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Notes & Queries

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 This is for our information and not for publication.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.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(7686) J. A. M. says: Will you give me a formula for the prevention of mildewing of cloth exposed to the weather? A. Dissolve 1 pound zinc sulphate in 40 gallons water, and then add 1 pound sal soda. When dissolved, 2 ounces tartaric acid are added. This holds the partially separated zinc carbonate without neutralizing the excess of alkali used. The cloth should be soaked in this solution for twenty-four hours and then dried without wringing.

(7687) E. C. L. M. asks: 1. What are the phenomena of the so-called "cloud burst"? A. A cloud burst is a thunder shower with so excessive a fall of rain that it seems as if the cloud itself was falling to the earth. They are thought to be due to the overturning of a mass of air which is in unstable equilibrium. They are very limited in extent, and last for a short time only. Little streams are swollen to rivers, and rush down the valleys, carrying soil, trees and even large bowlders with them and leaving desolation behind them in their track. The term originated in the Western United States, but its use has extended to the East, and is now used to describe any storm of more than usual severity. 2. Why does one perspire more when sleeping in a hot room (as we have here) than when sitting awake? A. We cannot answer this inquiry with any positiveness; but would suggest as a possible cause of the difference that when awake we are continually in motion, and therefore changing the air which is in contact with the surface of the body. The effect of this is like fanning or the use of the punka. But when asleep, the air lies motionless upon us, and is soon saturated with moisture, thus adding to our discomfort.

(7688) I. A. McC. writes: I would be glad if you would answer through Notes and Queries the question of what the pressure is in the modern gas engine at the instant of explosion under the most favorable circumstances. I asked the question of a manufacturer of gas engines who is rapidly coming into prominence in this portion of the country, and his answer was that under the most favorable circumstances the pressure was very close to 300 pounds per square inch. This is much more than I had ever heard it stated before, some parties giving it as low as 60 pounds. I have read no authorities on this question, but consider that 300 is rather extravagant and do not know whether the smaller figure is as extravagant as the other or not, but would think it a little too small. Another question I would like to understand is: What is the expansion of 74 degree gasoline measured in volumes when converted into gas at a pressure of one ounce per square inch? Also what is considered the best proportion of such gas and air for the most effective explosion? A. The explosive force in gas and gasoline engines varies with the charge compression. This may be from 30 to 80 pounds according to the volume of the combustion chamber or clearance adopted by the builder in the design of the engine. A low compression charge may give an explosive pressure of from 80 to 125 pounds per square inch; while a high compressive charge may raise the explosive pressure to from 150 to 250 pounds and possibly 300 pounds. Thousands of explosive motors are running at from 150 to 175 pounds maximum pressure. The vapor of gasoline is equal to 130 volumes of the liquid without admixture of air. The vapor and air mixture for highest explosive effect is one of vapor to six of air. The mixture continues explosive up to one part of vapor to ten parts air with economical effect.

TO INVENTORS.

An experience of 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 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 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, 631Br oadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

JULY 4, 1899.

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Addressing machine, envelop or wrapper, C. A. Belknap $28,385
Advertising device, Brown & Lincoln 628,194
Alarm. See Burglar alarm.
Amalgamating machine, S. Moreau 628,108
Armature for dynamo electric machines, H. H. Wait 628,050
Atomizer, R. Morrill 628,251
Axle lubricator, J. Cleavenger 628,156
Back pedaling brake, J. F. Wilbur 628,056
Bale tie, P. K. Dederick 628,197
Baling press, C. Harrington 628,001
Bandage, suspensory, J. J. Cooper 628,392
Battery. See Galvanic battery.
Bearing, cycle ball, W. J. Busse 628,138
Bearing, disk, A. Lindgren 628,204
Bearing, roller, W. B. Allen 627,962
Bearing, roller, F. A. Pilkington 628,033
Beer dispensing and pipe cleaning apparatus, J. D. Freese 628,084
Bell, bicycle alarm, J. E. Cotter 628,074
Belt fastener, B. F. Hough 628,326
Bicycle, L. Bauroth 628,383
Bicycle, Ennis & Ross 628,082
Bicycle, T. S. Woodruff 628,426
Bicycle and gearing therefor, J. W. Eisenhuth 627,990
Bicycle brake, R. R. Wise 628,059
Bicycle chain, Berry & Bonnell 628,386
Bicycle chain cleaner, E. B. Gibford 628,087
Bicycle driving mechanism, R. H. Plass 628,184
Bicycle gearing, J. A. Caldwell 627,977
Bicycle luggage carrier, I. D. Alderman 628,294
Bicycle path maker, F. W. Shoecraft 628,363
Bicycle pump connection, Histed & Mershon 628,005
Bicycle support and locking device, W. C. Humphreys 628,096
Bidet, L. E. C. Lelu 628,162
Binder, temporary, W. A. Webb 628,134
Binding, skirt, C. L. Sulzberger 628,368
Blowpipe, vapor, W. E. Hewit 628,222
Boat, life, H. S. Carley 627,979
Boiler. See Water tube boiler.
Boiler cleaner, Booker & Warren 628,388
Book, manifold order, L. A. Keith 628,008
Boot strap, D. C. See 628,164
Box. See Folding box. Pattern box.
Box, A. H. Alger 628,379
Box making machine, berry, C. W. Thomas 628,371
Boxes, adjustable lid holder for, W. T. Parker 628,031
Bracket. See Curtain rod bracket.
Brake. See Back pedaling brake. Bicycle brake.
Bridle bit rein ring, P. Peterson 628,114
Brush, finger tooth, C. W. Richards 628,185
Buckets, tubs, etc., bail fastener for, A. R. McDonnell 628,020
Buggy or carriage body, W. S. Wilde 628,217
Bung, C. E. Clayton, Jr 628,195
Bung, faucet, D. Beebe 628,298
Burglar alarm, J. H. Flentye 628,264
Burner. See Gas burner. Lamp burner.
Burner for heating purposes, F. H. Harriman 628,160
Burnishing tool, A. S. Vose 628,422
Button, F. I. Sherman 628,214
Button drilling machine, F. M. Joslin 628,097
Cabinet, lady's sewing, J. P. Shank 628,361
Calcining furnace, W. B. Devereux 628,077
Calculating machine, J. Mallmann 628,273
Camera, magazine, A. Angel (reissue) 11,757
Camera, photographic, H. B. Carlton 628,302
Can. See Oil can.
Candle extinguisher, Bacci & Piscopo 628,381
Car coupling, A. J. H. Beard 628,384
Car coupling, E. H. Janney 628,329, 628,330
Car coupling, C. Mehring (reissue) 11,754
Car draught rigging, Williamson & Pries 628,237
Car fender, M. Luther 628,271
Car fender, G. Mauro 628,275
Car fender, R. Salomone 628,119
Car fender, detachable, R. Hearns 628,003
Car fender, street, G. H. Hollingsworth 628,145
Carbon contact, E. Pettet 628,115
Carbonator, D. Boyle 628,137
Carding ending, traveling flat, R. Taylor, Jr 628,216
Carriage, folding baby, J. Anderson 628,295
Case. See Hinged case.
Cash register, G. R. Ellis 628,262
Castings, apparatus for immersing, J. A. Dyblie 628,241
Castings, machine for making sand moulds for, H. E. Pridmore 628,034
Cattle guard, E. L. Arnold 628,428
Cement or concrete work, mould for, O. P. Barnett 628,382
Centering support, T. M. Vinton 628,191
Chain, wire, F. W. Smith, Jr 628,189
Chains, machine for making curb, W. B. Cartledge 628,439
Chair. See Combination chair. Dental chair.
Chair, C. E. Farrington 628,306
Chart, adjustable garment draughting, F. A. Atwell 628,296
Checkrein fastener, overdraw, J. Mealey 628,277
Cigar branding machine, Weiss & Hagen 628,151
Circuit breaker, automatic magnetic, P. R. Goldey 627,997
Circuit closer, section, F. W. Prokov 628,036
Clasp. See Trace clasp.
Cleaner. See Bicycle chain cleaner. Dish cleaner. Window cleaner.
Clock system, electric, Hope-Jones & Bowell 628,325
Cloth pressing machine, D. Gessner 628,242
Clothes drier, J. J. Pelton 628,211
Clothes pounder, C. W. Cross 628,076
Clutch, E. S. Clarke 628,390
Clutch, M. Kane 628,249
Clutch and handle, combined rope, S. C. Houghton 628,224
Clutch, friction, S. Jackson 628,328
Coffee roaster, D. B. Fraser 627,993
Coin controlled apparatus, R. Wagner 628,171
Combination chair, J. Sheridan 628,166
Compressing powdered substances, apparatus for, P. E. M. Jamain 628,225
Confessional register, P. J. O'Connor 628,229
Conveyer, endless, T. L. Marvel 628,274
Conveyer, suction or injector, J. Sibley 628,187
Corset, M. Tucek 628,372
Corset closure, Klemschmidt & Kreuder 628,335
Counting apparatus, R. Burk 628,075
Coupling. See Car coupling. Shaft coupling. Stovepipe coupling. Tap coupling. Thill coupling.
Cover, F. B. Read 628,354
Covering machine, L. Vining 628,049
Crate, knockdown, A. Donnelly 628,304
Crib or cradle, folding, S. E. & H. Oakes 628,350
Cross tie, metallic, E. U. Stewart 628,215
Cultivator, D. C. Bushnell 627,976
Cultivator, two row wheel, J. H. Dempster 627,986
Currents, controlling high tension, H. G. O'Neill 628,026
Currents, method of and apparatus for varying the number of phases of polyphase, H. A. Rowland 628,358
Curtain rod bracket, F. Harris 628,199
Cut out plug, A. Johnston 628,180
Cutter. See Straw or feed cutter.
Cutting tool, H. S. Newcomb 628,280
Cycle gear, T. H. Williams 628,135
Cyclometer, A. A. Leuchter 628,340
Dental chair, adjustable, G. Holtz 628,244
Desk, E. M. Mosher 628,346
Diamonds and their mountings, gage for, S. Goldner 628,310
Dish cleaner, W. C. Williams 628,292
Dish washer, M. J. Mendenhall 628,409
Door hanger, C. A. Ensign 627,991
Door holding device, C. W. Sponsel 628,366
Door storm strip, C. Mitsch 628,278
Dough mixer, C. Cornelius 628,073
Dough mixer, W. & P. Kryszewski 628,337
Drain, cellar, G. O. Miller 628,207
Drawer centering device, J. M. Hoffmire 628,322
Drier. See Clothes drier. Fruit drier.
Drill, P. C. Forrester 628,404
Dye and making same, blue black wool, C. Oelschlaegel 628,025
Dye and making same, green trisazo, C. Simon 628,233
Dye, green acid, A. Herrmann 628,243
Ear drum, G. P. Way 628,051
Electric furnace, F. P. Van Denbergh 628,373
Electric machine, dynamo, Hutin & Leblanc 628,245
Electric meter, T. Duncan 628,240
Electric motor attachment, C. R. Meston 628,014
Electrode for therapeutic purposes, vacuum, H. G. O'Neill 628,352
Electrotherapeutic apparatus, H. G. O'Neill 628,351
Elevator safety device, U. S. Alz 628,260
Elevator safety device, J. D. Griffen 628,080
End gate, wagon, H. Wittich 628,425
Engine, G. De Camp 628,397
Engine, De Camp & Roth 628,398
Engine lubricating device, W. M. Musgrave 628,279
Envelop, W. Wolfe 628,152
Eyelet, D. C. See 628,165
Eyeleting machine, P. R. Glass 628,309
Eyeleting machine, W. L. Whittemore 628,291
Eyeleting machine, Whittemore & Glass 628,289, 628,290
Eyeleting machine gage, Whittemore & Glass 628,423
Fare register, S. C. Houghton 628,223
Fastener for envelops, etc., metal, H. C. Holcombe et al 628,324
Fastener stud member, detachable, E. Pringle 628,035
Fastener stud member, separable, G. E. Adams 627,961
Fastening device, A. Leblanc 628,203
Faucet, E. N. West 628,258
Feed water heater, J. W. Casey 627,980
Feed water heater, H. A. Millar 628,344
Fence, A. E. Lycan 628,102
Fence, L. A. Short 628,167
Fence machine, wire, J. Bennington 627,969
Fence making machine, Pendergast & Whidden 628,253
Fence post, E. E. Newquist 628,208
Fertilizer distributer, E. J. Corser 627,983
Fertilizer distributer, L. V. Labelle 628,100
File, newspaper, Bireley & Simms 628,430
Filter, C. T. Giles 628,088
Filter press, J. Williamson 628,057
Firearm, G. Testa 628,130
Firearm stock, adjustable, O. O. Scripture 628,360
Fire extinguisher, portable, R. D. Wirt 628,058
Fireproof partition, O. W. Norcross 628,252
Fireproofing composition, G. X. Dime 627,988
Flanging machine, F. L. Kollberg 628,099
Folding box, Cunard & Hannold 628,196
Foot rest and child's seat, combined, J. R. John 628,331
Footwarmer, A. & W. C. Meyer 628,182
Fountain. See Watering fountain.
Fruit drier, E. F. Schneider 628,212
Furnace, P. O. Krottnaurer 628,336
Furnace air feeding apparatus, J. S. Newlin 628,349
Furnace lining, metallurgical, B. Talbot 628,288
Gage. See eyeleting machine gage.
Galvanic battery, J. von der Poppenburg 628,116
Garment forming apparatus, I. B. Kleinert 628,435
Gas apparatus, J. M. Hadden 628,000
Gas burner, J. F. Barker ..... 628,063 to 628,065
Gas burner, incandescent, E. Bauweraerts 628,155
Gas engine, W. S. Sharpneck ..... 628,122 to 628,125
Gas generating gas fixture, J. J. Snyder 628,305
Gas generator, acetylene, R. F. Dull 627,989
Gas generator, acetylene, S. Hanford 628,198
Gas generator, acetylene, H. Keller 628,201
Gasolene or gas engine, J. A. Harp 628,315
Gate. See End gate. Railway gate.
Gate, S. W. Martin 628,013
Gear, driving, J. K. Starley 628,109
Gearing, W. W. Kenfield 628,407
Generator. See Gas generator.
Glass articles, making, M. J. Owens 628,027
Glass articles, perforating, E. A. Parker 628,030
Glass bottles, machine for manufacturing, L. Grote 628,313
Glass, making rough plate, P. Semmer 628,120
Glass pressing apparatus, G. E. Cleveland 628,157
Glassware, decorating, H. Thuemler 628,131
Glove, D. H. Murphy 628,017
Golf practicing apparatus, J. G. Warren 628,236
Gong, alarm, E. W. Vanduzen 628,133
Grain, etc., apparatus for separating or sorting, A. Boguszewski 627,970
Grain binder cord knotting and holding device, W. Butterfield 628,071
Graphophones, etc., case or holder for records of, Pizagno & Bisler 628,163
Grate, basket, F. H. Fielder 628,402
Grinding mill thrust bearing, J. H. Gunn 628,314
Gun, cane, E. H. Ericson 628,142
Hair cutting apparatus, C. Hasch 628,002
Hame and trace connector, A. E. Hall 628,221
Hammock, R. C. Funke 627,994
Handcuff, J. F. Cumming 628,139
Harrow, disk, Packham & Oates 628,028
Hat fastener for boxes or cases, G. H. Schoenleber 628,041
Hay rack loader or unloader, W. N. Simpkins 628,364
Heater. See Feed water heater. Water heater.
Heel, J. W. Cross 627,984
Heel protector, shoe, E. Slauson 628,188
Hinge joint for flat articles, G. Cohn 628,239
Hinged case, A. L. Mariner 628,103
Hoe and cultivator, horse, F. Bateman 627,965
Holdback attachment, vehicle, H. H. Brown 628,301
Hook. See Singletree hook.
Hook and eye, E. W. Groeschel 628,143
Horseshoe, nailless, H. Broers 627,974
Hose gate, E. S. Clarke 628,391
Hose safety device, hydraulic, J. Muskett 628,018
Hydrocarbon lighting apparatus, R. L. Doran 628,079
Ice and production of cold, etc., manufacture of, C. Tellier 628,150
Ice creeper, detachable, Feather & Saxton 628,263
Index, card, E. J. Bein 627,967
Indicating and registering distances, etc., apparatus for, J. Ridge et al 628,037
Indicator. See Liquid level indicator.
Ink well cover, B. G. Merrill 628,107
Insole, slipper, A. Lennon 628,339
Insulators for carrying electric line wires, fixing of, W. Menzel 628,343
Iodin compound and making same, A. Classen 627,981
Iodin derivatives of aromatic amins and making same, A. Classen 627,982
Iron. See Sad iron.
Ironing table, A. Josephs 628,332
Irrigating system for sprinkling farm lands, roads, or streets, surface, W. H. Shinn 628,127
Joint. See Hinge joint. Railway rail joint.
Journal bearing, L. P. Delano 627,985
Key guard, L. L. Downing 628,438
Kinetoscopic apparatus, McMillan & Roebuck 628,413
Knife, E. O. Wheeler 628,259
Knife polishing machine, C. W. Model 628,016
Labeling bottles, etc., machine for, S. Fyfe 628,307
Labeling tins, jars, bottles, etc., machine for, J. R. Bradley 628,389
Lamp, alternating current arc, G. L. Moyer 628,109
Lamp burner, F. T. Williams 628,424
Lamp, hydrocarbon incandescent, W. S. Proskey 628,415
Lantern holder and foot warmer, W. M. Wilmarth 628,377
Last, W. B. Arnold 628,236
Lasting machine, Keats & Clark 628,300
Lemon squeezer, G. E. Savage 628,254
Letter press, Hardy & Maple 628,286
Level and plumb, combined, Keyser & Roche 628,334
Liquid level indicator, H. Rasmussen 628,353
Liquid meter, Gray & Farrar 628,312
Lock. See Sash lock. Seal lock.
Loom, W. J. Lutton 628,206
Loom, E. P. Mason 628,226
Loom, J. Northrop 628,228
Loom, circular, J. & C. Herold 628,093
Loom, haircloth, C. E. Pervear et al 628,231
Loom shedding mechanism, S. Arienta 628,154
Lubricating plug, McAlexander & Thomas 628,019
Lubricator. See Axle lubricator.
Machinery, electrical slow starting device for, I. Stone 628,190
Magnetic separator, A. Dings 628,078
Mashing apparatus, O. Selg 628,232
Mattress stuffing machine, R. R. Thompson 628,047
Measuring machine, cloth, J. H. Vanderburgh 628,374
Mechanical elements, device for securing, H. Zorn 628,060
Mechanical movement, R. L. Crossman 628,220
Mercur-ammonium compound and making same, C. F. M. Schaerges 628,417
Mercury soluble in water and manufacturing same, product of, A. Lottermoser 628,270
Metal tube, compound, G. H. Everson 627,992
Metal working machine counter mechanism, N. Sperber 628,043
Metals by electricity, heating, E. M. Bentley 628,429
Metals, ornamenting, P. C. McIlhiney 628,348
Meter. See Electric meter. Liquid meter.
Milking apparatus, W. H. Lawrence 628,338
Mill. See Rotary mill. Windmill.
Mine shafts, etc., means for raising water from, R. E. Browne 628,219
Mineral lode tracer, Heyland & Gray 628,321
Mining and dredging ejector, W. Muir (reissue) 11,755
Mining machine, coal, C. M. Johnson 628,007
Mixer. See Dough mixer.
Mould and weight gage, A. C. Gillette 628,405
Mould for composition rollers, E. Stough 628,367
Moulding, picture, G. F. Drew 628,140
Money holder and changer, G. T. Farnell 628,401
Monorailway system, L. Beecher 628,174

(Continued on page 46)

Advertisements.

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Inside Page, each insertion, - 75 cents a line
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