

OUR CHICAGO EXCHANGES.

Chicago exchanges? Yes! they are creeping out of the cin- ders, like singed cats, much better than they look. Glad to see some of their old faces again. We recognize them, though their visages bear marks of their recent terrible or- deal. Courage! "Time makes all things even."

First here is the *Railroad Gazette*, a most excellent weekly journal, devoted to Transportation, Engineering, and Rail- road News, looking quite fresh and not at all frightened. It was formerly published at 63 and 65 Canal street. The whole establishment was cleaned out by the fire, but its enterpris- ing proprietor, Mr. A. N. Kellogg, states that the paper will, until further notice, be issued by the acting publisher, Mr. W. H. Boardman, at No. 72 Broadway, New York. The trade will address orders to the Western News Company, corner of Jefferson and West Randolph streets, Chicago, as heretofore.

Then comes along the *Chicago Railway Review*, another live journal devoted to Railways, Navigation, Manufactures and Finance, somewhat smaller than of yore, but not a whit less spirited. The reduction in size is announced as only temporary, and the editor, Mr. D. C. Brooks, thus apologises for defects: "Typographical errors were, we fear, the excep- tions which proved error to be the rule, last week. The Edi- tor, in addition to his usual duties, had to act in the capacity of publisher, assistant foreman, mailer, carrier, collector—not to say "devil," and it is not to be wondered at that something, or the want of it, played the d—l with the types."

The present address of the *Review* is Chicago, 1603 Prairie avenue, or at St. Louis, Barnum's Hotel, or 215 Pine street. Mr. Charles D. Lakey, editor and proprietor of our valued contemporary, the *American Builder*, writes to say that he is, among most other publishers, a sufferer by the fire in Chicago, his office being destroyed. He desires us to announce that the *Builder* will be continued, and its publication will re- commence as soon as practicable. "The good will of the public towards my magazine remains unchanged. Fortuna- tely, my house was not in the path of the flame." The pub- lic will join us in expressing great regret for Mr. Lakey's loss, and in a hope that his excellent publication will soon be again circulating through the length and breadth of the land.

The *Land Owner*, which was one of the most beautifully printed of the Chicago papers, and which was undoubtedly the most widely circulated land paper in the world, is— writes the publisher, J. M. Wing & Co., 58 Canal street—in press, and its publication will be continued as heretofore.

Our editorial friends, who have suffered by this great fire, will receive our most hearty expressions of sympathy, and their speedy resumption justifies the hope that they have yet a long and prosperous career before them.

RECENT PATENT DECISIONS.

In the matter of the application of E. S. Renwick for letters patent for improved suspender ends. Appeal from Exam- iners-in-Chief, August 8, 1871.

LEGGERT, Commissioner: The applicant claims that he has invented a new article of manufacture, named by him "Veneered Leather Suspender- Trimmings." His process of manufacture consists in pasting shabby leather upon the surface of roan leather, and from sheets thus prepared cutting the trimmings out with the dies in common use for such purposes, and then stitching with a sewing machine.

This process of "veneering leather" is not new, and could hardly be called an invention if it was. The process of past- ing different pieces or kinds of leather together, and then stitching, has long been known among manufacturers of all kinds of leather articles. Suspender trimmings, manufac- tured by this old and well known process, certainly cannot become a new article of manufacture in such a sense as to be patentable. But, waiving this point, it seems to me that the references made by the primary examiner were complete answers to the application.

The decision of the Board of Appeals is affirmed.

MILLIGAN AND HIGGINS' PATENT.

In the matter of the application of Milligan & Higgins for letters patent for calcimine powders.

LEGGERT, Commissioner: Calcimine, as generally used, is a compound of water, glue and a white pigment, such as whiting, Paris white, or zinc white (oxide of zinc), and has heretofore been prepared by painters by soaking the glue, dissolving it in water, and add- ing the white pigment, with or without some coloring ma- terial. As, however, different lots of glue vary in strength, and the strength is unknown to the user without experi- ment, a loss of time, and perhaps material, in its preparation occurs.

The applicants say:

Another difficulty in the preparation of calcimine arises from the fact that different proportionate quantities of glue for the same quantity of other material are required, according to the nature of the work for which the calcimine is to be used. Thus, for example, if the calcimine is to be used upon a wall that has never been calcimined nor sized, a larger quantity of glue is required than in the preparation of calcimine for a wall that has been calcimined.

Applicants further say:

The object of our invention is to enable calcimine to be prepared for use with rapidity, without experimental trials on the part of the user, and with certainty as to the quality of the prepared article, whether it is to be fixed for an old wall or a new one. To this end our invention consists of a package containing the requisite quantity of the materials required for prepar- ing a certain quantity of calcimine for use, with the glue in a separate paper (placed by preference inside of the package), in quantity sufficient to ren- der the calcimine suitable for a new wall, and in such a condition that it is readily soluble in water.

Applicants further claim:

The prepared calcimine powder, having the glue separated from the col- oring material, substantially as heretofore set forth, the same being a new article of manufacture.

I have thus quoted from the applicants' specification and claim, from the fact that the attorney for applicants has ably and persistently insisted that their invention is new and worthy of patents. I am of the opinion that the reference to Johnson's patent is well taken, and the applicants are fully

anticipated. The Board of Examiners-in-Chief upon this case say:

The object of applicant's invention is to provide the material, for calcimine painting, dry, pulverized, and put up in convenient packages for the trade. All that is necessary to be done to prepare the powder for use is simply to add the proper quantity of water. Johnson does the same thing, the only difference being that in his packages the glue and pigments are mixed, and those of applicants the glue is put in a separate paper, but in- closed in the same package. This does not appear to be a material differ- ence, and we must therefore affirm the decision of the principal examiner.

Applicants' mode of putting up their preparation has a single advantage over that of Johnson. It will admit of being compounded in various proportions to suit different cases. But Johnson does not limit himself to any exact pro- portion. As between the two there certainly is not a patentable difference.

The decision of the Board of Appeals is affirmed.

The Gatling Gun.

When describing and illustrating the Gatling battery gun some months since, we mentioned that Sir William Armstrong & Co. had received instructions from the Government to manufacture a limited number of these important adjuncts of our army and navy, for experimental purposes. It is, however, only recently that the production of these weapons has been proceeded with, on account of the delays which have occurred in determining the diameter of the bore, the nature of the rifling, and the description of cartridge to be used. These points have, however, at length been settled, and the guns at present ordered will be rifled upon the Henry principle, the calibre of the bore being .45, so that the ordi- nary service rifle cartridges can be used upon an emergency. Solid drawn cartridges, however, are to form the ammunition of the gun, as it has been found that the Boxer cartridge is liable to have the base torn from the body of the case by the extractor, the metal case being left in the chamber. Thirty- six of these guns have been ordered, a portion being for the War Office and a portion for the Admiralty. When complet- ed they will be distributed in various branches of the army and navy for experimental practice. Should they be found to answer the requirements of the service, their manufacture will be further proceeded with, and any modification suggest- ed by practice will be introduced. It is probable that in some of these machine guns a larger calibre will be adopted by the Government. For certain purposes, such as for use in case- mated forts or garrison batteries, the heavier guns would probably prove the most useful. All the weapons are being constructed with the most recent improvements.—*Engineering.*

Leaves.

The *People's Journal* gives the following practical advice to agriculturists: In a short time the frosts, aided by rains and winds, will have scattered a bountiful supply of leaves over the woodland. These leaves can be made to do an excel- lent service on the farm. They should be carefully raked together in heaps, and drawn to the homestead, where a shed or some place can be found in which they may be stored away. They may be hauled in a hay rack by weaving in some corn- stalks between the stakes, close enough to prevent them fall- ing through. A large barn-basket is a convenient thing to load them with, and it will be surprising how many loads may be gathered from an acre of woodland. They make a very excellent bed for hogs, being to some extent the bed provided for them by nature. For sows with young pigs, they are the best bed that can be procured, as there is no danger, when they are used, of the young pigs getting entangled in the bed- ding and crushed. As a source of manure they are valuable; they rot easily, and have good fertilizing qualities. Elm and oak leaves contain a large proportion of potash, and leaf mold, or the decomposed leaves, makes a valuable addition to the soil of flower gardens, or for potting plants. Where manure is scarce—and where is it not?—leaves should be the first resource whereby an increase may be made.

A Family's Ration.

The Relief and Aid Society of Chicago have adopted the following as the standard daily ration for a family of five persons, the amount to be varied according to the income of the family from labor or other sources:

Bacon or pork.....	2 pounds.
Or beef.....	3 pounds.
Beans.....	1 pint.
Potatoes.....	2 quarts.
Bread.....	3 pounds.
Or flour.....	2 pounds.
Tea.....	1 ounce.
Or coffee.....	2½ ounces.
Sugar.....	4 ounces.
Rice.....	4 ounces.
Soap.....	4 ounces.
Soft coal.....	½ tun per month.

THE fire in Chicago had the curious effect of spoiling the "outsides" of nearly two hundred weekly newspapers which are published, hundreds of miles from that city, in Illinois, Iowa, Wisconsin, and Minnesota. One of the leading print- ers of Chicago did a large business in printing these "out- sides" in duplicate and sending them to different places, where the local publishers printed the news on the other side. The farmers who depended upon these sheets for their weekly supply of news must have been puzzled to know how the Chicago fire could have deprived them of their village newspaper while the home office remained in- tact.

THE Babylonians, having no physicians with whom to con- sult in case of sickness, adopted a novel plan to obtain relief under such circumstances. They had the infirm brought into the Forum, and those who passed by were asked their opinion as to the nature of the disease. They demand- ed of each one if he ever had the same distemper, if he knew any one who had had it, and, if so, how he was cured.

WE give in another column an interesting account of a new diving bell, invented in Italy, by Sig. Toselli. Since the realization of their political unity, the Italians have made rapid strides in all the arts of peace and progress. Schools have been established, and institutions opened for popular education in scientific knowledge. Italy has a lib- eral patent law, and the number of patents granted for new improvements augments every year. The Italians are a generous, ingenious, and progressive race. The population of the kingdom is now twenty-six millions.

KINDLE UP THE FIRES.—Half the diseases that afflict hu- manity at this season of the year are due to the half chilled condition in which people live. More coughs, colds, consump- tions and fevers are produced by sitting in half-chilly rooms, on these days when it seems hardly necessary to build fires, than by all other causes.

A MIND full of piety and knowledge is always rich; it is a bank that never fails; it yields a perpetual dividend of hap- piness.

NEW BOOKS AND PUBLICATIONS.

REDFIELD'S TRAVELERS' GUIDE TO THE CITY OF NEW YORK. With a Map. New York: J. S. Redfield, 140 Fulton Street. Price, 25 cents.

Those who wish to see the sights of this great metropolis, and find their way with facility to objects of interest, cannot do better than invest in this little volume.

Examples for the Ladies.

Miss C—, of Troy, N. Y., with a Wheeler & Wilson Machine, earned in three years and eleven months, \$2308.92; stitching 638,652 collars, the length of seam being 380,602 yards, and the number of stitches 117,102,300, an average of 100,000 a day, and 12,500 an hour. This stitching was all done by foot power, and the machine is still in perfect order. It had no extra care, but was simply oiled and cleaned daily. This amount of stitching by hand, at 30 stitches a minute, would have been more than 20 years' work.

"Burratt's Cocaine for the hair, once used, recommends itself."—*Christian Freeman, Boston.*

Queries.

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

1.—FISH IN LIMESTONE WATER.—On a tract of land which I own, convenient to this city (Louisville, Ky.), is a natural basin about forty feet deep, containing sixteen acres level, and lying about 500 feet above the level of the river bed. The walls of this basin are of solid rock, from which flows, into the basin, a never failing stream of limestone water the size of an ordinary creek. At the lower end of this basin is an outlet or crevice, which can be filled at an expense not exceeding forty dol- lars; by filling this outlet the basin would have about fifty feet deep of fresh water in it. Can you give me any information whether this would make a good fish pond, what kind of fish would be best to stock it with, and where such fish can be had?—A. B.

2.—ELECTRIC BATTERY.—I am about to make an electric battery; the directions say that the zinc should be amalgamated, and I do not know how it is done. Will some one please answer in the SCIENTIFIC AMERICAN? Also, what is the best book for instruction in electrotyping?—S. H.

3.—HEATING SURFACE OF BOILERS.—D. B., of N. Y., in answer to my query: "How to find heating surface of boilers," misunder- stands me. I wish to know how to go about measuring the heating surface in a common two flued boiler, for instance, how do I get at the area of the flues and surface on which the fire impinges on the bottom of boiler? I simply want a rule how to measure the heating surface.—A. H. G.

4.—HEATING SMALL STEEL ARTICLES.—Can any of your correspondents inform me how to heat small articles of iron rapidly with- out producing so much scale, either by use of chemicals or by the construc- tion of furnace, in making knife blades and other delicate work?—P. L. S.

5.—ELECTRO-GILDING.—In electro-gilding I have had great difficulty in producing the red or fourteen carat color. Will some one inform me what the recipe for the red gold solution is, or if the solution is the same as the ordinary gold solution, and a different process used for depositing the gold on the work? Or in other words, be kind enough to give me the whole process from the making of the solution to the finishing of the work?—T. W. S.

6.—DISCOLORATION OF BRICKS BY SMOKE.—How can I re- move the dark stain of smoke from a brick wall after a fire?—W. B.

7.—CONDENSATION ON WINDOWS.—Will some one inform me of the best method to prevent a show window from sweating? I have ventilated both at top and bottom, and even now, on a moderately cold evening, it is impossible to see through the outer glass. I want to use a light in the window, but cannot, as that makes it worse. Would it not be a good idea to work a small blower underneath, and pass a current of air through?—J. E. G.

8.—NOISELESS BLOWER.—Is there any way to make an old fashioned sixteen inch blower noiseless, without boxing or burying?—L. M.

9.—GLUE TESTING.—Can some one inform me how to test the strength and quality of glues? The old way of testing by setting is not a good test. I want some way of telling what the glue is made of.—T. C.

10.—DAMAGED MIRROR.—Will some of your readers tell me how I can repair a valuable mirror, of which the quicksilver has been rubbed in spots?—E. F. C.

Declined.

Communications upon the following subjects have been received and examined by the Editor, but their publication is respectfully declined:

- BEECH TREE.—A. K.
- BOILER EXPLOSIONS.—J. A. M.
- ELECTRO-MOTOR, ETC.—J. T. P.
- FIREPROOF SAFES.—J. S.
- GUNS SCATTERING SHOT.—J. E.
- METALLURGY.—J. T.
- NARROW GAGE RAILROADS.—S. & Co.
- PSYCHIC FORCE.—C. G.
- ANSWERS TO CORRESPONDENTS.—A. H. G.—H. A. W.—H. R. J.—H. S.—J. F.—J. H. G.—J. L.—J. W. C.—L. D.—P. J. W.—R. A. B.—R. C.—S. S. G.—T. E. N. E.
- QUERIES.—B. S.—C. D. S.—C. T.—D. J. W., JR.—T. J. R.