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Rail Road News.

Senator Benton's Scheme for a National Highway to the Pacific.

The bill prepared by Senator Benton for a railway from St. Louis to the Bay of San Francisco, sets apart the proceeds of the sales of the public lands for opening such a communication with California, New Mexico, Oregon and salt Lake settlements. A breadth of one mile of the public lands is to be appropriated to the central highway, and one thousand feet to the branch roads, on each of which lines are to be constructed a railroad and common road and lines of telegraph. The common roads to be free of toll and the railroads to be taxed for transportation no higher than is necessary to keep them in repair. The Indian titles are to be extinguished on the routes to the breadth of one hundred miles. Military stations are to be established and 160 acres of land will be given to every male over eighteen years of age, who shall settle on the line of said road or branches within twelve months after the Indian titles are extinguished, and pre-emption rights to the same extent to those who shall afterwards settle. The bill also provides for surveys and examination as to the best route, and for the completion of the common road in one year and the central road in seven years, after located. The use of the railway when finished is to be granted to individuals or companies for a limited time, who shall contract to transport persons, mails, munitions of war, and freights of all kinds public and private in vehicles furnished by themselves at such reasonable rates as may be agreed upon.

General Railroad Law.

A general Railroad Bill has passed the Assembly of New York. The distinguishing feature of the bill is the power which it confers on voluntary associations, technically termed the right of "eminent domain"—that is the power to take the property necessary for their usees, on paying a just compensation, and under stringent regulations, without coming to the legislature for it, or for a declaration of "public utility," in each case where the right of way cannot be obtained by negotiation. In this respect it conforms to the general plank road and turnpike acts. The bill orginated in the Senate, and having been amended in the House goes back to the Senate for concurrence.

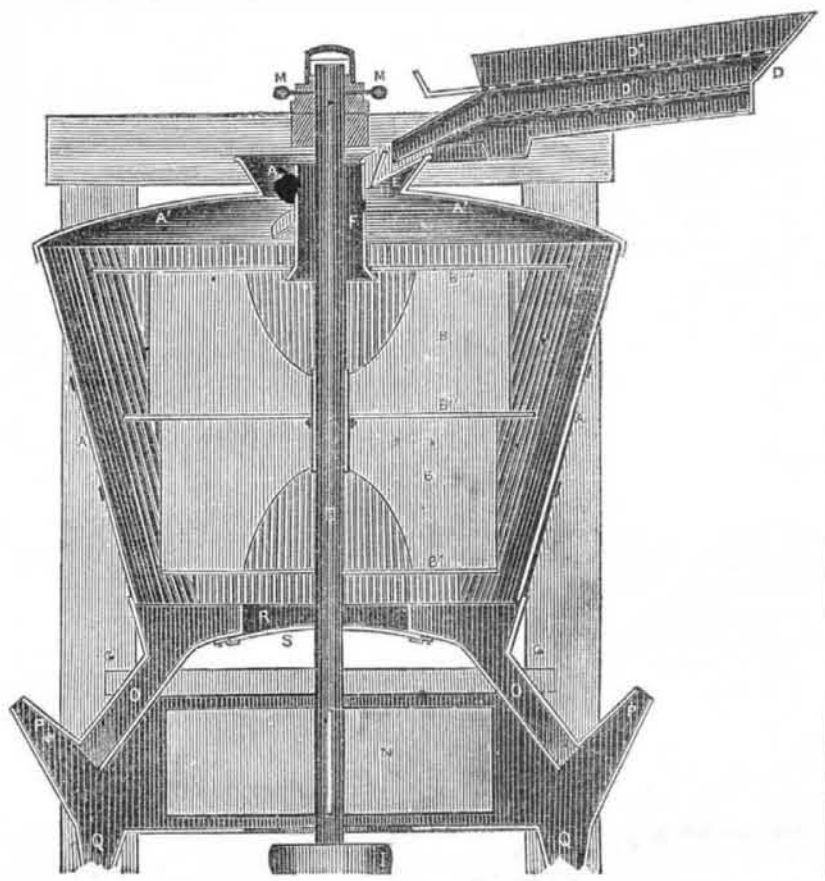
Railroad to the Pacific.

A very large meeting was held at the Chinese Museum, Philadelphia, last week, and passed resolutions favorable to De Grand's scheme for constructing a railroad to San Francisco. Mr. De Grand was there himself and addressed the meeting on the importance and feasibility of the project.

Railroad Experiment.

The Legislature of Virginia, at its recent session, made an appropriation of $10,000 for the purpose of testing the efficacy of an invention, whereby locomotives can be made to ascend and descend inclined planes with little difficulty. The invention is that of Mr. French, of Old Point Comfort.

GOSHON'S IMPROVED SMUT MACHINE.---Figure 1.

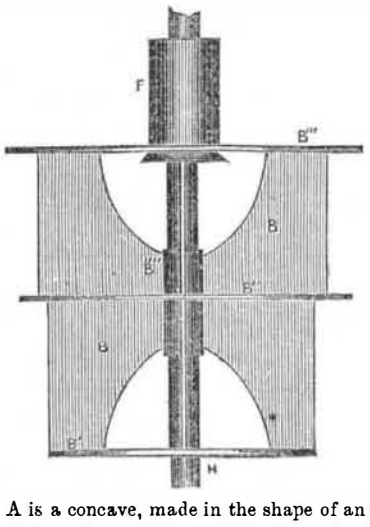


This improved Smut Machine is the invention of Mr. Joseph G. Goshon, of Shirleysburg, Pa. Letters patent were granted for it to the inventor on the 8th of last January.

Figure 1 is a vertical section of the machine. Figure 2 is an elevation of the blower and heater. Figure 3 is a plan view of the shoe. Figure 4 is a plan view of a perforated sheet iron grain distributor.

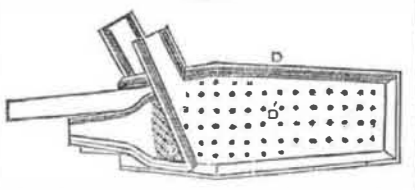
The improvement relates to the construction of the shoe, having a perforated plate for separating large extraneous matters from the grain, with a screen for separating the cockle and cheat, and an imperforated plate, D 1 1 1, to conduct the said impurities to the outside, thereby rendering the machine exceedingly perfect in cleaning the grain. The same letters refer to like parts on all the figures.

FIG. 2.



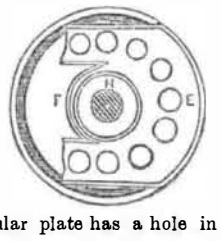
A is a concave, made in the shape of an inverted frustrum of a cone, with its lower end closed by a concave bottom, perforated in the centre, and encircled by a curb large enough to admit air into the interior. O O are two spouts for conducting the grain, &c., to meet the blasts produced by the rotary fan, N,—the dirt, &c., being driven out through the spouts, P P. The cleaned grain descends through the conduits, Q Q. The top, A 1, of the concave, is made spherical, and it has a round central eye encircled by a funnel curb, A 1 1, into which the perforated grain distributer, E, is placed to receive the grain from the shoe, D, from whence it is conveyed to the action of the beaters, B. The shaft, H, and the air-tube, F, pass up through this eye. The sides of the concave are composed of round tapered metal bars, arranged at suitable distances apart, to let the smut be blown through, but not the grain. These bars are held firmly in their required positions. The pitch or incline of the sides of the concave is such that the grain does not fall too fast, to allow free action

FIG. 3.



of the beaters upon the grain, to separate it from tenacious adhering impurities. The revolving beaters and blowers, B, are for beating the grain and throwing it against the sides of the concave as it descends and rebounds towards the centre, and the dust, dirt and all impurities are blown through the spaces between the meshes of the concave, which are composed of radial plates, B, which are secured between the circular plates, B1 B″ B‴. The middle plate, B″, has a round hole in its centre, to receive and retain a small tube, which revolves with the main shaft, H. The

FIG. 4.



upper circular plate has a hole in its centre about three times the diameter of the main shaft, in which is inserted the tube, F. This tube conducts the air to the space between the upper and circular plates, B″ B‴, when a partial vacuum is formed by the rapid motion of the radial plates, B, which force the air radially through the meshes of the concave. The tube, R, admits the air through the bottom of the concave.

The inclined vibrating shoe, D, has a perforated plate, D 1, for separating the larger impurities, which drop through the perforations upon a wire screen, D″, and is conveyed away by the large spout, whilst the cheat and cockle pass through the wire screen and is carried away by the spout, the front edge of which is seen in fig. 1. The grain is thus separated of considerable impurities before it enters the concave, which it does by the perforated distributor, E, which is placed in the eye of the dome of the concave for distributing the grain in a circle as it enters the concave, to be acted upon uniformly by the beaters, and the blast, I, is the driving pulley for revolving the shaft; G G is part of the frame. The shaft revolves in a proper step below and in proper guide bearings, set up by the set screws, M M, above.

The arrangement and construction of this machine is very perfect, and it accomplishes its work in the most superb manner—saving every kernel of grain, and separating it from all impurities whatever. More information may be obtained about it by letters addressed (*p. p.*) to the patentee, or to the Northern Patent Agency, No. 2 John st., N. Y.

Useful Receipts.

Detonating Silver

This is made by putting a sixpenny piece into a flask, and pouring upon it one ounce and a half of nitric acid, spec. grav. about 1.35.—When the silver is dissolved, two ounces of spirit of wine are to be added, the liquor is carefully heated over a lamp, and the detonating silver soon appears to be deposited in white crystals. By degrees two more ounces of spirit of wine are added, and when the boiling ceases, the liquor is decanted, and the decanting silver washed by pouring water upon it, and decanting the water several times; it is then to be carefully dried, with a heat not exceeding that of boiling water.

Detonating silver explodes on being exposed to a heat above 266 deg. Fah. or by the slightest shock between two hard bodies: it must therefore be managed with a wooden knife, or one of card paper.

It is used mostly for amusement, but may be applied as an alarm, by a paper or glass bubble containing some of it being placed where a person is suspected of going for improper purposes.

Solder for Silver.

This is made by melting three parts of silver with seven of copper, or four of silver with six of copper.

Silver gilt Plate.

Silver is gilded in the same manner as copper, but with an amalgam of gold.

Nitric Solution of Silver.

This is prepared by dissolving granulated silver in nitric acid, sp. gr. 1.500, diluted with an equal weight of water, until no more silver is taken up.

It is used to prepare the Luner Caustic of the surgeons, and to ascertain the presence of muriatic acid in mineral waters.

The Lunar Caustic.

This mystical phrase merely denotes the salt obtained by evaporating gently the nitric solution of silver to dryness, in a silver vessel, containing the heat until it melts, and when in fusion, pouring it into moulds, or cast it into sticks, the size of the barrel of a common quill.