

The American Slate Industry.

The superintendent of the census has lately published the report of William C. Day, prepared under direction of Dr. David T. Day, on the slate industry, from which it appears the total value of all slate produced in the United States in 1889 is \$3,444,863. Of this amount, \$2,775,271 is the value of 828,990 squares of roofing slate, and \$669,592 is the value of slate for all other purposes besides roofing.

As compared with the census report of 1880, the slate product of 1889 is nearly twice as great in number of squares and in value.

Twelve States at present produce slate. A line drawn on the map from Piscataquis County, Maine, to Polk County, Georgia, and approximately following the coast outline, passes through all the important slate-producing localities. According to amount and value of product, the most important States are, in the order named, Pennsylvania, Vermont, Maine, New York, Maryland, and Virginia. In the remaining six States productive operations are of limited extent, and in the case of Arkansas, California, and Utah, of very recent date.

The twelve States referred to do not include all those in which merchantable slate is known to exist, since discoveries promising good results for the future have been made in a number of other States, among which may be specially mentioned Tennessee, where operations of production are beginning.

The Bangor region, which is entirely within Northampton County, Pennsylvania, is the most important. This region includes quarries at Bangor, East Bangor, and Mount Bethel, Pennsylvania.

The Northampton Hard Vein region is specially distinguished on account of the extreme hardness of the slate as compared with that produced in other regions of the State. This region includes the following localities: Chapman's Quarries, Belfast, Edelman, Seemsville, and Treichlers, all in Northampton County.

The Vermont and New York region includes an extensive slate formation occupying a part of the old Champlain Valley, lying between the western base of the Green Mountains of Vermont and the southern trend of the Adirondacks in New York. The area in which slate is actually produced at present is confined to a narrow strip in Washington County, New York, and a somewhat wider one lying next to it in Rutland County, Vermont. It extends from Castleton, Vermont, on the north, to Salem, New York, on the south, a distance of 35 or 40 miles, and has a maximum width of six miles, but the average is not more than a mile and a half. With the exception of red slate, the production of which is at present limited to Washington County, New York, the general character of the slate in Vermont and New York is the same.

The slate quarrymen of the country, and to a considerable extent the firms operating the quarries, are either Welsh or of Welsh descent, many of them having learned the methods of quarrying slate in the celebrated quarries of Wales.

The quarries are operated on an average of about 220 days in the year. The idle days are the result of rainy weather and holidays. The first day of every month is regarded as a holiday by the Welsh quarrymen, and no work is ever done by them on Saturday afternoons.

The average wages for the entire country paid to foremen or overseers is \$2.48 per day; for quarrymen and millmen, \$1.56; for mechanics, \$1.64; for laborers, \$1.27; and for boys, \$0.76.

Sand on the Columbia River.

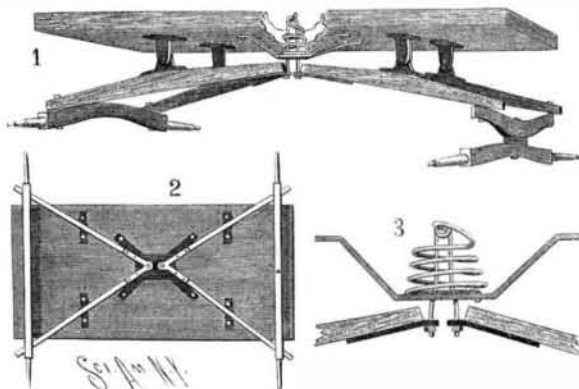
Sandstorms along the upper Columbia have long been a great source of annoyance and expense to the company operating the railroad through that section, trains frequently being delayed a day or more, at a time, from sand blown on the track. Heretofore no systematic effort has been made to get rid of the sand. A large gang of Chinese has been employed for years at an expense of about \$18,000 a year, to simply shovel sand off the track, and pile it up on the other side in a most convenient place for being blown back again. In some places the sand was from eighteen to twenty feet high on each side of the track, the accumulation of years, and much of it has been shoveled over hundreds of times.

A scheme has been adopted for the removal of the sand by sluicing it into the river by means of water supplied by a force pump on the river, near which the road runs for a long distance. The scheme bids fair to prove a great success, as with a comparatively small pump the sand is washed into the river for four cents a cubic yard, and a larger pump is being sent to the front, by which it is expected that the sand can be moved for three cents a yard.—*Pacific Lumberman.*

ONE of the latest inventions in connection with the electric light is a silent cab call. Several clubs and hotels in London have already been supplied with this useful commodity. Two lamps are suspended outside the building, one red and the other green, and by pressing a knob in the entrance hall one or other of the lamps can be lit at will. The red light calls a four-wheeler, and the green a hansom.

AN IMPROVED CARRIAGE SPRING.

The construction shown in the illustration is very light, while with it the body settles evenly without regard to the placing of the load, does not tip when one gets in and out, and may be made of full width. It has been patented by Mr. Alfred Conner, of Exeter, N. H. Pivoted on the under side of the platform are four bearing arms or levers, whose outer ends are connected to the axles, and whose inner ends come together centrally under a spider-like supporting frame attached to the under side of the platform, as shown in Figs. 1 and 3, a conical spiral spring between the body and frame here connecting the inner ends of the bear-

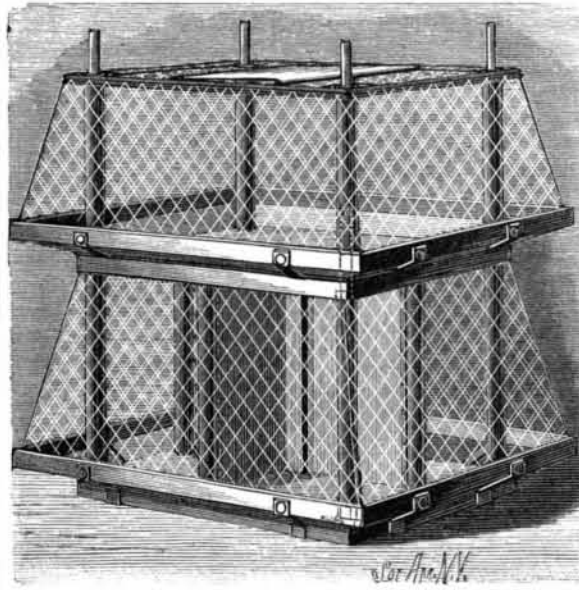


CONNER'S "CLIMAX" CARRIAGE SPRING AND HANGING APPARATUS.

ing arms with the body. Any other suitable form of spring may be used instead of the one shown in the illustration. Fig. 2 is a bottom plan view showing the application of the invention. A vehicle in which this construction is followed is not liable to get out of order, and is designed to afford easy riding and obviate all rocking motion, while any tendency to upset in turning corners is materially lessened. With a heavy person on one end of the seat and a light one on the other, there will be no tipping of the seat to one side, the arrangement of the spring and bearing arms causing the body to settle evenly.

A CRATE FOR SHIPPING AND EXHIBITING POULTRY, ETC.

A crate especially designed to safely carry and advantageously exhibit poultry, etc., and which may also be used for the conveyance of perishable articles generally, while, when not in use, it may be knocked down and packed in small compass, for storage and transportation, is shown in the accompanying illustration. It has been patented by Mr. Henry M. Bickel, of Larned, Kansas. The crate is made with opposite flat sides and beveled end sides, covered by wire netting, and has a detachable floor, on the outer edges of which are straps by which the floor may be connected with buttons on side strips. At the corners of the floor are beveled perforations, adjacent to which are hinged vertical posts, extending downward through the floor and upward through the ceiling of the crate, the upper



BICKEL'S KNOCKDOWN CRATE.

ends of the posts being reduced in size, thus forming shoulders to support the ceiling, and means for connecting with supporting posts above, whereby any number of similar crates may be thus superimposed on each other, our illustration representing a double crate. The top of the lower crate has centrally sliding doors moving in slideways, and the top of the upper crate has a swinging door held closed by a suitable catch, whereby fowls, etc., may be conveniently placed and confined in the crate. Detachable posts are used in connection with the upper crates, and the floor of the bottom crate has a removable central post, which, with other posts near the edges of the floor, is adapted to support partitions of cloth or webbing, whereby the crate may be divided into such number of compartments as desired. The webs pass through slots in the center post,

so that they may be easily regulated or moved. A detachable floor is also provided, of cloth or other flexible material, a strengthening rod or rib extending around its outer edge, adapted to fit within the side strips of the crates, this floor also having straps adapted to connect with buttons on the side strips. The crate shown, instead of being double, may be put together to afford one large interior compartment, with no dividing floor, the bevels from the top and bottom edges then giving a larger central horizontal portion. The network sides may also be made in globe form, the posts, supports, and side strips provided for in the construction admitting of application in the making of various shaped crates, as well as facilitating the nesting of them in such way as may be deemed desirable.

Stimulants for Pot Plants.

The successful florist has more faith in giving stimulants when the plants really need them than in keeping the roots buried in soil made rich and almost offensive by strong manure. When roots are few and the plants are almost at rest, the purer the soil and the less stimulant the plants receive, the better will they thrive when their roots come to draw up larger supplies of nourishment.

Moisture is needed to soften the soil and to allow the roots to extract nourishment from it, but when all the virtue is out of the earth and the plants begin to show signs of distress, all the watering in the world will not give vigor to the exhausted functions, but let a portion of guano or any well prepared manure be mixed with the water sufficient to color it, and let this be repeated at every watering instead of giving a much stronger dose at longer intervals, the result will be most satisfactory. The beneficial results obtained from manure water when judiciously applied to flowering and fruiting plants have long been recognized by cultivators, and its use is now becoming more general.

A valuable liquid is made by using ammonia, putting about one teaspoonful to two quarts water when watering the plants.

Plants require about the same treatment except in the matter of food. Ivies may be given plenty of warm water, but should not be stimulated with liquid manure.

Callas will bear stimulating to almost any degree. Give them an abundance of stable manure and warm water. Commercial fertilizers are of no value in creating blossom stocks.

Give your pinks a little lime water, but never stimulate them with guano or anything of the sort.

Give roses a little powdered charcoal or weak soot tea. If flowers do not mature well, they may be made to by placing a layer of powdered charcoal half an inch deep on the earth in the pot.

Commercial fertilizers or plant food should not be applied oftener than once in two weeks. Stir up the soil around the edge of the pot and sprinkle in a small tablespoonful of the fertilizer, watering the soil slightly immediately after.

All stimulants should be applied with care. Begonias are particularly sensitive to them, and they should be used but seldom on geraniums; but to roses, fuchsias, carnations, heliotropes, and others they may be given with more safety.—*American Rural Home.*

Telegraph Statistics.

The following comparative figures may be of interest:

Country.	Miles of Telegraph Wire.	Messages per Annum.	Messages per Annum per Mile of Wire erected.
United States.....	776,500	56,000,000	72
France.....	220,890	38,050,000	136
England.....	180,000	50,000,000	277
Russia.....	170,500	10,280,780	60
Australia.....	105,300	12,000,000	114
Canada.....	58,580	4,027,581	69
Italy.....	19,500	7,000,000	360
Japan.....	16,500	5,000,000	303
New Zealand.....	11,375	1,835,394	161

Dentists' Moulding Wax.

Dr. P. David communicates to the *Journal de Pharmacie et de Chimie* an analysis of the composition known as "Godiva," or "Stent." Upon this he bases the following formula:

	Parts.
Stearin.....	25
Half-soft copal.....	25
Talc.....	50
Carmine.....	.05
Oil of rose geranium.....	.2 drops to the ounce

Melt the resin by the heat of a sand bath, and when slightly cooled add the stearin, stirring constantly. When this has melted add the other ingredients, previously intimately mixed, and stir so that a homogeneous product may be obtained.

The adhesiveness of the composition may be increased or diminished by modification of the amount of copal. A more thorough blending of the color may be insured by dissolving the carmine in a little potash solution before mixing with the chalk.