## 

J. H. D., of N. Y.-Finely-powdered plaster-of-paris made into a thin cement with water, we have been told, answers wel for uniting broken pieces of meerschaum. Liquid quartz will an swer the same purpose.
S. W. T., of N. J.-In a general sense, combustible subsubstances are those which burn freely in the atmosphere, but in a chemical sense, this defition is too restricted. Iron and zinc burn rreely in pure oxygen gas.
W. F. W., of Pa.-It depends altogether on the terms of the patent whether the patentee can substitute a different material, and still claim to work under the patent.
P. D. of Vt.-The benefit of a re-issue will extend to past assignees. They can however, if they prefer it, adhere to the original patent. It is not necessary that all should jgin in the application for re-issue, thnugh it is usually better for them to do so.
F. A. M., of N. Y.-The Monitor class of vessels were not designed for speed, but merely for floating batteries. It would signed with respect to this quality. We shall give your article on stormsattention. The theory appears to be similar to that of Mr. Redficld, who believed that most of our storms were rotary.

## Money Received

At the Scientific American Office on account of Paten At the Scientific American Office on account of Paten
Omice business. from Wednesday, December 10, to Wednesday Omice business. from
December 17, 1862 :-
December 17, 1862 :-
W. S. \& G., of N. Y
W. S. \& G., of N. Y., $\mathbf{\$ 2 0}$; M. B. D., of Pa.,\$20; H. T., of Ind., $\$ 20$ H. M., of Mass., 820 ; M. H., of England, $\$ 120 ;$ F. R., of N.Y., $\$ 25 ;$ W
F., or Mich., $\$ 20 ;$ L. P. H F., of Mich., $\$ 20 ;$ L. P. H., of Iowa, $\$ 20$; T. N. of C. W., $\$ 10$; J
Z., of III., $\$ 45 ;$ J. M., of N. Y., $\$ 20$; D. \& J. of Minn., $\$ 100 ;$ S. W., Z., of IIL., $\$ 45$; J. M., of N. Y., $\$ 20$; D. \& J. of Minn., $\$ 100$; S. W. \& C., of N. Y., \$15; J. N., of N. Y., \$15; H. N. DeG of N. Y $\$ 25$; \& C., of N. Y., \$15; J. N., of N. Y.,\$15; H. N. DeG., of N. Y., $\$ 25$
F. P. S., of N.Y., \$22; J. A. of N. Y., \$15; S. C. H., of Mass., $\$ 30$ M. B. S., ON. Y., S22; J. A., of N. Y., B15, S. C. H., , Mass., \$30 M. B., of Paris, $\$ 93$; J. M. A., of Mass., $\$ 10$; H. B. of N. Y., $\$ 15$; B.
T. S., of Inl., $\$ 25 ;$ J. J., of Mass., $\$ 25$; E. L of Ohio, $\$ 25$, L R, of T. S., of In., $\$ 25$; J. J., of Mass., $\$ 25$; E. L., of Ohio, $\$ 25$; L. R., of
Ind., $\$ 10 ;$ J. D. B., of Vt., $\$ 15$ D. D. D., of N. Y., $\$ 15 ;$ M. B. S., of Ind., $\$ 10$; J. D. B., of Vt., $\$ 15$; D. M. D., of N. Y., $\$ 15$; M. B. S., of
N. Y., \$25; R. L., of N. Y., \$40; F. \& K., of Cal., \$25; V. \& O., of Pa., N. Y., \$25; R. L., of N. Y., \$40; F. \& K. of Cal., \$25; V. \& O., of Pa.
$\$ 15$; A. R., of N. Y., \$40; C. S. O., of N. H., \$20; P. J. C., of C. W. \$15; \&. R., of N. Y., \$40; C. S. O., of N. H., \$20; P. J. C., of C. W.,
$\$ 15 ;$ B. \& H., of Conn., \$40; J. H., of Inl., $\$ 15$; C. Van. H., of Mass., $\$ 15$; в. $\&$ H., of Conn., $\$ 40$; J. H., nf I.., $\$ 15$; C. Van. H., of Mass.,
\$15; C. N. B., of Pa., $\$ 15$ W. H. $\&$ Co., of N. Y., \$15; J. H., of Cal., \$15; E. J. M., of N. Y., \$40; F. W. G., of N. Y., \$10; E. D., of Mass., \$15; J. R., of Mass., \$15; N. F. B., of Pa., \$25; J. W. B., of Ill., \$15; A. H. C., of N. Y., \$25; T. C. A. \& Co., of Pa., \$337; S. C. E., of N. Y., \$15; R. F. C., of N. Y., \$25; J. P. M., ot N. Y. \$25; W. W., of Cal., \$25; W. A. D., of Ohio, \$15; W. H. G., of N. Y., \$20; Van H \& R., of Mo., \$10; J. M., of N. Y., \$25.

Persons having remitted money to this office will please to examin Se above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and in
form us the amount, and how it was sent, whether by mail or ex form
press.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent H. N from December 10, to Wednesday, December 17, 1862:A. R., of N. Y. ; J. T. M., of N. Y.; F. P. S. of N. Y. ; N. F. B., of a.; R. L., of N. Y.; R. F. C., of N. Y.; J. M., of N. Y.; J. J., of N .; E. L., of Ohio ; A. M. S., of N. Y.; D. W. C., of N. Y.; H. \& B. of Conn.; $\mathbf{F}$.
M., of $\mathbf{N}$.
$\mathbf{Y}$.

## TO OUR READERS.

Receiprs.-When money is paid at the office for subscriptions, a receipt for it will always be given ; but when snbscribers paper a bona fide acknowledgenent of our reception of ther funde

Patent Clame.-Persons desiring the claim of any inven tion which has been patented within thirty yeara, can obtain a copy by addressing a note to this office, statingthe name of the patentee and date of patent, when known, and inclosing $\$ 1$ as fee for copying. We can also furnish a sketch of any patented machineissued siuce 1853 , to accompany the claim, on raceiptor \$2. Address MUNN $\star$ CO., Patent Sollcitors, No. 37 Park Row, New York.
New Pampelets in German.-We have just issued a revised edition of our pamphlet of Instructions to Inventors, containing a digest of the fees required under the new Patent Law, \&c., printed cation at this ofice. Address

No. 37 Park-row, New Yorb.










## $\underset{\text { Rac }}{\mathbf{R}}$

## Ra Re Re Ren Rud Ru




 Sawing boring, modidin san planing ma.

Scales, index (Platt \& Rosecrans) 152
Sieve, coal (Wadman) 16
Sieve, coal (Wadman) 16
Silver from waste solutions, apparatus
for saving (Shaw) 112 for saving (Shaw) 112
Siphon, steam (Marsh) 304
Skate, ankle-supportmg (
${ }_{24}$ ankle-supportmg (Jebb \& Cutter
Skate, patent (Brady) 320
Skate, shell-groove (Duttan) 40
Sod-cutter
Skates, shell-groove (Dutian) 406
Sod-cutter, seeding machine and harrow
combined (Steller)
combined (Steller)
Tap gude, patent (Hadley) ${ }^{\text {392 }}$
Tombstones, mode of seting
Truck, store (Douglas) 161
Valve fore (Douglas)
Valve for canallocks, patent (Heath) 296
W
Well-curb and bucket (McGregor) 160
Wheel, iron-hnb carriage (Leavit) 50 Windlasses, capstan and anchor-gearing,
ship's (Brown \& Harfield) 225 , 226


## MISCELLANY.



## A

Absinthe in France, a heavy tax on 310
Acid, a new use for carbolic 103 Acid oy electricity rearediscovery of the
formation of nitric 6 formation of nitric
Acio fumes, nitric 00
Acid stains, nitric 184
Acciden ts, bailoon 69
Action and raeaction 182
Adriatic, steamer

Agassiz, extracts from 26
Age, the innorations of the 378
An
Agriculture in aid of war, new helps of
274
Ague, brass-founders' 118
Alabaina, the 401
Alouminate of iron and eoda as a thera
peutic agen 231
Alcohol cheap 176 Alcounic cheap 176
Alcohol from coal Alembic or still, the $\delta 7$
Almanac forthcomin, a great naiter American, foreiga honors to an 330

America-the granary of the world 290
Amusements,
Come 118 Anvil for a steam hammer, a large 204 Apple.sauce, substitute for 290 Artic expedition, Hall's 154, 195
Argument, a railroad 295 Argument, a railroad 295
Argylite-a new mineral 392
Arkansas, the ram $133^{*}$ Arkansas, the ram 133
Armory, 'Colv's 5,97
Arms manufactory Arms manufactory at Richmond, the
Robinson 391
Arms, valuable 188 Arsenicand other poisons on plants an
animals, effect of 119
Arts, progress of the mechanic 377 animals, eff ect of 149
Asterorot, anos of the mechanic 377
Aster 231 Astronomer, an able 161
Atom, the story of an 304
Axles, setting carriage
Axles, setting carriage
B
 Ballooning, scientific 113, 170, 267
Barley in Washlington Territory, great
growth of 117 growth of 117
Barn in the country, the largest 211
Barometer, how to use a 176 Barometer, how to use a 176 iteries, to amalgamate the of elec
Bric 65 tric ${ }^{\text {Bres }}$
Bateries, turret 246
Battery, a land 39
Battery, a and 39
Batter, an anclent iron-clad 326
Battery, railroad iron-clad 235
Battery, railroad iron-clad

| B |
| :--- |
| B |
| B |

## Be Be Be Be

Belt, seting a quarter twist 7
Belt
Berks rromorf its pulleys, why a 132*
Benzin
Benzinine, distilling 375
Benzole 149
Bins, preservation of grain in air.tight 5
Black Prince, trial trip of the 203 Blockade, results of running the 195
Boat.b bildingat Pittsurgh, Pa. 35
Boats at Pittsburgh, iron-clad river 215
$\qquad$
$\qquad$

Boilers, steam 295, 342
Boilers, the control of steam 313
Bollts in liquids, cause of 92
Bolts, new method of drawing taper 376*
Bone, a Parisian prize for the regenera-
and
Books and publications received 29,110,
126, 120,1238, ,
Boulder discorery of a
Bonlder, discovery of a great copper 327
Bread, fresh 12
Bread in C Bread in Calif ornia, aërated 186
Breath, a remedy for feted 231 Breath, a remedy for feted 231
Breech loaders rersts mnizzle-loaders 355
Bricks, all in silver 355 Bricks, all in silver 355
Brickwork, exclusion of damp from 310
Brickwork, the salting of 65 Bridge, a steel suspension 296
Bridgeat Harlem, new iron 73
Bridge in Portuga new Bridge a Harlem, new in
Bridge 73
Bridg in Sortuga, new inon 68
lar 153
Bridge, an American iron 2
British Association for the
British Association for the Advancemen
of Science, the 311. 338
Broom business, the
Brooms, California 352
Brunel's mishaps 119
Buildings, warming and ventilation of 37
Buliet, explosive 151,247 Bulet, explosive 15, 247
Bullion per month, three millions of 331
Bushes, rapberry Bushes, raspberry 177
Business in inyn 24
Business in war times 277
Batter, testing 203
$\qquad$
Cabie between Rngland and Holland, a
new submarine telegraph 135
California, annow line to 129
Camera, a kaleidoscopic 262
Canada, our disoposition toward 122
Canals in India, gigantic 33


