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THE ECLIPSE AGRICULTURAL ENGINE.

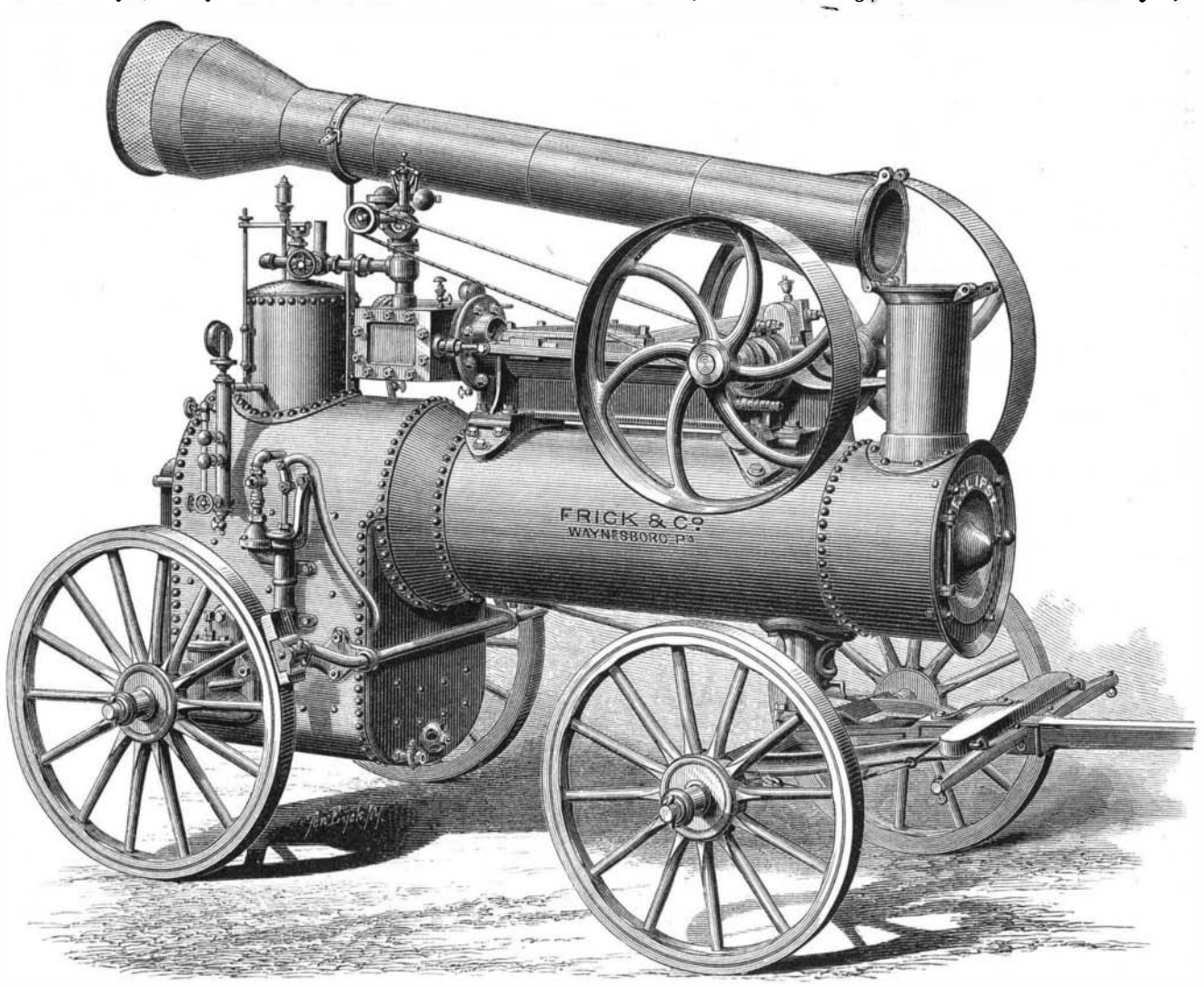
We illustrate herewith the well known "Eclipse" engine, mounted on wheels to adapt it for farmers' uses. The machine as thus arranged, the manufacturers inform us, vanquished all competitors at the Cincinnati Industrial Exhibition of 1874, and also during the field trials held under the auspices of the Centennial Commission, giving in both cases the most power with the least consumption of coal and water. From testimonials from parties using the engine, submitted to us, we learn that, with an 8 horse machine, 1,600 bushels of wheat were threshed with three fourths of a ton of coal and only five hogsheads of water. Another writer states that, with a 10 horse power engine, he is able to saw 3,000 feet of 1 inch oak timber per day, using a 48 inch saw. We have been obliged to obtain our information regarding the construction and advantages of this engine mostly from a pamphlet issued by the manufacturers; but from what we learn from other sources, we believe the Eclipse engine possesses all the qualifications herein stated.

The engine is of the horizontal style, the cylinder and steam chest being made in one casting. All of the exposed parts are felted and covered with iron. The frame or bed which comprises the cylinder head, the guides for the crosshead, and the two bearings for the crank shafts are also cast solid; so that it is impossible for the important working parts to get out of line. In shape, the bed is the half of a horizontal hollow cylinder, excepting a small portion of one extremity, which is an entire cylinder, which has a flange to which the cylinder and steam chest casting is bolted. The form of the bed enables all waste oil to be caught and afterwards led away by a suitable tube. The cylinder, being secured to the bed at one end only, is free to expand; and as the cylinder, steam chest, slide valve, and piston rod lengthen in the same direction, the engine will have the same lead and clearance when working as when cold. The pillow blocks are lined with anti-friction metal, and are provided with means for taking up lost motion. The crank shaft is double, made of forged iron, and is counterbalanced so that its motion is smooth and equable, even when at high speed. The piston has a metallic packing ring, and is self-adjusting; the piston rods are of steel. The pump is driven direct from the crosshead, its valves may be readily removed without disturbing the connections, and the water supply is easily regulated. A heater consisting of a large cast iron pipe, bolted near its end to the steam cylinder and supported by a bed bracket, receives the exhaust steam on its way to the smoke stack. The steam warms the feed water, the conduits of which pass two or three times through the entire length of the heater. All necessary fittings in the way of air cocks, self-feeding oil cups, governor, etc., are added; and the various parts are manufactured by special machinery so that they can be accurately duplicated.

In the boiler, which is of the locomotive style, the water space extends entirely around the fire box and ash pit, the water constantly circulating in the circular water bottom and thus preventing the accumulation of deposits. Each generator is made of the best boiler plate iron, the tubes are lap-welded, and a cold water pressure of 200 lbs. to the square inch is guaranteed to be withstood.

The wheels of the wagon have cast iron hubs, and are large enough to raise the boiler sufficiently to enable the forward wheel to pass underneath, so that the entire vehicle can be turned on a small space. The axles are of the best refined wrought iron; and strong cast iron brackets, containing spiral steel springs, sustain the weight of boiler and engine, thus enabling the machine to be moved over the roughest roads without injury. The springs are easily accessible for repair or adjustment, without dismounting engine or boiler. A new and powerful brake is used on the wheels. The fly wheels are turned smooth and true for belts, and are large enough to give the proper speed for threshing wheat, etc. The smoke stack is hinged, as shown in the engraving; so that, for storing or transportation, it can be laid down out of the way. It is also provided with an efficient device for arresting and extinguishing the sparks. This, we are informed, has been tested by putting straw and other combustible material on the smoke stack, without its taking fire. The ash pan also has a close-fitting door, to prevent danger from that source.

For further information, address the manufacturers, Messrs. Frick & Co., Waynesboro', Franklin county, Pa.



FRICK & CO.'S ECLIPSE AGRICULTURAL ENGINE.

Aniline Water Colors.

Aniline water colors are extensively used for tinting photographs, and are also being introduced for painting water color drawings. But as nearly all of these colors are altered by light, fade, and change, no honest artist will make use of them, unless he informs the purchaser by stamping some such notice as the following on the margin of the picture: "These colors, although pretty to look at, are good for nothing. They will soon fade."

Death of Signor Blitz.

Antonio Blitz, better known as Signor Blitz, the famous ventriloquist and conjuror, died recently in Philadelphia, in the sixty-seventh year of his age. Mr. Blitz came to this country from England in 1834, and at once became famous for his remarkable dexterity in the art of legerdemain. He was a very ingenious inventor, and many of the most startling tricks of later magicians originated with him. He besides was quite a humorist, and delighted to use his peculiar talents for purposes of harmless fun. It is related that a favorite amusement of his was to visit the markets, and there enjoy the astonishment of the old fruit women when he gravely extracted gold dollars from their oranges, and of the egg dealers, when their eggs hatched canaries under his marvellous touch.

Personally, Signor Blitz was a refined and pleasant gentleman and lavishly charitable to the poor. The best anecdote that is related of him describes how one sour-faced ascetic came and remonstrated with him, and taxed him with inculcating in the popular mind a proneness to deception. The Signor politely heard him through, and did not excuse himself in the slightest particular; but instead, he quietly extracted a pack of playing cards from his visitor's coat pocket and then a dice box and dice from the crown of his clerical hat. The giver of good advice departed in dumb astonishment.

Boiler Explosions.

In reference to this subject, a correspondent, H. P. G. C., writes to us to say that in his district, the oil regions of Pennsylvania, boilers are frequently too small for the work they have to perform, and that the men in charge of the boilers have frequently to quit this work to visit the wells which may be 60 or 600 yards away. Thus the boilers are left to mind themselves for hours at a time; and therefore, he claims, automatic safety appliances, such as fusible plugs, low water alarms, etc., would never be objected to by the engineers employed in the oil industry.

"An Engineer" points out the danger arising from scale in the boiler, which threatens destruction when the boiler has plenty of water as well as when the supply is short. Boiler plates get burnt by the excessive heat necessary to overcome the resistance of the scale; the scale may crack, the water come in contact with red hot iron, steam in prodigious quantities will be formed, and the boiler be unable to resist the sudden strain. He recommends the examination and certification of men in charge of stationary engines, and points out many well known advantages of the fusible plug.

Compressed Air for Power.

In using compressed air as a means of transmitting power, a velocity of about 40 feet per second for the air in its compressed state has been found to answer in practice. When the diameter of the pipe is so adjusted as to secure this velocity, the pressure expended in overcoming friction may be estimated at one per cent of the total or absolute pressure of the air, for every five hundred diameters of the pipe in length.—*Rankine.*

Fine Workmanship.

We recently received a small lathe chuck from the Morse Twist Drill Company, of New Bedford, Mass., sent as a sample of milling machine work. It is a superior specimen of a branch of machine shop manipulation of which we have reason, as a nation, to be justly proud.