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L. K., of N. Y .- In referring to articles which have apared in the SCIENTIFIC AMERICAN, it would save us much trouble would mention the pages instead of the dates Your article is well written, but of no general interest to our class of readers.

C. B. R., of Mass.-Colonel Bissel, who has charge of the ring operations for cutting the canal to isolate Vicksburgh, ctical engineer, and is well acquainted with excavating mais a practic chines. If they can be applied to his purpose, he will, we think, not fail to make the application

J. F., of Ohio .- The chloride of calcium ismade by dissolving marble in murlatic acid, then evaporating the free liquid and fusing the solid product. It is a white crystalline substance, and absorbs water rapidly from the atmosphere. It is employed to dry gases and abstract water from alcohol. It must be kept in a sealed bottle or it will become quite damp.

M. P. H., of N. H.-Molds made of common clay will remain plastic for a considerable length of time after being formed and they may be hardened almost like stone by heat. They require to be dried slowly or they will crack. A little glycerine mixed with clay or with chalk, used for molds, will keep them soft for a long clay period. By referring to our prospectus in another column you will notice the subscription price of the SCIENTIFIC AMERICAN. period.

J. S., of Ill.-Glass tubes only are suitable for barometers. They may be of any diameter, provided they are smooth and equal in the size of bore. Crude mercury will not answer for filling them. The method of purifying mercury for barometers is described in most treatises on chemistry. Neither tin, copper or zinc will and swer for the bulbs of thermometers, as the mercury will amalga-mate with these metals. ate with these metals.

J. B., of Pa.-The way to make a good lubricating oil for clocks and fine machinery is to mix common sweet or sperm oil with its own weight of alcohol in a vial, agitate it occasionally for a few hours, allow it to settle and use the clear. Pure glycerin will not congeal in cold weather, and we think it is the best lubricator

H. S. R., of C. E .- We cannot give you more information respecting the "photographic (camera" than is obtained in the advertisement to which you refer.

S. L. P., of Mich .- The volume of D. Kirkaldy, containing an account of his experiments with iron and steel, is not republished in this country.

R. S., of Mo. - The enamel gloss upon shirt collars and as is the result of practical skill. The linen must be well starched, then a clean iron, hard pressure and friction upon the uce the gloss.

W. E., of N. B.-Machinery for scutching and preparing flax for spinning to make cloth, is not manufactured in this vicinity. The best machinery for preparing spinning flax, that we have seen, was made at the works of Sir Peter Fairbairn, Leeds, England. The plant which you have sent us is the common milk-weed. Its fiber is beautiful, but very weak. It may be rendered suitable for some fabrics; a practical test alone can decide such a question.

C. E. K., of Mo.—The principalingredient in potter's clay is silica. The common kinds consist of about 60 parts of silica, 30 Is since. The common kinds consist of about oparts of since, so of alumina, 1 of iron and 1 of lime. The iron and lime are im-purities. In making pottery the clay is ground, then molded or spun upon a potter's lathe, then carefully dried and afterwards baked in a kiln heated to a very high temperature.

T. R. H., of Mass.-We have seen frictional gearing successfully applied to as small machines as hay cutters

R. H., of Md.-Address Mr. F. Storer, chemist, Cambridge, Mass., respecting his experiments with alloys,

O. L., of N. H.-We dont know what kind of sand you ling your castings, therefore cannot say whether it is use in mo good or not; if the castings are rough, the facing you use is not suitable; fine flour, charcoal and black lead, are used by molders for urpose. If your patterns don't draw, the draft must be bad, thie or perhaps there is some glue about them that, by getting damp, causes the sand to adhere. Finely-sifted learn is the best material formolding smooth castings. F. C. W., of Wis.—Your engine will work up to about

- 20 horse-power. You will require fiteen square feet of heating sur-face for every horse-power. If your boiler contains that amount you will have enough. If not, not. From the dimensions you have sout us, your boiler appears large enough to drive two such engines as you describe. You say nothing about the pressure you intend to work at, and have, consequently, omitted the most important item of the whole matter
- A. E. T. Jr., of Ohio.- The composition for priming percussion caps consists of fulminating mercury, 3 parts, by weight; chlorate of potash, 5 parts; powdered glass, 1 part. This powder is very dangerous. Another fulminate for percussion caps consists of the chlorate of potash, 6 parts; sulphur, 3 parts; powdered glass, 1 part; charcoal, 1 part. You will find a very full description e of making percussion caps on page 392, Vol. IV (new series) of the SCIENTIFIC AMERICAN.
- A. W. B., of N. Y .- Nitric acid is employed to etch steel plates for engraving. Those parts of the plate not to be etched are covered with a varnish made of resin and wax. Mechanical draw ing is taught in the Cooper Institute.
- C. A. B., of Mass.-A ball fired vertically will descend is absorbed by the resistance of the atmosphere. is absorb

E. B., of Mass.-Steel wire is used for clock bells. Apart from the "surroundings" of wire bells in clocks, the wire itself would make miserable musi

A. S., of N. Y .- Hard india-rubber is polished like the fine metals. No oil is used in the polishing operations, as it tends often the india-rubber.

W. M. F., of N. J.-On page 384, Vol. VI of the SCIENTIFIC AMERICAN, you will find a description of a projectile on the same principle as yours. We do not think you could obtain any patent on your invention.

S. C., of N. Y.-Fire-clay tiles are manufactured at several works near this city, but we know not where tiles similar to those used in England for malt-kilns are made.

Z. T. W., of R. I.-Your sketch represents a coil of pipe heated by steam placed in a vessel for "trying lard." You it if a patent can be obtained for the improvement. This m l'ou inqu heating boilers by steam is at least half a century old, and is not therefore patentable. Try again. G. T. C., of Mich.—All our soda ash is imported. You

state that the manufacture of this substance may be rendered a prefitable business in a salt country, like that where you reside. This depends on the cost of sulphuric acid, which is required in its manufacture. At present soda ash could be manufactured at less cost near the sea-board than in the interior of the country.

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aving remitted money to this office will please to examine Persons h the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and in-form us the amount, and how it was sent, whether by mail or exnress.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Oflice from Wednesday, February 25, to Wednesday, March 4,

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J. M., S., of Iowa; S. and P., of N. Y.; J. H. F., of Mass.; W. W.,
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The Scientific American.

A New Roofing Material.

The accompanying engraving represents the mode of applying a new patented material to the roofs of The article is manufactured in webs. buildings. ready to be laid upon the roof and put on in strips, slightly overlapping one another, and then tacked at the edges as shown by the cut. This brief decription fully explains the mode of applying the material. We will now proceed to state how the article is manufactured, and the nature and advantages of the composition. The base is composed of a thick woven fabric, which is thoroughly saturated and coated with a waterproof durable composition, and then dried at an elevated temperature. The with such a material as well as a builder. For more

known to endure for seventeen years without apparent signs of decay. The greatest difficulty heretofore experienced in roofing of this kind, has been owing to the inferior quality of the fabric used, cotton sheeting being the material usually employed. The fabric used by Mr. Robinson absorbs a large quantity of the insoluble composition, filling up its interstices, and forming a close, thick, firm waterproof material. The drying of this composition under a high heat admirably adapts it for warm climates. Twenty-five miles of this roofing have been manufactured for covering buildings for the Government. Any farmer or mechanic can roof his own buildings



A NEW rule in fashionable etiquette'is now coming into observation in Paris, in consequence of a regulation made by the Empress for a grand masked ball soon to be given at the Tuilléries, viz: that each person must present to the chamberlain, upon entering, a carte-de-visite representing the guest in the costume to be worn for the evening. These cards are afterwards to be gathered in a photographic album for the boudoir table of the Empress.



ROBINSON'S MODE OF COVERING ROOFS.

fiber employed is derived from tarred rope, which is information apply to the patentee, A. Robinson, made into strong heavy brown cloth by a method for which a patent was obtained through the Scientific American Agency on Aug. 16, 1862. The chief object of the invention is the production of a heavy fabric of great thickness and low cost, which is woven in looms adapted for the purpose, making webs twenty-five yards in length and forty inches in width. To give it the waterproof composition, a web of this fabric is first run by machinery through a vessel containing a composition of warm distilled bitumen, linseed oil, and some other ingredients. This saturates it completely and fills up all the pores. From the bitumen in this vessel it is carried upon rollers to the drying-room, where it is submitted to a temperature of 175 degrees, and is then completely dried, forming the first coat. After this it is again run through a composition of warm distilled bitumen containing a certain quantity of dry pulverized earthy substances; thence it is carried along upon rollers and its surface coated with sand, after which it is callendered and dried again as before stated, when it is finished and put up in rolls, ready to be put upon a roof in the manner shown by the engraving. The fabric is pliable and does not crack, and yet the composition is very hard on the surface, and it is said will not soften in the hottest climate. Such roofing may be walked upon without the slightest injury to it. The creosote in the distilled bitumen is a most effective preservation of the fabric. Duck prepared with the same composition has been

Secretary of the Ready Roofing Company, 73 Maiden Lane, New York.

An Ingenious Infernal Machine.

North Adams, Mass., was thrown into a fever of excitement last Thursday night, by the arrival of C. P. Bradley, the noted detective of Chicago, and two assistants, having a requisition from the Governor of Illinois for the arrest of Nehemiah Hodge. Hodge was charged with sending an "infernal machine," last December, to one Stephen M. Whipple of Chicago. Whipple formerly acted as agentfor Hodge in selling a patent railroad brake of his invention, but of late there have been differences between them and several lawsuits, two of which are now pending. Upon the receipt of the box at Chicago, Whipple suspected that something was wrong from its appearance, and it was placed in the hands of detective Bradley. It was opened by a weight and a wedge, between two ledges of rocks, a long rope being attached to the weight. An explosion followed which could be heard for miles. The box proved to have contained about fifteen pounds of powder. On the inside of the cover a spiral spring had been so arranged as to release a hammer and strike a percussion cap at the moment the box was opened. There was no possibility of a failure in the murderous engine if an attempt had been made to open itin the usual manner. Chief Bradley procured all the evidence that he could obtain, and returned to Chicago, whereupon



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industrial pursuits now published; and the proprietors are determined years they have been connected with its publication. To the Inventor !

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To the Mechanic and Manufacturer !

No person engaged in any of the mechanical pursuits should think of doing without the SCIENTIFIC AMERICAN. It costs but six cents per week ; every number contains from six to ten engravings of new machines and inventions which cannot be found in anyother publicaiton. It is an established rule of the publishers to insert none bi original engravings, and those of the first class in the art, drawn ar one hut engraved by experienced artists, under their own supervision, ex-Bally for this paper. Chemists, Architects, Millurights and Farmers!

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