6,027.-Hot-air Register.-EXESNSION. Autle, William Tuttle and J. S. Bailey, New York City, assignees of C. F. Tut tle, deceased. Patented January 23, 1849. Re-issued Oct. 14, 1862
We claim the application of the upright or vertical wheel. $G$, or
part or segnent of a wheel, to, he opeting and clusing of hitair

[This invention consists in placing at the side of the register-bor a wheel, or segment of a wheel, the top which comes flush, or nearly flush, with the upper surface of the fret-work, and is so connected with the fan that motion imparted to the wheel by the fout will actuate the fan and open or close the register. The adrautages claimed for it are, simplicity of construction, ease of operat the common defec of other styles of register

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## 4

W. B. S., of Wis.-Your proposed system of electro-magneto-helices for an Atlantic cable will not operatess you sup. pose. The great dificulty with marine cables is to obtain sufficient and proper insulation. We advise you to make some experiments on a limited scale and determine the question for your own satisfac tion.
W. C. B., of Conn.-Your father's experiments do not possess sufficient novelty to bring them into notice at the present
time. We have had our columns full of this kind of matter lately. D. McJ., of C. W.-It will require about 2,000 cubic feet of gas to raise a man of 180 pounds weight in a balloon. You can. not make a flying machine on the plan you have described or any at any pr has bcen bronght to our notice. You may ble safety valve and blow off steam gradually. You cannot pump steam back to the boiler by employing any specific valve whatever in the pump for the purpose of using the exhaust steam orer again. It is also evident that it would take just as much power to force back the steam into the boiter as the power you could obtain in working it over again, so there would be no saving whatever in recovering such steam.
J. N. Z., of Kansas.-If you burn the ends of your fence posts so as to char their surface or coat them with coal tar to the long as posts put in withoutany preparation in the common manner. G. W., of Ky.-The temperature of steam is not, as a rule, the sameat all pressures; steam can :be superheated so as to be . G. W., of Mass.-For ordinary purposes the upright flue boiler is about as good as any you can get; they are in very extensive use; all steam fire-engines have them. The plan of boiler you have sent us is very old ; the water space is rather narrow, but this makes no diflerence provided the feed-water circulates
properly. Put all the flues or tubes that you can into your boiler withont weakening it. Every tube you put in saves money here after, but you must be careful and see that the feed-water has free access to all parts of the heating surfaces, as boilers constructed with large amounts of the same are liable to "form."
E. M., of N. Y.-One kilogramme is equal to 2,205 pounds, 15,000 kilogrammes are equal to 33,075 pounds; 25,000 kilogrammes are equal to 55,125 pounds. One meter is equal to $3 \cdot 281$ feet, and a millimeter is the $1-1000$ th part of a meter. From these data you will be able to compare the strength of the different kinds of iron you refer to, in the article which you submit to us.
C. C., of D. C.-We have given you all the information we possess respecting the treatment of artificial stones with the chlor It is manutactured by dissolving the calcium fresh and try it your R. D. D., of Iowa.-From the section diagram which you $h_{\text {ave }}$ forwarded of your type machine we cannot perceive any features of a new and important character. There are several typewetting and disthen ine V. G., of Conn.-The best air pump, for your purpose, cylinder and piston like a water pump. You will find it dificult to cylinder and piston like a water pump. You will find it dificult to inch.
. J., of N. Y.-Pure india-rubber may be dissolved in turpentine or naphtha, but it is dificult to use as a cement for re-
pairing vulcanized boots and shoes. In the manufacture of india. pairing vulcanized boots and shoes. In the manufacture of india.
rubber articles the india-rubber is rendered soft by heat?and press. ure-not dissolved in a solvent.
H. W. B., of N. Y.-A submarine propeller is illustrated and described on page 81, Vol. VII (old series) of the Scievtific American. We think you will consider it superior to the one which you propose the war ships of an enemy by placing torpedoes under them
A. S., of Ohio.-On page 53 , current volume of the Scientific American, in the column of "Valuable Receipts," you will notice that we have described the muriate of zinc as one of the fluxes used in soldering.
H. and R., of C. W.-Cast iron articles are malleable-ized and thus rendered softand tough, by placing them in a properly. constructed furnace, covering them with an oxide of iron, such as some iron ore, and submitting them to a red heat, which is continued for several days, after which they are gradually cooled. "Cols must cast iron articles are unft for being malleable-ized. You must use a good quality of pig iron for all your castings.
F. J. C., of Philadelphia.-You propose, as a superior boiler for generating steam, one constructed on the principle of the centrifugal drying machive, into which a small quantity of water shall be conveyed and sprinkled over an extensive heating surface. Your proposition has been suggested on several occasions. You will find a rotary boiler illustrated and described on page 217, Vol. II (old series) of the Scientific American; also an illustrated history of steam boilers in Vol. VII (oid series) of the Scievtific Amprican, in which you will obtain much valuable information on the subject of steam boilers.
A. P. J., of Ill.-Some years ago we examıned a very good quality of paper that was made from cotton wood. We have no doubt but gond paper may be made at a moderate cost from such wood, asitit is very fibrous and contains but little silicious matter . B. C., of Ill.-An intense black India ink for writing on vellum is made with a very strong solution of good Indian ink. Yon J. H. G., of N. Y.-Your particular machine for performing music with a galvanic battery may be patentable, but the principle of executing music with an electrical apparatus is not patentable, as this was done years ago and a patent taken out for the inention by Alexander Bain. Fine iron wire is not equal to copper n making an electro-magnet of intensity or onefor a magaeto-electric machine.

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