

NEW INVENTIONS.

We publish descriptions of the following new inventions, obtained through Dewey & Co., Mining and Scientific Press Patent Agency, San Francisco:

HAY UNLOADER.—Jerry Tyler, Milford, Lassen Co., Cal. Patented Dec. 30, 1879. No. 223,082. The methods ordinarily employed for unloading and stacking hay and grain are: First, the employment of two-part nets, which lie in the wagon to receive the load. These nets are elevated bodily with their load by the aid of a derrick, and swung around to the place of deposit, when the fastenings are unlatched and the net allowed to part and drop the load. The second consists in connecting one side of the wagon net (which is made entire) with an unloading rope and pulleys, so that the load is rolled out of the wagon instead of being lifted, and thus much power is saved which was used in the first described method to lift the load. This method, which will serve to unload grain upon the table of a threshing machine, or upon a low platform or stack, cannot be employed to advantage in filling a barn or in building high stacks without the aid of other apparatus. This invention consists in the employment of a mast or support, having pulleys and hoisting ropes which are operated by a windlass, in combination with a continuous wagon net, which is adapted to receive the load, and which may be connected with the hoisting ropes when the wagon is brought to the barn or place of deposit, so as to roll the load up to any height desired without undue friction or pressure upon the side of the barn or stack. In combination with this, rollers or pulleys are employed, which are connected with the inner edge of the net, and by which sufficient tension may be brought upon the net to prevent the overturning of the wagon by the action of rolling the load out. By this construction, stacks may be built with a comparatively narrow base and very high, so that they present but a small area to be protected from the weather.

STEAM GENERATOR AND SUPERHEATER.—John B. Ward, 202 Sansome street, San Francisco. Patented Jan. 27, 1880. No. 223,825. This invention relates to an improved steam generator and superheater; and the improvements consist in mounting in the fireplace of the boiler a superheating or generating cylinder or chamber so constructed as to answer either the purpose of generating or superheating the steam as desired. This chamber is so connected with the interior of the boiler by pipes that at each stroke of the piston of the engine a supply of steam is admitted to the superheating chamber, in which it spreads in a thin annular sheet in such a manner as to admit of all the watery particles being immediately converted into dry elastic steam; but before being so highly heated as to injure the valves by burning out the lubricants, it is discharged into the engine cylinder. The chamber is of a proper size to hold about as much steam as the engine cylinder will take for each stroke, and at each stroke of the piston a fresh supply of wet steam fills the space in the chamber vacated by the dry steam, which has entered the cylinder.

COAL-OIL COOKING STOVE.—W. H. Wiester, S. F. Patented Jan. 27, 1880. No. 223,829. In this invention the improvements consist in the application of a single-sheet extension or heating plate to the top of the chimney in such a manner that when not in use the plate will not be heated, but when it is necessary to heat this plate to keep articles warm, the heat will be deflected so as to heat it from below without in any way affecting the draft.

THE combined length of new railroads projected in this country during 1880 will be 9,000 miles.

FRAUDULENT REPRESENTATIONS IN MINING.

When any great channel of enterprise is successfully inaugurated, all legitimate industries accessory to it are destined to flow in its course. They are the sustaining streamlets that supply the current of the channel. It is where they rightfully belong. It is where they should be found. The channel would be inoperative if they were not present. They constitute the arterial blood, which, flowing through it, imparts life and energy to it. In strict accordance with the laws of adaptation, they, while there, are in their true sphere.

But fungi will always be found upon the richest soil, and parasites will ever thrive upon the most nutritious vegetation. So in all channels of intrinsic value, there will be found schemers and fraudulent designers, who, going with the current, will hold forth illusive projects to ensnare the unwary, and by deception and falsehood inveigle their victims into disastrous speculations. If the loss entailed upon the unwary was the only evil arising from their pernicious operations, it, perhaps, would not be much of a matter of regret. It might in the end be a benefit by inculcating the growth of caution and due investigation. But, unfortunately, such is the fruit which matures from deceitful transactions. The deception which has led them into losses, to them appears but a natural result of the operations which legitimately belong to the channel upon which they have embarked with their venture. They do not discriminate between the false and the true; overlooking their own credulity and incautiousness they condemn all that is worthy of approbation. They are like the navigator who, lured by false lights, should anathematize all light-houses; or like the merchant, who, smarting under an ill-advised speculation, should declaim against all commercial transactions.

In no field of enterprise are the above remarks more appropriate than in that of mining. Properly conducted mining is not only a legitimate industry but it is also a profitable one. Its inducements for the investment of capital are greater in the way of profit than that of any other industry. Unfortunately, many who desire to avail themselves of its benefits are incapable of deciding between true and false statements in mining narrations. Knowing the desire of the many to engage in prosperous undertakings, the schemer ever stands ready to mislead them by false and glowing statements of the value of mines that are really worthless. Their only aim is to possess themselves of the money of those who listen to their lying assertions. There is not a mining district in the world but bears irrefutable evidence of the false representations of this class of men. The result has been that others who would operate in mines and bring intelligence and capital to aid in their development, are restrained from doing so by the wails of the losers. As far advanced as mining is at the present day, it would be still further on the way of successful operation, were it not for the result of the frauds that have been perpetrated by these schemers, who have placed lights where they would allure their victims to ruin.

It is the duty of the press to take a bold and firm stand against these artful and dishonest manipulators. Wherever a fraud is instituted it should be promptly exposed. If the papers in the locality of these mining claims that are so falsely overrated would at once decry the intended wrong they would ultimately reap the benefit of such a course. A few such errors, if allowed to culminate, would at last ruin the reputation and retard the progress of really good mining camps. They would keep capital away and would dishearten and discourage men of enterprise and ability from investing there. If they were checked in their incipency and put down by just exposure, the evil they would have produced would be averted. A condition of prosperity and success would exist, where, else, ruin and failure would ensue. In the dissemination of the truth, the local journal would

have strengthened its own foundation; while in abstaining from telling it, or in aiding in the fraud, it would certainly be weakening and undermining it. For a temporary gain it would establish a permanent evil. The journals in mining camps, particularly, should be like the beacons on the coast, warnings of the dangers to which the venturesome are liable.—*Scientific Press.*

PLUMBAGO AS A LUBRICATOR.—The *Engineer* gives this example of the value of black lead as a lubricator: "A fly-wheel shaft bearing, eight inches in diameter and 10 inches long, carried a load of nearly 10 tons. The bearing was supported on a box girder, and was lined with good brass. The engine could not be run, as this bearing invariably got nearly red-hot after a few revolutions; various oils, tallow, sulphur and gunpowder were tried with most indifferent success. By using a mixture of tallow and sulphur the engine could be run half an hour at a time, and once or twice has run a whole day, the shaft making 60 revolutions per minute. It was determined to have a new crank shaft with a longer bearing, but as at the last moment the use of black lead and tallow was suggested, a package of the ordinary black lead used for stoves was worked up with some tallow, the bearing carefully wiped, and the grease box on the cap filled with the mixture. The bearing never heated again unless oil was allowed to get access to it. The success of the plumbago as a lubricator was perfect. It should be added to the foregoing that while the principle of lubricating by graphite, or plumbago, is scientifically correct, and has in thousands of instances been practically illustrated, it has been damaged seriously by the use of impure graphite. For perfect success the graphite should be absolutely clean.

WHY DOES STEEL HARDEN?—Mr. James Nasmyth opens up a very interesting question in the following letter recently published in *Engineering*: "In these days of earnest scientific investigation, it is to me a matter of surprise that no special attention has been given to one of the most vitally important subjects, namely, 'the reason why' steel becomes hard on being suddenly cooled down from a red heat by plunging it into cold water. On this one simple but wonderful property of steel depends the entire range of those mechanical arts which lie at the basis of civilization, and by whose exercise we are enabled to rise above the savage condition. It occurs to me that it is from the want of due consideration of the enormously important consequences that arise from this wonderful, yet simple, property of steel, that the causes of so remarkable a change as respects hardness which results on suddenly cooling it from a red-heat condition, has prevented the subject from receiving special attempts to investigate its nature. While in these days the most powerful and active intellects are occupied in physical investigations, in searching into the nature of those actions in matters which are ever in progress around us, so far as I am aware no one has made an attempt to enter upon this vitally important subject. It is in the hope that these remarks may chance to direct the attention of some one who may have the ability and opportunity to enter upon the investigation to do so.

TO WASH FLANNELS.—Take soft water, as warm as you can bear your hands in. Make a strong suds, well blue. In washing fine flannels, wet but one piece at a time; soap the dirty spots and rub with the hands, as washboards full the flannels. When half clean, add three times as much blue as for cotton clothes. Use plenty of soap. When clean, have ready a rinse of the same temperature as the suds, rinse well, wring tight, shake briskly for a few minutes, hang out in a gentle breeze. When nearly dry, roll smooth and tight for an hour or two. Press with a moderately hot iron. If embroidered, press on the wrong side. Flannels washed in this way will look white and clean when worn out, and the quality will look better than when new.