

middle, leaving the cut or printing on each side. The appearance of wood cuts is improved by this method, as it gives the soft effect of an artist's proof on India paper. Many magazine or illustrated newspaper cuts may be split and mounted into books to illustrate them more fully. The effects obtained are really surprising.

(4590) G. E. C.—A correspondent of the *Lancet* states that he has found the following preparation most useful in cases of falling of the hair:

- Tincture of jaborandi. 1/2 oz.
Lanoline. 3 drms.
Glycerine. 2 oz.
Mix (by the aid of a little soft soap). A little to be rubbed in every night.

(4561) Mr. G. H. S. writes: In this city (Pueblo, Colorado) we have an electric line controlled by one power house and on one circuit of over 25 miles. One track from the Bessemer steel works to near the Overton oil refinery (both suburbs of Pueblo) is about 14 miles long, and its branches make up the rest. There are about 30 cars, some with one to three trailers, at work at one time, each car with two motors of 40 horse power using up to 50 amperes of current. This is the longest line on one circuit known to me.

(4592) F. G. asks: In calculating, how would you go about figuring the size and weight of a fly wheel for a certain size engine? In what proportion is area in the suction and discharge pipe to the water cylinder on a pump for boiler feeding, and others also? A. The sizes of fly wheels vary considerably with different makers and for the different uses of the engine, as well as the weight; 3 to 5 times the length of the stroke is about the range for diameter, and from 70 to 100 pounds per indicated horse power for the weight is a common practice with makers of Corliss engines. The lighter weights are assigned to engines running machinery of uniform load. The unequal pressure during the stroke by an early cut-off is also an essential factor. You will find the formulas for the different kinds of engines, with explanations and examples, in Nystrom's "Mechanics," pp. 446, 447, \$3.50 mailed. The relative diameters of suction and force pipes for boiler feeding vary by one size of the usual iron pipe sizes. For long suction or long discharge there should be an additional size for a long pipe.

(4593) G. W. J. asks for the formula for finding the ratios for the months, for finding the day of week that any given date of month falls upon. A. You will find the tables of the ratios for sixty centuries, and the ratios for the months, with examples for working the computation and an explanation of the old and new style calendar in relation to the days of the week, in SCIENTIFIC AMERICAN SUPPLEMENT, No. 578, 10 cents mailed.

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An experience of forty 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

November 8, 1892,

AND EACH BEARING THAT DATE.

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

Table listing inventions with names and patent numbers, including items like Advertising device, Aging liquors, and various mechanical devices.

Table listing inventions with names and patent numbers, including items like Car and truck safety attachment, Carding engine, and various agricultural machinery.

Table listing inventions with names and patent numbers, including items like Journal bearings, Key, J. W. Toops, and various electrical and mechanical devices.

Table listing inventions with names and patent numbers, including items like Switch stand, Syringe, and various household and industrial machines.

DESIGNS.

Table listing designs with names and patent numbers, including items like Badge, N. S. Boynton, and various decorative and functional items.

TRADE MARKS.

Table listing trade marks with names and patent numbers, including items like Beer, lager, Senn & Ackermann, and various brand names for goods.

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.

Canadian patents may now be obtained by the inventors for any of the inventions named in the foregoing list, for a fee of \$40 for the application and \$10 for the patent. The complicated cost will be a little more. For full instructions address Munn & Co., 361 Broadway, New York. Other foreign patents may also be obtained.