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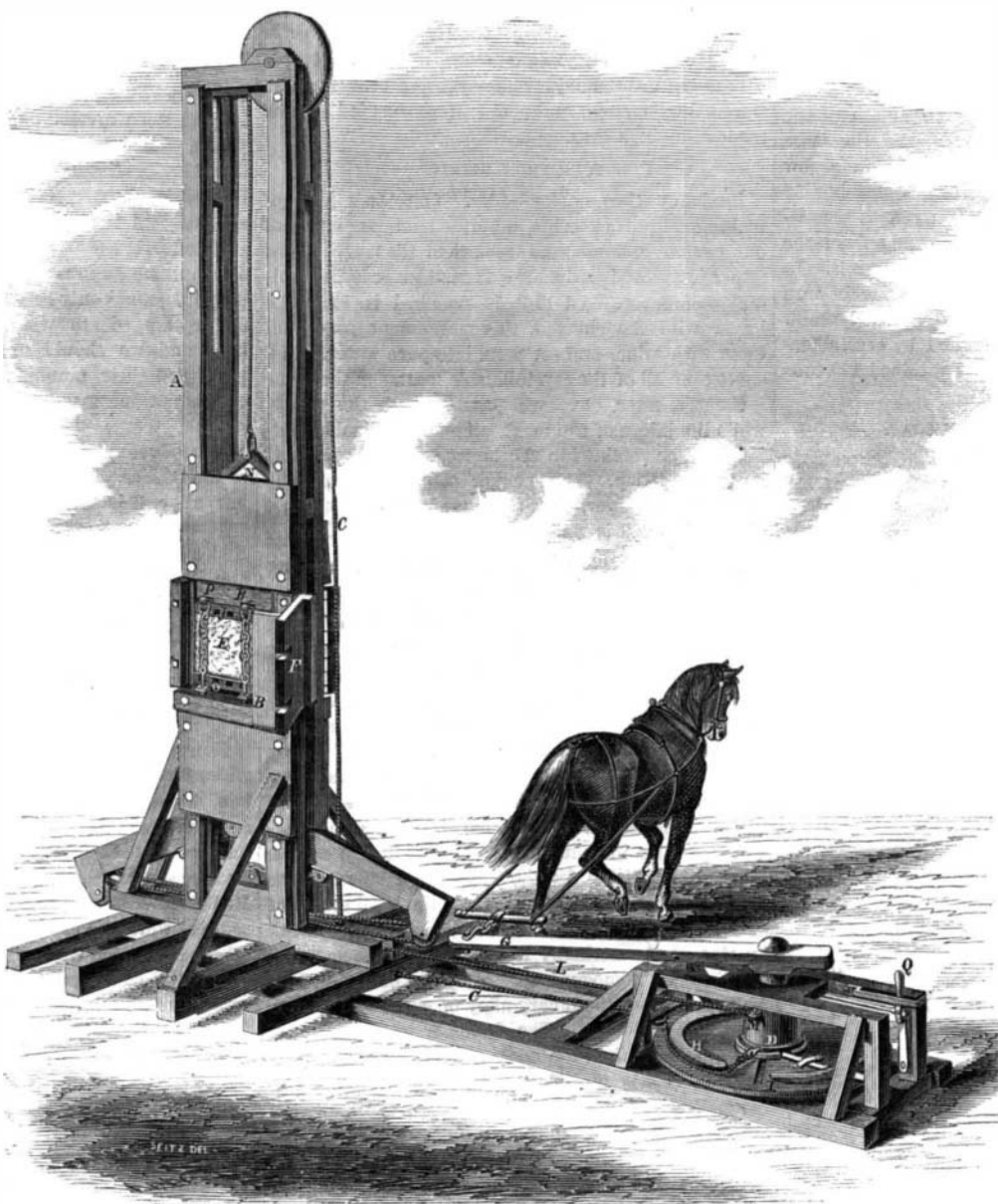
Improved Beater Hay Press.

This press is one of a class wherein the hay is beaten before it is finally compressed by the action of a drop, so that the operation of pressing is rendered much more effective than in ordinary presses. The machinery consists of a tall upright frame, A, in which the drop, B, slides. This drop is raised by a rope, C, attached to the windlass, D (in a manner hereafter described), and rove through pulleys in such a way as to run easily. The hay to be pressed is introduced to the box the bale, E, is in; the doors, F, are then shut and held by strong fastenings; the team attached to the bar, G, then travels around, thus elevating the weight. The rope coils up on the rim, H, which is so made that when the weight reaches the top the rope has arrived at an inclined plane, I, where it runs or slips off the rim, H, and the beater or weight falls on to the batten, J, placed over the bale. This operation is repeated four or five times, until the hay is well consolidated; it is then ready for pressing. To effect this the team is called into requisition again, and the capstan, D, is thrown out of connection with the base the rim, H, is on, so that the latter is stationary—the rope being connected to a loose band that slips on the capstan body as it turns. The line, L, that works the toggle joints is tied to the lug, M, on the capstan, and as the latter is worked the joints draw together and compress the hay, during which operation the batten, J, serves for a follower, and the toggles, N, on the beater block are pushed down so as to throw two strong side-blocks into recesses in the upright frame, A, so that the bale cannot give. This operation compresses the bulk into about 24 inches square. By the arrangement of the battens, J and O, above and below the bale, the operator is enabled to band it before removing it from the press. This is done by slipping two strong clamps into the openings in the battens, D; the clamps are provided with chains and T-headed swivel bolts, so that the clamp straps can be quickly connected without screwing or unscrewing nuts. So soon as these clamps are attached the bale can be removed and banded properly on the ground with hoops while another bale is being compressed. There is also a brake and lever at Q, which enables the sleeve or capstan body to be held at any part of its revolution, either to adjust parts or to suspend the movement altogether. A patent was granted

on this press to Ira James, of Mattoon, Ill., on the 16th of Feb., 1864. For further information address the patentee as above.

A New Alloy.

A new alloy, described as applicable to the manufacture of all metal articles, bells, hammers, anvils,



JAMES'S BEATER HAY PRESS.

rails, and non-cutting tools, has been patented by Mr. M. H. Micolon, of Paris. The alloy consists of iron with manganese or borax. The patentee takes 20 parts of iron turnings or tin waste, 80 parts of steel, 4 parts of manganese, and 4 parts of borax; but these proportions may be varied. When it is desired to increase the tenacity of the alloy, 2 or 3 parts of wolfram are added. When the cupola is ready, the iron and steel are poured in, and then the manganese and borax; finally, the vessel is filled up with coke; the metal is thus in direct contact with the fuel in the cupola, and by quickly running the fused mass into molds, bells which possess the sonorousness of silver, whilst the cost is less than bronze, may be obtained.

Split and Sawed Shingles.

A correspondent of the *Boston Cultivator* says:—"I have been interested in the communications of your correspondent in regard to shingles. I have had over thirty years' experience in building and repairing roofs. I have taken rifted pine shingles from off several roofs that were worn entirely through at the

line where the water falls from one shingle upon the next one below, while underneath the courses the shingles were as bright as when first laid. Such is not the fact with sawed and cut shingles, from any kind of timber. The reason is, that sawed and cut shingles are cross-grained, so that water runs through the pores of the wood—wets the under course, and, in wet seasons, seldom if ever dries. The agents of decay are air, water and heat. All are combined on a roof to produce decay, and you see the effect on all roofs made of sawed or cut shingles. I have replaced many roofs of sawed shingles, but they never were half worn; they were rotten and unfit to remain longer. Let any one examine a sawed shingle and he will find the grain severed, and every pore through which the sap was pumped up from the roots to the branches, is a water-pipe to conduct water through the shingle instead of over it, as is done by a rifted shingle. I advise every man, who has means to procure a rifted and shaved single, never to use a sawed or cut one. I think slate is the most economical and durable of all roofs. Tin will do well, and roofs with it will be laid more flat, thereby making less surface to cover. There may be compositions that will make good roofs, but I know of none I would

accept as a gift, and I have tried several kinds. In choosing rifted shingles, don't get those of twisted grain, so that one side will turn up and the other turn down. Any person who will discover a cheap kind of roofing that will endure our variable climate, will deserve the everlasting gratitude of his kind. But forever deliver me from sawed, and more especially cut shingles."

In order to answer fully all the inquiries addressed to us upon the manufacture of turpentine, we have had an illustrated article prepared, showing the whole apparatus and process necessary for the purpose. The whole will appear in an early number of our new volume.