

TO CORRESPONDENTS.

"S. S. G., of Phila."—You will see that we used your favor. Be pleased to accept our thanks.

"J. W. K., of N. H."—Your favor containing \$4 came safe. We cannot furnish you with number 28, vol. 4—nor send the paper from the Boston office, all the papers are mailed from this office.

"I. H., of Md."—We know of nothing having been arranged like your improvement on sawing, and have no hesitation in stating that it is patentable in one of the arrangements, in the moving of the log, but you will see the other arrangement illustrated in page 316, vol. 3, Scientific American.

"H. S., & R. L., of Md."—We will publish about the patent leather next week.

"M. K., of Mass."—If you are satisfied of the practicability and utility of your plan, we should advise you to patent it. It had better be thoroughly tested.

"A. M. T., of Va."—The earliest account of electricity, artificially excited, of which we have any record, is carried back as far as 600 years before the birth of Christ, when Thales, the Milesian, observed that amber, after having been rubbed, possessed the power of attracting light bodies, such as feathers, &c. The person who first contributed essentially to its promotion was Dr. Wm. Gilbert, who published a book of electrical experiments in 1600. We are indebted to Dr. Franklin more than any one else for developing this subject.

"G. W., of Pa."—Mr. W. resided in Cambridgeport, Mass., at the time the communication was made. We have not heard from him since—and do not know that he has ever constructed one of his instruments.

"W. F., of N. Scotia."—Such binding as you want will cost \$1.50 per volume.

"A. L., of N. Y."—The first 32 numbers of volume 4 cannot be supplied complete.

"G. S., of N. Y."—The model of your churn has been examined. We do not discover any new feature in it. Churns worked by a crank, and having a perforated dasher have long been in use. Several references could be given.

"J. W. S., of Ill."—Excuse the delay, our business is so extensive. We would say, that no such invention for plumbing wheels is in use to our knowledge, and we believe it to be patentable, but first of all try it, before going to any other expense. The old plan of wedging up the wheels and plumbing them by the spirit level alone, has always been held to be the best.

"J. C., of N. Y."—The meaning of melting the composition, and working it in cold water, is to grind in cold water after it is melted and then lay it on. After it is laid on it should be dried in a very hot stove room. If a small quantity of alum is used along with it there is little danger of it crumbling. It is waterproof, but the exact expense we cannot tell.

"M. K., of N. Y."—It would seem from your description that the principle is the same as the syphon; if so it could not be patented. We can tell much better by having an opportunity of examining a drawing or a model. \$2 received.

"D. P. C., of N. C."—The price of the book you ordered is \$2.50. It cannot be sent by mail unless you authorize us to take the covers off. Can it not be forwarded by express so as to save the covers. Please answer by return of mail.

"S. N. B., of Ohio."—Thomas Blanchard resides in Boston, Mass., by writing to him you can without doubt obtain all the information you require in regard to his wood bending machine.

"G. L. C. D., of Miss."—The invention you refer to is an English invention, and has not been introduced into this country. If any one has a good machine for covering wire and will let us know by letter post-paid we will inform you.

"J. H. C. of Pa."—If you can wait, we intend to treat the subject fully in our next volume.

Answers to Correspondents.

Owing to the great length of our invaluable index, answers to many correspondents is necessarily delayed till next week. Our attention to correspondents will receive a still greater share of our labors than heretofore—great though that has been.

Scientific American for Binding.

As this number closes volume 5, we would suggest to those that desire to have their numbers bound to send them to this office and have them executed in our usual manner, for the low price of 75 cents.

You can depend upon having your volumes well bound by sending them to this office, as they will be executed to conform in style with hundreds that we have bound for ourselves and the trade.

Important Notice to us!

Whenever any of our friends order numbers they have missed—we shall always send them, if we have them on hand. We make this statement to save much time and trouble, to which we are subjected in replying, when the numbers called for cannot be supplied.

To Correspondents.

Friends, we return to many of you our sincere thanks for the valuable information we have received from time to time. You have not only done us but "the State some service." Knowledge is truth, and your labor to diffuse knowledge has been to advance truth, and every man who does this, is a benefactor to his fellow-man.

To all correspondents who have asked for information, we have endeavored to give it to them in all candor. Many have written unto us, whom we could not answer, the reason in every case being good. Some could not get an answer because of the too great length of their letters, and some, we must say, we could not read, not owing to bad composition apparently, but to carelessness in the writers. Many of our correspondents may have been overlooked unintentionally. We endeavor to be careful in this respect, but when we have so many as 50 letters on an average per day, and some of them very long, it is impossible to prevent oversights. It is our intention, however, to employ a greater force and to labor more attentively for the benefit of our correspondents, than heretofore. We hope you will endeavor to extend the circulation of volume 6, and we will endeavor to return you equal favors.

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years can obtain a copy by addressing a letter to this office; stating the name of the patentee, and the year the patent was granted (adding the month of the year when convenient), and enclosing one dollar as fees for copying.

INDEX.

**A**  
Abdominal supporters 68  
Abdominal supporters, Henry's 340  
Abyssinia, discoveries in 123  
Accidents, R.R. 323  
Accidents, steamboat 323  
Acoustics 312  
Acoustic apparatus 220  
Acid, sulphuric 304  
Acid in cholera, prussic 225  
Action and re-action, 2 engs. 132, 140  
Aerial navigation 27, 69  
Aeronautic enterprise 318  
Aerostation 389  
Aerostation, new discovery in 315  
Africa, discoveries in 3  
Ague, cure for 185  
Agricultural discovery 195  
Air, atmospheric 320  
Air, density and elasticity of the 89  
Ale or porter that has turned sour, to restore 249  
Algebraic method, new 36  
Alloys, metal 100  
Almonds, milk of 385  
American Institute, gold medals awarded at the 50  
Ammonia hartshorn, to make water of 49  
Animal life in water 274  
Animals, fattening 114  
Animalculae 74, 91  
Annihilator, Phillip's fire 332  
Antimony, preparation of 12  
Ape, fossil 38  
Apple paring machine, Weed's 2 engs. 84  
Aqueeduct, Croton 146  
Arithmetical table, Allen's, 2 engs. 161  
Arrowroot culture in Fla. 318  
Art, discoveries in 20  
Arts, the 365  
Ashes, hard coal 400  
Association for the advancement of science, American 394, 402  
Asphaltum of New Brunswick 314  
Asphyxia 328  
Associations, mechanics 301  
Asthma 209  
Astronomy, eng. 176, 376  
Atlanta, Ga., 38  
Atlantic in five days, how to cross the 83, 275, 283  
Atmosphere, the 179  
Augur 372  
Augur handles, Larkin's, 2 engs. 388  
Aurora borealis 91  
Autographs 217  
Axle, Smith's ball 99  
Axle box 220  
Axles of carriages, circle bearing for the 4

**B**  
Bagnasse, apparatus for drying 334  
Bagging, cotton 292  
Bakatas of South Africa, 412  
Banvard 2  
Bald heads 18  
Balloon, frozen 81  
Balloon ascension, 2, 396  
Barometer, extraordinary 298  
Bath, Essex's, eng. 60  
Bath, foot operating 340  
Bearing, artificial 164  
Beavers, 14  
Bedstead 340  
Bedstead, cot and camp 76  
Bedstead fastenings, Taylor's 3 engs. 172  
Bee, cultivating the honey 163  
Bees, mathematics of 312  
Beehive, Wheeler's eclectic, 5 Engs. 236  
Beehouse, floating 40  
Beeswax, to purify 57  
Beer, to make table 249  
Birds, value of 14  
Bird, honey 395  
Biscuit machinery 84  
Blind, light for the 50  
Blind, machine for the use of the 276  
Blowpipe, the 61  
Blowpipe, Cook's, 4 engs. 185  
Blowing machinery, 2 engs. 92  
Boats, life 356  
Boilers, copper 212  
Boiler, steam 202  
Boiler explosion 234  
Boiler incrustations, steam 74  
Boiler invention, steam 324  
Boiler safety apparatus, steam 330  
Boat uppers, Sampson's apparatus for shaping, eng. 281  
Borax 342  
Boring machine, Jones' 29  
Boring and morticing machine, Swingle's 29  
Boring bedposts, Hall's machinery for 2 engs. 97  
Boring and sinking machinery for artesian wells, Gard's 4 engs. 137  
Botany of the Platte river II  
Brace, sash 364  
Brain 373  
Brain, phenomena of the 99  
Brain injury, case of 339  
Brakes for R.R. cars and other machinery, Kimball's & Rice's hanging, eng. 308  
Brass 363  
Brass castings, 164  
Bread, brown 385  
Bread, soup 84  
Bread, to make good 297  
Brick machine, Wagner's 2 engs. 401

**C**  
Bricks, hollow 364  
Bridle, safety 92  
Bridge, RR. 273  
Bridge, Britannia tubular 2, 68, 180  
Bridge, Lewiston suspension 242  
Bridge, Remington's 84, 148, 212, 322, 348  
Bridge, Levenson's iron 29  
Bridge, Wheelers suspension 29, 41, 53, 348, 356  
Bridge, wire suspension 218  
Bridge, wooden suspension 52  
Bronze 296  
Bruises and sprains 8  
Brunel, biography of 139  
Buckle, Scarlett's, 3 engs. 297  
Bang cutting tool 212  
Burns 8, 200  
Butter, 193  
Butter, American 26  
Butter, to preserve 113  
**C**  
Cabbage, to preserve 81  
Calculating machine 92  
California 374  
California gold region 139  
Caloric, solvent properties of 310  
Camomile 57  
Camphene 46, 253  
Camphor on the teeth, effects of 186  
Canalton 10  
Canal across the Isthmus of Panama 219  
Canals, steam on 76  
Cancer, cure of 81, 153, 226, 305  
Cancer-cured 338  
Candles 345  
Candles, Brown's apparatus for making mould, 3 engs. 164  
Candles made by railway process 140  
Candles manufacture of 68  
Cautchoucine 72  
Car, R.R. hand 97  
Car hoister, Prime's, 2 engs. 241  
Car wheels 52  
Carbon 372  
Carbon, properties of 104  
Carbon as food for plants 194  
Carding wool 316  
Camelia, yellow 256  
Carmine 12  
Carding 412  
Carpets 412  
Carpets, weaving tapestry 44  
Carriage making in N. J. 386  
Casks, purification of 109  
Casting, gun 28  
Catsup, butternut 113  
Cattle, feeding 43  
Caustic, lunar 233  
Caveat, a 157  
Cement for mastic work 10  
Cement for mending steam boilers 1  
Chair, RR. 100

**Chair, Van Anden's R.R., 2 engs. 388**  
Challenge to the mechanical world 301  
Charcoal melted, 268, 301  
Charter, first R.R. 329  
Charts, Maury's 252  
Cheese, Ohio 18  
Chemistry, agricultural 69  
Chemistry, animal and vegetable 113  
Chemical discovery, great 13  
Chemical philosophy 333  
Chestnuts, planting 42  
Chimneys, construction of 227  
Chimneys, cure for smoky 121, 260  
Chimneys, method of preventing the fracture in glass 12  
Chloroform, effects of 66  
Chloroform, employment of 272  
Chloroform, to arrest the fatal effects of 172  
Chloroform on plants, effects of 172  
Chocolate 114  
Cholera 3  
Cholera, theory of 138  
Choleric discovery 48  
Chrome 316  
Chromatype 308  
Chrono thermal medicine 153  
Chronograph, electro 84  
Chronometers arried, how 189  
Chrysanthemum, the 99  
Churn 76, 348  
Churn, Davis' self-adjusting, eng. 308  
Churn, Robbin's telegraph, 2 engs. 156  
Churns, labor saving 140  
Cisterns, charcoal for 306  
Clairvoyants 82  
Claret, Texas 226  
Clasp, Rockwell's bedclothes, 2 engs. 220  
Cleaner, buckwheat 68  
Cleaner, rice 372  
Cleanliness, Parisian 3  
Cleaning machine, Harris and Son's grain, 2 engs. 385  
Climate 376  
Clock, alarm 156, 188  
Clock, astronomical 108  
Clock, Lock's magnetic 44  
Clock, novel 300  
Clock, singular 260  
Clock faces, to silver 153  
Cloth, incombustible 124  
Cloth, stereolaic 348  
Cloth, vulcanized india rubber 147  
Cloth, waterproof 105  
Cloth folding machine, Carey and Bagley's, 2 engs. 41  
Clothes, washing 121  
Clothes without seams 172  
Clutch for machinery, Barlow's, eng. 273  
Coal 130

**Coal, Ala. 50**  
Coal, N. Y. 45  
Coal breaker, Battin's 222  
Coal formations 390  
Coating ships 268  
Cochineal to dye silk 32  
Cocoanut, manufactures from the 292  
Cocoanut, the Jamaica 330  
Coffee, benefits of 331  
Coffee, dandelion 225  
Coffee, Java 115  
Coffee, substitute for 281  
Coffee West India 49  
Coffee extracts, method of making, eng. 140  
Coffee for weak stomachs 321  
Colds, cure for 208  
Coloring matter 329  
Colors 400  
Combinations, heat of 67  
Combustion, spontaneous 243  
Comet, the 346, 387  
Compass, variation of the 412  
Compound, disinfecting 332  
Computing machine, Parmelee's eng. 364  
Contentment 202  
Convention, World's 196  
Cook without fire, to 14  
Cooking, errors in 376  
Cooking by gas 389  
Cooler, bed 44  
Cop spinner, Dodge's 29  
Copper blanched 49  
Copper, Lake Superior 390  
Copper mines, Lake Superior 30  
Corn sheller 76  
Corn sheller, Harris and Carter's, 2 eng. 121  
Cernices, wooden 372  
Corrosive sublimate, counteracting the effects of 400  
Cotton, nan keen 66  
Cotton, cultivating 386  
Cotton batting machinery, Essex's, Eng. 244  
Cotton crop, the 410  
Cotton drying machine 4  
Cotton, experiment in Australia 35  
Cotton factory, first 42  
Cotton gin, Dubois' 21  
Cotton gin, experiments with the 6  
Cotton gin, Parkhurst's 130  
Cotton machinery 100  
Cotton manufacture in the U. S. the 355, 363, 371  
Coupling, self-acting 252  
Coupling, Brown's, 2 engs. 332  
Cracker baking 68  
Cracker machinery, Nevin's, 2 engs. 305  
Crank and pulley, the 412  
Crank, against the 6, 115  
Crank, for the 14  
Crank, on the 96  
Crank, properties of the 125, 141

**Cream, shaving 140**  
Croup, cure for 193  
Crystals, sulphurous acid 146  
Cultivator, Rodgers', eng. 340  
Curiosity, natural 10  
Curve, Schiele's anti-friction, 2 engs. 289, 292  
Custards without eggs 225  
Cutlery, to glaze 8  
Cutter, straw 4  
Cutter, Bertholf's straw, eng. 52  
Cutter, Hovey's straw 124  
Cutter, Macomber's straw, 2 engs. 386  
Cylinder, bursting of the Brahmah 54  
**D**  
Daguerreotype 192  
Daguerreotype, oil painting 20  
Daguerreotype cases 324  
Daguerreotype improvement 276  
Damasus blades, manufacture of the 137  
Dam at Hadley Falls 58  
Damp, fire 381  
Dead Sea, the 283  
Deafness, remedy for 185  
Depurating machinery, Brooman's, 2 engs. 321  
Detector, alarm and thief 180  
Diamond, wonderful 368  
Diamonds 370  
Diamonds, artificial 325  
Diamonds, manufacture of 302  
Diamonds, value of 363  
Diet 354  
Diet, vegetable 285  
Discovery, important 67, 75, 83, 123  
Discovery, poetry of 77  
Discovery, simplicity of 13  
Discoveries, Layard's 283  
Dishes, washing 164  
Distributor, Morse's air, eng. 268  
Docks, foundation of 188  
Dog bites 2  
Down of the Eider duck 138  
Dragon blood plant, the 364  
Drawing pencil 190  
Drawing made easy, eng. 5  
Dressing machine, Wilson's stone, 2 engs. 284  
Drill, Ide's grain, 3 engs. 372  
Dropsy, cure for 338  
Drowning, to treat cases of 12  
Dryer, grain 244  
Dryer, Snead's grain, 2 engs. 257, 260  
Dyeing 180  
Dyeing blue, yellow and black, 48  
**E**  
Eggs, clarification of 89  
Eggs in China, hatching 338  
Electric batteries 54