

## New Inventions.

## Improved Grain Separator.

Mr. Jonathan Booth, of Cuyahoga Falls, Summit Co., Ohio, has taken measures to secure a patent for some improvements in Grain Separators, which have been pronounced, by those who have seen the machine operate, both new and useful. There is a peculiar curved conduit, which has direct communication with the blower—the conduit curving upwards, and the blower placed near the floor. This conduit has two outlets, or minor spouts, projecting out near the top; one is for grain of a certain lightness, which is carried above the full heavy grain, and the other, at the top, is for the lightest and most impure grain. The thrashed grain, with its chaff, &c., is fed in by a hopper, on to a vibrating screen, and by drawing a small slide, communication is had with the blast in the conduit spoken of, when the chaff is all blown out behind, through the screen, and the heavy grain passes into the conduit and down into the grain box, while that which is lighter, is carried up by the blast in the conduit, and passes out through the first minor spout spoken of; that which is still lighter, is carried further up, and passes out of the top spout. There may be more spouts, but two separate the grain into three distinct qualities, by the force of the blast passing up. By the slide which communicates with the screen, the blast can be directed in strength, either through the screen or through the conduit—and thus it can be easily regulated for separating different kinds of grain.

## Improvements in Planing Machinery.

Mr. L. W. Pease, of Oriskany Falls, Oneida Co., N. Y., has taken measures to secure a patent for improvements in wood planing machines, which have been held to be good and novel, by some who have seen it, and who are well acquainted with planing machines. He employs rotary cutters, but no pressure rollers; the board or plank being fed in by an eccentric series of moving graters, (we can find no other name for them,) which are guided in their action by side revolving rollers, with cam grooves in them. The cutters are set upon the cylinder radiating from the centre, and there is a stationary finishing knife to complete the operation, after the board has been acted on by the rotary cutters.

## Clay Tempering Machine.

Mr. Heman Whipple, of Port Richmond, Staten Island, N. Y., has invented a machine for tempering clay for making bricks, which is a good improvement, and for which he has taken measures to secure a patent. There is a large outside slatted metal cylinder, set horizontally upon an incline; and in the inside are a number of revolving beaters. The unworked clay is fed in at the higher end, and the beaters act upon it and puddle it through the crevices of the outside cylinder, while the stones and hard unworked lumps, are worked down to the lower end, and discharged there. It works the clay well, and discharges it in a very acceptable state for brick making. Good tempered clay, and simple and strong machinery to work it, are very important objects.

## Reefing Topsails from the Deck.

The Naval Gazette, England, states that on the "Iberia," one of the Oriental and Peninsular Steam Company's steamships, an important improvement has been introduced by a Capt. Cunningham. The topsails act upon the self-reefing principle. From the time the yard is lowered, it is close-reefed in two seconds. The reefs may be again taken out and the topsail at the mast-head, in 20 seconds. We have heard of a like invention being used on some of our American vessels, some years since, but we cannot tell now whether it has been successful or not. The above invention is highly spoken of.

## Balloon vs. Steamboat.

The greatest inventions of the age are balloons, but somehow or other they are not successful, as we have good evidence in believing that the California Balloon has been surpassed by the steamboat.

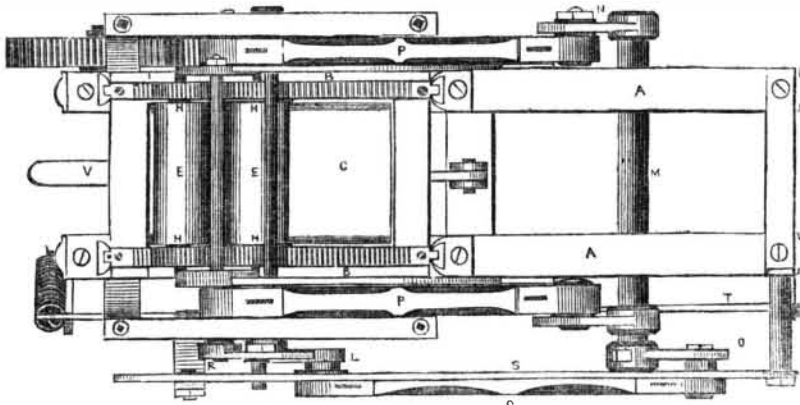
## MACHINERY FOR CALENDERING, FOLDING, AND MEASURING CLOTH.—Continued from First Page.

to the right hand, in figure 2, and when it has moved to the end of the rack (folded one yard) it will be tilted up, and the second roller, E, will mesh into the rack so as to draw or feed the cloth always between the rollers; this motion is necessary to the correct action of the rollers. The dotted lines represent the cloth coming over a roller on the ends of two fixed curved supports, W W.

Although this machine is very simple, there is some difficulty in describing it to others, and the tilting motion of the rollers is the difficult, and only difficult part, yet, by paying close attention, a good knowledge of this will be obtained.

On the shaft of R is a crank, which revolves with the shaft; pressing on its surface or periphery, is a metal foot, U; this foot has a leg, which is united to the longitudinal rod, T, and this is united by a bolt to one end of the frame, and at the other to a string coiled spring. To the rod, T, there is secured an upright arm, which passes up outside, standing out from the rollers, but in figure 1 appears to run up close to the roller plate, F. This arm is connected by a pin passing through a slot in the top longitudinal rod, S; into this slot there passes a pin from a slotted arm, R, which is secured on the outside of the shaft which supports the bearing plate of the feeding rollers,

Figure 3.



after passing through the ends of the reciprocating rods, P P. It will be observed, then, that if the rod, S, is moved up and down like a treddle, it will guide the pin of the crank arm, R, in the slot, so as to turn the axis of the roller plate, F, and give the said plate a vibratory motion to change the feeding rollers on the rack, as has been described before. This tilting motion is then mainly given by the cam, K, one half of which is projecting for one fold of cloth, and the other, from the two projections, is a depression for the other fold of cloth. The foot, U, is lifted or pushed up by the projecting part, and this lifts up the arm above, and elevates one end of the rod, S, and when the cam, K, revolves till the foot, U, comes to the depression, the coiled spring at the left hand, at the end of the frame,

brings down the end of the rod, S, and this, acting upon the pin of the slotted crank, R, gives the supporting shaft of the plate, F, of the feeding rollers, a tilting motion, to raise and lower the feeding rollers, to and from the rack, to give them the centre feeding motion, so as to take in and fold the piece on the table, as described.

An index may be placed with gearing, connected with the driving wheels, to tell the number of yards folded. The rollers may be either calender or mere feed rollers; the rollers, however, are an essential part of the invention. Of the many folding machines which we have seen, this one is different in its roller, folding and feeding motion. More information may be obtained by letter addressed to the inventor.

## Foreign Patents, Collated from our Foreign Exchanges.

"Newton's London Repertory of Arts," &c.; "The London Patent Journal and Inventors' Magazine;" "Mechanics' Magazine;" "Glasgow Practical Mechanic;" "Le Conservatoire," and "Annales des Chemins de Fer," of Paris.

**DRESSING STONE.**—In the Repertory of Arts, for November, we see that Wilson's American Stone Cutting Machine was patented in England, on the 6th of this month. This machine was illustrated on page 284, Vol. 5, Sci. Am. Five machines are now cutting stone at the foot of 28th street, East River.

**IMPROVEMENTS IN CARDS.**—M. Eugene A. D. Boucher, of Paris, has patented an improvement in cards, for cotton and wool carding; it consists in coating the iron with a less oxidizable metal than the iron of the wire. The process is to coat the wire by simple immersion, in a solution of one ounce of sulphate of copper, and half an ounce of sulphuric acid in five gallons of water heated to 86°. When the solution is cold, the wire is drawn through it, when it becomes coated with copper. The wire is then drawn through a plate, to make the wire even, and the copper adhere. It is thus dipped and drawn two or three times, until a good coat of copper is put on. This is a subject for our wire drawers.

**STEEL FROM THE ORE.**—J. M. Heath, residing near London, has taken out a patent for making steel from the ore. He prefers to use the magnetic iron ore, such as is found in the northern part of New York State. The ore is first reduced to the metallic state, by depriving it of its oxygen, by roasting, and after this he takes the roasted metal, mixes it with a portion of manganese and some tar (either coal

or wood,) in about the quantities of 3 pounds of manganese to one and a half gals. of tar, for each 100 lbs. of the deoxidized ore. This mixture is heated in a reverberatory or other good furnace, and when at the welding heat, it is removed from the furnace to the rollers, and formed into blooms. The blooms are re-heated and rolled into bars in the usual way, and after this they are converted into steel by the usual process. This process is altogether behind that of Mr. Dixon, in Jersey City. He makes good steel direct from pig iron.

**SUGAR REFINING.**—Mr. Thomas Dickason, of Ayrshire, Scotland, has taken out a patent for improvements in centrifugal machines for refining and dehydrating sugar. One improvement is to prevent oscillation in the revolving pan. This oscillation is a great evil in centrifugal machines, owing to the tendency of the machine to fly off at a tangent. Mr. Dickason employs friction rollers between the fixed bearings of the shaft and the socket of the revolving pan. He has a different way, also, of mixing the syrups for the action of the machine. He runs the syrup direct from the vacuum pan into large shallow coolers, each capable of containing about 500 gallons, at a temperature of 120°, and strength of 35° Beaume. This is cooled and put into the centrifugal machine.

**STEAM BOILERS.**—Messrs. John Turner & Joseph Hardwick, of Birmingham, secured a patent on the 15th Oct., for setting boilers. There is a central tube or flue within the boiler, in the usual manner, from end to end of it; the fore end of this contains the fire-bars and ash-pit, as usual, and a brick bridge is built up just behind it; immediately behind the fire-bridge, the flue is contracted in diameter, and immediately above this contraction, upon

the top of the boiler, is placed the ordinary man-hole. The patentees state that their only object in this construction is to better enable a person to enter the boiler for the purpose of cleaning it, by giving more room to do so. The return side flues of the boiler are constructed as usual, with the exception of the front end of the boiler, where, instead of the flues traversing around the outside of the boiler, the heated air and products of combustion are conveyed across from one side of the flue of the boiler to the other, by metal flues passing transversely through the body of the boiler, close to its front end. The drawings show two of these flues, one above the central tube or fire place, and the other beneath it. These flues are shown to occupy as little vertical space in the boiler as practicable.

**IMPROVEMENTS IN MILLING.**—Mr. Charles Seely, of Heighington, in Lincoln Co., enrolled a patent of the 5th of last month. It consists of an annular chamber formed in the eye of the runner, which is left open for the introduction of the grain in the ordinary manner. This annular chamber is carried above the stone, and is in connection with the horns, which pass horizontally from the centre in a curved direction, so as to expose the mouths of the horns directly to the air, which enters by reason of the runner's motion. The air is thus carried into the annular chamber in the eye of the stone. This chamber terminates at the lower side of the runner, slightly curving under that stone, in order to direct the air between the grinding surfaces; to facilitate this, the corner of the stone in the eye is removed or rounded. The horns at the mouth are furnished with a blade or fan on the inner diameter, which is inclined towards the mouth, by which the air collected by this blade is carried into the horn. A casting is provided in which the mouths of the horns' route, which forms a circular channel, bounding them up on the upper and under sides, and also at the circumference, by which the air thrown off by the centrifugal force arising from the rotation of the horns is collected, and presented to the horn mouths, by which the passage of the air between the stones is facilitated.

## Gas for Factories.

In England nearly every manufactory of any consequence prepares the gas which it uses in lighting the factory—the machinery requisite not being very costly for preparing gas to a considerable extent. Every factory in our country should use gas. Let those who use oil try gas one season, and then they will see the difference both in comfort and price.

## Strange Phenomenon.

An English brig, the Ellen Anne, was lately struck by a meteoric stone, while in the British Channel. The report was like a musket charge, and the planking of the deck was torn up and perforated in several places as if by musket shots. No signs of a thunder storm were to be seen or heard, though the day was dull and lowering, with a fresh breeze. The occurrence is said to be very rare in the British channel, though frequent up the Mediterranean.

## Discovery of a Third Ring to Saturn.

We learn from the "Boston Traveller," that on Friday night, the existence of a third ring around this Planet, which had been for some time suspected, was ascertained by the astronomers at Cambridge. It is interior to the two others, and therefore its distance from the body of Saturn must be small.

## Gutta Pescha.

We know of no substance which has come into such general use, in such a short time, as this. It is now used for pipes, whips, shoe soles, picture-frames, &c., but perhaps its most useful application is the coating of the telegraph wires.

It is now proposed that the glass palace in Hyde Park shall be a permanent erection, and be converted into a winter garden for shrubs and plants indigenous to the temperate zones.

The Koh-i-noor diamond, or Mountain of Light, will, it is said, be placed among the collections of minerals at the Exhibition in Hyde Park, next year.