

(80) J. S. S. says, in reply to E. H. H., who asks: Is there any machinery for cutting files in use that is working successfully, and what has been the principal trouble with machine-cut files? There are several machines in use cutting files successfully. The principal trouble with machine-cut files is prejudice. I once called at a machine shop; and the conversation turned upon files, when I asked if they used a certain machine-made file. The answer was "No. We have tried them but have given them up. Machine-cut files are a failure; but we are using now a file which is the best we ever had in our shop." He handed me a half-dozen package of files, and I found that they were marked with the name of a firm whose files were cut by machinery in the very room that I was foreman of. You state that "machine-cut files are not equal to hand-cut either in regularity of cut or quality of the cutting edge of the teeth." I will cut a file by machinery that will compete with any hand-cut file in the world for regularity. As for the cutting edge of the tooth, that is determined by the shape of the chisel which cuts the file; and if the tooth is not sharp and of the right shape, it is the fault of the operator and not of the fact of its being machine-cut. A badly shaped chisel will make a bad file, whether in the hands of a skillful hand cutter or in a machine.

(81) S. T. says, in reply to G. H. M., who asks: What part of a horse power is an eight day clock spring? Find, by single pulley and cord, how many pounds your spring will raise one foot high in one minute. The number will be the numerator of a fraction whose denominator is 33,000 or 1 horse power. Any two springs of same size and workmanship will have different lifting forces, and therefore this question must be decided by the particular spring.

(82) J. S. G. says, in answer to several correspondents, who ask how to temper cast steel: Heat the piece of steel to be tempered to a bright red; throw it into a tub of clear cold water and let it cool; then take a loaf of hot bread of the required size to hold the tool thus cooled, stick them into the loaf, and let them cool; and you have one of the finest finished tempers that has yet been discovered.

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

F. X. L.—It contains no silver.—T. H. P.—It is marcasite, commonly called white iron pyrites. It is composed of iron 46, and sulphur 53.6, in 100 parts.—B. S. S.—It is talc, and is composed of silica 62.8, magnesia 33.5, and water 3.7.—W. E. H.—The amount of hardened clay sent is too small to enable us to decide by practical or other test whether it could be used for brick-making, etc.—J. A. G.—No. 1 is galena, a sulphuret of lead. No. 2 is iron pyrites, or sulphuret of iron.—W. W. B. Jr.—It is carbonate of iron. No chromium was detected in the sample sent.—J. S. K.—It is iron pyrites.

C. A. asks: How can I stain poplar wood the color of red cedar for the manufacture of cigar boxes?—H. K. asks: How is the word bollingor bubbling translated into the Winnebago (Indian) dialect?—J. S. McK. asks: When the sun and moon are both on the same side of the earth, what causes the tide on the opposite side?—F. A. McG. asks: Why does a belt run to the highest point?

COMMUNICATIONS RECEIVED.

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

- On Electric Railway Signaling. By W. R.
On Small Printing Press Engines. By F. C. S.
On the Spiritual and the Material. By E.
Also enquiries and answers from the following:
J. E. M.—E. N.—A. G. F.—J. J. S.—G. W. E.—H. B.

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.

We have some queer correspondents: One writes to know if we will not be so good as to send a messenger to an address which he gives—distance two and a half miles from our office—to make certain inquiries for him. It would require one and a half hours' time to do the errand, and not a stamp inclosed. Another wants us to write a letter and tell him where to get a combined thermometer and barometer. Another: "Will you be good enough to give me the names and addresses of several of the makers of the best brick machines"; another wants water wheels; another threshing machines; each writer desires our written opinion as to which is the best device, with our reasons, and not one is thoughtful enough to inclose a fee, or to reflect that to answer his request will consume considerable of our time. Another party wishes us to write to him the recipe for making ornaments out of coal tar, where he can buy the mixture ready for use, and how much checkermen will sell for in the New York market. For this information he sends us the generous sum of three cents in postage

stamp. Mr. C. wants us to tell him of some valuable invention, of which he can buy the patent cheap, that would be suitable for him to take to sell, on his travels out West, by towns, counties, etc., three cents inclosed. Others want us to put them in communication with some person who will purchase an interest in their inventions, or manufacture for them, or furnish this or that personal information, our reply to be printed in the SCIENTIFIC AMERICAN. We are at all times happy to serve our correspondents, and when they present enquiries which we consider of general interest to our readers, we give space for them in the above columns; but if replies to purely personal errands are expected, a small fee, say from one to five dollars, should be sent.

(OFFICIAL)

Index of Inventions

FOR WHICH

Letters Patent of the United States

WERE GRANTED IN THE WEEK ENDING

September 1, 1874,

AND EACH BEARING THAT DATE.

(Those marked (r) are reissued patents.)

Table listing various inventions such as 'Air, navigating the, M. Dyer', 'Animals, shearing, Hamilton & Harlow', 'Artist's kit, E. G. Chorman', etc., with corresponding page numbers.

Table listing various inventions such as 'Knit goods, holding, W. Martin', 'Ladder, fireman's, J. R. Conway', 'Ladder, fireman's, H. Fox', etc., with corresponding page numbers.

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:

- 30,802.—CLOTHES WRINGER.—G. J. Colby. Nov. 18.
30,850.—PHOTOGRAPHIC CAMERA.—S. Wing. Nov. 13.
31,001.—STRAW CUTTER.—W. Gale. Dec. 2.

EXTENSIONS GRANTED

- 30,023.—ROCK DRILLING MACHINE.—L. M. Gilmore.
39,030.—STEAM ENGINE.—W. Wells.

DISCLAIMER.

26,013.—GIRTH BUCKLE.—L. C. Chase.

DESIGNS PATENTED.

- 7,715 to 7,721.—CARPETS.—R. E. Campbell, Lowell, Mass.
7,722.—COOKING STOVE.—J. V. B. Carter, Detroit, Mich.
7,723.—SPICE MILL.—W. Haslam, Philadelphia, Pa.
7,724 to 7,726.—CARPETS.—W. Kerr, Philadelphia, Pa.
7,727 and 7,728.—CARPETS.—H. S. Kerr, Philadelphia, Pa.
7,729.—CARPET.—W. Kerr, Philadelphia, Pa.
7,730 to 7,732.—STOCKING FABRICS.—W. Martin, Phila., Pa.
7,733.—CARPET.—D. McNair, Lowell, Mass.
7,734 and 7,735.—OIL CLOTHS.—C. T. Meyer et al., Bergen, N. J.
7,736.—STOVE.—J. V. B. Carter, Detroit, Mich.
7,737.—FIRE SHOVEL.—A. W. Hirschfeld, W. Meriden, Ct.
7,738 and 7,739.—CARPETS.—H. S. Kerr, Philadelphia, Pa.

TRADE MARKS REGISTERED.

- 1,950.—CARPET WARP.—E. W. Holbrook & Co., Troy, N. Y.
1,951.—PLOW, ETC.—Lawrence et al., Kalamazoo, Mich.

Table listing various items such as '1,952.—FERTILIZERS.—W. W. Leman, Macon, Ga.', '1,953.—WHISKY.—Shields & Co., Cincinnati, O.', etc.

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

AUGUST 31 TO SEPT. 12, 1874.

Table listing Canadian patents: '3,800.—E. P. Hildebrand, Indiana, Indiana county, Pa.', '3,801.—J. Brown, Brantford, Brant county, Ont.', etc.

Advertisements.

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PATENTS. F. T. H. RAMSDEN, Bryan Block, Chicago, Ill. Mechanical Engineer and Manufacturers' Agent.