

one would be better, as the friction of the steam in the pipe would be sufficiently less to compensate for the loss of heat by radiation, etc., by the saving in fuel, if it costs as much as it does generally.

CUTTING BEVELS.—C. H. S. asks for a rule for mitering bevels or "flaring boxes." I submit two methods, original as far as I know.

CASE HARDENING.—If E. N. G. will make a paste of prussiate of potash, and cover his screws and nuts with it, and then heat until red hot, he will have them case hardened.

Queries.

[We present herewith a series of inquiries embracing a variety of topics of greater or less general interest. The questions are simple, it is true, but we prefer to elicit practical answers from our readers.]

1.—LIQUID GLUE.—M. M., Havana, Cuba, asks:—Can any of your correspondents inform me through your scientific paper, how to prepare a good liquid glue for banks, commercial offices, and general use?

2.—MARKING FLUID.—Will some of your many readers inform me how to make a good marking fluid, for marking boxes, barrels, etc?—R. W. R.

3.—VENTILATING ICE HOUSES.—Can any of your correspondents tell me the best way to ventilate ice houses?—J. M. D.

4.—BINIODE OF MERCURY IN SOLUTION.—I often have prescriptions calling for bichloride of mercury with potass iodide, combining which have the biniodide of mercury (Hg I 2) as a precipitate. I wish to inquire through your columns how to retain the salts in solution.—H. G. I.

5.—SOLDERING CAST IRON.—Will you inform us what preparation has been most successfully used for putting solder on to cast iron?—G. D. & S.

6.—DECAY OF INDIA RUBBER BANDS.—Is there any manner of rendering elastic rubber bands proof against decay? Those now in use in business houses are useless after a year or two.—W. H. S.

7.—DEOXIDISING ZINC.—Can any one inform me of any method by which I can restore oxidized zinc or spelter? I use it in a liquid state, but have a great deal of waste by over heating.—G. A.

8.—FIREPROOFING TIMBER.—Can any one inform us of any wash that can be applied to wood to make it fireproof? We have a building of easily fired timber, and would like to avert the danger.—K. K. & W.

9.—COMPOUND GEARING ON SCREW CUTTING LATHE.—I wish a simple and reliable rule for compounding gearing on screw cutting lathes, the traverse screw having four threads to the inch.—R. F. S.

10.—BATTERY POWER.—How many cups of Daniell's battery would be required to work a telegraph line 650 feet long with common sounders at each end? The wire is copper, No. 16.—E. M. D.

11.—SALT AND ICE.—Why is salt mixed with ice to freeze ice cream, while, in winter, we put salt in our pumps to keep them from freezing?—M. A.

12.—CARBON BATTERY PLATES.—I wish to know how to make carbon battery plates for voltaic batteries.—A. N.

13.—DRESSING FOR SHOES.—Can anyone give me a receipt for making the best dressing for ladies' and children's shoes, waterproof, and that will not injure the leather?—M. L. K.

14.—FREEZING OF MORTAR.—Does lime mortar undergo any chemical change by freezing when in a soft state? I am informed that it is customary, upon the continent of Europe and in England, for all lime mortar which is to be used in the masonry of buildings of importance to be made up months, or perhaps longer, before it is used.

15.—RESULTANT POWER.—Does the resultant equal the power applied, in that class of machinery where the power is applied at the axle (as in reapers), no account being taken of friction or the power required to draw the weight of the machine? If any power is lost, how can it be accounted for, or, in other words, what becomes of it?—C. A. B. of Ill.

16.—LAND AND SEA BREEZES.—I would like to inquire what causes the wind to moderate at sun setting, and then a breeze to get up after dark? I have often noticed the same at sea, and on land in heavy gales.—B. R., Jr.

17.—JEWELLER'S LAP.—Can any one give me directions for making a lap, such as is used generally by jewellers in polishing? I want to know what the different kinds of metals are, and their proportions, so that I may cast one.—O. B. F.

18.—REVOLUTION OF BODIES.—The following question has given rise to a good deal of discussion in this place, and both parties have agreed to leave the matter for your readers to decide: A man starts to go around a squirrel that is on the trunk of a tree, and, as the man goes round, the squirrel travels around the tree, and remains in the same position to the man until both arrive at the point whence they started. Does the man go round the squirrel?—R. O. H.

19.—HYGROMETER.—I wish to know what to do with my hygrometer, that is, the wet bulb thermometer, when it is so cold that water freezes, so that I can find the relative humidity of the air? Is there an instrument made called a hygrodeik?—T. M., Jr.

20.—ANNEALING LAMP CHIMNEY.—Every person who has used a "German Study Lamp" one season, knows that the glass chimneys of the kerosene lamps in common use are an imposition on the public. Can any of your readers give a simple process to anneal or temper them, so that they, with judicious care and careful usage, will not be broken by the heat of its burning wick?—R. L. B.

21.—MARKING INK.—How can I make a good marking ink, suitable for marking boxes and barrels, etc?—T. L. S.

22.—RESTORING BUFFALO ROBES.—What can be applied to buffalo robes to make them soft and pliable after having been wet?—T. L. S.

23.—SOFTENING LEAD.—Will some one please give me, through your paper, a receipt for softening lead, that has become hard by repeated melting and using?—C. W. L.

24.—BRONZING.—Can any one give me some information about bronzing? And where can I obtain a work on bronzing, and which is the best work to get?—C. R.

Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.

CUTTING AND ASSORTING PLAYING CARDS AND STRIPS.—Victor E. Mauger of New York city.—This invention has for its object to produce simple and effective means for assorting—that is to say, putting upon one another in regular order—the several strips or pieces cut from strips.

WATCH ESCAPEMENT.—Don J. Mozart, of New York city.—The ordinary escapement has a projecting pin or ruby on the staff, which receives an impulse from the double pronged anchor alternately in opposite directions.

BORING MACHINE.—Frank S. Allen and Charles F. Ritchel, of New York city.—This improved boring machine is designed more especially for use in boring holes upon a flare and at different inclinations, and is so constructed and arranged that all the holes, whatever or however different their inclination, may be bored at the same time and at one operation; and it consists in the construction and combination of various parts, which can not well be described in such a notice as the present, but which constitute a very ingenious invention.

KEY FOR SEWING MACHINE LOCK.—Edward L. Gaylord, of Bridgeport, Conn.—This invention has for its object to furnish an improved key for locks to be attached to sewing machine covers and other articles that are turned up or over so that the key is liable to fall out and be lost, and which shall be so constructed as to retain its place in the key hole however much the article to which the lock is attached may be turned up.

ASH PANS FOR STEAM BOILERS.—John Gates, of Portland, Oregon.—This invention consists in certain improvements in connection with the ash pans of steam boilers. A surrounding pan, within which the ash pan is placed, is so adjusted that a water space will be formed between the two.

ROCK DRILLING APPARATUS.—Lycurgus Nelson, of Smyrna, Tenn.—This invention has for its object to so combine the necessary shafts and devices of a power drill that either of the processes of drilling, extracting tools, and sand pumping may be carried on without much preparation or difficult change or gearing.

COMBINED WASHER AND BOILER.—George C. Taylor and John B. Christian, Port Jervis, N. Y.—This invention furnishes an improved washing machine, claimed to be very effective in operation, washing the clothes quickly, thoroughly, and without injuring them, and, at the same time, so constructed that the water may be heated and the clothes boiled in the machine.

SKATE FASTENINGS.—Edward Lawson Fenerty, Halifax, Canada.—This invention has for its object to furnish an improved skate fastening which shall be light, strong, simple, and inexpensive, and so constructed that it may be firmly secured to the boot by a single motion.

APPARATUS FOR TESTING CANS, BARRELS, ETC.—William D. Brooks, Baltimore, Md.—In this case, an apparatus is constructed for testing cans, barrels, and other vessels, by forcing air into the same, so that, if the vessel is not perfectly tight, the condensed air therein will leak out and indicate the spot where the hole is, the fact of leakage being revealed by the backward rotation of the index of a pressure gage that is connected with the force pump.

FIRE PLACE FENDERS.—Charles C. Algeo, Pittsburgh, Pa.—This invention consists in having an inwardly projecting flange at the base of the fender with the spindle or pivot of the caster passing through said flange up to the under side of the top of the fender, where a cavity is made for the reception of the top of the spindle, and the latter is confined against falling out by a pin passing through it above the aforesaid flange.

FLUTING SAD IRONS.—Edward A. Franklin, of Brenham, Texas.—This invention relates to a new combination of fluting and sad iron, of such kind that the upper fluting roller will serve as handle for the sad iron, there being thus no loose or separate parts required for the two functions.

LIFTING JACKS.—Walter S. Burgin, of Washington, Vt.—This invention relates to a new arrangement of parts constituting a lifting mechanism for a wagon jack. The case or main frame of the jack is made in form of a rectangular narrow box, standing on a stout base or board, and open on top for the reception of a lifting slide.

SASH HOLDERS.—Charles T. Tessier, of New York city.—This invention consists of a T headed lever, a sliding locking bolt with a retracting spring, a flexible locking roller, and a shifting inclined plate in connection with said roller, all arranged in a case adapted to be applied to the stile of the sash, and to lock the sashy the bolt, and free it from the flexible roller by a down movement of the lever, the bolt being employed for locking the sash when down.

STONE CRUSHER.—Peter Wood, Jersey City, N. J.—This is a powerful machine, the principle of which may be briefly described as follows: A fly wheel shaft receives power from a belt, and through a crank of short radius and a stout pitman, actuates a powerful lever, which, through a bar, applies the force thus multiplied to toggle levers which actuate a pivoted jaw which, moving to and from a fixed jaw, crushes the stones as they are fed in between the jaws.

Official List of Patents. ISSUED BY THE U. S. PATENT OFFICE.

FOR THE WEEK ENDING DECEMBER 5, 1871.

Reported Officially for the Scientific American.

SCHEDULE OF PATENT FEES: On each Caveat \$10, On each Trade-Mark \$25, On filing each application for a Patent, (seventeen years) \$15, On issuing each original Patent \$20, On appeal to Examiners-in-Chief \$10, On appeal to Commissioner of Patents \$20, On application for Reissue \$30, On application for Extension of Patent \$50, On granting the Extension \$50, On filing a Disclaimer \$10, On an application for Design (three and a half years) \$10, On an application for Design (seven years) \$15, On an application for Design (fourteen years) \$30.

For Copy of Claim of any Patent issued within 30 years... \$1, A sketch from the model or drawing, relating to such portion of a machine as the Claim covers, from... \$1 upward, but usually at the price above-named, The full Specification of any patent issued since Nov. 20, 1866 at which time the Patent Office commenced printing them... \$1.25, Official Copies of Drawings of any patent issued since 1836, we can supply at a reasonable cost, the price depending upon the amount of labor involved and the number of views, Full information as to price of drawings in each case, may be had by addressing

MUNN & CO., Patent Solicitors, 37 Park Row, New York.

- 121,447.—CUTTER.—E. Benjamin, Chicago, Ill.
121,448.—FENCE.—C. E. Brown, Pamela, N. Y.
121,449.—MOLD.—G. Carnell, Philadelphia, Pa.
121,450.—BRICK MACHINE.—J. Cooke, Muncy, Pa.
121,451.—STEAM ENGINE.—C. P. Deane, Springfield, Mass.
121,452.—FASTENING.—J. C. Desumeur, C. & E. Dudin, L. Delacourt, Guise, France.
121,453.—CARRIAGE.—E. Falkingham, San Francisco, Cal.
121,454.—SAFE.—D. Fitzgerald, New York city.
121,455.—ORDNANCE.—D. Fitzgerald, New York city.
121,456.—LAMP POST.—S. W. France, Brooklyn, N. Y.
121,457.—ENGINE.—A. Goulding, Worcester, Mass.
121,458.—BRUSH, ETC.—S. S. Groff, Vogansville, Pa.
121,459.—WAGON.—A. Iske, Lancaster, Pa.
121,460.—SEWING MACHINE.—M. H. Kernaul, Berlin, Prussia.
121,461.—WASHER.—C. Larrabee, Hayward, Cal.
121,462.—HUB.—J. Monk, Norwich, Conn.
121,463.—HOIST.—J. Nicholson, Monticello, Ind.
121,464.—DRAFT HOOK.—J. Nicholson, Monticello, Ind.
121,465.—EDGE PLANE.—A. J. Parker, Lynn, Mass.
121,466.—SAW MILL.—L. C. Pattee, Lebanon, N. H.
121,467.—COMPOUND.—P. Paul, Black Earth, Wis.
121,468.—TRAP.—H. Polley, San Francisco, Cal.
121,469.—BOAT.—W. E. Prall, J. D. Defrees, Washington, D. C.
121,470.—DESK, ETC.—J. S. Rankin, Minneapolis, Minn.
121,471.—DESK, ETC.—J. S. Rankin, Minneapolis, Minn.
121,472.—WATER WHEEL.—B. Redding, Kentville, Canada.
121,473.—BED BOTTOM.—R. A. Smith, East Weare, N. H.
121,474.—WATCH CASE.—C. L. Thiery, Boston, Mass.
121,475.—TINTING.—H. Vander Weyde, New York city.
121,476.—INDICATOR.—F. F. Warner, J. W. Benham, Chicago, Ill.
121,477.—SEWING MACHINE.—J. N. Wilkins, Chicago, Ill.
121,478.—PAINT.—D. R. Averill, New Centerville, N. Y.
121,479.—ENGINE.—J. S. Baldwin, Newark, N. J.
121,480.—ENGINE.—J. S. Baldwin, Newark, N. J.
121,481.—ENGINE.—J. S. Baldwin, Newark, N. J.
121,482.—FORCING LIQUIDS.—J. S. Baldwin, Newark, N. J.
121,483.—PIPE HOLDER.—V. A. Bond, Cotton Gin, Tex.
121,484.—CULTIVATOR.—D. W. Bowman, Tippecanoe, Ohio.
121,485.—SAFETY PIN.—W. H. Brock, Bridgeport, Conn.
121,486.—CAR SEAT.—G. Buntin, Boston, Mass.
121,487.—FAUCET.—M. Burnett, Boston, Mass.
121,488.—SEWING MACHINE.—R. G. Bush, Jamestown, N. Y.
121,489.—EARTH CLOSET.—D. B. Collins, Richmond, Va.
121,490.—CAN HEAD.—E. T. Covell, Brooklyn, N. Y.
121,491.—PIN PACKAGE.—C. O. Crosby, Milford, Conn.