



PATENTS

GRANTED
FOR SEVENTEEN YEARS.
MUNN & COMPANY,

In connection with the publication of the SCIENTIFIC AMERICAN, we act as Solicitors and Attorneys for procuring "Letters Patent" for new inventions in the United States and in all foreign countries during the past seventeen years. Statistics show that nearly ONE-THIRD of all the applications made for patents in the United States are solicited through this office; while nearly THREE-FOURTHS of all the patents taken in foreign countries are procured through the same source. It is almost needless to add that, after seventeen years' experience in preparing specifications and drawings for the United States Patent Office the proprietors of the SCIENTIFIC AMERICAN are perfectly conversant with the preparation of applications in the best manner, and the transaction of all business before the Patent Office; but they take pleasure in presenting the annexed testimonials from the three last ex-Commissioners of Patents.

Messrs. MUNN & Co.—I take pleasure in stating that, while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE CAME THROUGH YOUR HANDS. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed. In all your intercourse with the office, a marked degree of promptness, skill, and fidelity to the interests of your employers. Yours very truly,
CHAS. MASON.

Judge Mason was succeeded by that eminent patriot and statesman, Hon. Joseph Holt, whose administration of the Patent Office was so distinguished that, upon the death of Gov. Brown, he was appointed to the office of Postmaster-General of the United States. Soon after entering upon his new duties, in March, 1859, he addressed to us the following very gratifying letter.

Messrs. MUNN & Co.—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents, while I had the honor of holding the office of Commissioner. Your business was very large, and you possessed (and I doubt not justly deserved) the reputation of energy, marked ability, and uncompromising fidelity in performing your professional engagements. Very respectfully, your obedient servant,
J. HOLT.

Hon. Wm. D. Bishop, late Member of Congress from Connecticut, succeeded Mr. Holt as Commissioner of Patents. Upon resigning the office he wrote to us as follows:

Messrs. MUNN & Co.—It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your agency; and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully, your obedient servant,
WM. D. BISHOP.

THE EXAMINATION OF INVENTIONS.

Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit it to us, with a full description, for advice. The points of novelty are carefully examined, and a written reply, corresponding with the facts, is promptly sent, free of charge. Address MUNN & Co., No. 37 Park Row, New York.

As an evidence of the confidence reposed in their Agency by inventors throughout the country, Messrs. MUNN & Co. would state that they have acted as agents for more than TWENTY THOUSAND inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of inventors and patentees, at home and abroad. Thousands of inventors for whom they have taken out patents have addressed to them most flattering testimonials for the services rendered them; and the wealth which has inured to the individuals whose patents were secured through this office, and afterwards illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! Messrs. MUNN & Co. would state that they never had a more efficient corps of Draughtsmen and Specification Writers than those employed at present in their extensive offices, and that they are prepared to attend to patent business of all kinds in the quickest time and on the most liberal terms.

PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE.

The service which Messrs. MUNN & Co. render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there; but is an opinion based upon what knowledge they may acquire of a similar invention from the records in their Home Office. But for a fee of \$5, accompanied with a model, or drawing and description, they have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a patent, &c., made up and mailed to the inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through the Branch Office of Messrs. MUNN & Co., corner of F and Seventh streets, Washington, by experienced and competent persons. Many thousands of such examinations have been made through this office, and it is a very wise course for every inventor to pursue. Address MUNN & Co., No. 37 Park Row, New York.

THE VALIDITY OF PATENTS.

Persons who are about purchasing patent property, or patentees who are about erecting extensive works for manufacturing under their patents, should have their claims examined carefully by competent attorneys, to see if they are not likely to infringe some existing patent, before making large investments. Written opinions on the validity of patents, after careful examination into the facts, can be had for a reasonable remuneration. The price for such services is always settled upon in advance, after knowing the nature of the invention and being informed of the points on which an opinion is solicited. For further particulars address MUNN & Co., No. 37 Park Row, New York.

The Patent Laws, enacted by Congress on the 2d of March, 1871 are now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

The law abolishes discrimination in fees required of foreigners, excepting natives of such countries as discriminate against citizens of the United States—thus allowing Austrian, French, Belgian, English, Russian, Spanish and all other foreigners, except the Canadians, to enjoy all the privileges of our patent system (except in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

CAVEATS.

Persons desiring to file a caveat can have the papers prepared in the

shortest time by sending a sketch and description of the invention. The Government fee for a caveat is \$10. A pamphlet of advice regarding applications for patents and caveats is furnished gratis, on application by mail. Address MUNN & Co., No. 37 Park Row, New York.

REJECTED APPLICATIONS.

Messrs. MUNN & Co. are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of their Washington Agency to the Patent Office affords them rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Their success in the prosecution of rejected cases has been very great. The principal portion of their charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted, are invited to correspond with MUNN & Co., on the subject, giving a brief history of the case, inclosing the official letters, &c.

HOW TO MAKE AN APPLICATION FOR A PATENT.

Every applicant for a patent must furnish a model of his invention susceptible of one; or, if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the Government fees, by express. The express charge should be prepaid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by a draft on New York, payable to the order of Messrs. MUNN & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but, if not convenient to do so, there is out little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & Co., No. 37 Park Row New York.

MUNN & Co. wish it to be distinctly understood that they do not speculate or traffic in patents, under any circumstances; but that they devote their whole time and energies to the interests of their clients.

Patents are now granted for SEVENTEEN years, and the Government fee required on filing an application for a patent is \$15. Other charges in the fees are also made as follows:—

On filing each Caveat.....	\$10
On filing each application for a Patent, except for a design.....	\$15
On issuing each original Patent.....	\$20
On appeal to Commissioner of Patents.....	\$20
On application for Re-issue.....	\$50
On application for Extension of Patent.....	\$50
On granting the Extension.....	\$40
On filing a Disclaimer.....	\$10
On filing application for Design (three and a half years).....	\$10
On filing application for Design (seven years).....	\$15
On filing application for Design (fourteen years).....	\$20

SEARCHES OF THE RECORDS.

Having access to all the official records at Washington, pertaining to the sale and transfer of patents, MESSRS. MUNN & CO. are at all times ready to make examinations as to titles, ownership, or assignments of patents. Fees moderate.

ASSIGNMENTS OF PATENTS.

The assignment of patents, and agreements between patentees and manufacturers, carefully prepared and placed upon the records at the Patent Office. Address MUNN & Co., at the Scientific American Patent Agency, No. 37 Park Row, New York.

FOREIGN PATENTS.

Messrs. MUNN & Co. are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business they have offices at Nos. 66 Chancery Lane London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. They think they can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through their agency.

Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Any one can take out a patent there.

Circulars of information concerning the proper course to be pursued in obtaining patents in foreign countries through MUNN & CO'S Agency, the requirements of different Government Patent Offices, &c., may be had, gratis, upon application at the principal office, No. 37 Park Row, New York, or any of the branch offices.

INVITATION TO INVENTORS.

Inventors who come to New York should not fail to pay a visit to the extensive offices of MUNN & Co. They will find a large collection of models (several hundred) of various inventions, which will afford them much interest. The whole establishment is one of great interest to inventors, and is undoubtedly the most spacious and best arranged, in the world.

COPIES OF PATENT CLAIMS.

MESSRS. MUNN & Co., having access to all the patents granted since the rebuilding of the Patent Office, after the fire of 1836, can furnish the claims of any patent granted since that date, for \$1.

EXTENSION OF PATENTS.

Many valuable patents are annually expiring which might readily be extended, and if extended, might prove the source of wealth to their fortunate possessors. Messrs. MUNN & Co. are persuaded that very many patents are suffered to expire without any effort of extension, owing to want of proper information on the part of the patentees, their relatives or assigns, as to the law and the mode of procedure in order to obtain a renewed grant. Some of the most valuable grants now existing are *about* to expire. Patentees, or, if deceased, their heirs, may apply for the extension of patents, but should give ninety days' notice of their intention.

Patents may be extended and preliminary advice obtained, by consulting, or writing to, MUNN & Co., No. 37 Park Row, New York.

UNCLAIMED MODELS.

Parties sending models to this office on which they decide not to apply for Letters Patent and which they wish preserved, will please to order them returned as early as possible. We cannot engage to retain models more than one year after their receipt, owing to their vast accumulation, and our lack of storage room. Parties, therefore, who wish to preserve their models should order them returned within one year after sending them to us, to insure their obtaining them. In case an application has been made for a patent the model, as in deposit at the Patent Office, and cannot be withdrawn.

It would require many columns to detail all the ways in which the inventor or Patentee may be served at our offices. We cordially invite all who have anything to do with patent property or inventions to call at our extensive offices, No. 37 Park Row, New York, where any questions regarding the rights of Patentees, will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid) should be addressed to MUNN & Co., No. 37 Park Row, New York.



J. G., of Ill.—You should have your boiler tested. We cannot inform you what pressure it would safely bear from a knowledge of the fact that it is worn to a sixteenth in some places. Get a force pump and force water into it at pressure one-fourth greater than you desire to work at, and you will find what it is capable of with standing. The water should be hot, not cold.

G. W., of Ill.—We know of no books that will make an individual a mechanical engineer or engine-tender—that is acquired by practice. Works containing useful information can be had by addressing H. C. Baird, No. 406 Walnut street, Philadelphia.

S. J. & Co., of Wis.—For full directions for galvanizing iron, see page 243, Vol. XI., SCIENTIFIC AMERICAN.

N. J., of Pa.—The unpleasant odor of the dead oil from gas tar comes from the naphthaline contained in the oil, and is no practicable method for removing it; its boiling point corresponds so nearly with that of the other portion of the oil that it cannot be separated by fractional distillation, and its chemical affinities are so inert that it cannot be extracted by combination.

Some Machinists, of N. Y.—A hollow column is not in all cases stronger than a solid one. To support a crushing strain a solid column is stronger, but the same amount of metal put into a hollow column is stronger to resist a transverse strain than a solid one. There is no such technical phrase among machinists as screws with *soft* threads. You have either misunderstood some thing you have heard or been imposed upon. Double and treble thread screws are cut to obtain quick pitches on small rods. A quick pitch of a single thread on a small rod would cut it off if it were made deep enough to hold. By having double or quadruple the number, this trouble is obviated, but the speed of a nut or worm-wheel driven by a four-threaded screw is no quicker than a single thread of the same pitch. Screws are sometimes cut with square and sometimes with V threads, to conform to the nature of the work they have to do.

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Works at Woodbridge, N. J. Office and Depot foot of Hammond street, New York. 21 4*

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—New and useful inventions manufactured, introduced and sold on commission. Agents wanted. 121 21 RICE & CO.

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Power.—Root's Double Reciprocating. For engraving and description of which see SCIENTIFIC AMERICAN, Vol. X., page 193. Has been used about 3 months. Reason for selling now, use water power. Cost \$800. Price \$5.00. Address NELSON P. AKIN, Philmont, Col. Co., N. Y. 21 4*

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for \$20 the following parts of a new Steam Engine, all in good order: Cylinder 2 1/2 by 6 in. stroke; Steam Chest, Valves, Bed Plate, Cross-head, Piston and Rod, Cylinder Cover. 21 E. P. WATSON, Box 778, New York.

\$75.00.—SELF-REGULATING STORM-DEFY-
ING Wind Power and Pump complete; simple, durable, several sizes for pumping, grinding, sawing, etc. 1* A. P. BROWN, Worcester, Mass.

TO AGRICULTURISTS AND SCIENTIFIC MEN.—For sale—A complete set of the "Natural History of the State of N. Y.," 22 vols., and map, \$10; Annual Reports of "N. Y. W. Agricultural Society," complete, except 1841-3, and 4, 20 vols. Set Annual Reports of "American Institute," 19 vols. The above in complete order. Address G. J. G., Box 194, Syracuse, N. Y. 21 2*

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Screws and Machine screws, constantly on hand for sale by LEACH BROTHERS, No. 65 Liberty street, New York. 21 12*

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feet long, 4 feet wide, and 3 feet 8 inches high in clear; it has two sliding leads on cross bar, to work two tools at the same time; it will weigh about 12 tons; has been some used; is now in first rate working order; is of modern build; can be seen in operation at our factory, where all kinds of Machinists' Tools are made to order. Nos. 4 and 6 Hill street, Rochester, N. Y. 21 4* A. M. BADGER & CO.

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by Prof. H. DUNSAUCE, Chemist. Consultations on Chemistry applied to Arts and Manufactures, Agriculture, Metallurgy, Pharmacy, Etc. Advice on Chemical Fabrication, with Plans of Factories and Drawings of Apparatus. Analysis and Commercial Assays of every kind. Address New Lebanon, N. Y. 1*

TO SOAP MANUFACTURERS.—PLANS OF FAC-
TORIES, Drawings of Apparatus, Recipes to prepare Lyes and the following soaps:—Castile, Hard Soap, Fancy, Rosin, Family, Palm, Cocoa, Toilet, Transparent, Scented, Etc. Analysis of Alkalies, Greases, Oils, Soaps, Etc. Address: rot. H. DUNSAUCE, Chemist, New Lebanon, N. Y. 1*

VALUABLE PATENT FOR SALE.—HAVING OB-
TAINED A Patent on an improved Harness Saddle which will not chafe or injure the horse's back, dated May 9, 1865, (see claim in the list on another page of this number), I wish to dispose of the same. Address ADOLPH KOEHLER, Holyoke, Mass.

THE MOST VALUABLE MACHINE for Builders and Carpenters, Furniture, Carriage, Agricultural Implement, Sash and Door, Waxed and Straight, Molding and Piano Manufacture...

A SAFE STEAM BOILER.—THE ATTENTION OF Manufacturers and others is confidently called to the HARRISON BOILER, a New Steam Generator, combining essential advantages...

PLATINA—WHOLESALE AND RETAIL—FOR ALL purposes. H. M. RAYNOR, Importer, No. 748 Broadway, New York.

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THE UNION MOLDING MACHINE—BEST IN USE.—For circulars address H. A. LEE, patentee, Worcester, Mass.

PATENT EXCHANGE, NO 229 BROADWAY, NEW YORK.—Patents and manufactured articles introduced and sold on commission.

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OIL! OIL! OIL! For Railroads, Steamers, and for Machinery and Burning PEASE'S Improved Engine Oil, and for Oils, indorsed and recommended by the highest authority in the United States and Europe.

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PORTABLE STEAM ENGINES—COMBINING THE maximum of efficiency, durability, and economy with the minimum of weight and price. They are widely and favorably known, more than 300 being in use.

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WATER WHEELS.—THOSE WHO WISH TO GET a large amount of power from a small quantity of water should use Warren's Turbine Water Wheel.

REYNOLDS' TURBINE WATER WHEELS.—COMBINE PATENT men are employed to measure streams, make plans, and put in flumes, wheels, and gearing.

BOILER INCrustATIONS.—A MOST VALUABLE discovery and perfectly ready for the removal of scale in fresh and salt water boilers. Has been thoroughly tried with perfect success.

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Munn & Co., 37 Park Row, New York. Auf der Office wird deutsch gesprochen. Die Patent-Befehle der Vereinigten Staaten, weiß den Regeln und der Geschäftsführung der Patent-Office und Anleitungen für den Erfinder, unjüngst Patente zu sichern, in den Vereinigten Staaten sowohl als in Europa.

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ANDREWS' PATENT OSCILLATING ENGINES.—A Double and Single Engines, from 1/2 to 125-horse power, finished at short notice. These engines leave the shop ready for use, require no special foundation, are compact, light and simple, and economical of power.

DAMPER REGULATORS—GUARANTEED TO EFFECT a great saving in fuel, and give the most perfect regulation of power. For sale by the subscribers, who have established their exclusive right to manufacture damper regulators, using diagrams or sections of any kind.

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NEW STEAM ENGINE FOR SALE—250 H. P., HORIZONTAL; cylinder 6 feet stroke, 30 inch diameter. Built at the Burdon Iron Works, Brooklyn, N. Y.

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FOR SALE.—ONE SINGLE AND ONE DOUBLE Circular saw-mill (in the West). One new 40 H. P. Steam Engine, in New York state. One large and several small Engine Lathes.

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WOOD-WORKING MACHINES.—ONE 24-IN. IRON Frame, Double Surface; one 6-inch Molding M.; Improved Style; one Turning M.; one Scroll saw; one Power Mortiser; one Boring M.; three Saw Benches; one Blind Boring M.; one Elms Blind Slat M.; one Hub-mortising M., Etc.

LUNKENHEIMER'S IMPROVED GLOBE VALVE: A complete assortment of Brass Work for Locomotives, Portable and Stationary Engines.

MESSEURS LES INVENTEURS.—A VIS IMPORTANTE Les inventeurs non familiers avec la langue Anglaise, et qui préféreraient nous communiquer leurs inventions en Français, peuvent nous adresser dans leur langue natale.

Improved Gang Plow.

Keeping a plow straight in the furrow and lifting it in and out at the end of each row, as well as over roots or big stones that happen to be in the way, is the hardest part of that hard task—plowing; for if the plow is properly made, it will hold its own cut and never require bearing down.

The engraving published herewith shows a ma-

chine for rendering hard work easy. All the labor above alluded to is avoided by the employment of simple mechanism, which can be easily seen by referring to the engraving. The arrangement consists in fixing a gang of plows, A, of any desired form, to several frames, B, which are independent of each other, and so contrived that they can be adjusted

the driver's seat, and which, being grasped, enables him to elevate the plows at will whenever it is necessary to do so. They are not only lifted easier by this method, but quicker and straighter, so that they may run close up to a stone or stump, be lifted up by the side of it, and let down again opposite with but little loss of space.

It will be seen that by setting the plows under the

months to effect the object, it is now attained in as many days. The tan vat here illustrated is intended to facilitate the process and improve the quality of the material; very good results are said to be obtained from it. In detail the vat is constructed with an air-tight cover, A, held down by clamps, B; the inner surface near the top being provided with racks, C, so that rods can be placed therein and the hides suspended from them, as at D. These hides are continually immersed in the tanning liquid up to the top, or nearly so.

The improvement further consists in agitating the tanning liquor by a current of air or other gas under pressure, and the tank is therefore furnished with a pipe, E, through which a continuous current of air is forced at a pressure varying from 5 to 20 pounds per square inch; this causes the tanning liquor to be violently agitated, and to act on the surface and enter the pores of the skin, so as to penetrate it with great effect. There is a safety valve at F, Fig. 2, through which the superabundant pressure passes off.

By this method all handling of the hides is obviated, and the process completed in a few days.

A patent on this invention was procured through the Scientific American Patent Agency on the 10th January, 1865, and application for a reissue is now pending. For further information, address Messrs. Kennedy & Elder, 205½ Walnut street, Philadelphia, Pa.



MITCHELL'S GANG PLOW.

center of the machine, and connecting them under the draught pole, they hold their furrow and never jump out or miss. When desired, the plows can be taken off and cultivators substituted.

This arrangement gives a very neat and efficient machine for the purpose. It was patented Feb. 14th, 1865, by S. H. Mitchell, of El Paso, Ill., through the

center of the machine, and connecting them under the draught pole, they hold their furrow and never jump out or miss. When desired, the plows can be taken off and cultivators substituted.

Fig. 1

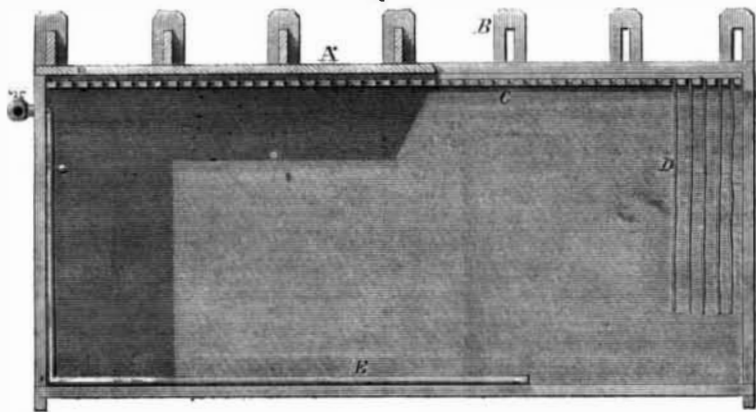
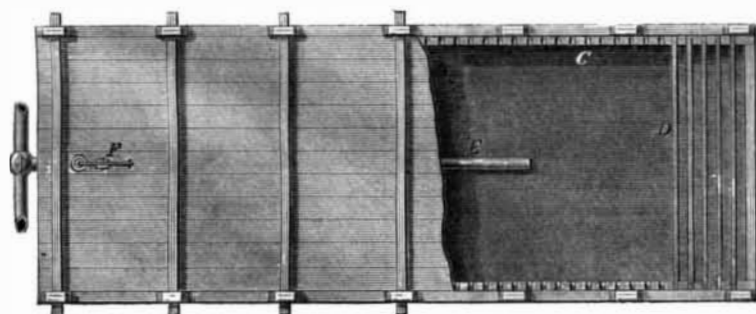


Fig. 2



KENNEDY & ELDER'S TAN VAT:

sideways in order to suit crops of different kinds that may be planted in different ways. One end—the forward one—of the frame is connected to the draught pole of the machine by suitable fixtures, and at the latter, or hinder parts, by chains to a transverse shaft, C; this shaft has a lever, D, in it, which is close to

Scientific American Patent Agency; for further information address him at that place.

Improved Tan Vat.

Very great improvements in tanning hides have been made of late years. Where it formerly required

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