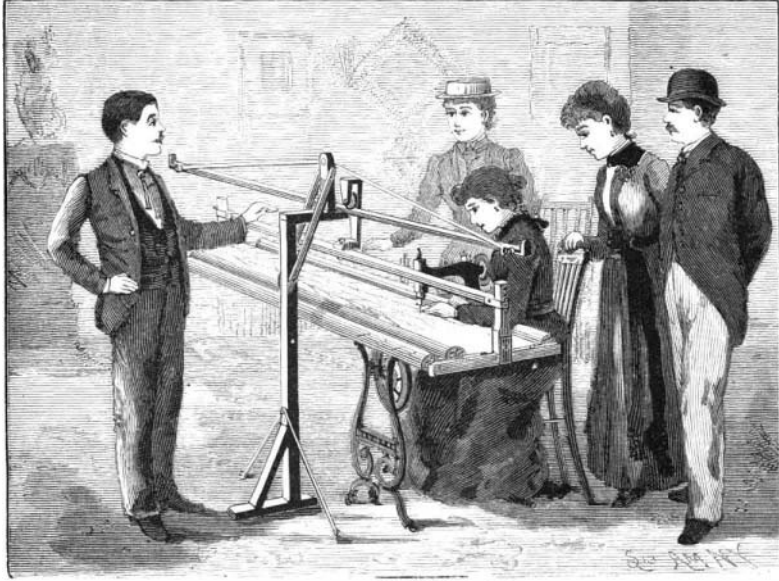


**Wood Pulp.**

Wood pulp making by the sulphite process is thus briefly described: The wood is peeled, discolored or decayed parts are removed, the wood is cut across the grain into thin chips, which are elevated to the top of the mill and dropped into large drums about 14 feet in diameter, 24 feet long, and strong enough to sustain a pressure of from 75 to 200 pounds to the square inch; when packed full of chips the drum is filled with sulphuric acid and other chemicals, and the cotton-like product is pressed dry and mashed, mixed with water,

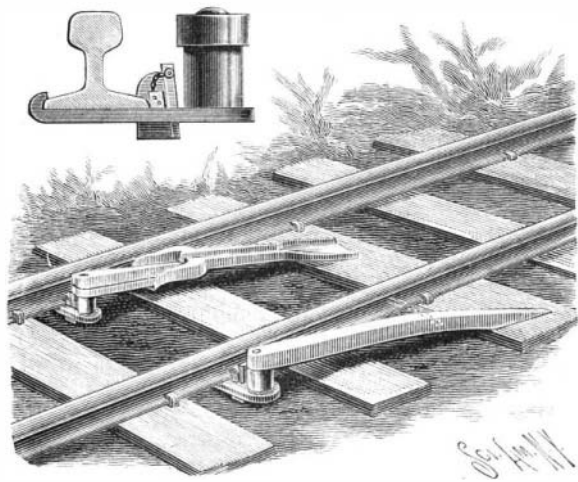


TOUCHSTONE'S QUILTING FRAME FOR SEWING MACHINES.

rolled flat, and cut into shape for bundling, being 60 per cent moisture and 40 per cent fiber. Thus it goes to the paper mill. One cord of spruce makes 1,200 pounds of dry fiber, worth from \$1 to \$1.50 a hundred pounds. Freight is paid on the water contained rather than use dry pulp, which packs hard. A sulphite plant that will consume from 8 to 15 cords of wood every twenty-four hours will cost about \$10,000.

**A READILY APPLIED CAR REPLACER.**

The device shown in the accompanying illustration, which has been patented by Messrs. William Stephens and Joseph Mott, is designed to afford a ready means of replacing a derailed car or engine upon the track at



STEPHENS &amp; MOTT'S CAR REPLACER.

any point in the length of the road. An outer and an inner frog or skid are provided, each made in two sections—a bar or track section and a base section for securing the device to a track rail. A sectional view of the device applied to one rail is shown in the small figure, the base plate having at one end a flange gripping the flange of the rail base on one side, while an adjustable clamp and key, projected through an aperture in the base plate, are adapted to clamp the device on the other side of the rail base, the key being attached to the clamp by a small chain. The bar or track section is pivoted at one end to a short post at the other end of the base section, and is curved downward and flattened on its under face to rest upon a tie, a pin or pins in its flat under face being adapted to enter the sleeper and retain the track section in fixed position. In the inner frog or skid, the upper face of the track section is provided with side flanges, each of which has an angular recess, while a switch point is pivoted to the pivotal end of the section, and adapted to be swung into or to enter either of the recesses, according to the direction in which the switch point is to be thrown. Attached to each skid near its lower end is a suitable length of chain having at its free end a double hook for engagement with a rail flange when the device is placed in position.

For further information relative to this improvement address the inventors, Redding, Cal.

**A QUILTER FOR SEWING MACHINES.**

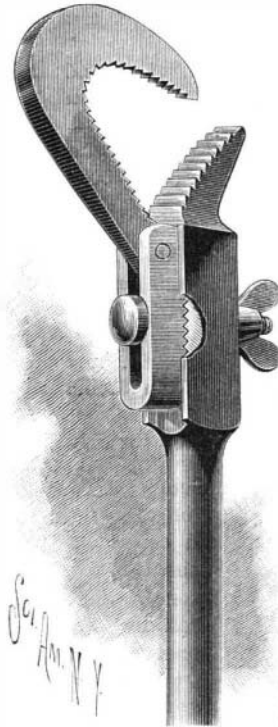
The illustration represents a device designed to be easily and nicely adjusted to hold a quilt in convenient position for work upon it, and so that it may be readily adapted to the feed of any sewing machine. It has been patented by Mr. James N. Touchstone, of Ida, Texas. A properly braced standard resting upon the floor has a forwardly extending arm carrying a vertical post connected by side braces with the standard. Upon the projecting end of the arm rests the central portion of a cross beam or track having its upper edges beveled to receive a pulley, the track having an end stop to prevent the pulley block from running off, and rods extending from each end to a pivotal connection with the upper end of the vertical post, whereby the track may be tilted to any desired inclination. A pulley block with a grooved pulley is carried by the track, and through the lower portion of the pulley block extends a vertical bolt, on which is pivoted a cross beam, at each end of which is a loop adapted to receive an upright of the quilt-holding frame. By the insertion of a bearing pin in one of several holes in the upper end of the uprights the latter may be readily adjusted as to height, and at the lower ends of the uprights are loops, through which extend the end pieces of the frame, in which are journaled three rollers adapted to support a quilt placed thereon in the usual manner. The rollers have at one end perforated disks adapted to be engaged by latches, whereby the rollers will be held from turning, except when the latches are disengaged. With this construction, the frame supporting the quilt may be readily brought into any desired position, the suspended frame moving freely, and the device permitting of such arrangement in connection with a sewing machine that the feed of the machine will draw the quilt and frame through it. This quilter is designed for adaptation to all family sewing machines, for the quilting of any desired pattern.

**A PROPELLING MECHANISM FOR VEHICLES.**

This is a further invention of Mr. M. A. Libbey, of South Berwick, Me., for an improved vehicle, styled by the inventor the "Princess of the Highway," described in our issue of March 14. It is designed to afford a strong and light tubular construction containing frictionless, telescopic, ball-bearing slides and balanced steering and driving gear, adapted for application to ordinary light road vehicles, to the varying lengths and widths of which it is adjustable. Fig. 1 is a view in perspective of a vehicle provided with this mechanism, Fig. 2 being a broken plan view, and Fig. 3 an enlarged detailed sectional view of the steering mechanism. The power by which the vehicle is propelled is applied to a vertical shaft having its bearing in a bracket projecting forward from the front end of the wagon body, a solid collar, forming the upper end of a stiff spiral spring, being firmly connected to the shaft, while the lower end of the spring is fixed to the flange of a tube on a shaft in a frame connected with the front end of the reach rods, a depending arm from this frame carrying the connecting rod which drives the rear wheels. The spring on the power shaft is not intended to yield vertically, but is adapted to spring laterally, to allow for the swaying of the vehicle, the spring being turned like an ordinary shaft. Clamped to each of the rear wheels are annular flanges with inwardly projecting flattened rims, the flanges having a rib extending around their inner surfaces and being provided with recesses or indentations, while a circular gear is adapted to fit closely within the flanges, to abut with the rib and receive the indentations. The gears are adapted to mesh with pinions on transverse shafts, so that when the pinions are turned, the rear wheels will be revolved. A hollow shaft, carrying at its top a hand wheel or handle bar, extends upward through the wagon body in front of the seat, the lower portion of this shaft being connected with a forwardly extending steering mechanism, whereby the forward wheels and axle may be turned to one side as desired, as shown in Fig. 2. The main parts of the mechanism are inclosed, so as to be unaffected by mud and dust, and the driving parts are designed to remove the weight and strain from the axles and place the weight in continued suspension on the circumference of the advancing half of the drivers. Other modifications of the invention, on the same general principle, are designed for application to heavy passenger vans, etc.

**AN IMPROVED WRENCH.**

A wrench which is simply and strongly made, and is readily adjustable to grip larger or smaller work, is shown in the cut, and has been patented by Mr. Benjamin B. Farris, of Rocky Ford, Ga. The stock has an angularly extending fixed jaw, provided with serrations, and on one side of the stock



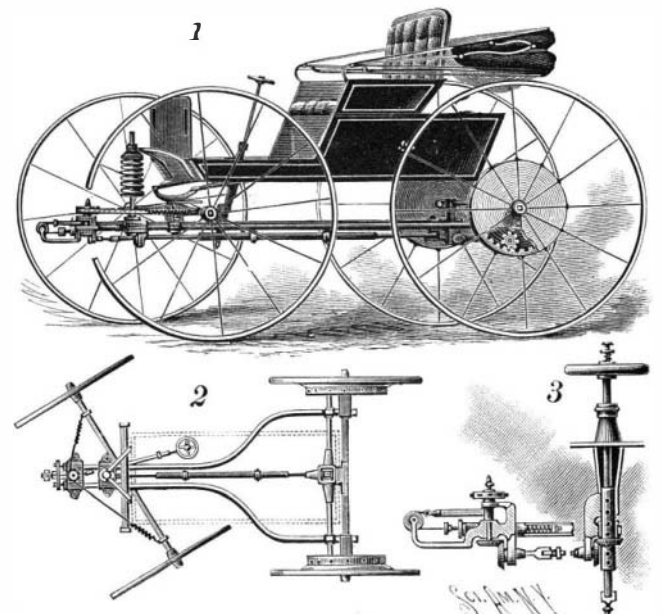
FARRIS' WRENCH.

are serrations as shown in a broken-away portion in the picture. The serrations in the side of the stock are engaged by corresponding serrations on the inside of a head sliding between two parallel flanges at the edge of the stock. A bolt, passing through a longitudinal slot in the stock, secures the head thereto in the desired adjustment, and in the outer end of the head is pivoted a hook-shaped, serrated jaw. When the head is in the proper position, the work is engaged at one side by the serrations of the fixed jaw, and as the operator turns the work the hooked jaw has

a tendency to be firmly drawn toward the fixed jaw, so that the wrench does not slip on the work.

**Wesley's Electricity.**

While the religious sect which he founded has been celebrating the centenary of John Wesley, how many of his followers have been made aware that he was the author of a work on electricity? This curious brochure was published in 1759, under the title of "The Desideratum; or, Electricity made Plain and Useful by a Lover of Mankind and of Common Sense." The titles of the sections are decidedly suggestive: "Electricity the Soul of the Universe;" "The Cat in the Oven, curious Electrical Experiment;" "A Person with Small-pox cannot be Electrified;" "Electricity the greatest of all Remedies." The reverend author goes in for a serious argument to demonstrate that it is "just as innocent to keep our rooms tight from lightning, as from wind and water." One of the entries is as follows: "Exp. 32. A Person standing on the Ground cannot easily kiss an electrified Person standing on the Rosin." About half the volume is taken up with narratives of cures supposed to have been wrought by electrifying, the diseases being of the most varied



LIBBEY'S DRIVING DEVICE FOR VEHICLES.

kind, from fistula to epilepsy. Even the cure of moral diseases is attributed to electricity. "Fetters are speedily cured by drawing Sparks. If any disorder be superficial this Operation suffices: But if it lie deeper, then the giving of Shocks is found to be more effectual." The good old divine had probably little idea what mischief his well-meaning recommendations of electricity might work. Happily, in science more weight is attached to proved facts than to the authority of a great name. And Wesley's attempt to intervene in science was less successful than his intervention in ecclesiastical organization.—*The Electrician*.