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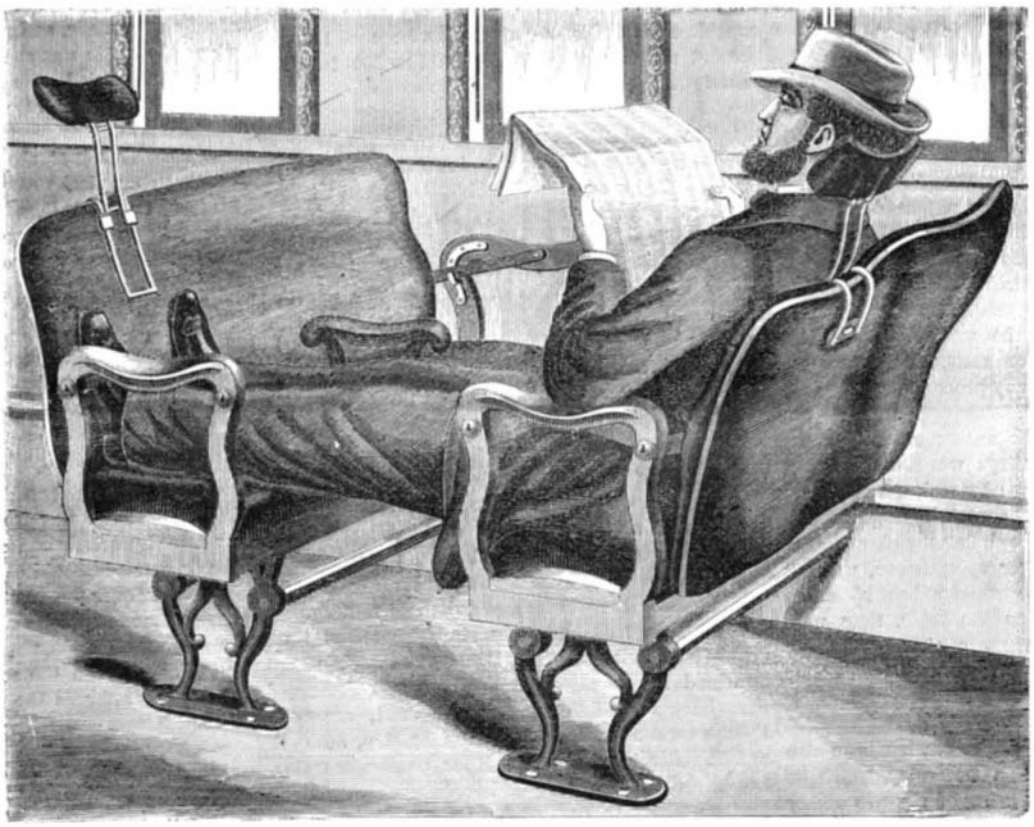
Improved Head-rest.

Riding upon the rail is very fatiguing, especially if one has to take a long journey. After a few miles the scenery, what one can see of it, becomes monotonous, and fences merging into white lines, trees bending and whisking their branches in the wind, houses, cattle, men, and the thousand and one objects—animate and inanimate—make one giddy and fain to seek refuge in closing the eyes. As cars are ordinarily built the seats are too low behind to afford any support to the head, and after vainly leaning back or frantically bolting forward, the weary traveler, is obliged to relinquish the idea of getting even "forty winks," and is compelled to grin and bear the jolting and concussion as well as he can.

That is ordinarily; now he may provide himself against the evils and annoyances above mentioned by the use of the head-rest shown in this engraving. A distinguished individual of literary tastes and luxurious habits is represented enjoying both with great satisfaction.

The object is to provide the railroad traveler with an easy and ready mode of procuring rest or sleep while riding in railway cars, either day or night. With some propriety it might be called a portable pocket berth, as it is susceptible of being carried about the person or within any common traveling satchel or bag, and may be attached to, or detached from, the back of any ordinary car seat, and raised or depressed to any desired position for the head in a moment of time. With it one may pass a day's or a week's ride in any railway car without experiencing any thing like the usual fatigue.



PHELPS'S TRAVELERS' HEAD-REST.

The rest is externally light, weighing but a few ounces, is made of the finest spring steel highly polished, and is upholstered in a handsome manner in conformity with first class cars.

When it is considered that one will last a life time, and that the ordinary fatigue from riding in railroad cars is reduced to comfort and pleasure by their use, the portable rest will be esteemed and approved of by the public generally.

This invention was patented on July 4, 1865, by W. R. Phelps, through the Scientific American Patent Agency; for further information address him at No. 34 Barclay street, New York.

Savings Banks in England.

Charles Ryland & Son's *Iron Trade Circular* (London) says:—

"It is indeed a noticeable fact that the amount deposited and invested in savings banks and friendly societies, now reaches ninety-three millions and upward of a tenth, an amount equal to about one-eighth of the national debt. As this sum is invariably invested in consols, and is steadily on the increase, it is not difficult to estimate the effect it must have in steadying the price of the funds, and replacing, by a Government enforced investment, the withdrawals made by independent holders, who retire their money from securities paying so small an interest, to others which they regard as equally secure, while they give a larger return.

Large Profits of the London Underground Railroads.

The last number of the London *Engineer* makes the following statements in regard to the Metropolitan Railway:—

"Among our railway systems the Metropolitan is *sui generis*. It is unique in its mode of construction, in the district it serves, and in its working. At the top of the list in mileage traffic receipts and, we may almost add, in the value of its shares. It is peculiar, inasmuch as the whole of the line is constructed in or under the metropolis, many portions of it passing under densely populated districts and busy thoroughfares. The number of passengers it conveys is perfectly enormous. In the last half year the persons carried on the Metropolitan were 7,462,823, that is, two-and-a-half times the population of London. The mere increase in the number of passengers conveyed in the last, as compared with the preceding, half year, was equal to the united population of a score of the next largest cities and towns in England, including Manchester, Liverpool, Birmingham, Newcastle, etc.

"The third-class passengers, in the number stated, were 5,110,823, or nearly 69 per cent of the whole. The total capital of the company in ordinary and preference shares and debentures, amounts to £2,800,000, but will amount, it is expected, to £5,400,000, when the whole system is completed. As to the soundness of the scheme and its profitable character, it may be mentioned that in the first year of its existence the shares were at 50 per cent discount, whereas they have been sold at upward of 40 per cent premium. The dividend for the last half year was at the rate of 7 per cent per annum. The revenue has risen from £15,000 for the half year ending December, 1863, to £41,000 for the half year ending June, 1865. The traffic per mile presents an extraordinary contrast with that of most other railway companies. The Metropolitan receipts per mile per week are as high as £703. The nearest approach to this is by some of the lines which have Metropolitan and suburban traffic, but all of these fall far short of it. The Blackwall line reaches about £394 per mile per week, and the North London £373, whereas the great companies having London termini, and other large companies in other parts of the country, have traffics which only yield receipts ranging from £60 to £160 per mile per week. In Whit week last the Metropolitan carried 370,843 passengers, and in one day alone—the Monday of that week—it carried 83,440 and, as a result of the perfect system of signaling adopted on that line, without loss of life or casualty to a single passenger. The trains are now very frequent, but it is expected that when the system is completed, they will be run each way at intervals of two minutes, which may be done with perfect safety, inasmuch as no train is allowed to pass from one station to another until the signal has been received that the line is clear between the stations. The Metropolitan forms an important part of what is popularly known as the 'inner circle,' which gives access by railway to all directions in general, and leads to no place in particular. This 'circle,' belt, or link, is far from being a true circle. On the map it has somewhat of the appearance of the trunk and head of a 'porker,' or a hippopotamus with an unduly elongated snout."

HENRY BESSEMER ON HIS PROCESS OF MAKING STEEL.

At the recent meeting of the British Association, at Cheltenham, Eng., Mr. Henry Bessemer read a long paper on the manufacture of steel by his process of blowing air through molten cast iron to burn out the carbon—a process which has been repeatedly illustrated and described in the SCIENTIFIC AMERICAN, and which has been recently introduced into this country by Messrs. Winslow, Griswold & Holley, of Troy, N. Y. It will be remembered that Mr. Mushet claimed to be the discoverer of that modification in the Bessemer process which made it a practical industry—the introduction of manganese. On this point Mr. Bessemer makes the following statement:—

THE AUTHOR OF THE MANGANESE IMPROVEMENT.

In the old Sheffield process the original quality of the Swedish charcoal iron employed governs the quality of the cast steel made; consequently, £36 per tun is freely given for the high class Danamora iron, while other brands of Swedish charcoal iron may be

bought for £15. In either case these are expensive raw materials for the cast steel maker.

"In 1839 the trade of Sheffield received an enormous impulse from the invention of Josiah Marshall Heath, who patented in this country the employment of metallic manganese, or, as he called it, 'carburet of manganese.' The addition of a small quantity of this metal, say from one-half to one per cent, rendered the inferior coke-making irons of this country available for making cast steel; it removed from these inferior qualities of iron their red-shortness, and conferred on the cast steel so made the property of welding and working soundly under the hammer. This invention was of great importance to the town of Sheffield, where its value was at once appreciated. Mr. Heath, supposing himself secure in his patent told his licensees that if they put oxide of manganese and coal tar or other carbonaceous matter into their crucibles along with the blister steel, that it would do as well, and be much cheaper than the carburet of manganese he was selling them; in effect it was the same thing, for before the steel was melted the carbon present reduced the oxide of manganese to the metallic state, so that his patent carburet of manganese was formed in the crucible in readiness to unite with the steel as soon as it became perfectly fused. But the law decided that this was not Heath's patent, and so the good people of Sheffield, after many years of litigation, were allowed to use it without any remuneration to the inventor.

"Manganese has now been used for many years in every cast-steel works in Europe. It matters not how cast steel is made, since manganese added to it necessarily produces the same beneficial changes; no one better appreciated this fact than the unfortunate Mr. Heath, as evidenced by his patent of 1839, in which he declares that his invention consists in 'the use of carburet of manganese in any process whereby iron is converted into cast steel.' Had Heath seen in his own day the Bessemer process in operation, he could not have said more; he well knew the effect produced by manganese on steel, and, therefore, claimed its employment in any process whereby iron is converted into cast steel.

"At the suggestion of the author a work for the production of manganese alloys was erected by Mr. Henderson, at Glasgow, who now makes a very pure alloy of iron and manganese, containing from twenty-five to thirty per cent of the latter metal, and possessing many advantages over spiegeleisen, which it will doubtless replace. Two bright rods of 1¼ inches in diameter will be found on the table, they were folded up cold under the hammer. This extremely tough metal is made by using Mr. Henderson's alloy in lieu of spiegeleisen, which is incapable of making steel of such a quality.

"A Prussian gentleman, M. Preiger, has been also successful in manufacturing a new alloy, which he calls ferro-manganese, consisting of sixty to eighty per cent of metallic manganese. It is extremely useful in making malleable iron by the Bessemer process, in which spiegeleisen cannot be employed on account of the large proportion of carbon it contains."

We make also the following extracts from his paper:—

USE OF BESSEMER STEEL IN SHIP BUILDING.

"The Bessemer cast steel made for ships' plates by the several eminent firms now engaged in that manufacture is of an extremely tough and ductile quality, while it possesses a degree of strength about double that of the inferior kind of iron plates usually employed in ship building, hence it is found that a much less weight of material may be employed, and at the same time a greater degree of strength may be given to all parts subjected to heavy strains.

"Most prominent among the builders of steel ships is the firm of Jones, Quiggin & Co., of Liverpool, who have now constructed no less than 31,510 tuns of shipping, wholly or partially built of steel. Of these, thirty-eight vessels are propelled by steam with an aggregate of 5,910 horse-power, besides this the principal masts and spars of eighteen sailing ships have been made by them wholly of steel.

"Vessels of a large size, constructed to class AA twelve years at Lloyd's, weigh, when built of iron, about 12 cwt. per tun measurement; whereas similar vessels built of steel weigh only about 7 cwt. per tun measurement; thus an iron ship to take first class at Lloyd's for 1,000 tuns measurement, would weigh 250 tuns more than a steel one of the same class. Such a vessel could, therefore, take 250 tuns, or 25 per cent more freight at the same cost, or could avail herself of the difference of immersion to leave or enter port when the tide would not permit an iron vessel to do so. As a steamer she would carry 250 tuns more of coal, and thus be enabled to lengthen her voyage or take her coal for the return trip. The two steam paddle-wheel steamers launched at Liverpool by Messrs. Jones & Co., on the 13th ult., for Dublin and Liverpool service, will draw from 3 to 4 feet less water than iron steamers built on the same lines, and being thus enabled to leave port at all states of the tide, will not require a tidal train in connection with them. If the employment of steel for the construction of merchant vessels is found to be so important, how much more so is it for ships of war. Some of the larger class of armor-plated vessels require 6,000 tuns of iron for their construction, and an addition of 1,800 tuns in the shape of 4½-inch armor plates. Now, if the frames and inner skin of such a vessel were constructed of steel it would be much stronger even if reduced to 4,000 tuns in weight; this would admit of 9-inch armor plates being used in lieu of 4½ inch, and would still leave the vessel 200 tuns lighter than the present ones, and hence, as the resistance of the armor to impact is as the square of the thickness of the plate, we should have a vessel capable of resisting four times the force of those at present constructed, while it would be 200 tuns less in weight."

FOR PROJECTILES.

"The application of steel for projectiles has now become a necessity since the introduction of armor plates. We have before us a 110-pound shot, that has passed with very slight injury through a 5-inch armor plate, and also some specimens of bent angle iron, made of Bessemer iron, and rolled at the Millwall Iron-works in London, and from the same works a portion of one of Hughes's patent hollow steel beams for supporting the armor plating in course of construction for the forts at Cronstadt; both are interesting examples of what the rolling mills of the present day can effect, and of the facility with which cast malleable iron and cast steel admit of being worked into the most difficult forms."

FOR AXLES AND TIRES.

"There is no department in engineering in which the peculiar toughness of steel and its strength and power of resisting wear and abrasion are of such vital importance as in its application to railway purposes. This fact had long since impressed itself strongly on the mind of Mr. Ramsbottom, of the London and Northwestern Railway, who commenced experiments with this material in 1861, carefully, though trustingly, he tried it step by step, not even at first venturing to employ it for passenger trains, but as proofs of its safety and economy crowded upon him, he carefully applied it to the most important parts of passenger engines, and even to the manufacture of the formidable engine cranks (at that time intrusted only to the most eminent iron-making firms in the kingdom), these iron cranks are now being replaced by steel ones forged from a single mass. One of these steel cranks, manufactured at the new steel works at Crewe, has been obligingly lent by Mr. Ramsbottom as an illustration of the use of steel for this purpose; that gentleman has also taken out of use a plain steel axle that has run a distance of 112,516 miles, and now exhibits very slight signs of wear.

"The tires of wheels, on which so much of the public safety depends, were then tried, but the exact amount of difference between the endurance of wrought iron and Bessemer steel for this purpose is not yet ascertained, as none of these steel tires are yet worn out; but enough has been shown to prove the advantage of entirely replacing iron by steel for this purpose.

"In order to show how a steel tire will resist the most violent attempts to produce fracture, an example is given of a steel tire manufactured by Messrs. Bessemer & Co., of Sheffield; it was placed on edge under a six-tun steam hammer, and subjected to a series of powerful blows until it assumed its present form, that of a figure of eight, a degree of violence immensely more than it could ever be subjected to in practice. These tires are made without weld or joint, by forging them from a square ingot partly under the improved plan invented by Mr. Ramsbottom, and partly by an improved mode of flanging and rolling, invented by Mr. Allen, of the Bessemer Steel Works, Sheffield.

"So important were found to be the advantages of employing cast steel as a substitute for wrought iron at the works of the London and Northwestern Railway Company, that the directors, acting under the advice of their able engineer, determined on building large steel works at Crewe, which is now in active and successful operation. In the design and arrangement of their plant for working up the steel several important improvements have been introduced by Mr. Ramsbottom, among others his duplex hammer, which strikes a bloom on both sides of the ingot at once, in a horizontal direction, and thus renders unnecessary the enormous foundations required for ordinary hammers. Here, also, he has put up his improved rolling mill for rolling blooms of large size, the enormous machine being reversed with the greatest rapidity and ease by the attendant, without any shock or concussion whatever."

FOR RAILROAD RAILS.

"While matters were thus steadily progressing in the engine department of the company, the engineer of the permanent way, Mr. Woodhouse, took in hand a thorough investigation of a no less important problem, viz., the substitution of cast steel for wrought-iron railway bars. For this purpose some 500 tuns of rails were made, and put down at various stations where the traffic was considerable, so as to arrive, at the earliest period, at a true comparison of the respective endurance of wrought iron and cast-steel rails. It will be unnecessary here to enter into the numerous details of the extensive series of experiments systematically carried out by Mr. Woodhouse; the trials made at Camden will suffice to show the extraordinary endurance of steel rails. It is supposed that there is not one spot on any railway in Europe where the amount of traffic equals that at the Chalk-farm bridge at Camden Town. At this spot there is a narrow throat in the line, from which converges the whole system of rails employed at the London termini of this great railway. Here all passengers, goods, and coal traffic have to pass; here, also, the making up of trains and shunting of carriages is continually going on. At this particular spot two steel rails were fixed on May 2, 1862, on the side of the line, and two new iron rails were on the same day placed precisely opposite to them, so that no engine or carriage could pass over the iron rails without passing over the steel ones also. When the iron rails became too much worn to be any longer safe for the passage of trains, they were turned the other way upward, and when the second side of the iron rails was worn as far as the safety of the traffic would allow, the worn-out rail was replaced by a new iron one—the same process being repeated as often as was found necessary. Thus we find, at the date of the last report on March 1, 1865, that seven rails had been entirely worn out on both faces. Since then another rail has been worn out up to July, making sixteen faces worn out, the seventeenth face being in use on August 22d, when the steel rail that had been placed opposite to them was taken up in the presence of the writer, and, by the kind permission of Mr. Woodhouse, now lies on the table before the meeting. The first face of the rail only has been used, and this is now become much thinner than it was originally, but, in the opinion of the plate layers is still capable of wearing out another half-dozen faces. Taking its resisting powers at three more faces only, it will show an endurance of twenty to one in favor of steel.

"Mr. Woodhouse has ascertained, by careful and continued testing for twenty-four hours at a time, that, an average of 8,082 engine tenders or carriages pass over the steel rails every twenty four hours, equal to 16,164 wheels every day for 1,207 days, making a total of 9,754,974 wheels passed over the rail. Subject to this excessive wear the rail seems to have been reduced 7½ lbs. per yard, hence, for every grain in weight of steel lost by abrasion, no less than 371 wheels had to pass over it. Another steel rail, put down also in May, 1862, at a place much less subject to wear, has had four faces of iron rails worn out opposite to it, and still appears as if very little used; this rail is also placed on the table. An iron rail, wears out by the giving way at various parts of the imperfectly welded mass, and not by the gradual loss of particles of metal, as in the case of the steel rail,

which no amount of wear and tear seems capable of disjointing. It must be borne in mind that this enormous endurance of cast steel is not owing to its hardness or brittleness, as some have supposed, for, in fact, Bessemer steel possesses an extreme degree of toughness. There is before the meeting an example of this fact: one of the same quality of steel rails having been attached at one end of the main driving shaft of a steam engine so as to twist it while cold into a long spiral, measuring 9 feet in length at top and bottom, and only 6 feet if measured along the center of the web. A single glance at this spiral rail will, it is presumed, dispel any idea of brittleness that may have been entertained."

EXTENT OF THE MANUFACTURE.

"In conclusion, it may be remarked that cast steel is now being used as a substitute for iron to a great and rapidly increasing extent.

"The jury reports of the International Exhibition of 1851 show that the entire production of steel of all kinds in Sheffield was, at that period, 35,000 tuns annually, of which about 18,000 tuns were cast steel. equal to 346 tuns per week; the few other small cast steel works in the country would probably bring up this quantity to 400 tuns per week as the entire production of cast steel in Great Britain. The jury report also states that an ingot of steel, called the 'monster ingot,' weighing 24 cwt., was exhibite by Messrs. Turton, and was supposed to be the largest mass of steel ever manufactured in England. Since that date a great change has been made, for the largest Bessemer apparatus at present erected in Sheffield, at the works of Messrs John Brown &Co., is capable of producing with ease every four hours a mass of cast steel weighing 24 tuns, being twenty times large than the 'monster ingot' of 1851.

"There are now seventeen extensive Bessemer steel works in Great Britain. At the works of the Barrow Steel Company 1,200 tuns per week of finished steel can easily be turned out, and when their new converting house, containing twelve more five-tun converters, is completed, these magnificent works will be capable of producing weekly from 2,000 to 2,400 tuns of cast steel. There are at present erected and in course of erection in England no less than sixty converting vessels, each capable of producing from three to ten tuns at a single charge. When in regular operation these vessels are capable of producing fully 6,000 tuns of steel weekly, or equal to fifteen times the entire production of cast steel in Great Britain before the introduction of the Bessemer process. The average selling price of this steel is at least £20 per tun below the average price at which cast steel was sold at the period mentioned. With the present means of production, therefore, a saving of no less than £6,240,000 per annum may be effected in Great Britain alone even in this infant state of the Bessemer steel manufacture"

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week; the claims may be found in the official list:—

Reversing Gear for Steam Engines.—The object of this invention is to change the motion of the slide valve at the end of each stroke of the piston by the action of parts which are arranged in the interior of the cylinder and operated by the piston or parts attached to the same. This object is effected by connecting the slide valve to a rod which connects two pistons working in cylinders that are formed by the ends of the valve chest, and the outer ends of which connect by suitable channels with chambers which are situated in the cylinder heads and communicate with the cylinder through openings that are closed by spring valves. Whenever the piston approaches one of the ends of its stroke it strikes the stem of one of the spring valves, and by opening it allows the steam contained in the end of the supplementary cylinder to escape, and thereby the equilibrium at both ends of the small pistons connecting with the slide valve is disturbed, and the slide valve is changed automatically. Small channels passing through said pistons allow the steam to pass into the supplementary cylinders, but these channels are so small in proportion to the channels leading from the supplementary cylinders to the chambers in the cylinder heads, that if one of the spring valves is opened, the steam from the supplementary cylinder escapes much quicker than it can be replenished through the small channel, and thus the equilibrium is disturbed and the slide valve changed as above stated. A. S. Cameron, corner of Second avenue and Twenty-second street, New York, is the inventor.

Device for Extracting Stumps and Elevating and Conveying Heavy Bodies.—This invention relates to the application of hydraulic pressure to a carriage for elevating heavy bodies, extracting stumps, raising stones, etc., and conveying them, when elevated and retained in a suspended state, to the place designed for them. The invention consists in the employment or use of an hydraulic apparatus similar to that used in the hydraulic press, placed upon a strongly-built carriage, and arranged with a water tank, and having the axles of the carriage provided with screw jacks—all arranged in such a manner that the desired work may be performed with but little labor, and with great facility. E. C. Haserick, Lake Village, N. H., is the inventor.

Drill Coupling.—This invention consists in a new method of making joints or couplings by which drilling tools are fastened on their rods and the sections of the rods coupled to each other, whereby the joint is made with facility and without injury to the screw thread or to the joint itself. One of the most serious difficulties now experienced in drilling an oil well is from the constant tendency in the couplings of the drill rod to become unscrewed; and, since there are four or more in every set of tools, the hindrances from this cause are frequent. Another difficulty arises from the breaking off of the male screw at its shoulder, caused by the excessive wrenching to which it is subjected when the joint is put together. Another difficulty is the stripping of the threads of the screw, by reason of the violent jar when the drill gives its stroke. The present manner of "wrenching on" the joints or couplings of drill rods and their tools is about as follows:—Two iron wrenches, several feet long, are used, the lower one resting against the ground or some fixed body, and the upper one being turned as tight as possible by hand, when two men, with a wooden lever about six or eight feet long, surge with all their might against the wrench. This throws an immense strain upon the threads, creating new bearings and angles, and causing them to become stripped and broken. This invention is meant to preserve the joints and couplings aforesaid, and to provide a more certain connection, and one which costs less labor to make secure. Job B. Stockton, Oil City, Pa., is the inventor.

Button-hole Sewing Machine.—This invention relates to a button-hole sewing machine which imitates, as near as possible, the hand stitch generally employed in making button-holes. One needle is employed which passes down alternately through the cloth near the edge of the button-hole, and then through the hole itself. Two threads are employed, one of which is carried by the eye-pointed needle and the other by a circular shuttle or bobbin situated in the interior of an oscillating hook. The gimp which is used to strengthen the edge of the button-hole, is carried by a bobbin which lies in the cavity of a revolving hook. The oscillating hook which carries the lower thread serves to take up the loops of the needle thread, as the same drops from the revolving hook and passes the same over the bobbin carrying the lower thread, which, passing through said loops in a direction opposite to the gimp, causes them to twist and to produce a stitch similar to that employed in making button holes by hand. The position of the cloth on the cloth plate is governed by a feeder which has a triple motion, viz., a vertical motion in the direction transversely to the cloth plate, or in the direction in which the cloth is fed while sewing; a similar motion in a direction at right angles to the latter motion, and a rotating motion. The first motion serves to feed the cloth in the ordinary manner; the second imparts to the cloth a lateral motion, causing the needle to pass down through the hole instead of through the cloth, and the third or revolving motion is employed to govern the motion of the cloth in sewing round the eye of the button hole. While sewing the straight edges of the button-hole the circular motion of the feeder is thrown out of gear. The various motions of the feeder are adjustable so that they can be accommodated to button-holes of different sizes. If desired, the sewing machine can also be employed for ordinary or plain sewing. Emil Cajar, of No. 298 Hudson street, New York, is the inventor.

Spinning Jack.—This invention relates to an apparatus the object of which is to put friction upon the driving pulley of the jack by sliding the bolt partially upon it from the driver pulley and thereby to assist the spinner in winding the yarn upon the bobbins. This apparatus consists of a bell-crank cam lever, one arm of which is hinged to a longitudinally sliding rod which is subjected to the action of a spring, and the motion of which is governed by a regulating screw, in combination with the belt shipper and with a catch and rod acting on said catch, when the faller or cooping wire is applied in such a manner that, whenever the spinner applies the faller to the threads, the catch is sprung, and by the action of the spring rod the belt is shifted from the loose or the fast pulley, more or less, according to the position of the regulating screw; and when the carriage is pushed home it strikes the bell-crank cam lever and carries the spring rod back, thereby shifting the belt back upon the loose pulley and allowing the catch to drop behind the spring rod, ready for the next succeeding motion of the carriage. Ezra Dews, South Britain, Conn, is the inventor.

Self-acting Brake for Horse-powers.—This invention consists in having the bearings of the driving shaft of a horse power arranged in such a manner that they will slide in a direction transversely with the shaft, and having springs, or their equivalents, connected with said bearings in such a manner that they will have a tendency to press the band wheel, which is the driving shaft, in contact with the break when the band is off from said wheel—the band, when on the wheel, keeping, by its tension, the wheel free from the brake, so that at any time when the band is cast off from the wheel the spring will throw the wheel in contact with the brake. William F. Rundell, Genoa, N. Y., is the inventor.

Apparatus for Drying Straw Boards.—This invention has for its object to dry straw boards and other articles of similar character. Straw boards have hitherto been dried by passing them in their green state around heated cylinders by means of strong canvas bands, which are made partly to encompass the cylinders. This invention consists in the use of stationary steam chests, against whose surfaces the articles to be dried are held by means of hinged pressers, consisting of frames whose bodies are composed of cloth or other suitable material, which shall be of an open texture, to admit the passage of vapor through it. William H. Severson, Cohoes, N. Y., is the inventor.

Fire-arm.—This invention consists in forming the breech-piece or cylinder of a fire-arm in two parts or sections, so arranged as to be opened or removed from each other for the insertion of metallic cartridges therein, or the removal of the waste cases therefrom; and when a revolving breech cylinder is used, so constructed and connected as to revolve together and as one piece—the metallic cartridges, when inserted within the chamber or chambers of the breech, extending across from one section to the other, with their fulminating rims in and between the contiguous ends of the same, and the striking hammer of the fire-arm being properly constructed and arranged to discharge the cartridges, as in ordinary fire-arms. Silas Crispin, No. 45 Worth street, New York City, is the inventor.

WORTH IMITATING.—The New Bedford and Taunton Railroad has an arrangement for preventing brakemen being knocked off the tops of the cars by bridges while riding backward. About thirty rods distant from every bridge crossing is a bar or joist twenty feet above the track, from which a number of laths or similar small strips of wood are suspended by short cords, hanging within three or four feet of the car roofs. Persons standing on the cars cannot pass these sticks without striking some of them, and their attention is thus called to the fact that they are rapidly approaching a bridge.

ONE good Havana cigar is found by Dr. Richardson to yield, when its smoke is condensed, a sufficient amount of poisonous matter to induce active convulsions in a rabbit, and six pipes of common shag tobacco will yield sufficient poison to destroy a rabbit in three minutes.