Improvement in Railway Car and Locomotive Wheels.

Much of the necessary expense of working railway lines is to be charged to the deterioration of the rolling stock, subjected, as it is, to the constant percussion of one rigid body, the wheel, on another unyielding surface, the rail. The slightest degree of elasticity in either would partially remedy this evil, and reduce the cost of repairs to track and rolling stock; but if this elasticity is confined wholly to the track, the power necessary to propel a train is enhanced, although the attention of railway managers, both in this country and Europe, has been for several years directed to methods intended to secure a permanent way. The elasticity sought, on the other hand, for the rolling stock, is wholly confined to springs interposed between the axle and the body or weight of the carriage or engine. It is well known, however, that this does not relieve the excessive wear and rapid deterioration of the rolling or running parts—the wheels and axles—which are subjected to perpetual hammerings. The objects of the improvement, illustrated in the accompanying engravings, are to provide a wheel which while always presenting a rigid face to the surface of the rail shall pass without jar over inequalities in the road, preventing concussions on the axle, relieving the shock of lateral motion, and the jar on the carriage, and furnishing a wheel immensely stronger and longer lived than any rigid wheel now in use. These objects attained, not only are the life and efficiency of railway rolling stock extended and increased and the expense of running trains consequently reduced, but the comfort of passengers and the safety of freight greatly enhanced.

Fig. 1

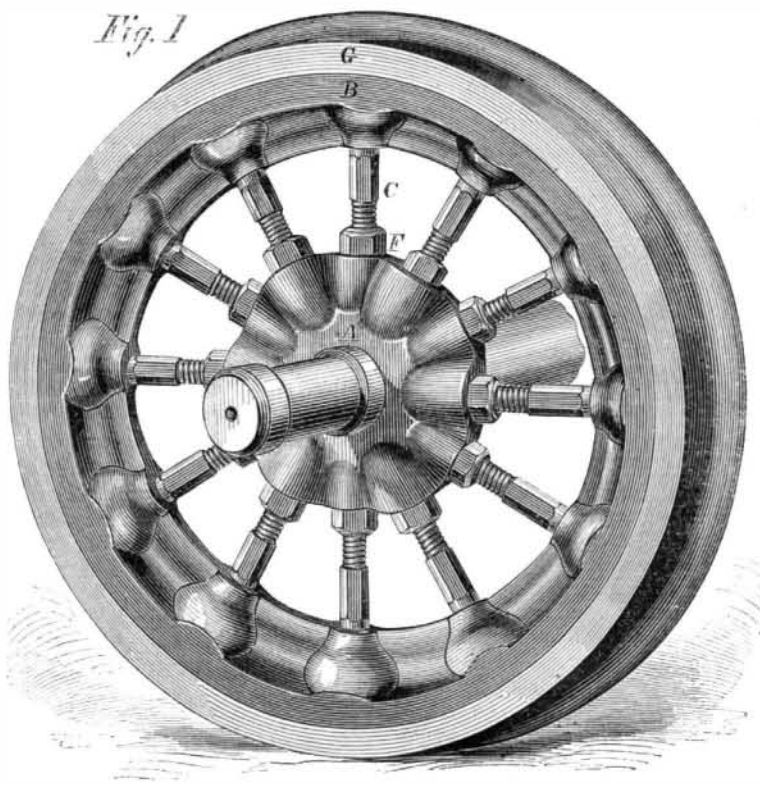
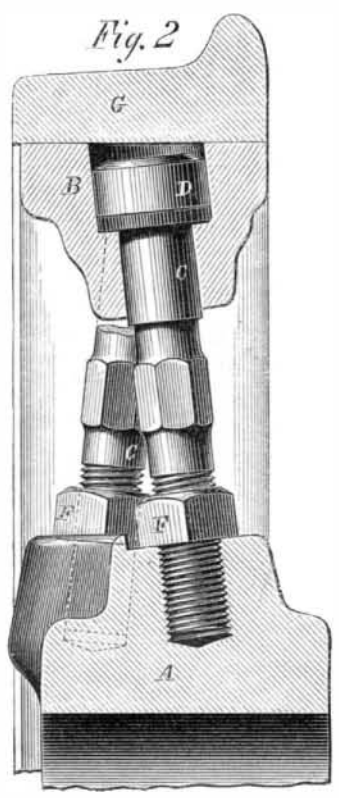


Fig. 2



AYER'S PATENT CAR WHEEL.

Fig. 1 is a perspective view of Ayer's Car Wheel, and Fig. 2 a vertical section from the axle to the tread. The hub, A, and rim, B, are of cast iron, the best stock being used. These are united by wrought iron spokes, C, each alternate spoke leaning at an angle from opposite sides of the central circumference of the hub to the central line of the rim. This is to receive and relieve the lateral shock in running caused by inequalities in the rails or the rounding of curves. The hub is tapped to receive each spoke, which is screwed into it, passing through holes in the rim. Each spoke has a head, D, seated in a recess, and between the under side of the head and the bottom of the recess is interposed a cushion, E, of rubber, between which and the head is a washer of iron or steel. The wheel is trued and the pressure on the elastic cushion adjusted by the nut, F, bearing on the hub; a portion of the spoke being squared, as seen, for the reception of a wrench. The spokes are passed through the rim, screwed into the hub, and the wheel is finished by a tire, G, made of Krupp's best steel, rolled without a weld from a solid ingot.

The weight acting on the hub is suspended from the rim by the wrought iron arms, or spokes, and rests at all times on an elastic cushion. A wheel made on this plan has been found by long trial, under the most exacting circumstances, to wear perfectly round, to withstand uninjured the severest shocks, and to wonderfully increase the comfort of passengers, in the reduction of noise, the absence of jar and jolt, and the additional security from accident afforded.

It is the subject of two patents by Charles C. Ayer, of Lynn, Mass., assignor to himself and Henry A. Breed, of the same place. Manufactured by the New York Steam Engine Company at their works, Worcester, Mass. All orders should be addressed to the Ayer Patent Wheel Company, 126 and 128 Chambers St., New York, where specimens may be examined

Transmitting Steam Power.

At the shops of the Portland and Kennebec Railway a large steam boiler has been put in the wood shop of the company, and from this boiler a three-inch iron pipe leads under ground to the machine shop, a distance of four hundred and fifty feet, conveying steam power for driving two engines of twenty-five and fifteen horse-power, carrying all the lathes and other machinery of an extensive establishment. The pipe is four feet under ground, is inclosed in three-quarter inch hair felting, and encased in a seven-inch box filled with calcine plaster. It has three slip joints to prevent breakage by expansion. When there is a pressure of 80 pounds of steam at the boiler, the same pressure is maintained at the other end of the pipe. The new arrangement is found to work admirably, and will be a great saving in machinery, labor and fuel.—*American Railway Times.*

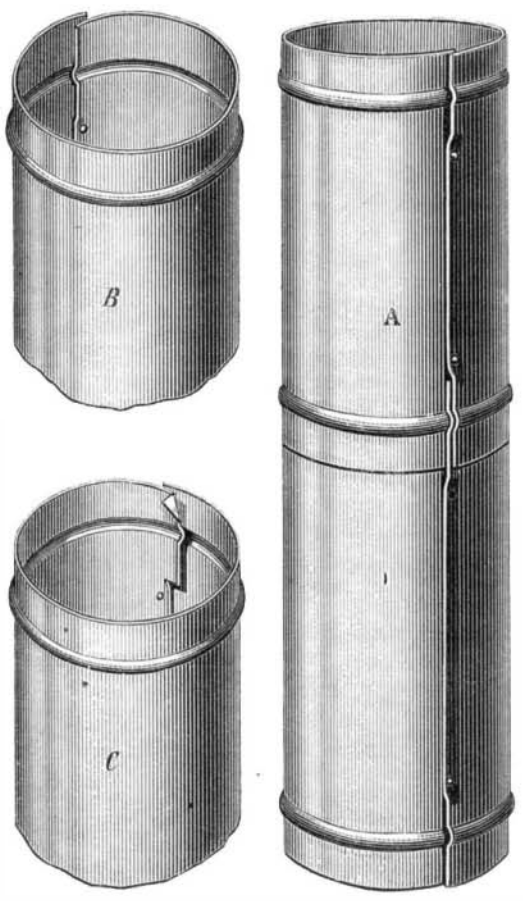
Cheap and Good Smoke-House.

A Western New York farmer publishes his plan of a small, cheap, and good smoke-house, which, as it may contain some practical hints for our readers, we append:

"No farmer should be without a good smoke-house, and such a one as will be fire-proof and tolerably secure from theives. Fifty hams can be smoked at one time in a smoke-house seven by eight feet square. Mine is six by seven, and is large enough for most farmers. I first dug all the ground out below where the frost would reach, and filled it up to the surface with small stones. On this I laid my brick floor, in lime-mortar. The walls are brick, eight inches thick, and seven feet high, with a door on one side two feet wide. The door should be made of wood and lined with sheet-iron. For the top I put on joists, two by four, set up edgewise, and eight and a half inches from center to center, covered with brick, and put on a heavy coat of mortar. I built a small chimney on the top in the center, arching it over and covering it with a single roof in the usual way. An arch should be built on the outside with a small iron door to shut it up, similar to a stove door, with a hole from the arch through the wall of the smoke-house, and an iron grate over it. The arch is much more convenient and better to put the fire in, than to build a fire inside the smoke house, and the chimney causes a draft through into the smoke-house. Good corn-cobs or hickory wood are the best materials to make a smoke for hams. The cost of such a smoke-house as I describe, is about $20."

FAINT'S PATENT STOVEPIPE JOINT.

Most of our readers know something of the annoyance of putting up stovepipes, the difficulty of entering the joints, the liability of their separation while the work is being done, and



the unavoidable smut, arm ache, and temptation to profanity. The plan shown in the accompanying engravings makes the joining of stovepipes as "easy as rolling off a log." By this method the pipes can be joined when the connecting ends are of the same size; the sections are securely fastened and cannot fall apart, and the operation either of joining or taking apart is performed instantly; the joint, when made, is as closely fitting as where one end slides into another; when rusted they may be separated as readily as when clean, and when put together the joint has as neat an appearance as those made in the ordinary way.

A, in the engravings, represents the two sections of the pipe joined. B is one section showing the unconnected or unriveted portion of the seam between the bead and the end, and C is a similar section also open at the seam and having the corner of the inner edge bent to form a stop for the inner edge of B. The difference between a true circle and the opening of the lap at the seam is only sufficient to admit easily the passage of the sheet iron.

In use the two ends are brought together, one edge entered into the opening between the lap of the other, and turned about one-third of a revolution, with a slight endwise pressure, when the parts are securely locked by this simple rotary or spiral motion. With this method there is no necessity for suspending the pipe, unless of very great length between the points of support, as the joints are so stiff that no appreciable sagging takes place.

Patented Dec. 8, 1868 by John Faint. For further information address or call upon John and G. B. Faint, Tremont House, 665 Broadway, New York

A New Alloy for Coin.

The authorities of the mint in France have been experimenting upon zinc for replacing copper, either partially or entirely as an alloy for the silver coinage of the country, and articles of silverware generally. The advantages are said to be that the metal is more homogeneous, has at least as fine a white luster, and possesses a clear ring and considerable elasticity. When toughened by continued or repeated rolling, it is restored by simple heating, and is less liable to be blackened by exposure to the sulphureted hydrogen of the atmosphere, while there is no green coating formed with acid liquids. A mixture of 835 parts of silver, 93 of copper, and 72 of zinc is recommended.

OBITUARY---DEATH OF A NATURALIST.

John Cassin, a distinguished naturalist, died in Philadelphia on Sunday morning last, the 10th inst. Mr. Cassin was born near Philadelphia, September 6, 1813. In 1834 he became a resident of that city, and was, for a few years, engaged in mercantile pursuits. From early youth, however, his favorite study was ornithology, and in his later years occupied his whole attention. He contributed description of new species of birds and synoptical reviews of various families to the Philadelphia Academy of Natural Science. His more elaborate publications are "Birds of California and Texas," a handsome octavo volume, containing descriptions and colored engravings of fifty species not given by Audubon; a "Synopsis of the Birds of North America;" "Ornithology of the United States Exploring Expedition;" "Ornithology of the Japan Expedition;" "Ornithology of Gillis' Astronomical Expedition to Chili;" and the chapters on rapacious and wading birds in the "Ornithology of the Pacific Railroad Explorations and Surveys." His works are the result of careful research, and are especially valuable for their descriptions and classification of many birds not given in the previous works of Wilson and Audubon. Mr. Cassin was of a Quaker family, several members of which have distinguished themselves in naval and military service.

A Novel Method of Catching Mice.

A correspondent of the "Journal of Pharmacy" says: "Having on several occasions noticed mice in our seed barrels, I bethought me of some method how I might trap the little intruders; they having gained entrance by eating through the chime. To kill them with a stick was impracticable, as the little fellows would invariably escape as soon as the lid was raised to any hight. I then thought of saturating a piece of cotton with chloroform and throwing it in, then closing the lid. On raising it again in a few minutes, I would find that life had almost or quite departed. Having on one occasion left the piece of cotton in the barrel, on again returning, found three mice with their heads in close contact with it, and dead. In the evening I saturated another piece, and placed it in the barrel, and on opening it the next morning, to my surprise I found *nine dead mice.*" We recommend our Chicago friends to try chloroform on their rats, and see what effect it will have.

RICE is a valuable crop in Louisiana, a rich planter in St. James Parish, determined to sow rice for the use of his family and his farm hands on about one hundred acres, which he had to spare after planting his sugar cane. His rice crop filled 1,400 barrels, the greater number of which he disposed of on the plantation at $21 a barrel; the entire cost of plowing, sowing, and preparing the grain for market was $4,000. If he had sold all the barrels, which he could easily have done, at $21, his clear profit would have been $25,400.