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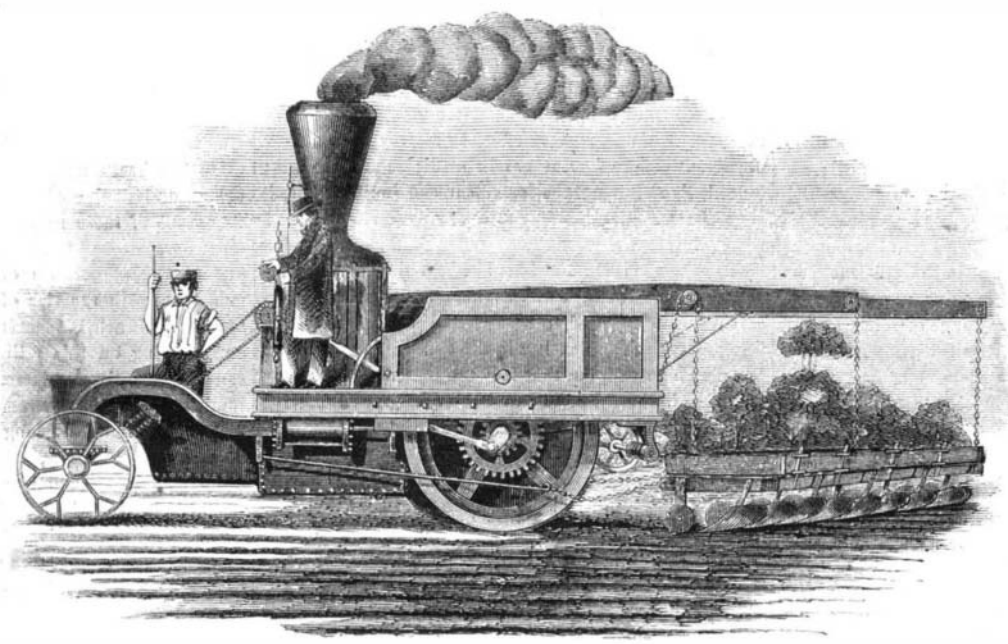
FAWKES' STEAM PLOW.

The time is quickly coming when a great revolution will take place in our modes of cultivating the soil, and steam is designed to make as great a revolution in agriculture as it has done in transportation and travel. From all the accounts that we have seen of the various trials of the steam plow invented by Joseph W. Fawkes, of Christiana, Pa., it seems likely to prove a great step in the right direction, and it has already done some very good work. We understand that it plows up and down hill with equal facility; the furrows are very deep and regular; it is perfectly manageable in turning, backing and the other requisites of a field-locomotive. Our illustration is a perspective view of one of these steam plows, with the shares above the ground. In outward appearance, it is a traction engine, with its front supported by two wheels, on whose axle is a segment, so that they can be turned by a screw, and so steered. This screw is operated by an endless chain passing around a pulley at its end, and around the axle of a steering wheel on the platform. The back part of the framing is supported by a drum of slightly bilge form, and the axle of this being connected by cranks and cog-gearing to the pistons of two horizontal high-pressure cylinders, it forms an efficient driver.

A shaft crosses the back part of the engine, provided with a ratchet at one end, into which a pawl catches. On this shaft, near its ends, are two pulleys, around which chains or ropes pass, and these chains are connected with others that pass over pulleys on the bars that project from the back of the engine, and support the oblique, rhomboidal shaped frame that carries the plow frame.



FAWKES' CELEBRATED STEAM PLOW

The plows may be of any form, and they are attached to other frames in pairs. These frames are simply two iron bars placed at a suitable distance apart, and plows are firmly secured to each side of these frames in gangs, one plow being slightly in advance of the other, and turns a furrow slice which will be lapped by the one turned by the hindermost plow. Each of these plow-frames has a gage-wheel attached to its front end, and these wheels determine the depth of the furrow.

These plow-frames are attached to the frame suspended by chains or ropes by a bar in front, that passes through a slotted piece attached to the front of the suspended frame, and a wooden pin in the bar above the slot. The back part of each plow-frame has a curved bar connected with it, and this is attached to a slotted piece in the back of the suspended frame. All these parts are so adjusted that the plow-frames can be placed parallel with each other, and in line with the planes of their movement. Each plow-frame is connected to a bar on the engine by a chain. The shaft to which the chains of the suspended frame are attached is connected with the driving-wheel by a belt and a pulley on the axle of the driving-gearing that can be thrown in and out of gear from the platform of the engine, so that the plows can be raised out of the ground by the engine itself. A brake, also operated from the platform, is applied to a wheel on the end of the chain shaft.

The machine operates in the following manner: As the whole is propelled along, the plows turn the furrow slices in the ordinary way, any proper number of plows being used, according to the size and power of the machine. Each plow-frame is allowed an independent movement in the suspended frame, so that each can fall in passing over a depressed surface of the ground without affecting the other plows, and each frame may rise and carry with it the suspended frame for a certain distance without affecting the other plows. Every two plows, therefore, are allowed an independent adjustable movement to conform to the inequalities of the ground over which they pass. In case of either of the plows of a frame meeting with an obstruction, the wooden pin that connects its chain with the engine will break, and the wooden pin above the slot will also be broken, and the plow-frame will be detached from the suspending frame without in any way affecting the other plow-frames. By this method of attaching the plows, none of the parts of the machine can become strained or injured in consequence of either of the plows meeting with obstructions in its path.

When the whole gang of plows is to be raised from the earth, the belt-wheel on the shaft of the gearing is thrown in gear by the attendant, motion is given to the chain shaft, and the plows are elevated, the front end of the suspended frame being elevated first so that the plows will be placed on an angle and pass upward out of the ground when the suspended frame is raised bodily off the ground. The ratchet on the chain shaft prevents it from turning under the weight of the plows and their frames. When it is desired again to allow the plows to work, the frame is caused to descend gradually.

It will be seen, from this description, that the great objection to such machines, namely, the jarring and consequent disarrangement of the machinery by obstructions in the ground, is overcome, and the adjustability of all the parts is secured. We have, in recent numbers of the SCIENTIFIC AMERICAN, said so much upon the subject of steam-plowing and its advantages that we need not here reiterate our remarks. Mr. Fawkes has applied for a re-issue of his original Letters Patent, dated Jan. 26, 1858, and has also made application (through the Scientific American Patent Agency) for a new patent on improvements and novelties he has recently introduced into this excellent steam plow. He will be happy to give any information, upon being addressed as above. An arrangement has been effected with Mr. Fawkes for an exhibition of this plow in full operation during the Fair of the American Institute, which will be held in this city, commencing the last week of this month, and continuing throughout the month of October.

THE GOLD BELT OF THE ATLANTIC.—There is a belt of gold-bearing rocks which extend from Virginia, through North and South Carolina and Georgia, and then dips down under the coal fields of Alabama. Professor Darby, of Auburn, Ala., in a letter to the N. Y. *Evening Post*, states that this belt is of various widths, from a few to many miles. "It is of varying richness, and in most places will pay for working, and in other places yield rich returns. These rich deposits or veins are generally of a limited extent, so far as accessibility is concerned. From these main veins there are often branches that extend out of the gold be proper, and often form rich mines. The principle mines on the main belt are, commencing on the northeast part of Georgia, thence in the neighborhood of Dahlonega; and on the Chestater river, Nickelsville, the Lawhona or Sixes, are mines on the same belt, that have been extensively worked, and have made at times rich returns. The McConnell mine, recently sold to a New York company, is southwest from the above, and on the same belt. The Mahone and King mines are southwest from the above and on the same belt. The great Allatoony branch, in Cass county, Ga., runs through this property, from which millions of dollars were taken out from 1832 to the present time, and this branch and other branches running through this property now would yield fruitful work in getting what gold was left from the rude and imperfect working of former years."

FLIES *vs.* HORSES AND CATTLE.—It is a true saying that a merciful man will be merciful to his beast. Acting on this idea, a correspondent wants to know if some preventive cannot be employed for the protection of horses and cattle against the attacks of flies, thus enabling these animals to enjoy more quiet and peaceable lives. He says that flies will not touch onions or smart-weed, and thinks it possible that some wash might be made out of these, or some other article, to serve this humane purpose. There is a snug little fortune in this discovery.