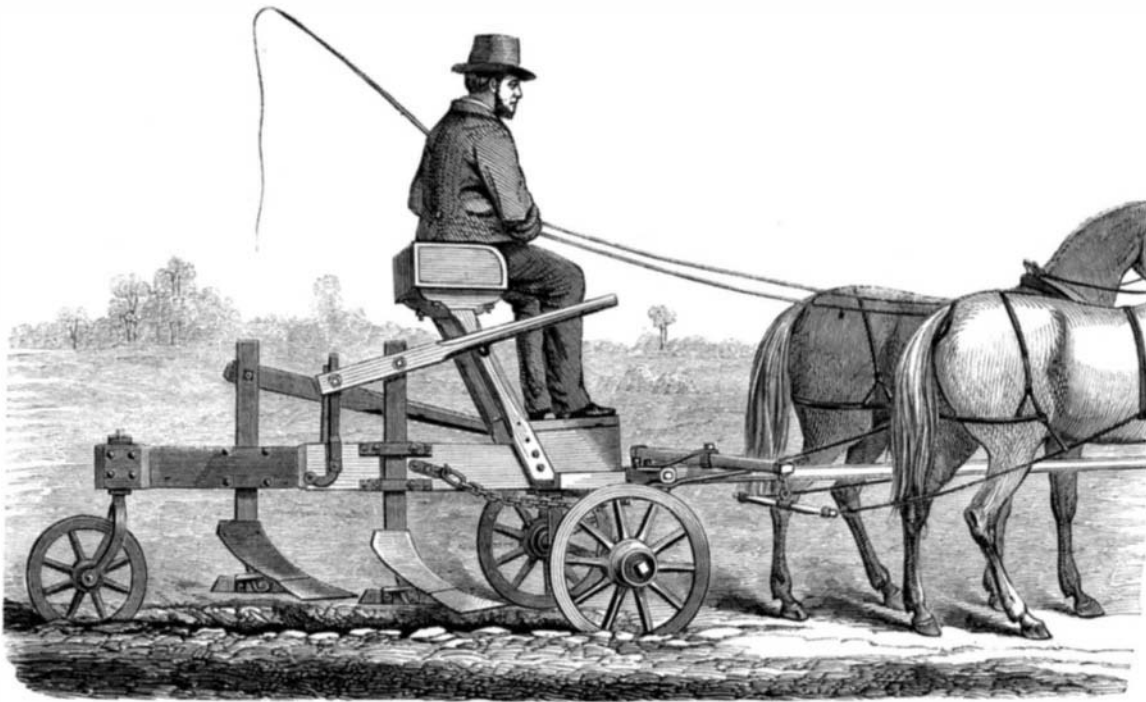


Improved Gang Plow.

The engraving gives a perspective view of a gang plow that appears to have the recommendation of strength, simplicity, and ease of operation. The two shares are attached to beams of unequal length, which are connected in front and supported by the axle, which is either bent to form a crank so that while one wheel travels in the furrow and the other on the firm surface the plow frame shall be kept level, or is two separate journals secured to either sides of the plow at unequal heights. The pole is in line with the shortest beam so that the horses can travel in a convenient position. The tail of the plow is supported on a caster, which, being pivoted, will turn freely in any direction, enabling the driver to turn his team in a space scarcely more than sufficient to turn an ordinary two-wheeled cart. A chain connects the axle with the short beam to facilitate the process of turning. The shares are secured to uprights which move in suitable guides, and they can be elevated or depressed by levers operated by the driver, as shown; one being operated by the foot and the other by the hand. The fulcrum of each lever may be adjusted, as desired, by bolts.

It is claimed by the patentees that the plow while light is very strong; that being short it is easily turned in any direction; that it can be made to plow deep or shallow, as desired, using one or both shares, and that it is easily managed even by a novice. It was patented through the Scientific American Agency, Nov. 20, 1866, by Bequeret & Demoulin, Jamestown, Ill., who will furnish any additional information desired.



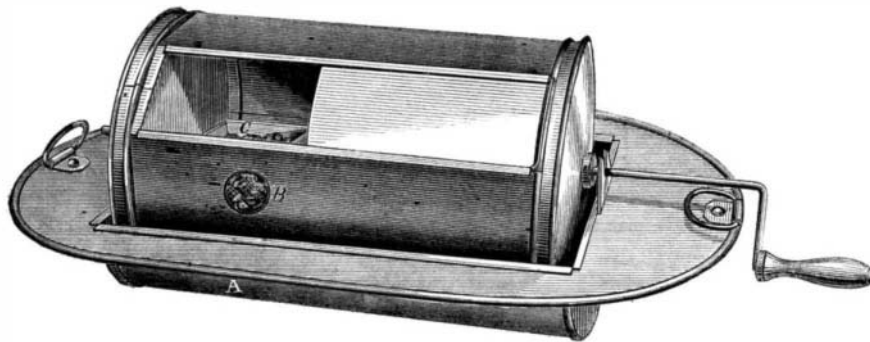
BEQUERET & DEMOULIN'S GANG PLOW.

Improved Coffee Roaster.

Lovers of pure coffee do not much fancy the miserable adulterations which are sold as ground coffee all over the country. It is not alone the low price at which roasted and ground barley, peas, stale bread, and chicory are retailed, that induces people to buy them in place of the coffee berry, but the trouble of roasting and grinding. The roasting process in an open pan, where the berries must be continually stirred to prevent scorching, is always one of anxiety as well as of labor. Several devices for reducing this care and insuring an even roasting are in the market, but they do not always fill all the necessary conditions.

The roaster herewith represented is a form of the rotary utensils so popular, but which, unlike many, permits an inspection of the process during its progress without opening the roaster or removing it from the fire. The cylinder is of brass or any sheet metal in octagonal, cylindrical form, the corners where the cylinder rotates insuring the perfect mixture of the berries. It is swung in a recessed plate with supports for the journals. The protecting sheet, A, prevents the cylinder itself from becoming too hot and exposing the berries to a red hot surface. The journals are not secured to the center of the cylinder but on alternate sides of the head, so that with the rectangular sides the berries are constantly shaken up from end to end of the cylinder as well as from side to side. The circular glass, B, is to enable the operator to see at any stage of the process how the roasting is going on. The glass is so secured as to give room for necessary expansion. C is a receptacle from which a few kernels can be easily withdrawn to test the roasting. This machine, by the substitution of a perforated in-place of a close slide is said to be an excellent corn popper. It is made of varying sizes from those capable of roasting two pounds to those of a capacity of one hundred pounds.

It was patented through the Scientific American Patent Agency Feb. 5, 1867. For additional facts and rights address Whitney & Van Valkenberg, Effingham, Ill. [See advertisement on another page.]



WHITNEY'S COFFEE ROASTER.

By using solar heat no expense is incurred, and the highest power of the ventilator is on the calm hot days, when other systems of ventilation fail. In the absence of the sun's rays, any artificial heat, otherwise wasted, may be resorted to. Above the discharge pipe of this ventilator is attached a cone-shaped iron cap, by which a free discharge of impure air is secured without recoil or downward draft.

Though a great heat is obtained by the iron chamber without glass, experiments have proved that the concentration of the sun's rays by lenses upon a hollow metal ball within the heated chamber has important practical advantages. Though the lenses do not create any additional heat, they distribute it in such a manner that its concentration acts, with the mechanical arrangement of the ball and the interior, in the most advantageous manner for the production of a strong upward current.

It is believed to be of great practical importance to have the source of heat so near the place of discharge. The mechanical part is very simple and not liable to get out of order. He believes the principle to be correct, and its application new and it is applicable to buildings of every size and description, to mining shafts, and to all localities where ventilation is of the first importance. It is especially adapted to southern and tropical regions, as the hotter the sun the more efficient its action. He has applied it to his own and to other houses with most gratifying results. K.

FOUR ECLIPSES DURING 1867.—1. Annular eclipse of the sun on March 6th, invisible in America. 2. Partial eclipse of the moon on March 26th, visible in America, and in this latitude from about 2 to 5 A. M. 3. Total eclipse of the sun on August 29th, invisible in the United States. 4. Partial eclipse of the moon on the evening of September 13th, visible in America. The moon will rise eclipsed about 6 P. M., and the eclipse ends between 8 and 9 o'clock.

GUTTA PERCHA CABLE INSULATOR.

On page 140 we published a notice of an adverse report made by the Chairman of the Senate Patent Committee on the application of Geo. B. Simpson for the extension of a patent for insulating cable wires by gutta percha. We have since received a copy of the bill itself, with accompanying documents, from which it appears that Simpson never had a patent, and therefore could not be an applicant for an extension.

It appears also from the records of the Patent Office that Simpson made application for a patent in April, 1849, for insulating telegraph wires by coating them with gutta-percha. The application was rejected in September of the same year, and subsequently withdrawn. About nine years afterwards Simpson made a second application, in which he claimed "the combination of gutta percha and metallic wire, in such form as to incase a wire or wires or other conductors of electricity within the non-conducting substance gutta percha."

This claim was rejected Dec. 29, 1858, for want of novelty. The matters at issue were carefully reviewed by the Examiners-in-Chief, who reported to Commissioner Holt that the application should be finally rejected. The application of Mr. Simpson came before the Senate and House of Representatives in the form of a bill of relief, wherein he prays that Congress will

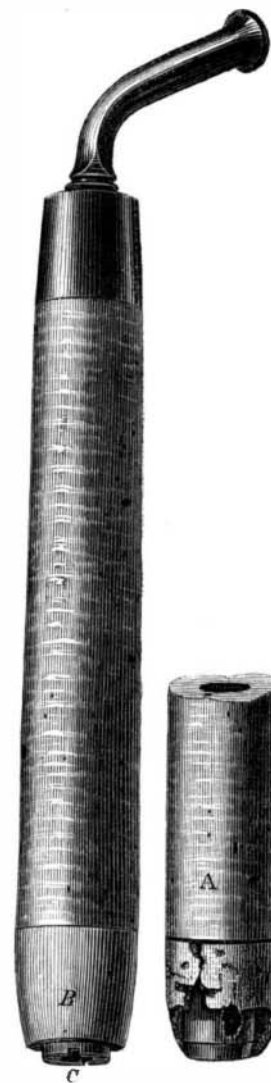
authorize the Commissioner of Patents to hear and determine the application in accordance with rules in other cases.

The prayer of the petitioner was opposed by Samuel C. Bishop, the agent of the Bishop Gutta Percha Company of this city, by their counsel, George Griscom, Esq., of Philadelphia, who presented a strong array of proofs to show that the invention was not new. After a hearing of all the facts, the Senate Committee very justly, in our opinion, reported that the bill ought not to pass.

TRUMAN'S IMPROVED PIPE STEM.

Many smokers prefer the pipe to the cigar—the meerschaum or briar-wood with stem of cherry to the roll of the leaf. But there are some annoyances in using the pipe, one of which is

represented at A, in the engraving. The cork sleeve on the stem where it engages with the neck of the bowl is so thin that, after being removed several times for the purpose of cleaning, it almost invariably splits and breaks, as in the illustration. The improvement represented is the substitution of a hollow plug of rubber, B, secured by a hollow screw, C, to the stem. This screw has a flat head or flange, which prevents the plug from separating from the stem and remaining in the pipe. The plug is not merely a sheath covering the wood of the stem, but is secured to the end of the tube thereby removing the wood, which is apt to rot from the effect of the nicotine, further from the bowl. If cork is preferred to rubber it may be secured in the same manner and will last much longer than where it is simply a thin collar. The improvement is one that every smoker will recognize at a glance. A patent was issued for it through the Scientific American Patent Agency, Jan. 15, 1867, to James W. Truman whom address for additional particulars, at Macon, Ga., Lock Box 21.



CITY FREIGHT RAILWAY.—The railway around Paris, on the left bank of the Seine, is completed, connecting the goods stations of all the great lines out of Paris without any break.

If one four-hundredth part of iodine is added to sulphur heated to about 180 deg. cent. (365 deg. Fah.), and the mixture poured on a slab of porcelain, there results a material which retains for some time a remarkable elasticity. It possesses a metallic luster and takes impressions with great fidelity.

NEW USE FOR THE SUN.

Reported for the Scientific American.

At the February meeting of the Massachusetts Institute of Technology, Mr. Thomas Boyd gave an account of the "Solar Ventilator" invented by himself, in which the heat of the sun or, in its absence, artificial heat, is employed to produce the ventilating current. However efficacious revolving ventilators may be when the wind is blowing, they do not act in hot sultry days, when no air is stirring, and besides they are noisy and apt to get out of order in this climate. The face principle, by which impure air is forced out and pure air is forced in by mechanical power, is regarded by many with favor but, as this can only be applicable to large buildings, or