[From the Louisville Courier.]

Hemp and Flax Culture.—Machines for Cutting and Dressing Wanted.

Amid the multiplicity of agricultural improvements that have been introduced for the relief of the agriculturist, it is a little to be wondered at that no efficient machines have yet been invented to meet exactly the wants of the farmer in the three important operations of cutting, breaking, and dressing hemp and flax.

We regard hemp and flax as among the most important crops that are grown by the American farmers. Indeed, they now occupy a more conspicuous place among the products of the soil and in the trade and commerce of our country than cotton did at the time Whitney brought to light his cotton *gin*—an invention which has caused an increase in the product of the great staple of cotton, from a few thousand dollars to *one hundred and three millions of dollars annually*, and which now exerts a greater influence upon the commerce and manufactures of the world than any other product.

The culture of cotton is limited to the southern or warmer portions of our country, while hemp and flax may be grown in any State or territory possessing soil of sufficient richness for the production of wheat or corn.

If the proper machinery for cutting hemp in the field, and the preparation of the fiber were introduced, the trade arising from the manufacture of these materials, like the trade in cotton, would be co-extensive with civilization, and increase to an amount almost incalculable.

A number of machines have already been invented for the preparation of flax fiber, which perform the work well, but these require further improvements to render them capable of accomplishing the work with greater expedition.

With the light we already possess in the manufacture of harvesting machines we can see but little difficulty in the way of constructing machines, that will cut hemp in the field, as perfectly as wheat is now cut. But in the machinery for breaking and dressing the fiber we are not so far advanced; although to perform this operation *perfectly* there is nothing half so intricate, or that requires machinery near so complicated and difficult to make as the Hoe printing press, or hundreds of other machines now in every-day use.

Machinery for the perfect performance of these operations *will* be made, and we believe at no distant day; and when accomplished it will be so simple in its construction and operation that the world will wonder, that the thing was never thought of before.

Some six months since, Mr. M. M. Manly, an extensive marble manufacturer of Vermont, made known through the columns of the Scientific American (a paper that is, or should be taken by every mechanic, artisan, and man of science in the country,) that an invention was needed for sawing tapering forms in marble, and offered a prize of $10,000 for such an invention. Within the short period we have named, sixteen patents have been granted for machines of this character, several of which are now doing satisfactory work. A number more of these machines are before the Commissioner of Patents waiting their turn for examination, while others still are in a state of progress of construction.

This want was no sooner made known to American inventors than a hundred minds were at once engaged to meet it, and in six months the demand is more than supplied. So valuable have some of these machines proved that their inventors have refused the $10,000 offered, and one of them has sold the right to be used in a single establishment alone for $1000 and such is its efficiency that it is said it will pay for itself the first year. The marble interest of the State of Vermont is set down at $15,000,000, and the value of these inventions throughout the country can hardly be estimated.

Now, had not inventive minds been called to this subject, and stimulated by the proffered reward by Mr. Manly, it would probably have been years before any invention would have been brought to light to meet this particular requirement, although the work of marble cutting is carried on in the midst of the inventors.

Let some one or more of the enterprising hemp growers of Kentucky or Missouri make known through the Scientific American, published by Munn & Co., New York, that such machines are wanted, and offer a reward of $10,000 or $20,000, for such as will perform the work to satisfaction, and we venture the prediction that in twelve months the demand will be supplied by more than one inventor, and result in making fortunes to the offerer, and add millions to the annual value of this great Western staple.

In offering a prize of $10,000, or of even twice that sum for a machine that shall successfully cut hemp uniformly close to the ground, and lay it off in even and compact bundles as it advances; and an offer of $20,000, or even $50,000 for a machine that shall break and dress hemp or flax with expedition, as well as it is done by hand, the person or persons making the offer run no risk, for if the machines do not meet the requirements, the money is not expected to be paid. But if the machines operate successfully, they will be worth to the parties making the offers several times the amount of the highest sums we have proposed.

[The above interesting article is from the pen of H. P. Byram—an able writer upon agricultural subjects. His suggestions if adopted will surely bring about the results he aims at. They are certainly worthy of consideration.

The Decks of Ships.

Messrs. Editors—Not long since I saw an article in the Scientific American concerning ships' decks, and I perfectly agree with the views therein. The deck of vessels are not half strong enough; let our shipwrights say what they will, and follow their old-fangled notions as long as they can, it is time some one should break through their stupidity, and fasten the decks as they fasten the sides; let the plank be strong, the beams hard, and put in spikes and bolts of three times the ordinary length. I never saw a ship built, but I have seen a great many broken up, and new ones, too, and the first place they fail is in their decks, and as soon as the deck is gone, so is the ship.

The ship *Stingray*, built in New York, and stranded on the south side of Long Island, it was said, was a good ship; I do not know who built her, but that is of no consequence, only if she had been *well* built, she might have been saved. She had pine beams, and the spikes went into them scant three inches; a smart man could have pulled them off. As soon as there came any strain on them, her deck ripped up, and she filled with water; her cargo, worth a quarter of a million, was nearly destroyed, and the ship was lost, when, if her deck had been a little stronger, she would have held together a little longer, her cargo would all have been saved, and so would the ship. It is not her alone, but I can name a dozen similar cases that have come under my own eye. F. Dominy.

Fire Island, N. Y.

Errata.

Messrs. Editors—Your types made sad work with my communication on page 194. The whole is made unintelligible.

$v=\frac{g}{m}p$ is changed to $v=g+mp$.

$p=\frac{v}{g}m$ is changed to $p=v+gm$

$p=\frac{v}{g}wv$ is changed to $p=v+gwv$

and $p=\frac{w}{g}v^2$ is changed to $p=w+v^2$

Very respectfully, J. B. Conger.

Brittle Annealed Iron.

Messrs. Editors—I notice that a correspondent assures you the piece of iron sent by me, and described on page 184, is no curiosity. All that may be; but to me, and all others in this vicinity, it is still a curiosity, even if gray iron was sent through mistake, as he suggests. The fracture is a curiosity for any iron. The iron was received here about one year ago, and the parties sending it were notified of its defects but they never pretended it had not been annealed, made no allowance in the price on account of its being brittle, or even apologized.

One curiosity connected with the iron is, that some parts of the same piece are tough, while other parts are brittle. The subject has been looked into further than your correspondent is aware of. It is still a curiosity to me. A. Hotchkin.

Schenevus, Otsego Co., N. Y.

McCormick versus Manny's Reaper.

The decision of the Court in the above case, noticed by us on page 154, has been published in pamphlet form, and is a valuble acquisition to patent jurisprudence. The first patent of McCormick was obtained in 1834, and the invention described in it has been public property for a number of years, so there was no infringement of it in the question. The principal features of complaint were the infringement of McCormick's patents of 1845 and 1847, the one embracing the "divider" for separating the grain to be cut from that to be left standing; and the other a peculiar arangement of the raker's seat on the platform.—Manny used both a divider and a raker's seat; but the claims of McCormick's patents only embraced combinations; and the Court held that none of the combinations (which were useful in themselves) were infringed by Manny, because he employed different combinations. Dividers and rakers seats were used in reaping machines before McCormick used them; his improvements the Court held to be distinct from the defendants. It has been stated by some persons that a seat cannot be used with a reel on a Harvester without infringing McCormick's patent of 1847, but Obed Hussey used a rakers' seat in connection with a reel before McCormick, so that this is not the feature of McCormick's invention. It consists in placing the driving wheel back, the gearing forward, and shortening the reel so as to balance the machine when the raker sits or stands on a certain part of the platform.

The decision says:—"Now if a raker be seated on a different part of the machine and where he can rake without balancing the machine, and without interruption from the reel, it is a contrivance and an invention substantially different from McCormick's. To seat the raker on Manny's machine does not require the same elements of combination that were essential in McCormick's invention." This is very decided and clear. The Court therefore decided that the reel and rakers' seat in Manny's machine did not infringe the plaintiff's patent.

Gold Extracting Invention Wanted.

The following is from the Shasta, (Cal.,) *Republican*: "Stillwater creek is situated on the east side of the Sacramento, about 12 miles north of Quartz Hill. We are informed that the gold upon this stream is so exceedingly fine that the miners find it impossible to save a sufficient amount to pay wages, although it is abundant in the dirt. There is no doubt, were some effectual mode discovered by which the fine flour gold could be saved, that both quartz mills and placer mines would be worked to a hundred per cent. more profit than by the present defective system.

We would cordially recommend to some of our down-east Yankees who are torturing and racking their brains to invent improvements in clothes-pin, foot-stoves, hooks and eyes, hen-coops and baby-jumpers, that they devote some of their invaluable and peculiar talent to improvements in mining implements.

Here is a vast field for the exercise of ingenuity. We have seen with our own eyes the gradual advances which have been made in the art of gold mining, and we know that the present advanced state of the art has been attained here in California by slow and uncertain degrees. We, ourself, have a very vivid and distinct recollection of washing out about ten dollars a day in 1849, with the aid of a frying-pan and jack-knife, and we have not forgotten the feelings of envy with which we regarded the superior ingenuity which was displayed by an enterprising and philosophical negro, the proprietor of an adjoining claim.

The colored gentleman had, like us, been for some weeks engaged in the pursuit of knowledge under difficulties, with a pewter spoon and tin pan. At last he came to the rational conclusion that a return of from ten to twenty eollars per day was inadequate to his genius, and wisely attributing the smallness of his earnings to the defective mode of operating, our colored neighbor got a hollow log, which he could roll back and forth like a rocker. With this powerful auxiliary he was enabled to more than double our earnings, at which, we confess, to have felt considerably humiliated and discouraged."

[This is a good story and well told.

A New Steam Fire Engine.

During the past week, on parts of three successive days, a new steam fire-engine was exhibited and operated in the "City Hall Park," of this city, and with gratifying success. The construction of this engine is peculiar,—quite different from any other ever brought before the public. The machinery is supported on a four wheeled truck, made of wrought-iron, and resting on strong elliptic springs, so as to run free and easy. Only one pump is employed—a rotary of Cary's patent, (illustrated on page 345, Vol. 3, Scientific American,)—which is driven by two small oscillating engines of Reed's patent, (illustrated on page 36, this Vol. Scientific American.) The rotary pump is placed on the forward end of the carriage, and the two piston rods of the steam cylinders are directly yoked to the central shaft of the pump, and immediately behind it. They are set at right angles to one another, working upwards and across the machine, giving the pump shaft a uniform rotary motion. The machinery is thus packed in a very small space, and the pump works without that jarring motion peculiar to those steam fire-engines having fixed steam cylinders and reciprocating pumps.

The boiler is peculiarly constructed; it is principally composed of a hollow square stack, standing upright, of double tubes, having the water enclosed between two heating surfaces, thus exposing a thin sheet of water to a double fire sheet. Its inventor is Mr. Lee.

One great object in a steam fire-engine is to get up steam rapidly. From the time the fire was kindled, until the steam gauge showed a pressure of 80 lbs., twelve minutes elapsed, when we were present, and the engines then started at a very good speed. At 120 pounds pressure it threw two 1 1-8 inch stream of water 174 feet horizontally, and with perfect uniformity, for nearly an hour. It is intended to light the fire when the engine leaves the house, and thus to have the steam up and ready for work when the engine arrives at a fire.

Inspection of Flour.

For some time past a number of flour dealers, and others interested, in this city, have been making efforts to effect a reform in the inspection of flour and meal; and they have formed an Association for this purpose. One object of the Association is the adoption of a proper standard of Inspection. This reform very necessary. We have been informed by those who retail flour, that no confidence can be placed in the marks of Inspectors. Barrels of flour bearing the highest mark of an Inspector do not command the highest price in the market. The brands of the millers or manufacturers of the flour are the guides of knowing purchasers. Some miller's brands not marked as the highest grades, sell for a dollar and a half per barrel more than others bearing the highest brand of an Inspector.

There are "fine," "superfine," and "extra" brands on barrels of flour; but what is the meaning of these terms? Do they indicate the quality of the flour? That is the intention, but we are assured they do not determine it, and these marks are entirely disregarded by the dealers.

What is a proper standard of the quality of good sweet flour? Is fineness the test of quality, or color, or what? Such information would be of great use to the whole community, as there is an almost total want of knowledge regarding the *quality* of flour, and the means of judging it by the inspector's mark. The quality of drugs and dye stuffs cannot be ascertained by inspection; analyses is the only method of determining their quality.

We hope the Flour Inspectors Association will establish a correct standard, and inform the public what that standard is to be, and so regulate the Inspector's brand that it may be relied upon.