

North and South are quarreling over their respective routes, Kansas is quietly pushing forward her settlements and enterprising population along the most favorable route, in such fashion as to *compel*, by the inevitable law of trade, the formation of this great highway within her bosom.

Leavenworth, the commercial capital of the territory, has experienced some reverses; property was held too high, puffed beyond its real value, and, of course, had to "come down." The citizens have had some considerable losses by fire lately. They are not properly provided with water or machinery for such emergencies. I was glad to notice that they are constructing large tanks or cisterns to hold water in case of the occurrence of other fires—an admirable plan, and one that has much assisted Cincinnati in past years. If to this they would add a couple of steam fire engines, the property-holders would be the gainers in the long run.

That frightful "Massacre of the Innocents" which has lately occurred in Lawrence, Mass., is a catastrophe sufficiently appalling to make the blood run cold in one's veins. But what other result could be looked for, when we consider the culpable manner in which buildings in some sections of this country are often put up? Years ago I wrote on this topic, calling attention to the danger that is always imminent in such cases; others have done the same, yet all apparently to no purpose. The day of prayer recommended (by the Mayor of Lawrence) to be set apart for supplication of the Most High, I regard as little better than insult and blasphemy. Men first violate, in the most reckless and criminal manner, the well-known physical laws of God; and then, because the punishment due to their infraction follows that violation, they kneel down and pray—for what? Is it that He will suspend the action of His mighty laws of gravitation and cohesion? The authorities would please God much more by *prosecuting* the criminal parties in this matter, and taking good care for the future that no such murderous, slaughter-house factories are put up in their city, than they will by the whole industrial community losing one day's labor at such a time. I believe in prayer, but more in obedience.

E. M. RICHARDS.

CULTIVATION OF ZANTE CURRANTS, CORK AND RAISINS IN CALIFORNIA.

The second volume of the report of the Commissioner of Patents for 1858 is devoted to agricultural matters. We find many things in it which are very interesting, and make at this time the following extracts from a communication by Andrew W. McKee, of San Francisco:—

"To the efforts of the Agricultural Division of the Patent Office, California is indebted for the introduction of most valuable vines of the Zante grape, which produces the celebrated dried currants of commerce. These are growing and thriving exceedingly well, a most significant fact, when it is said that this variety of grape is rapidly failing, and great fears are entertained of its total loss in the country where it has hitherto been grown, the Islands of Zante, Cephalonia, &c. Should these fears be realized, and this grape reproduced and brought to its pristine quality in California, it is believed that the result to this State alone will tenfold re-imburse the entire appropriations for that Office. Six hundred and forty-three vessels annually leave the Mediterranean for the Atlantic ports, loaded with figs, lemons, oranges, limes, almonds, and products of the vine, to the amount of \$7,250,000, the total yield from the Mediterranean, for all countries, being over \$200,000,000. It is merely a question of time, when California will supply her sister States with the above-named articles and still have more to spare.

"In connection with the subject of the products of the vine, it will at once be seen that great importance will result to California especially, as well as to Ohio, Indiana, Missouri, and all other States where the grape is manufactured into wine, from the introduction of the cork oak, by the importation of the acorn from Spain, through the Patent Office. The invoice or home cost of the cork bark imported into the United States amounts to over \$250,000 annually, with a greatly increasing demand. This tree is found to grow and thrive remarkably well wherever planted in our middle and southern States, as well as those on the Pacific coast. It grows rapidly, and attains a height of over 30 feet. The Patent Office has already imported enough acorns to plant more than half a million trees.

In Lower California, where labor is cheaper and the distance from market too great for the sale of fresh fruit, most excellent raisins are made from the large Malaga grape, and thus, with the California grape, we may expect, ere long, to have plenty of excellent raisins manufactured in our interior valleys. Certain it is, that our grapes lack nothing in richness of flavor nor abundance of saccharine qualities to adapt them to such a purpose.

"The cultivation of the grape in California is exceedingly simple, and attended with the most astonishing profits. The soil, as a general thing, is a rich sandy loam, which is plowed, harrowed and stricken off into rows six feet each way. Some put them seven feet asunder. A crow-bar is used to make the hole, and the cutting is inserted about three feet deep, leaving from four to six inches above the surface. In two years the vines begin to bear, and abundantly, in from three to five. At what age they reach their maximum yield is uncertain; but the records of the Missions and living witnesses prove, beyond a doubt, that there are vineyards in this State from 60 to 70 years old, which are yielding as largely as ever before; nor within the period of 70 years has there been even a partial failure, although, within that time, the wine crops throughout Europe and other countries have been terribly afflicted, and entire annihilation threatened.

"The ordinary calculation is that an acre of land in California is sufficient for a thousand vines, each of which, when in full bearing, will produce a gallon of wine. This is proven to be a safe estimate, but rather under than over the average. An experienced man, with the assistance of a horse and plow, for about eight days in the year, will attend and cultivate from eight to ten acres. The vines are generally pruned close, but not trained. In this manner the yield is more abundant, the grapes sweeter, and produced more cheaply, there being no cost for staking or trellising. The closer the bunches can be raised to the earth in California, where it never rains during the summer months, the more benefit they receive from the radiation of calorific. Thousands of vines and cuttings have been sent from California to the eastern States. Mr. N. Longworth, of Cincinnati, speaks of them as doing well in Ohio. A quantity has also been planted near Lebanon, Tenn., in the open air, and is reported as doing well; and it is believed that, if a similar method of culture, with a little care in winter, were tried in Maryland, Virginia, North Carolina, Kentucky, and other States adjacent, this grape would prove highly profitable. As to the future prospect for the grape-culture in California, it is ascertained beyond a doubt that there are now in full bearing two million vines matured, two million about two years old, and preparations are being made this year to put out at least three million more. The increase of vines from 1856 to 1858, only two years, has been more than doubled. The value of the grape crop in this State, for 1858, is estimated at \$1,000,000. When the present stock of vines is well matured, it is estimated that their yield will be worth nearly \$8,000,000.

"Although there is not a county in this State, from Oregon to Mexico, where the grape will not flourish well, it is conceded that the three southern counties, Los Angeles, San Bernardino and San Diego, which are about on an equality wherever localities are found susceptible of irrigation, bear off the palm for quality and quantity per acre; and it is fully ascertained that the capabilities of these counties for the vine, with the present supply of water for irrigation, are equal to one hundred million vines, equivalent to 100,000,000 gallons of wine."

SEWING BY ARTIFICIAL LIGHT.

MESSRS. EDITORS:—Persons whose vision is somewhat defective can sew white cloth by candle-light, but they are unable to perform the same operation with black cloth. The following plan, however, affords a partial remedy:—Pin or baste a strip of white paper on the seam of the black cloth to be operated upon, then sew through the paper and cloth, and when the seam is completed the paper may be torn off. The black thread will be distinctly seen on the white paper, and by drawing the stitches a little tighter than usual, good work will be produced. This method is well adapted for sewing by machinery as well as by hand.

M. M.

HORSE-POWER OF BOILERS

We will give some rules by which any person may be able to ascertain the horse-power of a steam boiler. We do this in answer to several correspondents who have recently sought information on this point.

Without artificial draft, for stationary boilers, 1 square foot of grate and 9 square feet of heating surface, is called a horse-power. The 9 square feet of heating surface mean half the area of the tubes or the flues, half the area of the vertical sides of the fire-box (when surrounded with water), and the whole of the crown plate. Question: what is the horse-power of a boiler having 9 square feet of grate area, with the two sides of the fire-box 2 feet deep to the crown plate, and 20 3-inch tubes, 10 feet in length? Answer: efficient fire-box surface, 15 feet; tube surface, 117.6.10; therefore $15 + 117.6.10 \div 9 = 14.7$ horse-power. Of course all rules for estimating the horse-power of boilers are conditional. It is simply considered that a boiler which has a clear burning fire, 1 square foot of grate and 9 square feet of effective heating surface, is called a horse-power. The efficiency and evaporative power of any boiler depend on several circumstances. One with 100 square feet of grate and 1,000 of heating surface, if it has not sufficient draft, may not be able to generate steam to drive a donkey engine of 5 horse-power. With high chimneys boilers have done well with half a foot of grate surface per horse-power. The foregoing rule is applicable to both cylinder and tubular stationary boilers, and has no reference to the economy of the one or the other. With a good draft the fire-box surface is most efficient in generating steam rapidly, but the fuel is economized almost in proportion to the extent of the heating surface. Upon this subject Clarke says, in reference to locomotive boilers "It is fairly deducible from 200 distinct trips, with 27 engines, on the Great Western Railway (England), that an increase of heating surface from 40 to 84 times the grate area, with a rate of evaporation of about 11 feet per hour, per foot of grate, was attended with a substantial increase of the evaporative efficiency of the fuel (coke), represented by a rise from $6\frac{1}{2}$ to $8\frac{3}{4}$ pounds of water for 1 of fuel." The evaporation of a cubic foot of water per hour in a boiler is equivalent to a horse-power. Some locomotives have evaporated 22 cubic feet of water per hour per square foot of fire-grate. It will be found economical to have about 60 times the heating surface to 1 of the grate; that is, calling the whole surface of the tubes and flues heating. Bridge walls and diving flues are very essential for economizing fuel, by keeping the heated products of combustion longer in contact with the metal, through which the heat passes to the water. Experiments with American boilers, both marine and locomotive (the latter belonging to steam fire-engines) are favorable to the superior efficiency of vertical tubes. No steam is generated from the lower surfaces of horizontal tubes, while in the vertical tubes there is a constant current which permits the steam to escape upwards more freely from the heated surfaces. This accounts for their more rapid generation of steam.

GOV. BLACKSNAKE.—This noble and venerable old Indian has gone to his long home. He died about the first of the present month, aged 123 years! This relic of bygone generations retained his powerful mind and energies vigorously to the last. He was born in 1736, and was four years the junior of Washington. He was 37 years of age when the tea was thrown into Boston harbor; he was a warrior in the vigor of manhood in the old French war in the years 1755-6 and 7. Gov. Blacksnake was a great friend of, and intimate with Washington, and received and faithfully kept a medal given him by the latter. He was a very strong and athletic Indian, and has actually traveled on foot to Buffalo and returned, between the rising and setting of the sun, which by the old Indian trail was 110 miles—time, twelve and a half hours. When he was 90 years of age, he was as erect and noble, his step as firm and elastic as a youth at 20. He died at his residence near Cold Spring. He was buried after the customs of his people, in a sitting posture, with his hunting implements around him, amid the lamentations of the fading relics of his race that still linger along the shores of the Alleghany. Alas!—

"Chieftains and their tribes have perished,
Like the thickets where they grew."

From recently published data, it seems that in Lima, Peru, there are 45 shocks of earthquakes a year. Agitation is "the order of the day" there.