

ery becoming a pleasant employment. They will see it in an increased appreciation of their services by an intelligent employer; for nothing is more annoying to an employer, manager, or foreman, than to be compelled to watch every movement of his workmen, from the fear that the job may be retarded, injured, or ruined. They will feel it in the growing consciousness of increasing independence, in the certainty of employment in dull times, in the opportunities for advancement, and in their fitness for higher and better positions.

MONITORS IN ENGLAND.

Our English exchanges continue to discuss the monitor question at great length. The *Engineering*, Mr. Colburn's new paper, and the *Engineer*, treat the matter by correspondence, by the burin of the engraver, and by leaders. Mr. John Bourne, whom all the engineering world is well acquainted with through his works, openly advocates them, and argues in their favor, condemning in strong terms those antique ships with top lofty sides and thin armor which constitute the naval force of European nations.

It must not be inferred that monitors meet with favor on all sides. Quite the reverse. The *Engineer* declares that "such ships as the *Dictator* are unseaworthy and objectionable as cruisers in every respect. Even Americans admit the fact. We must, in short, have free board. Of what should it consist? Of vessels of moderate size, apparently of thin, tough plates of the best possible iron, say three-fourths of an inch to seven-eighths of an inch from the upper edge of the armor plating up say twelve or fourteen feet;" and the editor goes on to say that this thickness of metal would not offer sufficient resistance to explode a fuseless shell, and that splinters dislodged by bullets and round shot would do much damage to the crew if mantlets of rope or hide were suspended in-board. The *Engineer* also says it would appear that on the whole ships with unarmored upper works are safer than those with imperfect armor—a laborious conclusion to arrive at in a leading article of a column and a-half.

"Three wise men of Gotham went to sea in a bowl; if the bowl had been stronger this song would have been longer," and that is the predicament of our British friends. Two horns of a dilemma are presented, but they are both sharp and unpleasant: Either they must abandon the monstrous ironclads they have constructed at such immense outlay, and build others on approved plans, such as the monitors, or lose their boasted supremacy on the sea in case of a naval war.

On the whole, it is inferred by the journal which claims to lead in matters of this kind, that armored ships are of no particular utility when they are fourteen or fifteen feet out of water. No one familiar with the performances of our vessels would dispute this statement. We are quite well satisfied with the performance of our ironclad fleet, and the comments of the English press strengthens our confidence.

SALT AND SODA.

The *Tribune* of the 29th ult. records the fact that within the last ten days soda ash has gone up half a cent a pound, and laments that "there is not a single living, kicking, soda-ash factory in all our country." Although the *Tribune* is slightly mistaken about the existence of soda-ash factories in the United States; yet its complaint that we are dependent upon foreign countries for soda ash is well founded. The American soda ash is manufactured only incidentally or accidentally, and is so small in quantity that it does not affect the price or the consumption of the article. It is made here simply to use up materials about acid factories which otherwise might be wasted.

The present obstacle to the manufacture of soda here is the want of cheap salt; in this country salt costs eight or ten times more than in England. The other raw materials needed, sulphur, coal, and manganese, we have in great abundance, in fact, we are more favored than any other country. But there is plenty of salt in the sea, and we have plenty of places like the Jersey flats which might be used for its extraction.

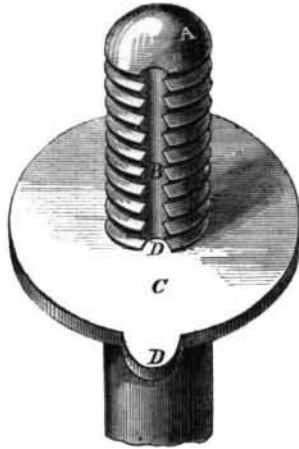
Some of our readers may ask "what of it?" and "what is soda ash to us?" The soda ash manufacture implies more extensive manufacturing establish-

ments than now exist on the continent. It does not concern soda ash alone, for about it clusters, as of necessity, the manufacture, at the same time, of acids, bleaching powder, and hyposulphite of soda.

Some of our most important arts are built on soda ash. Without it, no soap, no glass, no white paper. If the supply of soda ash should be interrupted for six months, what would become of us? As we have suggested above, our salvation, would be salt. The American people cannot do any thing more profitable than to find us salt for ten cents a bushel.

HICKMAN'S IMPROVED WASHER.

The annexed engraving represents a bolt with a longitudinal slit, and a washer with two lips, one of which enters the slit in the bolt and prevents the revolution of the washer, the other being bent up against



the nut to prevent the latter from becoming loosened. The object is to prevent the loosening or loss of nuts or burrs where exposed to jar or tremulous motion, and in many places will answer a very desirable purpose. Patented May 29, 1866, through the Scientific American Patent Agency, by G. G. Hickman, Coatesville, Pa., to whom address for further information.

How American Velvet is Made.

The machinery for the manufacture of American velvet was introduced into this country by the inventor, a Mr. Holt, of Cheshire, England, and its superiority in the matter of rapidity is said to be as great as that of the modern railroads over the old stage coach system. The method is as follows:—Grooved brass rods or wires were placed under the web which forms the pile, secured by threads woven into the warp. The weaver cuts the threads by means of a knife, held in the hand, the blade of which slides along the groove, dividing the pile into two rows of threads, thus giving a nap or pile of the depth of the rod inserted.

The manufacture, according to the patented method, is accomplished by weaving two warps or foundations, with a middle warp alternately rising into the upper and lower, being secured by two shuttles moving at once. The knife moves horizontally, in the same direction as the shuttles, and the two warps and the pile between are divided, and the naps are cut into equal lengths. Two plied fabrics—the exact counterpart of each other—are thus made at one time. The shuttles and knives are all impelled by the ordinary motions of the power loom.

The statement that 110 picks or threads are made in a minute (or nearly two every second) will give some idea of the rapidity of the manufacture. A man with a patented machine can make from fifty to sixty yards per week, while eight or ten yards would be a good week's work for the same person should he make use of the ordinary hand-loom. The saving of labor by this process over the wire-weaving method is estimated at from fifty to seventy per cent., while the fabrics are equal, and, in some respects, superior to those of foreign make. The looms are adapted to the manufacture of plied fabrics, such as silk plush, since an article of this nature for gentlemen's caps has become very popular as a substitute for fur. Tartan, or clan velvets, are also made.—*Commercial Bulletin*.

STAMP YOUR RECEIPTS.—The importance of stamping receipts was recently determined in this city in a suit against a party who neglected to attach the required two-cent revenue stamp to seven receipts. The fine for such neglect is \$200 for each and every offence, and the party sued was fined \$1400. The example is worthy of remembrance.

An Extensive Salt Mine.

The New Orleans *Times* gives an extended account of what it considered the purest and most important natural deposit of salt in the world, located on the coast of Louisiana at Petit Anse Island. The deposit was known as early as 1698-99, but all knowledge of it appears to have been lost until after the commencement of the recent war. During that period, when the supply from other sources was cut off, the mine was discovered by residents of the interior who had resorted to the island for the purpose of procuring salt by boiling, and for two years nearly the whole of the trans-Mississippi region was supplied from that source, no less than two thousand pounds having been taken from it in three months. When the island passed into the hands of the Federal forces, the works, buildings, etc., were destroyed, but it has recently been purchased by New York capitalists, who, in developing the property, have found the salt rock from thirteen to twenty-two feet below the surface, extending over a great number of acres. Pits of over forty feet in depth have been sunk through the salt without finding any indications of reaching bottom. The salt formation is almost perfectly pure, chemical analysis showing that it contains about ninety per cent pure salt. The development of the property is being rapidly pushed, and the product has already reached two hundred thousand pounds per week, with a force of ten hands. This mine is regarded as forming a prominent part of the material resources of Louisiana.

Estimates about the Cotton Crop.

A good deal of interest is manifested in the probable amount of the cotton crop for 1866. Some writers have estimated it as high as 2,500,000 bales, but a correspondent of the *Vicksburg Journal*, who has recently visited several counties in different sections of the State, estimates the cotton crop at a fraction less than 1,500,000 bales.

A letter from Georgia, recently published, says:— "The cotton crop of 1860 was 5,000,000 bales, which brought into the Southern States \$175,000,000. South-west Georgia produced 110,000, receiving \$3,500,000. The crop of the current year will range somewhere about 1,200,000, and south-west Georgia will yield at least 90,000 bales; hence, if cotton commands 25 cents per pound next fall, this favored section will obtain nearly \$12,000,000, and consequently will be, by long odds, the richest district south of the Potomac. This country suffered comparatively nothing from the war; no enemy penetrated into this portion of the State; labor was uninterrupted; property was not destroyed or wasted, and a greater quantity of first-class land is now in cultivation than in 1860; and lastly, the planters are turning their attention exclusively to the production of cotton.

"In the present disordered state of Southern society, it is almost impossible to collect sufficient reliable data to ground an estimate upon, and I freely confess I am not able, by reasoning, to maintain the figures made elsewhere; but this we do know, an immense tract of our cotton-growing region is now idle, and that numbers of what were formerly most productive plantations, are now being worked with one-half of the customary force. Some of the papers say that the crops will be diminished one-third from this cause alone. Then there are three other causes operating in this direction—the scarcity of mules and horses; the scarcity of cotton seed; and the scarcity of labor."

HOW TO CURE A FELON.—As we often see friends suffer with these very troublesome things, we publish the following cure for them, which we have heard highly recommended:—As soon as the parts begin to swell get the tincture of lobelia, and wrap the part affected with cloth saturated thoroughly with the tincture, and the felon is dead. An old physician says he has known it to cure in scores of cases, and it never fails if applied in season.—*Journal of Medicine*.

PRIZE FOR AN INVENTION.—The French Government has issued a decree, published in the *Moniteur*, by which a prize of 50,000 francs, or \$10,000, is to be awarded, within the next five years, to the person who shall discover a system by which the voltaic battery can be economically applied to heating or lighting purposes.