Scientific American.

The Cotton Gin.

Many incorrect opinions are entertained respecting the nature and action of the saw gin which it may not be improper to notice. Some of these opinions have been the cause of attempts to remove evils which have never existed. Two of these opinions have been presented to the public through the medium of the SCENTIFIC AMERICAN. The first is that the " staple or fiber of the cotton may come in contact with two saws at the same time, and be thereby injured." The second is "that by long direct action of the saw upon one part, as in the common saw gin, the staple will be cut." These two opinions have come out in connection with two late improvements. One in gin saws and one in a cotton gin.

There is no intention, in this article, to depreciate the value of any improvement in this direction, but simply to defend the saw gin from some of the wrong charges made against it.

That two saws cannot take hold of the fiber of the short staple cotton at the same time, so as to injure it, may be ascertained by taking a single lobe of cotton and placing it on a saw, and turning it slowly by hand.

As respects the second of these opinions, those who are familiar with the cotton gin know that there is a constant counter circular motion called the "role," caused by the action of the saws in taking the fiber from the seed; so much of the fiber as is taken into the teeth at one time, passes through the spaces in the ribs, is immediately blown into the room, and never returns. In this circular motion, new fiber is constantly presented to the action of the saws, until the seed are cleaned, and fall out at the lower end of the ribs.

In defence of the saw gin, it may be said that it never cuts the staple unless it is imperfectly made or badly regulated by those who attend it. The fiber is so easily separated that if a seed is held in one hand and the staple in the other, it may be pressed off with a penknife without injury. There is on every seed of cotton one portion of fiber shorter than another. The ignorance of some in reference to this peculiarity in the growth of cotton has furnished the idea of the saw gins cutting the staple.

JOHN DT BOIS. Greensboro', Ala., Nov. 1855.

How America was Formed; and the Cause of the Flood.

Clark Mills, of Washington, states that the fountains of the great deep being broken up, the waters must have retired in great agitation to the east and west from the sides of the rising continent. The various opposing currents caused immense deposits to be made, and the rush of water, with the flaming ocean beneath, generated an immense evaporation. The winds, which, before this, moved from east to west around the globe, were suddenly obstructed by the towering burning mountains. They rolled back as if astonished at the new phenomena, laden with the vapors of a boiling occan. The clouds, in their sublime evolutions, moving in the direction of the waters to the east and west from America, met in awful ar ray over the Old World. There they discharged their burdens, the vapors descending for forty days, and after the earth revolved 150 times in her cumbrous mantle, the waters retired to the caverns from whence our continent arose.

Pennsylvania Coal.

It is more than twenty-five years since Pennsylvania coal began to be a recognised article of production and commerce. This year the product will amount to no less than six millions of tuns. This, as delivered at the mines, is worth at least twelve millions of dollars-so particularly palatable. that this great sum may be regarded as the auount of solid wealth dug annually at the present time, from the bowels of the earth .---Pottsville Register.

A Chance for Inventors.

The Belgian Government, rather than interdict the use of corn and potato starch in manufactures, which would be to stop labor for the purpose of econmising food, has offered aprize of 10,000 francs for the discovery of a nonalimentary substance to replace the use of starch in those industrial occupations in which it is now employed.

POST PLICENE

MIOCENE

Clay.

Olive Marl.

Light Colored Marl.

Dark Colored Marl.

Ash Colored Marl.

Sandy Clay

Sand

92'

1115

mencing another of a much larger caliber.

Messrs. Welton & Stearns, the engineers

The people of Charleston, S. C., deserve a

verence they have shown in boring this Arte-

tic States put together, for deep bored wells,

Charleston, S. C.

minerals.

CRETACLOUS

3

23)

450

The accompanying outline sketch represents higher than this, it diminishes in quantity until the Charleston Artesian well. The entire it reaches the hight of 23 feet, when it ceases depth penetrated is about 1,250 feet. The running altogether. The tube is only 3 inches water is now running at the rate of 40 gallons in diameter, and it is inferred that a larger one

No Rocks.

Bedsof Green Sand.

Line Rock's from two to ten

leet thick.

Sand Rocks.

Waler

300

400

500

700

800

Sectional Plan of the Artesian Well at Charleston. | face of the earth. If the water is conducted | in depth. The water in none of them rises to the surface of the earth. In Sacramento an Artesian well was sunk to

the depth of 80 feet, where hard boulders, (apparently in an old bed of some ancient river,) per minute, at a hight of 6 feet from the sur- would yield a proportionably larger amount of from six to ten inches in diameter, were encountered. These boulders were loose, and could not be drilled through nor taken out without very great expense, and the well was abandoned.

In Stockton an Artesian well was sunk to the depth of 400 feet without finding water, and then the City, which was managing the enterprise, allowed it to drop.

In Marysville an Artesian well has been commenced and carried to the depth of 300 feet without obtaining water. They are, we believe, still working away.

In Los Angeles an Artesian well has reached the depth of 537 feet, without getting water. This is probably the deepest well in the State. In Napa an Artesian well has been bored 225 feet without finding water, and there stopped.

For the above information we are indebted to the California Chronicle, which also gives the following strata, encountered in boring a well on the corner of Powell street and Broadway, San Francisco:

115 feet hard sand; 3 1-2 feet fine gravel with considerable water; 12 feet tough blue clay; 1 1-2 feet fine gravel; 10 feet yellow clay; 120 feet very hard grayish sandstone rock. Total, 260 feet.

These strata, encountered in the search of water, afford us a curious insight into the formation of the earth's crust in Charleston and San Francisco. An account of the geology of California was given on page 11, this Vol., Sci-ENTIFIC AMERICAN, being an abstract of W. B. Blake's paper, read before the American Association for the Advancement of Science.

Marshall Hall on Cousumption.

Marshall Hall, an eminent English physician, says: "If I were seriously ill of consumption I would live out of doors day and night, except it was raining or mid-winter, then I would sleep in an unplastered log house." He says that consumptives want air, not physic-pure air, not medicated air-plenty of meat and bread. "Physic has no nutriment; gaspings for air cannot cure you; monkey capers in a gymnasium cannot cure you; and stimulants cannot cure you."

In Australia there is a species of ant about an inch long, called the "bull-dog," which stings with its tail as fiercely as a wasp. They are very tenacious of life, and the only way to kill them is to crush them to pieces. Speaking of them, Wm. Howitt says "as to killing them by cutting them to pieces, that is hopeless; cut them in two, and the head will immediately seize the body, and gripe it fiercely with its nippers, and the tail will sting away at the head. They never trouble themselves to die."

Sugar from Honey Dew.

In Utah a great quantity of sugar is made from the honey dew which collects on the leaves of cotton wood. The leaves are soaked in water, after which precisely the same course is pursued as in the manufacture of maple

Bituminous Coal in Texas.

The Victoria (Texas) Advocate states that a large body of bituminous coal has been dis tous formation. The quality of the water is without exhausting it. In San Jose, Cal., there covered in the upper part of Lavaca county, good, although, on account of the presence of are about sixty Artesian wells, which are used and adds, "We have seen at Hallettsville specimens equal to any of the kind from the mines

Great Canal Project.

A project has been started in Louisiana to connect the Mississippi river with Lake Borgne by a canal, cut from a point eleven miles below New Orleans to an intersection with Bayou Philipon. It is believed that by the construction of this work, up-country produce could be landed at Mobile, and other places of consumption along the Gulf seaboard, at onehalf the cost of freight and charges, and viceversa, by the avoidance of the reshipments

© 1855 SCIENTIFIC AMERICAN, INC.

water. It is understood that the city will surface. In San Francisco alone, there are 175

make an appropriation for the purpose of com- bored wells, averaging 110 feet in depth, in all

J. H. STEARNS

of which the water remains at some distance About 60 rocks have been drilled, the first below the surface. Perhaps by deeper boring sugar. commencing at the depth of 230 fect. For a stratum of water of greater pressure might some weeks the well has thrown up large be obtained. The wells of San Francisco, quantities of sand and finely comminuted shells, however, give out a great deal of water-

1250 ft.

of a marine character, common in the cretatæ | 30.000 gallons being pumped from one in a day the carbonate of soda and a little salt, it is not principally for irrigating the soil of gardens and farms. The water of these wells rises of Pennsylvania or Indiana, and the quantity above the surface of the earth. The least is said to be inexhaustible." plentiful well supplies twenty to thirty gallons of this well, give personal attention to con- perminute, and the largest (as we are informed) tracts for sinking Artesian wells, or boring for | ejects 100,000 gallons per hour, and throws a solid body of water eight inches in diameter to a hight of eight feet above the mouth of the great deal of credit for the patience and perse- pipe. The water rushes up with such force that stones as large as two fists are often sian well. There are now a great number of thrown out. The Artesian wells of San Jose Artesian wells in our country, especially in | are 60 to 250 feet deep, the whole distance Alabama, Missouri, and some of the Western through gravel, clay, sand, and cement without States; but California distances all our Atlan- rock. In Alameda County, Cal., there are four or

but these do not throw their water above the five Artesian wells, averaging about 150 feet and expense of consignment at New Orleans.

900 A Stinging Ant. 1100 1200