instrument for laying out. G. McKinney.	
Can cleaning machine. J. Long.	539,523	Horseshoe forming machine. C. L. Haight.	539,427	Stand. See Music stand.	
Can ends, means for closing or readily opening. A. Ritter.	539,545	Hydrocarbon burner. E. M. Tydeman.	539,781	Steam engine, compound. A. W. McGrath.	539,635
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Cane stripper. W. H. Leighton.	539,434	Induction box. A. C. Bausman.	539,407	Stopper. See Bottle stopper.	
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Cane work, machine for inserting diagonal strips in woven. F. H. Bancroft.	539,405	Jacquard mechanism, knif for. B. H. Gledhill.	539,753	Stove, T. I. Rankin & Cooper.	539,546
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Car coupling. O. C. Billings.	539,656	Knitting machine for making fabric for mat-tresses, etc. G. F. Sumner.	539,558	Street sprinkler. A. Bastam.	