

ing a hole 1/4 inch diameter at the end of the crack and sawing a kerf along the crack wide enough to prevent the edges from touching by the vibration of the bell. For the bell you describe the kerf should be 1/4 inch wide at the rim of the bell and narrower if convenient toward the hole.

(6695) G. G. C. asks us to explain the cause of sound in a steam whistle. A. The cause of sound in a steam whistle is the same as in any form of whistle or organ pipe, viz. : A vibration of the atmosphere induced by a vibration set up in a steam jet directed agai at the edge of the bell, the vibration of the air or steam column in the bell influencing the tone according to its length and diameter.

(6696) Win. N. C. asks the best way to cement a cellar floor 19 feet 8 inches by 26 feet 10 inches, the probable cost and which of the following suggestions is best if any are good: One suggested to me gravel for foundation and then a layer of cement. Another suggested broken brick or cobble stone pounded down for a foundation with cement between the pieces of stone or brick and then a layer of cement for the surface.

(6697) S. B. W. says: Will you inform me what is the best preparation and what is generally used to polish ivory and how to apply? Also the best preparation and methods for getting a high polish and finish on fine steel such as surgical instruments and dentists' tools when not nicked.

(6698) S. H. R. says. Will you publish a formula for a harmless color for the hair, producing medium chestnut? A. Where, from some personal idiosyncrasy, the color of the hair has disappeared and cannot be restored, a dye may be considered necessary, the following will be of service; but the nitrate of silver dyes should be avoided, and the use of any dye for prolonged time is detrimental to the hair.

- 1. Brown:
Walnut skins beaten to a pulp 4 oz.
Rectified spirit 16 "
The above is perfectly innocent in its character.
The following is original, and non-injurious:
2. Black:
Sulphate of iron 10 grs.
Glycerine 1 oz.
Water 1 pt.

After the first application of formula 2, the hair should be allowed to dry and then be brushed. Subsequently, both formulae may be used once daily at an interval of an hour or so, until a black color is produced. All preparations of lead and mercury are injurious if used for any length of time; they may, however, be legitimately used where some small portion of hair has, from personal idiosyncrasy, lost its color, which cannot be restored.

TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., OFFICE SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted December 31, 1895, AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Aerial navigation, E. J. Pennington..... 552,443
Air drying and purifying compound, A. M. Purves..... 552,142
Alarm. See Speed indicating alarm.
Ammunition, miniature, H. Andrews..... 552,090

Bedding, Z. Guzik..... 552,472
Bedstead, O. S. Foster..... 552,176
Bedstead, C. Maher..... 552,283
Bedstead, lounge, sofa, etc., combined, M. Lang- bohm..... 552,323
Bel, John, M. Mittag..... 552,257

Boiler, steam, for forges, furnaces, etc., J. Gillham, Jr..... 552,178
Boiler, steam, for forges, furnaces, etc., J. Gillham, Jr..... 552,178
Boiler, steam, for forges, furnaces, etc., J. Gillham, Jr..... 552,178
Boiler, steam, for forges, furnaces, etc., J. Gillham, Jr..... 552,178

DESIGNS.

TRADE MARKS.

Artists' and draughtsmen's use, certain named materials and instruments for, Hirsberg, Hollander & Company..... 27,571
Baking powder, Dixie Baking Powder Company..... 27,557
Bicycles, Hay & Willits Manufacturing Company..... 27,552

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1863, will be furnished from this office for 25 cents. In ordering please state the name and number of the patent desired, and remit to Munn & Co., 361 Broadway, New York.