

HAY AND STRAW STACKING APPARATUS.

The labor of stacking wheat, rye, oat, or barley straw and hay with an ordinary pitchfork is by no means slight, and indeed it is almost impossible to build stacks by hand high enough to prevent their becoming flat by settling, and their consequent rotting by the soaking in of the rain.

The invention herewith illustrated is designed to enable one man to place straw or chaff on a stack or pen eighteen feet high, as fast as the material can be furnished by the thrashing machine. It consists of an upright resting on a pivot and held erect by two braces, the upper ends of which are fastened in such a manner as to allow the upright to pivot readily in any direction. The lower extremities of the braces are firmly staked in the ground, as shown in the engraving. To the upright is attached a windlass, A, furnished with a ratchet and pawl, and carrying an elevating rope which passes up over a pulley, B, then down around another pulley on a carriage, C, and thence back to a staple on the upright, to which it is made fast. The carriage, C, is provided with friction rollers so as to slide freely up and down the upright, and connects with the lower end of the brace, D, the upper extremity of which is pivoted to the vibrating beam, E. The latter is hinged to the top of the upright as shown, and supports at its further end the tongs or grapple. The construction of this appliance is after the fashion of lazy tongs, and is readily understood from the engraving. To the point of intersection of the grappling arms is attached a cord, which passes through a loop on the swinging beam, and thence is led along down to a point beside the windlass.

To operate the device, the rope attached to the windlass is slacked until the beam, E, is inclined downward sufficiently to allow the tongs to grasp a quantity of straw. By pulling on the cord attached to the grapple, the jaws are opened to engage the material, and by slacking the line the tongs close of their own weight and firmly hold. The windlass is then revolved and the beam elevated to the proper distance, when the whole apparatus is turned on its pivot until in position to drop its load on the stack. The cord attached to the tongs is then pulled, causing the jaws to open and the straw to fall out. The machine is represented at this stage in our illustration—the figure at the foot of the upright being in the act of drawing the cord.

The principal advantages of this invention are the economy of labor and time which it must cause, and also the simplicity of its parts. It can readily be made by any farmer, with the assistance of an ordinary smith in the construction of the metal portions. It is not heavy or unwieldy to manage, and can be easily carried upon the shoulders of two men.

Patented through the Scientific American Patent Agency, September 24, 1872. For further information address the inventor, Mr. D. W. Baird, Lebanon, Tenn.

SEWING MACHINE TREADLE AND CASTERS.

Our engravings represent an improved form of treadle and also an ingenious mechanical combination of levers, whereby the sewing machine may be lifted on or off its casters at pleasure. From Figs. 1 and 2 the arrangement of the treadles is readily understood. There is necessarily an alternate motion, the cranks being on a quarter turn similar to those of a locomotive. The dead center is thus avoided, and the machine can be entirely controlled by the feet, which, acting separately, have a much more natural and less tiresome motion than usual.

Figs. 3, 4, and 5 represent the various portions of the device for actuating the casters, which, in Figs. 1 and 2, are shown respectively out of and in action. The lever (Fig. 3) is attached to the rear right hand leg of the machine, its forward end terminating in a foot plate. Fig. 4 is affixed to the corresponding forward leg, the arm of the lever being inwards, connecting with and moved by the foot lever, Fig. 3. Fig. 5 extends across the machine under the treadles. On its right hand end are an arm and pin, which pin enters the slot shown in the foot lever. A caster is attached to its left hand extremity by means of a short arm.

In Fig. 1, the device being out of action, the foot lever is raised, the casters are consequently clear of the floor, and the machine rests firmly on its legs. In Fig. 2 the foot lever has been pushed down and is caught under the catch on the

forward leg, which retains it until it is released by the hand. The rear caster fastened to this lever is therefore thrown into action, while the arms of the levers, Figs. 4 and 5, are forced down, causing the other two casters thereto attached to press on the floor and to act as fulcrums, so that the machine is raised fully half an inch, and may be easily moved from place to place. It will be noticed that the bar, Fig. 5, carrying the caster on the left, is made concave, so, that any oil, that may fall from the feeder or bearings, is caught and prevented from reaching the carpet. The treadles and the invention just described may be easily applied to all forms of sewing machines new or old.

These devices were patented through the Scientific American Patent Agency, the treadles under dates March 7, 1871,

national glory. "Confidently relying on the zeal and patriotism ever displayed by our people in every national undertaking, we pledge and prophesy that the centennial celebration will worthily show how greatness, wealth, and intelligence can be fostered by such institutions as those which have for 100 years blessed the people of the United States."

A Huge Snow Plow.

We see it stated that the Union Pacific Railroad is having built, at the shops in Omaha, a snow plow which, when finished, will be the largest and most powerful in the world. It is rapidly approaching completion, and in a few days will be ready for business. The trucks on which it is built are very heavy and strong, and were cast especially for this plow.

The platform on the trucks is 22 feet long and 10 feet 6 inches wide, and is composed of solid oak timbers, 8 by 16 inches. These timbers are held together by 10 iron bolts 1½ inches in diameter, which run crosswise. This solid bed is fastened to the transom beams by 40 bolts, 20 over each truck. The inclined slide, placed on the platform, is 22 feet long, and slopes at an angle of 30 degrees, and is held firmly to the bed by 40 bolts of an inch in diameter, and is supported from behind by inclined posts 5 feet long, 8 inches wide, and 16 inches thick. The entire length, from the rear of the platform end of the slide, is 32 feet. The slide is to be ironed, and an immense plow of the ordinary shape, 18 feet long, 11 feet wide, and 5 feet high, and covered with iron 3-16 of an inch thick, is to be securely placed upon it. On the point of this plow there is to be an iron plate, steel pointed, 11 feet long and 4 feet wide. This plate, of course, runs across the track, and only 1 inch above it. The rear of the platform will be boxed in, making a room twelve feet high, 11 feet wide and 10 feet long, for the purpose of keeping the snow out. It will be

furnished with a door, so that, if necessary, it can be loaded with iron.

The monster will weigh fifty tons, and will be operated by three of the heaviest engines on the road. The cost will be over \$5,000. The design was gotten up by Mr. G. E. Stevens, superintendent of the car and building department, and Mr. J. H. Congden, general master mechanic of the road, who must have made it a study since last winter. There will be but very few snow drifts that this plow won't clean out; but if it ever jumps the track, it will be a pretty hard job to get it on again.

New Submarine Telegraph Cable.

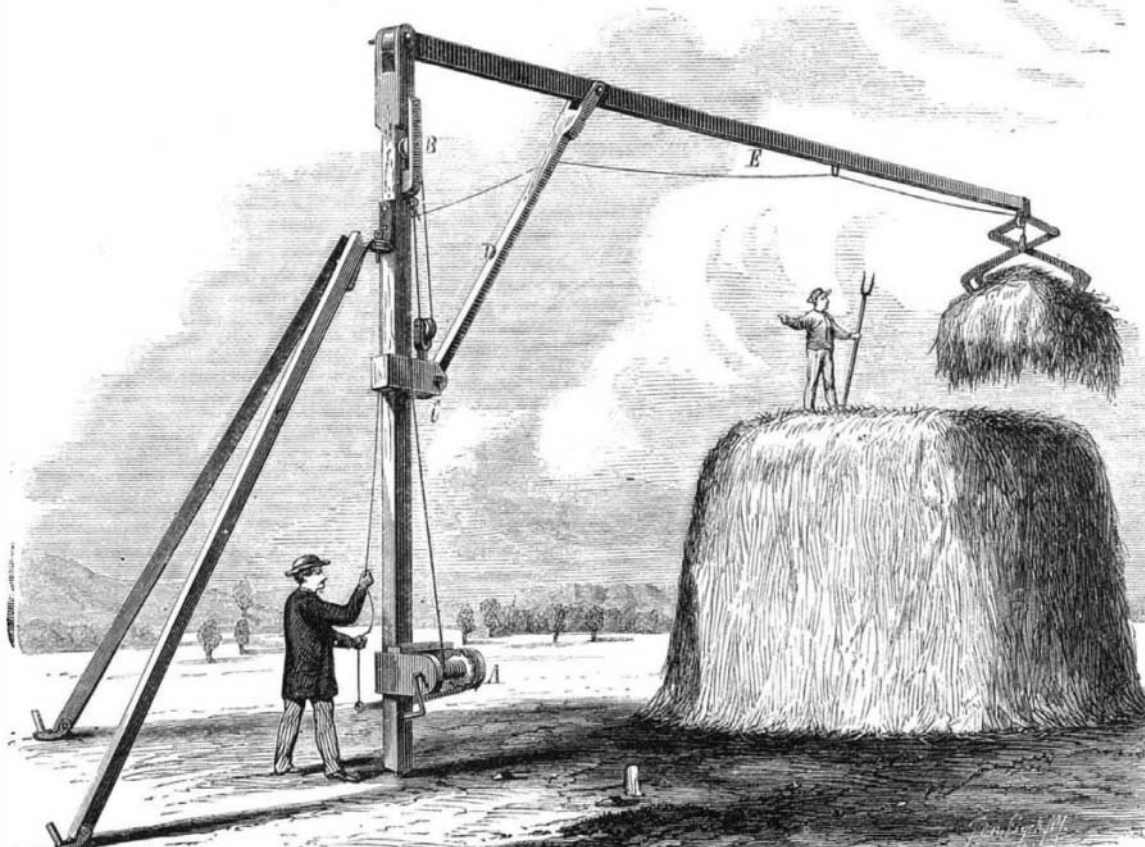
Telegraph cable works have been erected on the Pacific coast, at San Francisco, and the Electrical Construction Company have completed the first section of their first job, to wit, a cable for the British Columbian Government. It is intended to be submerged under Rosario straits, to connect Vancouver's Island, at Victoria, with the continent.

The cable is 35,000 feet in length, and weighs about 30,000 pounds. The conductor is composed of seven No. 20 copper wires of 97 per cent fineness. The dielectric consists of two coats of pure gutta percha 3/8 of an inch in diameter, with intermediate coatings of Chatterton's compound. The gutta percha coil is served with two coats of machine banding, well tarred, and covered with a protecting armor of No. 9 galvanized iron wires, laid on spirally. Electrically tested, the resistance of the conductor is eight ohms, or B A units, per knot, and the resistance of the dielectric or insulating medium, 443,000,000 ohms per knot. The company has an order on hand to manufacture another cable 30,000 feet long, for the Puget Sound Telegraph Company, to establish a connection between Seattle and Port Townsend.

A PATENT called the "Electro Magnetic Motor" has, it is said, lately been tried on board the yacht *Miranda*, in the Birkenhead Great Float, and for the moment the result is of that nature which enables the inventors to state that at full power the motor made 1,400 to 1,500 revolutions per minute, while not connected with the screw. The yacht was worked for about five minutes, but before she could be brought up she had torn all the fastenings away from the great vibrator. The fact is, remarks the London *Daily News*, that

the motor was twice too powerful for the yacht, and there is no doubt that it will take some time to bring the new invention into general use.

We have not a doubt as to the latter.



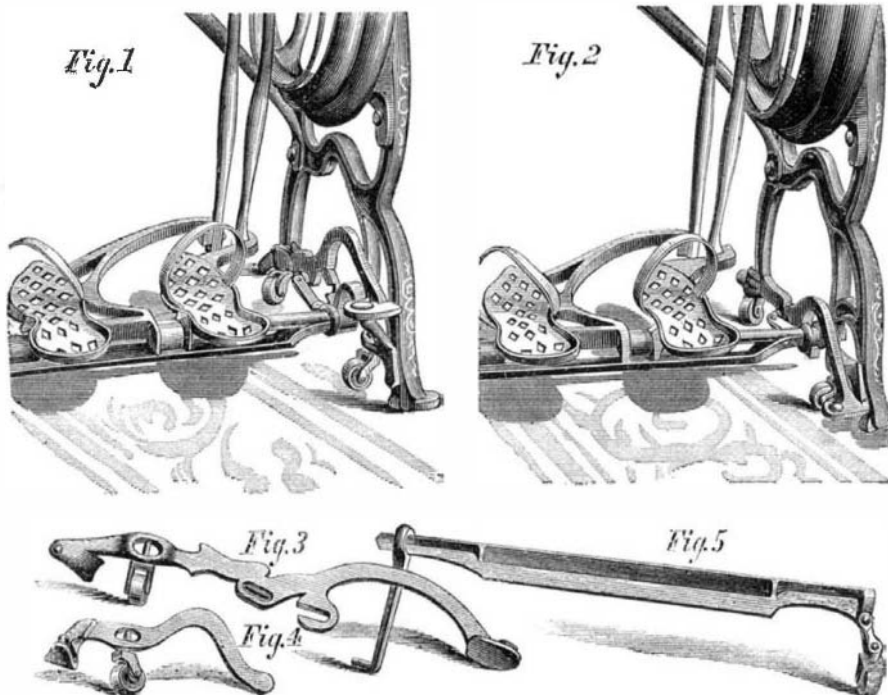
BAIRD'S HAY AND STRAW STACKING APPARATUS.

May 9, 1871, and Sept. 12, 1871, and the casters Oct. 17, 1871, by Mr. G. K. Proctor. They are now manufactured by the Salem Shade Roller Manufacturing Company, of Salem, Mass., John C. Osgood, agent, to whom further inquiries may be addressed.

The National Jubilee.

The one hundredth anniversary of American Independence is to be celebrated at Philadelphia, Pa., July 4th, 1876, in a becoming manner. One grand feature of the occasion will be the general exhibition of the products of American Industry.

The Centennial Commission has issued an address to the people of the United States, signed by President Joseph R. Hawley, for subscriptions to the fund of ten millions of dollars required to make the Centennial such a success as the patriotism and pride of every American demand. The Commission looks to the unfailing patriotism of the people of every section to see that each contributes its share of the benefits of an enterprise in which all are so deeply interested. It would further earnestly urge the formation in each State



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and Territory of Centennial organizations which shall in time see that county associations are formed, so that when the nations are gathered together in 1876, each Commonwealth can view with pride the contributions she has made to the