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THE PEERLESS STEAM ENGINE.

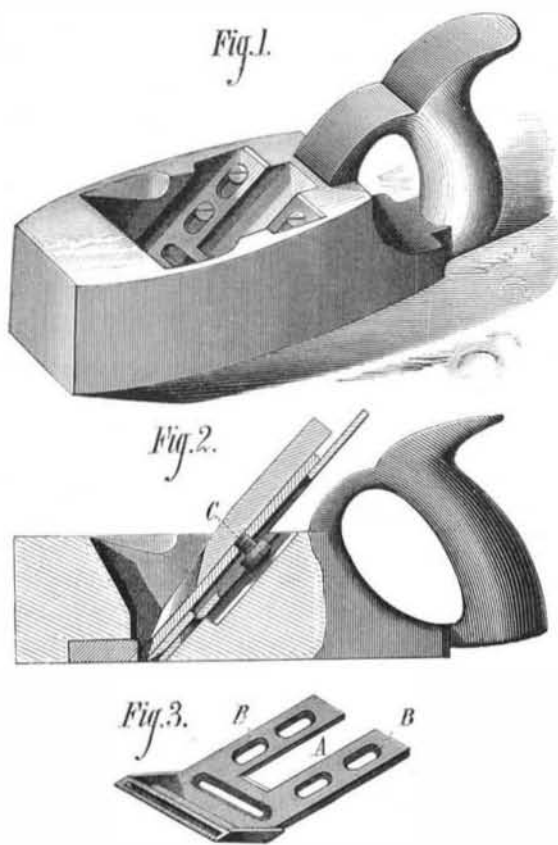
We illustrate herewith a new portable steam engine, adapted to all cases where power ranging from 6 to 10 horse power is required. The new features relate mainly to the general construction, and are claimed to impart increased durability, efficiency, and economy in use. The engine is horizontal, and is balanced on the boiler by its fly wheel. The cylinder and steam chest are in one casting, and accurately aligned with the bed plate, and the latter is so constructed that nothing can get out of line. All parts are interchangeable. The guide bars are adjusted by underlaying them with paper. Hot bearings are avoided by passing cold water through a channel between bearings and boiler, keeping them cold, as in a stationary engine. When water is not required in the boiler, the flow is still maintained by opening a valve and allowing the water to return to the tank from which it was taken. This device is patented and owned exclusively by the manufacturers. The pump is thus kept continuously in operation and always ready to feed into the boiler. The eccentric is fastened to the crank wheel, and is made so that the engine can be reversed by simply loosening one nut and turning the engine in the desired direction for about one turn. The connecting rod bearings are large, and require very little adjusting. The crank and cross head pins are hardened and ground true by special machinery. The valve chambers and valves of the pump are made of composition metal, and are of easy access. In case it becomes necessary to remove dirt from them, by loosening one nut which holds a bar down on the caps over the valves everything can easily be taken out, even while the engine is in motion, the workman standing on the ground. The steam pipes are tightly put together with ball and socket joints, and are easily taken apart. The check valve is so constructed that in case of its becoming choked the opening of a jet cock, and raising the small wheel under it, cause the valve to be lifted from its seat and the obstruction blown out. Arrangements are made to prevent the engine being affected by boiler expansion. The boiler is of the best American plate, and provided with an improved fusible plug in the crown sheet. The whole apparatus is put on steel springs; the smokestack is hinged, so that it can be laid back, and is provided with a spark arrester; the governor and safety valve are of improved construction, and generally the machine is, we are informed, well and substantially made. For further information address the manufacturers, Messrs. F. F. and A. B. Landis, Lancaster, Pa.

New Telegraph Apparatus.

Experiments with a new telegraph apparatus have lately been made at Vienna, by means of which some one hundred or one hundred and twenty messages may be sent by a single wire in the remarkably short space of one hour. Under certain conditions this number may even be raised to two hundred or even two hundred and fifty messages. The inventor of the new apparatus is Herr August Eduard Granfeld, an Austrian telegraph official. At the end of December he presented to the Austrian "Telegraphenanstalt" eight working and two principal apparatus of his invention for practical trials. The experiments are reported to have been crowned with complete success.

IMPROVED BENCH PLANE.

The invention herewith illustrated is an improved adjustable metal lining for the throat and mouth of a bench plane,



BOYCE'S PLANE LINING.

the object being to protect the parts from wear. It is of simple construction, and may easily be applied to planes whether old or new. Fig. 1 is a perspective and Fig. 2 a sectional view of a plane with the lining in place. Fig. 3

shows the lining separate. It will be seen from the sectional view that the usual coupling set screw and wedge are employed. The lining plate has an open slot, A, two oblong countersunk slots, B, a central opening, and an oblong mouth, which consists of abutting sides and a transverse connecting strip. The bed of the plane is reduced to receive the lining, and the wood at the sides and front of the mouth is suitably mortised away. The plate is fastened to the bed by set screws, which pass through the slots, B. By means of these the readjustment of the plane face may be effected. The plane iron with its cap is placed upon the plate, and the coupling screw, C, is allowed to pass into the usual recess, which is in rear of the oblong opening of the lining. Thus applied, the iron and cap are fastened with the wedge. It will be readily seen that the device can be applied with great facility, and that its addition in nowise weakens the plane, but, on the contrary, the durability of the latter is materially increased.

Patented February 5, 1878. For further information address the manufacturers, Messrs. Boyce & Bruce, Box 1185, Lockport, N. Y.

Notes Given for Patent Rights.

Judge Sharswood filed the opinion of the Supreme Court, on Monday, in the case of *Haskell vs. Jones*. The case is one of a series pending in this State which involves the constitutionality of the act of Assembly, which makes it a misdemeanor to issue a promissory note given for a patent right without the words "Given for a patent right" written across its face. In this case the note was actually given for a patent right, but the words were not written across its face. The court decided that the note was nevertheless good.—*Harrisburg (Pa.) Telegraph, March 6.*

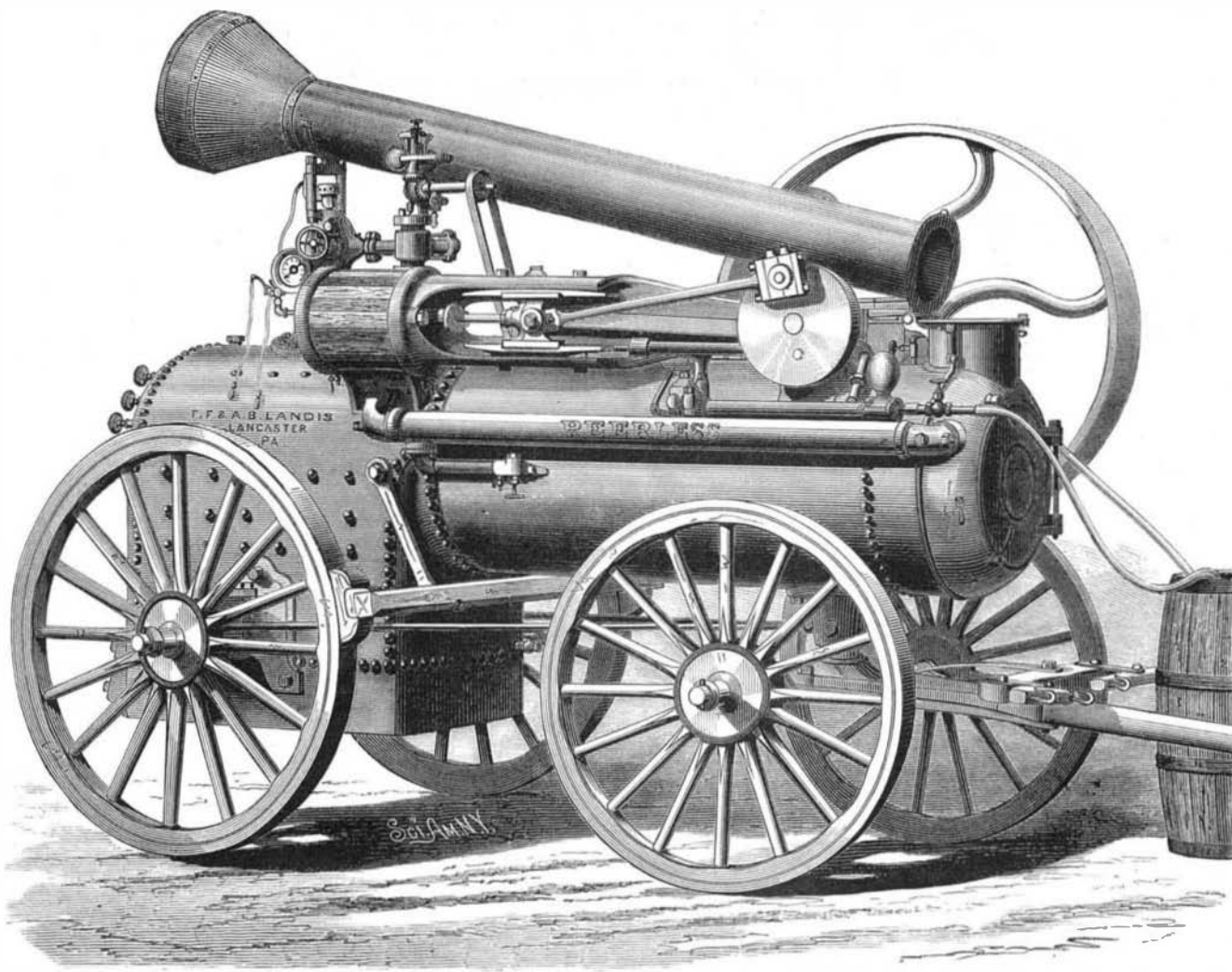
[We have several times called the attention of State legislators to the folly of enacting laws like the above, in the hope of regulating patents. All such State laws are invalid. Under the Constitution of the United States all legislation relating to patents is vested in Congress. Judge Sharswood's decision is in accordance with analogous decisions by the courts heretofore published in the SCIENTIFIC AMERICAN.]

Imitation Ebony.

The following recipe, which we take from the *Revue Industrielle*, will answer numerous correspondents who have inquired how to turn oak black so as to cause it to resemble ebony. The wood is immersed for forty-eight hours in a hot saturated solution of alum, and then brushed over several times with a logwood decoction prepared as follows:

Boil 1 part of best logwood with 10 parts of water, filter through linen, and evaporate at a gentle heat until the volume is reduced one half. To every quart of this add from 10 to 15 drops of a saturated solution of indigo, completely neutral. After applying this dye to the wood, rub the latter with a saturated and filtered solution of verdigris in hot concentrated acetic acid, and repeat the operation until a black of the desired intensity is obtained.

Oak thus stained is said to be a close as well as handsome imitation of ebony.



THE PEERLESS PORTABLE STEAM ENGINE.