of air.' It is singular to us how a patent was obtained on the safe.
"A. H. of Me."-We have replied to your last, by mail, I hope it will be satisfactory but if it is not, institute inquiry of the commissioner of patents and he will corroborate our statement.
"A. P. of N. Y."-Your letter of the 3d inst. is at hand, and we shall proceed to making out your papers in a few days.
"S. H. of N. Y."-We cannot supply you with No. 34, as the demand for that No. has been so great that we are out of them.
"L. R. of Del."- The votice to you was an error,-your subscription will expire with No. 26 , vol. 5 .
"J. G. P. of Va."-We have sent you the Nos. yourequested, except Nos. 18 and 39, of vol. 2 , which we have not. There is a balance of 75 cents which we will add to your subscription, in the absence of any thing to send you.
A. S. of N. C. T. and B. of N. Y. W. W. of Ct. S. S. R. of Tenn. and J. G. P. of R. I. -Your specifications have been completed since our last issue, and the papers sent to you for signatures.
R and W. and P. B. of Ct. L. and B. of N J. R. O. G. of Ct. and I. M. of Pa.-Your papers have been deposited in the Patent Office since last week's issue of the Scientific Amer.
Money received on account of Patent Office business since Sep. 4th-A. S. of N. C. $\$ 50$. L. T. of N. Y. \$5. P. B. of Ct. \$20. J. F. of Mass. $\$ 30$. J. B. F. of N. Y. $\$ 20$. H. A. of Ill. $\$ 30$. I. M. of Pa . $\$ 20$. L. B. of Ala. $\$ 30$. W. S. of N. H. \$25.

## Read This.

It is known to most of our subscribers that it has been our usual custom to send with the last number of each volume a prospectus of the forthcoming volume printed on a separate sheet, from the paper and a blank left for filling out with the names of new subscribers. As the Post office law now prohibits the sending of such circulars we are obliged to refrain from thus accomodating our patrons this year which we very much regret, however we hope and feel confident that our friends will not take less active measures to get up clubs than if a blank was sent for that particular purpose.
Peruse our new prospectus which has been published in each number of the Scientific American for the last three weeks, and if you think the new volume is to be worth its cost (illustrated as it will be with our 500 engravings of new and useful machines,) please make no delay in ordering it yourself and withal, ask a friend or two to join you.
See sur terms to clubs and remember you are not only rendering your friends a service by getting them to subscribe but an also contributing to advance the cause of inventors and helping to sustain their rights.
The Scientific American has advocated the interest of inventors and mechanics since published by its present proprietors and it shall continue to do so as long as the publication is sustained.
To one and all we would say subscribe, and to insure yourelves the volume complete we would advise you to send in your orders early as the first numbers are many times exhaust-
ed before the volume has one quarter expired.
sclentific Amaerican for Binding
As this uumber closes volume 4, we would suggest to those that desire to have these 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.
The Benefits of illisitrating inventions According to our Patent Laws, no old machine that may have been used abroad, it not used here, and not described in some printed work, would interfere with a patent in this country. All the machines which we illustrate, if not described, as patented, or about to be patented, are made common property, their parts are free to be used by any person. Many of our subscribers receive valuable hints in this way. We have published a history of the rotary engine in this volume, illustrated with 67 good engravings. We have no doubt but these engravings will be the deans of saving much to inventors, it lets them know what has been done before, and makes them acquainted with those things that would prevent them from securing a patent. We like to throw as much light abroad as possible. Many ingenious men spend both time and money to perfect machinery (to them unknown) which have been tried and laid aside. We will honestly endeavor to be a beacon light to guide the ingenious man into shoals that surround him.

## Subsoribers inttend.

Remember-That this nuber of the Scienific Americancloses volume 4.
Remember-That our terms for this paper are low and payable in advance in all cases.
Remember-Thatthe Scientific American is the leading mechanical paper in this country. Remember-That this publication is considered a standard work. and that thousands of volumes are bound every year, many of which are placed in public libraries.
|Remember-That volume 5 commences next week, and that it is to be printed on new type, to be embellished with a beautiful border and that the work shall exceed in interest all past volumes.
Remember-That we have a friendly confidence that all our subscribers whose term expires with this number, will re-subscribe and, withal, send along at least one more name each besides their own.
Remember-That every person who sub scribes gets full value for his money, and we publish many receipts worth ten times the amount to every body.
The inducements to subscribe for volume 5 , are of no ordinary character, and no man can lay outt wo dollars to better advantage, and that will return as good interest; as investing the same in a years' subscription.
In our next volume there will be more illustrations of machines and machinery, of every description, than can be found in any book that is five times the price of a year's subscription

## 




| Chemical law. new 8,16, 24,32, 40. 43, 56, 64, 72, 80. 88, 96, |  |
| :---: | :---: |
|  |  |
| Cheshire RR. 157 |  |
|  |  |
| Chilbtains 232 |  |
| Chimney cap, 348 |  |
| Chimney cap, improved 204 |  |
|  |  |
| Chloroform in Surgery 413 |  |
| Chloroform applied to the skin, 259 |  |
| Chloruform a substitute for steam, 12 |  |
| Cholera, 29, 43, 64, 69, 98, 106, 115, 27 |  |
| Cholera aud the atmosphere 398 Cholera liquid, 11 |  |
|  |  |
| Cholera protector, 2 engs. 132 |  |
| Chuck, improved taper 20 |  |
| Chuck, Martin \& Parry's, eng. |  |
| Churn, Irving's, eng. 156 |  |
|  |  |
| Cincin. and St. Louis RR. 209, |  |
| Clock, astronomical 101, 141 |  |
| Clock, electro magnetic 347 |  |
| Cloth and wool drier, 2 engs. 73 |  |
|  | Clover, extract of 258 |
| Coal, 28 |  |
| Coal Trade, Pa. 393 |  |
| Coast survey 101, 105, 158 |  |
| Cobalt, 357 |  |
| Cochineal, 142, 198, 405 Cocculus 1ndicus 171 |  |
|  |  |
| Coffee, disinfecting property of 88 |  |
| Coffee, Liberia 37 |  |
| Cohesion, 270 |  |
| Cohesion, attraction of, 32 |  |
|  |  |
| Coke vs. diamond 12 |  |
| Collars and hoops, joining 252 |  |
| Colors: 128, 136 |  |
| Columbus and Xenia R. R. 161 |  |
| Combustion, 134 |  |
| Combustion, locomotive, 140 Comp ass,the, eng. 291 |  |
|  |  |
| Compensation box, 252 |  |
| Contraction, 371 |  |
| Cooking range, 172 |  |
| Cooking stoves, 34 |  |
| Copper as a poison, 176 |  |
| Copper and zinc ores, 172 |  |
|  | Copper, tinning 136 |
| Copper, to ascertain the weight of 24 |  |
| Copper, to zinc 316 |  |
| Copperas as a disinfeotant, 2 |  |
|  |  |
| Cork 253 |  |
| Corn sheller 2 eng. 89 |  |
| Cotton and cotton manuf. 126 |  |
| Corton gin 206 |  |
| Cotton gin saw filer 188 |  |
| Cotton gin improvements, 2 eng. 404 |  |
|  |  |
| Cotton manufactures in R. I. 410 |  |
| Cotton machinery 348 |  |
|  |  |
| Cotton picker 172Cotton press 340 |  |
| Coupliag ioint, 260 |  |
|  |  |
|  |  |



[^0]
[^0]:    Glass moulding 76
    Glass, sensitive 338
    Glass, silvering 356
    Gloves, to clean 280
    Gloves, to clean 28
    Glue 16
    Glue, liquid 360
    Gold leaf and Fold wire 168
    Gold
    Gold mine machinery 20
    Gold pens 34
    Gold washer 140
    Gold washer, Danfurth's eng.
    Gold washer, Glenn's, eng. 1 185
    Gold washer, Singer's, eng. 164
    Golden yell
    Gold washer, Singer's, eng. 164
    Golden yellow 72
    Governor, Bakers 3
    Governor, Bakers, 3 engs. 340
    Grain separator, Sanders, eng.
    324
    Grain separator and thresher,
    Grape vines 88
    Grass, curious 400
    Grass cutting machine 2 engw.
    ( ${ }^{289}$.
    Gravitation, attraction of 32
    Grease, axle 396
    Grease, axle 396
    Grinding mill, eng 201
    Grooving maching i 72
    Grummet, metallic 60
    Grummet, metallic 60
    Guage, cock, steam 90
    Guage cock, $\Lambda$ dams', eng. 84
    Guage cock,
    Gunnery 130 ,
    Gunnery 130
    Gunpowder and Greek firn 27
    Gunpowder and Greek firn 27
    Gunpowder experiments 402
    Gunshot wounds 28
    Gun smoke 324
    Gun stock machine 91
    Gutta percha 149 27
    Gypsum mounds 27
    Gymnastic Ballounist 410
    Hail. formation of 35
    Hammer. steam 60
    Harlem. R. R. 209
    Harness, Vogel and Thomas
    5 engs. 45
    Harness machine 34
    Harness saddles 68
    Harrisburg and Lancaster R. R.
    Hartford and Bristol R. R. 241
    Hay and straw cutter, Tupper's
    412 Heading machine 2 engs. 353
    Heat and electric light 211
    Heat a nd electric light by fric-
    tion 190
    tion 190
    Hemp 140, 311, 406
    Hemp 140, 311, 406
    IIoistink apparatus 292
    Honey Lee the 219
    Honor to whom honor is due
    45.53
    45.53
    Horizons, drawing false 131

    Horizons, drawing false 131
    Horn pressing machine, eng. I7
    Horse power 28, 188, 412
    Horse power 28, 188, 412I
    Horse power, Bertholf's, eng.
    212
    Hot blast for furnaces 181
    Hudson river R. K. 17, 67,97,
    201, 297,385
    Huek beds 66

