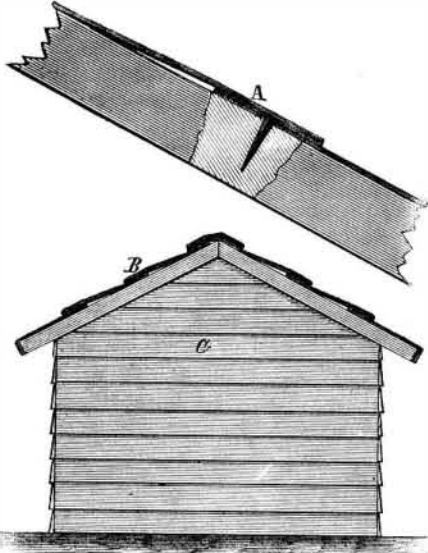


FAY'S ROOFING, FLOORING AND WEATHER-BOARDING PAPER.

Those oldest manufacturers of paper, the Chinese, have adapted this substance to many uses for which we employ other and more costly materials. Clothing, the soles of boots, household utensils, coverings for houses, etc., are among the varied uses to which paper is adapted by this ingenious people. We have not yet equaled them in diversity of employments for paper, but the engraving herewith given shows a use for paper specially prepared for the purpose. It is a paper made of manilla, hemp, or grass according to a process which makes it perfectly air and moisture proof.



The improvement is the subject of a patent issued through the Scientific American Patent Agency to C. J. Fay, in January, 1867, and includes the method of attaching the paper to the roofs, sides, flooring and ceiling of buildings, and to the decks of vessels, to awnings and carriages. The paper is manufactured in strips of proper width for the purpose required, and creased at regular intervals for folding and

marked for the insertion of the nails or tacks which secure it to the surface on which it rests. The plan protects the nails from oxidation by covering them with the impervious paper. This method may be seen at A, where the tack is driven through the paper into the board and the paper is then folded over it. It is used on the siding or roof of a house in the same manner, as seen at B and C.

It is claimed that for weather boarding, half-inch lumber is as good where this paper is used as inch stuff, where it is not used. The boards, even for the roof, need not be tongued and grooved, only matched by the saw. For floors, it is tacked down, and then painted if the floor is not to be carpeted. No moths will attack a carpet laid on this paper. For walls and ceilings it is intended to supersede laths and plaster, and it can be painted as desired, will wash clean without injury, and is said to be far superior for warmth to any plaster.

It is cheap, efficient, and easily applied, greatly reducing the cost of building. For more detailed information our readers are referred to C. J. Fay & Co., S. E. corner of Front and Vine streets, Philadelphia, Pa.

Tests of the Potter Rail.

In No. 4, current volume we illustrated a rail made of Bessemer steel and iron at the Wyandotte Rolling Mills, at Wyandotte Mich. The heads are of steel and the web and bottom of iron. A few weeks ago a test of the security of the weld was made, an account of which we copy from the *Journal of the Franklin Institute* :—

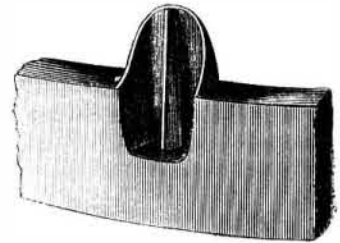
"A weight of sixteen hundred pounds was allowed to fall four feet upon a piece of Doddized rail five feet long; it broke at the first blow. A piece of the steel-headed rail made at Wyandotte was then put under the drop, and subjected to four blows as follows: For the first blow the weight was raised five feet; for the second, ten feet. The rail was then turned over, and received the third blow with a fall of fifteen feet; and the fourth blow with a fall of twenty feet, bent the rail almost double. The rail was then taken to the steam hammer whose weight was eight thousand eight hundred pounds, and received ten or twelve blows."

"When the bar was nearly straightened out, it broke, but the iron and steel remained perfectly welded together. One of these pieces was then subjected to one hundred blows from the eight thousand eight hundred pound hammer on the head

on the rail, as follows: Fifty blows at two feet fall, and fifty at three feet fall. This crushed the rail without breaking the weld of the iron and steel."

CUSTER'S IMPROVED TOE CALK FOR HORSES' SHOES.

This calk is formed with a ribbed projection produced by a displacement of its metal. The bar, when hot, is placed upon a die and with a blow the recess and central projection is formed. The ordinary calk is made by one end being drawn to a point and turned up at a right angle. This entails more labor and by being forced into the shoe weakens it, while the welding of the projection on this improved calk to the shoe adds to its strength. It is claimed that this calk has



advantages over both the ordinary and the two pronged calk, in greater durability of the shoe and greater economy of labor and material.

These calks can be made upon the anvil or from the bar under a drop, which for this purpose may be made very cheaply. The union between shoe and calk is very perfect, partaking of the nature of a dovetail, as the toe of the shoe is driven into the recess of the calk while the projection of the calk is welded into the shoe.

This device was patented Feb. 12, 1867, and rights of territory or manufacture may be obtained of Custer & Tull, Monroe, Mich.

ANÆSTHESIA has been tried by two French surgeons, on the track of the tri-facial nerve, in the external ear, to produce local insensibility under the extraction of teeth. Twenty four out of thirty-two operations were painless and three doubtful. A tonsil was removed without the slightest pain.

Advertisements.

A limited number of advertisements will be admitted in this page on the following terms:—
Seventy-five cents a line, each insertion, for solid matter; one dollar a line for space occupied by engravings.

SHINGLE BAND
State and County Rights For Sale.
SEND BIDS TO
J. W. WELLS & Co., Box 536,
ST. JOE, MO.
Patented Feb. 19, 1867.

SCOTCH GLASS TUBES, ASHCROFT
Gages, Indicators, and Counters for sale.
108* E. BROWN, 311 Walnut st., Philadelphia, Pa.

ZIMMERMAN'S PATENT STEAM COOKING APPARATUS.
For cooking all kinds of vegetables and meats at one time and together, without flavoring each other in the least. All offensive odors done away. Saves labor, fuel, and time. Dinner can be cooked over one stove hole. Fit any kind of stove. Several sizes: within reach of all. Soup can be made in lower receptacle, vegetables and meat cooked in center, and puddings steamed on top, at one time. Sealing is believing.
No patent ever issued has met with a greater success in the same period—200 steamers sold in this city in six weeks: none returned. Fifteen States sold in same time. We offer Massachusetts, Connecticut, Rhode Island, New York State, western half of Michigan, and Illinois without Cook County.
Large profits in their manufacture and sale. Send for illustrated circulars to
S. W. JOHNSON & CO.,
Detroit, Mich.
Full description and cut appeared some months ago in Scientific American. 18 208

LAW'S PATENT SHINGLE and HEAD-ING MACHINE—The simplest and best in use. Steam Cutters, Jointers, Equalizers, etc. Send for illustrated circular. Address **TREYOR & CO.,** 17 4* Lockport, N. Y.

IMPORTANT TO BLOCK MAKERS.—The subscriber would like to sell his patent for a Swivel Shackle Block, patented May 29, 1866. It is very simple in construction, perfect in its operation, and the best article of its kind ever patented. Parties engaged in making blocks will be licensed on reasonable terms, or a share of the profits taken in payment. Address **THOS. B. ROCHE,** Folsom, Cal. 17 8*

AGENTS WANTED.

\$200 Per Month and Expenses Paid Male or Female Agents, to introduce a New and Useful Invention, of absolute utility in every household. Agents preferring to work on Commission can earn from \$10 to \$20 per day. For full particulars, in close stamp, and address **W. G. WILSON & CO.,** 16 084*

EUROPEAN AGENCY for the Exhibition and Sale of American Patents and Manufactures. **BLANCHARD & MCKEAN.** No. 82 Boulevard de Sebastopol, Paris, France. **GEO. A. BLANCHARD,** 10 0813* **J. A. MCKEAN.**

MACHINERY.—We are prepared to furnish **FIRST-CLASS MACHINISTS' TOOLS OF EVERY DESCRIPTION, ON SHORT NOTICE AND REASONABLE PRICES.**

SAMPLES of the TOOLS manufactured by us may be seen at our Ware-room, and we invite an inspection of their Workmanship and Design by those in want of superior Machinery.
NEW YORK STEAM-ENGINE CO.
Office and Ware-room
7 08 19* 222 Pearl street, New York.

CIRCULAR SAWS,



EMERSON'S PATENT MOVABLE TEETH.

These Saws cut More and Better Lumber in the same time, and with Less Power, than any other Saw in the world, with Less Expenditure of Labor and Files to keep in order, and never Wear Smaller. Also,

EMERSON'S PATENT GAUGING AND SHARPENING SWAGE,
For Spreading the Points of Saw Teeth. Send for New Descriptive Pamphlet, with Price List.

AMERICAN SAW COMPANY, 15 8*
2 Jacob street, near Ferry street, New York.

TURBINE WATER WHEELS.



The **REYNOLDS PATENT** embodies the progressive spirit of the age. Simplicity, Economy, Durability, Accessibility all combined. The only Turbine that excels Overshots. Awarded the Gold Medal by American Institute.
Shafting, Gearing and Pulleys furnished for all kinds of Mills, made on Mechanical Principles, under my personal supervision,
having had long experience. Circulars sent free.

GEORGE TALLCOT,

17 11—H] No. 96 LIBERTY STREET, NEW YORK.

WILD MOSS MILLS, Carrollton, Mo., March 14, 1867.
LONZO WARREN, Esq., Boston, Mass.:
Dear Sir—The first-class, high finished, hollow shaft, globe coupling Turbine Water Wheel purchased of you last summer has been running three months. Went together like a clock; runs strong and steady; economical in using water; journals work cool; answers all recommendations. I am well pleased—satisfied enough to pay for this unsolicited notice of its merits through the Scientific American. Respectfully yours,
J. F. LAWTON.

Quick Applications.—When, from any reason, parties are desirous of applying for Patents or Caveats, in **GREAT HASTE,** without a moment's loss of time, they have only to write or telegraph us specially to that effect, and we will make special exertions for them. We can prepare and mail the necessary papers at less than an hour's notice, if required.

HOW TO OBTAIN PATENTS.

The first inquiry that presents itself to one who has made any improvement or discovery is: "Can I obtain a Patent?" A positive answer can only be had by presenting a complete application for a Patent to the Commissioner of Patents. An application consists of a Model, Drawings, Petition, Oath, and full Specification. Various official rules and formalities must also be observed. The efforts of the inventor to do all this business himself are generally without success. After a season of great perplexity and delay, he is usually glad to seek the aid of persons experienced in patent business, and have all the work done over again. The best plan is to solicit proper advice at the beginning.

If the parties consulted are honorable men, the inventor may safely confide his ideas to them; they will advise whether the improvement is probably patentable, and will give him all the directions needful to protect his rights.
We (**MUNN & CO.**) have been actively engaged in the business of obtaining patents for over twenty years—nearly a quarter of a century. Many thousands of inventions have had benefit from our counsels. More than one-third of all patents granted are obtained by us. Those who have made inventions and desire to consult with us, are cordially invited to do so. We shall be happy to see them in person, at our office, or to advise them by letter. In all cases, they may expect from us an *honest opinion.* For such consultations, opinion, and advice, we *make no charge.* A pen-and-ink sketch, and a description of the invention should be sent, together with stamps for return postage. Write plainly do not use pencil nor pale ink; be brief.
All business committed to our care, and all consulta-

tions, are kept by us *secret and strictly confidential.* Address **MUNN & CO.,** 37 Park Row, New York.
Extensions.—The applicant for an extension must file his petition and pay in the requisite fee at least ninety days prior to the expiration of his patent. There is no power in the Patent Office to renew a patent after it has expired. The preliminary business to extend a patent should be commenced at least six months prior to the expiration.
Many valuable patents are annually expiring which might readily be extended, and, if extended, might prove the source of wealth to their fortunate possessors.
All the documents connected with extensions require to be carefully drawn up and attended to, as any failure discrepancy, or untruth in the proceedings or papers is liable to defeat the application.
In case of the decease of the inventor, his administrator may apply for and receive the extension; but no extension can be applied for or granted to an assignee of an inventor. Parties desiring extensions will address **MUNN & CO.,** 37 Park Row, N. Y.

Zur Beachtung für deutsche Erfinder.

Nach dem neuen Patent-Gesetze der Vereinigten Staaten, können Deutsche, sowie Bürger aller Länder, mit einer einzigen Ausnahme, Patente zu denselben Bedingungen erlangen, wie Bürger der Vereinigten Staaten.
Erfindungen über die, zur Erlangung von Patenten nötigen Schritte, können in deutscher Sprache schriftlich an uns gerichtet werden und Erfinder, welche persönlich nach unserer Office kommen werden von Deutschen prompt bedient werden.

Die Patentgesetze der Vereinigten Staaten, nebst den Regeln und der Geschäftsordnung der Patentoffice, und Anleitungen für die Erfinder um sich Patente zu sichern, sind in Buch-Format von uns in deutscher Sprache herausgegeben, und werden gratis an alle begehrt, welche darum mündlich oder schriftlich eintommen.
Man adressire

MUNN & CO.
37 Park Row, New York.

Scientific American ENLARGED FOR 1867.

This is the oldest, the largest and most widely circulated journal of its class now published. It is the constant aid of the Editors to discuss all subjects relating to the industrial arts and sciences, in a plain, practical, and attractive manner.

It would be impossible within the limits of a Prospectus, to enumerate the great variety of subjects discussed and illustrated. A few only can be indicated, such as Steam and Mechanical Engineering, Fire-arms, Mechanics' Tools, Manufacturing Machines, Farm Implements Hydraulic Engines, Wood-working Machines, Chemical Apparatus, Household Utensils, Curious Inventions, beside all the varied articles designed to lighten the labors of man in the Shop, Factory, Warehouse, and Household. The **SCIENTIFIC AMERICAN** has always been the Advocate of the Rights of American Inventors. Each number contains a weekly list of Claims of Patents, furnished expressly for it by the Patent Office, together with notes descriptive of American and European Patented Inventions.

Patent Law Decisions, and questions arising under these laws, are fully and freely discussed by an able writer on Patent Law.

Published Weekly, two volumes each year, commencing January and July,

Per annum.....\$3 00
Six months..... 1 50
Ten copies for One Year..... 25 00
Canada subscriptions, 25 cents extra. Specimen copies sent free Address

MUNN & CO., Publishers,
No. 37 Park Row, New York City