- (43) A. D. B. asks: How can I prepare The steel became of a brightred, and the iron was sperm oil so as to prevent its becoming gummy still perfectly black, forming a distinct line around and sticky when used on light machinery? A. It the die at point of welding. Can you give us a may be purified by agitating 100 parts oil with 4 reason for the same?—G. G. F. asks: What will tity of decoction of oak bark is afterwards added wear?—W. C. C. asks: How can I prepare cotton to remove all traces of gelatinous matter which it netting to prevent its shrinking and stretching retains, and the mixture is left to settle. The when exposed to the weather ?-L. B. H. asks: Is clear oil is afterwards agitated with a small portit possible to make brook trout lay their spawn tion of sulphuric acid, again clarified by subsitiven confined in a well, if they have a suitable dence, and washed to remove adhering sulphuric gravel bed?-E. L. P. asks: How are the pivot
- (41) W. W. B. asks: 1. How can I renovate a Philadelphia pressed brick front, which has be come soiled with the weather? A. Very dilute sulphuric acid and a stiff brush are sometimes used for this purpose. 2. I tried to make the cement original papers and contributions upon the followwhich you recommend as waterproof for repairing ing subjects: glass, namely, white shellac dissolved in 1/3 its weight Venice turpentine, but it will not dissolve. How can I do it? A. Melt them together by
- (42) J. M. McC. asks: How can I make marking ink of the following colors, violet, blue, green, and black? A. The various colored inks in use can be made as follows: Violetink: 8 partslogwood and 64 parts water; boil down to one half. strain, and add 1 part of chloride of tin. Blue ink triturate best Prussian blue, 6 parts, with solution of oxalic acid in 6 parts water, and, towards the end of one quarter of an hour or so, add gradually gum arabic 1½ parts, white sugar 1 part. Green ink: digest 7 to 10 parts of the blue ink with 1 part of gamboge. Black: Fine glue 2 ozs., water 12 ozs., ivory black 1 oz. Stir well.
- (43) J. C. T. asks: How can I melt old rubber car springs? A. Dissolve them in bisulphide of carbon.
- (44) G. W.L. asks: What are the igniting or explosive parts of torpedoes made of? A. They are commonly made of fulminating mercury mixed in with a few pebbles, and, in some cases a little gunpowder.
- (45) J. M. says: I put a coat of boiled lin seed oil on some woodwork wanting a hard surface, but it will not get hard. How can I remedy it? A. If the oil is properly thinned with spirits of turnentine, you should have no difficulty with it. The oil was probably applied while in too viscid a condition. Try again.
- (46) J. H. E. says: 1. We received some sheet zinc some time since, that has large white spots on it. Is there anything that can be used to clean the zinc? A. Try a little oxalic acid or oxychloride of zinc. If these do not answer, try a little very dilute sulphuric acid. 2. Is there anything used in soldering tin instead of acid, that will not color the tin as acid does? A. A strong solution of oxychloride of zinc is used for this purpose, although many prefer the resinous acids.
- (47) W. K. J. asks: How can I harden paraffin sufficiently to enable me to turn it in a lathe? A. We know of no satisfactory method of accomplishing this.
- (48) H. E. E. says: 1. In the case of the prisoners who got away from the working gang, and took charge of a passing freight train, compelling the engineer to get off, how is it that the pump caused the bursting of the cylinder heads? A. If the pump continued working, it soon filled the boiler, and then the water was carried over into the cylinders, filling the steam pipe and steam chest, so that either the engine must stop or the cylinder be broken to allow it to escape.
- (49) J. M. R. asks: How can I preserve cel ery through winter? A. Place it in the ground so deep that the frost will not touch it, and cover with straw.
- (50) C. M. & S. say: If there is one pump with piston and suction pipe having the same area, say 4 square inches each, piston to be lifted 10 feet per second, and another pump, suction pipe same area as above, 4 square inches, piston 40 square inchesmoving 1 foot high per second. there being the same space to be filled (480 square inches) in each pump in the same time, one piston moving 10times faster than the other: What difference would there be in the required driving force? A. Disregarding the friction of the piston and stuffing boxes, the two pumps would require similar amounts of power for their operations.
- (51) O'B. & D. say: We would like you to tell us what size of cylinder of engine will be re-vellow pine flooring, and to run a siding saw to split 6,000 feet of 1 inch lumber 6 inches wide into siding, per day of 10 hours? A. You will require an engine capable of exerting from 12 to 15 effective horse power.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

G. M. A.—The globular formation is marcasite white iron pyrites. The other mineral contain silica, alumina, potassa, soda, magnesia, iron, car bon, and water. We judge it to be a variety of M.-Your coal with spots on it gave none of the indications of paraffin.—S. S.—It is most probably a medicinal preparation. It is principally a com-pound of zinc. Consult the Dispensatory as to the a medicinal preparation. It is principally a compound of zinc. Consult the Dispensatory as to the application and medical uses of the zinc salts.—R. A. M.—It is calcite. For its uses consult an encyclopedia.—R. P.—No. 1 is decomposed quartz rock Cars, door for grain, F. J. Kimball. 165,469 (carbonate of lime). The primary form of erystallization of carbonate of lime is the rhombohedron: in these specimens the crystals are six-sided prisms, and consequently dimorphous.

parts chloride of lime and 12 water; a small quan-remove the gloss that black cloth is subject to by jewels of watch arbors applied and set?

### COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of

On the Potato Bug. By P. Y. On Cider. By A. P. On the Keely Motor. By S. B. On the Origin of Life. By J.B.P. On Meteorology. By J. H. T.

Alsoinquiries and answers from the following: W. A. S.-J. H.-C. H. P.-O. P. S.-J. D. B.-T. N. M.-S.-O. B.-W. A. C.-M. N.-A. B. C.-A. T. W.-J. W.

## HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Enquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent: "Who makes hand organs? Whose is the best boiler incrustation preventive? Who sells the best covering for boilers and steam pipes? Who sells stills, suitable for distilling oil of sassa fras? Who makes water motors? Who buys sumac for tanning and dyeing? Who sells iodate of calcium? Who sells nickel plates and salts? Who sells spectroscopes? Who sells stencilled designs for frescoing? Who sells match-making machinery? Who publishes a book on fruit cul-ture? Who sells hand pumps? Who sells mica in plates? Who sells boilers made of corrngated iron? Who sells bicycles? Who sells gas blowpipe noz zles? Who sells machines for steaming feathers? All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained,

[OFFICIAL.]

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Mop, Johnson & Barnes Mowing machine, D. Lockhead. Mowing machine, C. Wheeler, Jr. Muff, E. Winkler. Natl for shoemaking, L. R. Blake. Natl rolling machines, conductor for, R. E. Cady. Neck tie, A. Hellenberg. Neck tie, A. Solomon. Neck tie, S. Solomon. Needle sharpener, T. D. Cashin. Needles, polishing eyes of, J. Berry Newspaper file, F. B. Alderson. Ore concentrator, G. W. White. Ore separater, H. P. Minot, (r) Paperclip, C. E. Ramus. Paper weight, F. E. Whitney. Pavement, H. R. Bellamy. Pegging machine, T. T. Prosser. Planoforte damper mechanism, E. Porter. Pick, T. R. Pinks. Pipes, thawing frozen water, R. E. Dietz. Planing machine, miter, J. Mannebach. Planter and cultivator, corn, P. S. Starnes. Plow, W. S. Lawrence Plow, gang, H. Opp. Plow mold boards, making, J. Holmes. Pneumatic machine, C. A. Hagemann Press, J. P. Kefauver Printing press, M. A. Pendleton. Protractor, A. Swasey	165,588   165,453   165,645   165,470   165,577   165,593   165,625   165,532   165,632   165,634   165,532   165,650   165,503   165,650   165,503   165,650   165,503   165,513   165,51	4 4 4 4 4
Mop, Johnson & Barnes Mowing machine, D. Lockhead Mowing machine, C. Wheeler, Jr. Muff, E. Winkler Nail for shoemaking, L. R. Blake Nail rolling machines, conductor for, R. E. Cady. Neck tie, A. Hellenberg Neck tie, A. Landes Neck tie, S. Solomon Needle sharpener, T. D. Cashin Needles spolishing eyes of, J. Berry Newspaper file, F. B. Alderson Ore concentrator, G. W. White Ore separater, H. P. Minot, (r) Paper lip, C. E. Ramus Paper weight, F. E. Whitney Pavement, H. R. Bellamy Pegging machine, T. T. Prosser Planoforte damper mechanism, E. Porter Pick, T. R. Pinks Pipes, thawing frozen water, R. E. Dietz Planing machine, miter, J. Mannebach Planter and cultivator, corn, P. S. Starnes Plow, W. S. Lawrence Plow, gang, H. Opp Plow mold boards, making, J. Holmes Press, J. P. Kefauver Printing press, M. A. Pendleton	165,588   165,453   165,451   165,474   165,593   165,625   165,462   165,462   165,462   165,462   165,693   165,693   165,693   165,502   165,502   165,502   165,503   165,613   165,513   165,613   165,513   165,613   165,513   165,613   165,513   165,629	4 4 4 4 4 4
Mop, Johnson & Barnes Mowing machine, D. Lockhead. Mowing machine, C. Wheeler, Jr. Muff, E. Winkler. Natl for shoemaking, L. R. Blake. Natl rolling machines, conductor for, R. E. Cady. Neck tie, A. Hellenberg. Neck tie, A. Hellenberg. Neck tie, S. Solomon. Neck tie fastener, J. H. Harrington. Needle sharpener, T. D. Cashin. Needles, polishing eyes of, J. Berry Newspaper file, F. B. Alderson. Ore concentrator, G. W. White. Ore separater, H. P. Minot, (r) Paperclip, C. E. Ramus. Paper weight, F. E. Whitney. Pavement, H. R. Bellamy. Pegging machine, T. T. Prosser. Pick, T. R. Pinks. Pipes, thawing frozen water, R. E. Dietz. Planing machine, miter, J. Mannebach. Planter and cultivator, corn, P. S. Starnes. Plow, W. S. Lawrence Plow, gang, H. Opp. Plow mold boards, making, J. Holmes. Pneumatic machine, C. A. Hagemann Press, J. P. Kefauver Printing press, M. A. Pendleton Protractor, A. Swasey. Pump, S. B. Strong. Pump, bilge, J. F. Smethells.	165,588   165,453   165,645   165,647   165,577   165,593   165,625   165,632   165,632   165,632   165,633   165,653   165,653   165,650   165,502   165,503   165,603   165,60	4 4 4 4 4 4
Mop, Johnson & Barnes Mowing machine, D. Lockhead. Mowing machine, C. Wheeler, Jr. Muff, E. Winkler. Nail for shoemaking, L. R. Blake. Nail rolling machines, conductor for, R. E. Cady. Neck tie, A. Hellenberg. Neck tie, A. Landes. Neck tie, S. Solomon. Neck tie fastener, J. H. Harrington. Needles harpener, T. D. Cashin. Needles, polishing eyes of, J. Berry Newspaper file, F. B. Alderson. Ore concentrator, G. W. White. Ore separater, H. P. Minot, (r) Paperclip, C. E. Ramus. Paper weight, F. E. Whitney. Pavement, H. R. Bellamy. Pegging machine, T. T. Prosser. Pianoforte damper mechanism, E. Porter. Pick, T. R. Pinks. Pipes, thawing frozen water, R. E. Dietz. Planing machine, miter, J. Mannebach. Planter and cultivator, corn, P. S. Starnes. Plow, W. S. Lawrence Plow, gang, H. Opp. Plow mold boards, making, J. Holmes. Pneumatic machine, C. A. Hagemann Press, J. P. Kefauver Printing press, M. A. Pendleton. Protractor, A. Swasey. Pump, S. B. Strong. Pump, bilge, J. F. Smethells. Pump, potary, H. A. Barber. Pump link, L. W. and C. Olds (r). Resawing machine, E. Benjamin.	165,588 165,453 165,461 165,647 165,474 165,577 165,593 165,625 165,481 165,461 165,461 165,465 165,614 165,650 165,650 165,650 165,503 165,650 165,503 165,650 165,503 165,50	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
Mop, Johnson & Barnes Mowing machine, D. Lockhead. Mowing machine, C. Wheeler, Jr. Muff, E. Winkler. Natl for shoemaking, L. R. Blake. Natl rolling machines, conductor for, R. E. Cady. Neck tie, A. Hellenberg. Neck tie, A. Hellenberg. Neck tie, S. Solomon. Needle sharpener, T. D. Cashin. Needles sharpener, T. D. Cashin. Needles, polishing eyes of, J. Berry Newspaper file, F. B. Alderson. Ore concentrator, G. W. White. Ore separater, H. P. Minot, (r) Paperclip, C. E. Ramus. Paper weight, F. E. Whitney. Pavement, H. R. Bellamy. Pegging machine, T. T. Prosser. Planoforte damper mechanism, E. Porter. Pick, T. R. Pinks. Pipes, thawing frozen water, R. E. Dietz. Planing machine, miter, J. Mannebach. Planter and cultivator, corn, P. S. Starnes. Plow, W. S. Lawrence. Plow, gang, H. Opp. Plow mold boards, making, J. Holmes. Pneumatic machine, C. A. Hagemann Press, J. P. Kefauver Printing press, M. A. Pendleton. Protractor, A. Swasey. Pump, S. B. Strong. Pump, bilge, J. F. Smethells. Pump, ink, L. W. and C. Olds (r). Resawing machine, E. Benjamin. Saccharine solutions, filtering, Watson et al.	165,588   165,453   165,451   165,477   165,577   165,577   165,577   165,578   165,625   165,625   165,625   165,503   165,630   165,602   165,503   165,60	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
Mop, Johnson & Barnes Mowing machine, D. Lockhead. Mowing machine, C. Wheeler, Jr. Muff, E. Winkler. Natl for shoemaking, L. R. Blake. Natl rolling machines, conductor for, R. E. Cady. Neck tie, A. Hellenberg. Neck tie, A. Hellenberg. Neck tie, A. Solomon. Neck tie fastener, J. H. Harrington. Needle sharpener, T. D. Cashin. Needles, polishing eyes of, J. Berry Newspaper file, F. B. Alderson. Ore concentrator, G. W. White. Ore separater, H. P. Minot, (r) Paperclip, C. E. Ramus. Paper weight, F. E. Whitney. Pavement, H. R. Bellamy. Pegging machine, T. T. Prosser. Pick, T. R. Pinks. Pipes, thawing frozen water, R. E. Dietz. Planing machine, miter, J. Mannebach. Planter and cultivator, corn, P. S. Starnes. Plow, W. S. Lawrence Plow, gang, H. Opp. Plow mold boards, making, J. Holmes. Pneumatic machine, C. A. Hagemann Press, J. P. Kefauver Printing press, M. A. Pendleton Protractor, A. Swasey. Pump, bilge, J. F. Smethells. Pump, rotary, H. A. Barber. Pump link, L. W. and C. Olds (r) Resswing machine, E. Benjamin. Saccharine solutions, filtering, Watson et al. Saw guide, band, Young and Ferguson. Sawing machine, band, B. D. Whitney.	165,588   165,453   165,645   165,647   165,577   165,593   165,625   165,488   165,645   165,462   165,502   165,503   165,50	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
Mop, Johnson & Barnes Mowing machine, D. Lockhead. Mowing machine, C. Wheeler, Jr. Muff, E. Winkler. Nail for shoemaking, L. R. Blake. Nail rolling machines, conductor for, R. E. Cady. Neck tie, A. Hellenberg. Neck tie, A. Hellenberg. Neck tie, S. Solomon. Neck tie fastener, J. H. Harrington. Needle sharpener, T. D. Cashin. Needles, polishing eyes of, J. Berry Newspaper file, F. B. Alderson. Ore concentrator, G. W. White. Ore separater, H. P. Minot, (r) Paperclip, C. E. Ramus. Paper weight, F. E. Whitney. Pavement, H. R. Bellamy. Pegging machine, T. T. Prosser. Planoforte damper mechanism, E. Porter. Plok, T. R. Pinks. Pipes, thawing frozen water, R. E. Dietz. Planing machine, miter, J. Mannebach. Planter and cultivator, corn, P. S. Starnes. Plow, W. S. Lawrence Plow, gang, H. Opp. Plow mold boards, making, J. Holmes. Press, J. P. Kefauver Printing press, M. A. Pendleton Protractor, A. Swasey. Pump, S. B. Strong. Pump, bilge, J. F. Smethells. Pump, rotary, H. A. Barber. Pump link, L. W. and C. Olds (r) Resawing machine, E. Benjamin. Saccharine solutions, filtering, Watson et al. Saw guide, band, Young and Ferguson.	165,588   165,453   165,645   165,647   165,577   165,593   165,625   165,635   165,635   165,635   165,635   165,650   165,550   165,55	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4

	.
Coal chute, W. M. Thompson 165,63	
Coal scuttle, R. M. Steele	
Cooler, lard, F. E. Rockstroh 165,61	7 Sleighs, runner for, H. Smith
Cooler, liquid, B. F. Shaw	
Corn stalks, cutting, T. O'Bryan 165,49	5 Soap, S. Strunz
Corset, M. K. Bortres 165,53	Soap, transparent advertising, S. Strunz 165,628
Cracker machine, G. W. Baker 165,52	7   Spindle, lubricating, A. M. Wade 165,433
Culinary vessel, J. Demoss	Spoke socket, J. B. Blatt
Cultivator, Dunnavant & Hampson 165,555	
Digger, potato, J. W. Haag 165,566	Stone and cement, A. Boag
Door check, J. Naughten 165,60'	
Door spring, J. B. Starkweather 165,626	
Dredging machine, R. R. Osgood 165,600	
Drilling machine, rock, M. C. Bullock 165,539	
Drilling machine, E. S. Winehester 165,640	
Duster, feather, H. L. Harrison	
Egg beater, T. Earle (r)	
Egg beater, J. Howes	
Elevator, H. W. Brinckerhoff	
Engine house gong, R. Bragg 165,438	
Engine, hydraulic hoisting, G. M. Gerrish 165,555	
Engine, rotary, S. Gibson	
Envelope machine, J. Ball (r)	1
Eraser holder, W. H. Bennett 165,531	
Exhaust mechanism, G. Bonker 165,487	
Eyeglass, I. Kahn 165,589	
Fabrics, initation, C. H. Kneller 165,420	
Fare box, G. J. Hill 165,579	Thermometer, registering, J. V. Raymond (r) 6,544
Fence, portable, M. Burtless 165,439	Ticket case, W. H. Crowther 165,478
Fence post, E. Geer 165,557	Ticket case, Crowther and Collins 165,479
Fence wire stretcher, Brown & Cramer 165,536	Tobacco mouth piece, B. Morahan 165,606
Filter, H. F. Scherr 165,512	Trap, animal, H. H. C. Arnold 165,526
Fire lighter automatic, M. Curran 165,409	Trap, animal, J. M. Wilkinson 165,643
Fire place, M. Fitzpatrick 165,440	
Fire place, J. McHenry 165,604	
Floor clamp, E. Hickman	
Flower stand, S. Vanstone 165,456	
Furnace, metallurgic, W. Swindell 165,630	
Furnace, smelting, H. C. Creal 165,477	
Furnaces, nozzle for hydrocarbon, H. Stacey 165,431	
Furnaces, blast pipe for, G. H. Goodsell 165,561	
Game board, C. R. Edwards	
Gate, automatic, O. P. Clinton	
Gate, automatic, K. G. Knuteson	
Goods, etc., transmission of, D. Brown 165,473	
Grave cover, R. H. Sipes	
Gun stocks, checking, J. A. Blake	
Handle attaching device, Hood & Joseph 165,583	
Harrow, A. W. Davis	
Harvester, C. Wheeler, Jr	
Harvester dropper, T. McDonough	
Harvester safety seat, W. E. Mattison	
Hatchway, self-closing, J. Fensom	
Heel polishing machine, W. Westcott 165,640	
Hinge, F. L. Sanderson	
Holdback, W. H. Harvey	
Hoops, machine for cutting, H. Fowler 165,555	,
Hose coupling, W. M. Henderson 165,415	
Hose, india rubber, T. J. Mayall, (r) 6,545	DESIGNS DAMENTED
Tube to agles attaching IV F Deatt 105 FO	

,476 to 8,480.—Carpets.—J. Webster, Philadelphia, Pa., ,481.—Lamp Pedestals.—N.Bradley, West Meriden,Ct. ,482.—Paper Weight.—H. Lee, New York city. ,483.—Heating Stove.—R. Scorer et al., Troy, N. Y. 494.—Stove Cover Lifter.—H. Brown, New York city. ,485.—Printing Type.—A. Little, New York city. ,486.—Rubber Eraser.—C. Roberts, Newark, N. J. 487.—Broom Head Neck.—C. Van Slyck, Schenecta-

SCHEDULE OF PATENT	Fees.
On each Caveat	
On each Trade mark	\$25
On filing each application for a Patent (17	years)\$15
On issuing each original Patent	820
On appeal to Examiners in Chief	-
On appeal to Commissioner of Patents	
On application for Reissue	
On filing a Disclaimer	
On an application for Design (3% years).	
On application for Design (7 years)	
On application for Design (14 years)	830

## CANADIAN PATENTS. LIST OF PATENTS GRANTED IN CANADA, July 8 to 14, 1875.

.956.-J. Collins, Guelph, Ont. Feed cutter. July 8, 1875. ,957.-J. P. Connell, Kensington, Conn., U. S. Door bell. July 8, 1875. 988.—D. Whiteside, Toronto, Ont. Carpet cleaning

machine. July 8, 1875. 959.-J. Bates, Thornbury, Ont. Combined clothes

dryer, desk, and table. July 8, 1875. ,960.—T. S. Church et al., Boston, Mass., U. S. Cleans ing furniture, etc. July 8, 1875. 961.-J. M. Gill, Brockville, Ont. Permutation lock

July 8, 1875. ,962.—J. Clark, Greenpoint, N. Y., U. S., et al. Furnace grate bar. July 8, 1876. 968.-J. C. Chase, Rutland, Ohio, U. S. Washing ma

chine. July 8, 1875. .964.-Phebe Edmonds, Rochelle, Ill., U. S. Churn

.965.-J. Filion, St. Eustache. P. Q. Stumping ma

chine. July 12, 1875.

967.-R. C. Harris, Dalhousie, N. B. Snow excavator July 12, 1875. 968.-C. D. Van Allan, West Farnham, P. Q. Churn

and washer. July 12, 1875. ,969.—A. L. Blackman, Nashville, Tenn., U. S. Wheel machine. July 14, 1875. ,970 .- A. Davis, Belleville, Ont. Lubricating locomo-

tive cylinders. July 14, 1875. ,971.—M. Hubbell, Mount Kisco, N. Y., U. S. Horse collar and hames. July 14, 1875. ,972.-W, B. Wright, Toronto, Ont. Barber's chair.

,973.-P. Baker. Lockport, N. Y., U. S. Sash supporter and lock. July 14 1875.

,974.—G. Henry, Lennoxville, P. Q. Regulator for feed apparatus. July 14, 1875. 975.-E. Fuller, Caledon, Ont. Bridle. July

1875. ,976.-M. Fox, New York city, U.S. Reversible cap. July 14, 1875. J. E. Finley, Memphis, Tenn., U. S. Hard corn

sheller. July 14, 1875.

..... 165,406

Senarator, grain. W. S. Clymans ...... 165,544

Sewing machine shuttle, C. E. Billings...... 165,405

Sewing machine, shoe, E. P. Richardson...... 165,506

4,978.-C. H. Orcutt. Leominster, Mass., U. S. Cutting and skiving leather. July 14, 1875. 4,979.—C. Robinson, Eau Claire, Wis., U.S. Trace fast-

ening. July 14, 1875.

4,980.—J. W. Beatley, Brooklyn, N. Y., U. S. Illuminmake the standard of the stand

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