

L. P. S. says: In a factory a 3/4 inch pipe was placed against the wall, and above a tank in which acids were kept for dipping the bronze work.

C. Y.—Your boat seems to be well proportioned. Your engine should make from 250 to 300 revolutions per minute, giving a speed of from 8 to 10 miles an hour.

G. B. M. asks: 1. How can oxygen gas be generated, and can it be kept for inhalation? A. There are several methods of preparing oxygen.

A. S. asks: In testing milk, what is the relative proportion of cream and milk? If I pour 5 inches of milk into a test tube and let it remain in a moderately warm place till the cream all rises to the top, how thick ought the cream to be?

J. P. H. asks: If a siphon whose vertex is 50 feet above the level of a reservoir be closed at each arm with a stopcock, and both branches be then filled with water at its vertex, after which it be made airtight and both ends be opened, will the water flow through the siphon, or will the formation of a vacuum be made of its vertex? A. The siphon will not work.

G. R. J. says: 1. When a light is applied to a perforated cork in a bottle containing oxygen and hydrogen gases, an explosion takes place, driving the cork with great force out of the bottle.

H. C., H. E. W. and others: You need entertain no doubt as to the possibility of making sugar and sirup from sawdust, rags, and paper. In order to effect this change, shreds of linen, paper, or sawdust are submitted to the action of strong sulphuric acid in the cold.

E. C. H. asks: 1. Which has the greatest driving power, a balance wheel 3 feet in diameter or one 4 feet in diameter, the weight being the same in each wheel? A. Precisely alike, other things being the same.

C. says: Will carbonic acid gas completely extinguish fire when it exists at a dead red heat, or are its virtues confined simply to a blaze? A. We once tried some experiments with carbonic acid gas as a fire extinguisher with the following results: The gas used was compressed in an iron reservoir, to from 200 to 300 lbs. per square inch, so that a stream of gas of any desired force could be obtained.

distance of 5 or 6 feet, the effect was lost, the fuel burning more fiercely than before, from the fact of the stream of gas spreading and carrying with it so much oxygen from the air.

H. S. asks: 1. What will force the beard to grow? A. Nature and time are the most powerful auxiliaries. Frequent shaving seems to stimulate the growth to some extent. 2. How can I make nitrate of ammonia? A. Saturate nitric acid diluted with three or four times its weight of water with sesquicarbonate of ammonia, evaporate by a gentle heat and crystallize.

W. H. S. asks: 1. At what cut-off does an engine give the most power? A. At full stroke. 2. Which gives the most power, a short or a long stroke engine, both using the same amount of steam? A. Theoretically both give the same, with similar piston speed.

T. C. O'B. asks: How can a straight avenue of fifteen yards wide and two hundred yards long best be lighted up brightly? We have tried some glass reflectors, but they are entirely inadequate.

M. E. D. says, in reply to our correspondents who asked as to washing flannels: Take soft water, as warm as you can bear your hands in. Make a strong suds, well luted. In washing fine flannels, wet but one piece at a time; soap the dirty spots and rub with the hands, as washboards full the flannels.

L. M. R. says, in answer to J. B. V., who asks how he may remove green moss from his brown stone stoop: Carbolic acid will effectually accomplish it. A solution containing one per cent of the acid in water should be applied to the plants, which will kill them, although it will not alter their appearance.

C. W. Y. says, in reply to F. O. C. H., who asked as to patching a boiler: Take off all warped and twisted parts of the boilerplate; have your patch large enough to cover the hole nicely, then bolt it on firmly with boiler bolts, bevel the patch on the outer corner, or, in other words, thin the patch; then, with a caulking tool, upset the iron all around the patch close to the boiler.

A. W. W. says: C. W. B. asks, on p. 202, if there is any better way to make a house warmer than the usual weatherboarding and plastering, except to fill in with brick between the boarding and plastering. Let me give him my ideas of how a frame house should be built.

J. H. W. says, in answer to M. V. D.'s question as to condensation: I will say that a worm 4 feet in diameter, 8 coils deep, and 2 1/2 inches diameter of pipe, if kept cool by a continuous stream of cold water, will condense easily 2,000 gallons of proof spirit per day.

H. W. G. replies to W. P. S. P.'s query as to the area visible from an elevation of 400 feet: The height you mention gives a range of 20-25 miles all around giving a surface of, in round numbers, 1,200 square miles.

H. W. G. replies to R. H. D.'s query as to the sinking of the 1,000 feet tower: A sinking of 1/4 inch on one side would throw it out of perpendicular 4-90 inches at top. Settling 1/2 inch on one side and raising 1/4 on the other would throw it 9-98 inches away at top.

G. W. says, in answer to C. W. B., who asked for a cheap and efficient method of building a house, which will make it warmer and drier than any other plan in use: Put the studs one foot apart, and board perpendicularly (outside and inside) with 1 1/2 inch stock boards, making the joints on the center of the studs.

M. G. P. asks: How can I render a pair of buckskin gauntlets impervious to water?—A. D. asks: How can I prepare gelatin for molds to cast plaster of Paris undercut work?—A. B. asks for a formula for obtaining the force of the wind at different velocities.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

- On the Regulation of Patent Monopolies. By G. H. K.
On a Mathematical Problem. By H. M.
On Polishing a Parabolic Mirror. By W. B. C.
On Reclaiming the Colorado Desert. By R. d'H.
On Steam Engines and Turbine Wheels. By J. H.
On Drying Lumber by Steam. By H. G. B.

Also enquiries and answers from the following: A. W. M.—F. G. H.—F. R.—E. B. W.—C. J. T.—N. A. W.—J. P. F.

Several correspondents request us to publish replies to their enquiries about the patentability of their inventions, etc. Such enquiries will only be answered by letter, and the parties should give their addresses.

Correspondents who write to ask the address of certain manufacturers, or where specified articles are to be had, also those having goods for sale, or who want to find partners, should send with their communications an amount sufficient to cover the cost of publication under the head of "Business and Personal," which is specially devoted to such enquiries.

[OFFICIAL]

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Table listing various items such as 'Table, tailor's', 'Telegraph, student's', 'Telegraph, fac simile', etc., with corresponding prices.

3,241.—H. E. Wells, Van Wert, Van Wert county, O. Improvements on lumber-drying houses, called "Wells's Lumber Dryer." March 27, 1874.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter mentioned:

EXTENSIONS GRANTED.

27,609.—WRINGING MACHINE.—S. A. Bailey. 27,627.—CULTIVATOR.—C. M. Hall et al.

DESIGNS PATENTED.

7,251.—CLOCK CASE SASH.—G. Blakesley et al., Bristol, Ct. 7,252 & 7,253.—TYPE.—J. M. Conner, Greenville, N. Y.

TRADE MARKS REGISTERED.

1,682.—FLOUR BAGS.—L. D. Benner, Boston, Mass. 1,688.—UMBRELLA STRETCHERS.—Dawes et al., N. Y. city.

SCHEDULE OF PATENT FEES.

Table listing patent fees: On each caveat \$10, On each Trade Mark \$25, On filing each application for a Patent (17 years) \$15, etc.

CANADIAN PATENTS.

LIST OF PATENTS GRANTED IN CANADA. MARCH 27, 1874.

3,228.—William Sharp, Portland, Cumberland county, Me., U. S. Improvements in preparing and preserving fish, called "Sharp's Improvements in Preparing and Preserving Fish." March 27, 1874.

Advertisements.

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PATENTS

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Inventions examined, and advice as to patentability free. Patents obtained in the best manner, and with as little delay as possible. Caveats prepared from either model or drawings, and filed in the Patent Office at short notice. Special examinations as to the patentability of inventions made, at the Patent Office, on receipt of model or drawing and description; cost for this search and report, \$5.

Trade Marks.—The necessary papers for securing protection to manufacturers and merchants in this country and abroad are prepared at this office. Design Patents, for protecting artists and designers of any new ornamental work, are quickly and cheaply obtained through this office. Copyrights obtained.

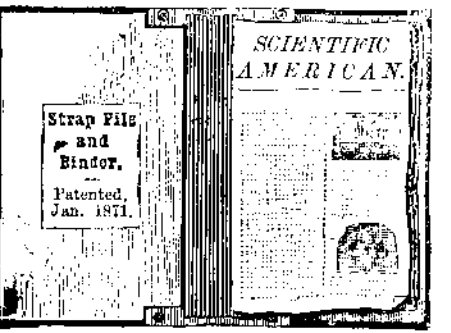
Foreign Patents are solicited in all countries where patent laws exist. Pamphlets, containing the cost and full particulars, mailed on application. Canada Patents.—Canada is one of the best countries for patents. The cost depends upon the length of time for which a patent is desired. Full particulars by mail on application.

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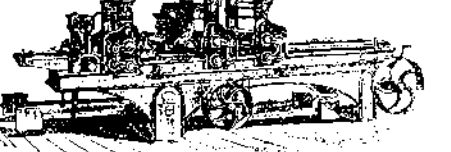
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