

MISCELLANEOUS INVENTIONS.

Messrs. John M. Edmunds and Charles E. Wallin, of Salt Lake City, U. T., have patented a practicable and humane improvement in stock cars. This invention relates to means for holding up or supporting live stock during transportation by car, and consists in belts of leather or strong webbing attached to rollers arranged at the ends of the car, and passing over cross bars in the car, and through stirrups suspended from the roof, at such a height from the floor of the car as that said belts, when drawn taut by turning the rollers, will pass directly under the bellies of the animals, and so support and relieve the latter.

An improved wire stretcher for stretching the wires of wire fences, and which operates without injury to the wire, has been patented by Mr. Spencer W. Johnson, of Lathrop, Mo. In this device two plates hinged together at their one end, and provided with transverse grooves on their faces, in which the wires are placed, are drawn together by a clamping screw to hold the wire firmly between them. These grooves, which are coincident in the faces of the plates, are not made in a direct line across said faces, but are enlarged or rounded near the edges of the plates to form curved shoulders, over or against which the wire to be stretched is drawn, and whereby the wire will not be cut, bent short, or otherwise injured. The device is applicable to stretching either barbed or plain wire, and the power employed for stretching the wire may be transmitted through a lever passed through a ring attached to the device, or it may be otherwise applied.

An improved tool for drawing taut the wires of wire fences to fasten them to the posts of the fence, and for bringing together the ends of broken wires for the purpose of mending them, has been patented by Mr. Andrew Anderson, of Duck Creek, Ill. This tool consists in part of a main lever provided with points in the outer end surface of its operating arm for the purpose of engaging with the fence post when the tool is used to stretch or draw taut a wire, and in part of a lever jaw which is pivoted to the main lever. The outer end of this jaw is made diagonal to close against a diagonal offset of the main lever for grasping and holding the wire to be drawn taut by pressing the handle ends of the lever and jaw toward each other. Furthermore, said lever and jaw are formed with diagonal cutaway places in their faces, in which clamps are pivoted, for the purpose of securing between them the ends of a broken wire, and so that on bringing the lever and jaw forcibly together the ends of the wire lap sufficiently to form the twist or tie. Thus the same tool has a double use, which it performs perfectly.

Mr. Daniel Dockstader, of Fonda, N. Y., has patented an improved hay elevator. The carrier frame of this elevator is held in position, ready for loading the latter, by a catch pivoted to the underside of the track on which said frame moves, and such frame is fitted internally with a vertically sliding block, a catch, a notched dog with which the catch engages, and a sheave over which the free portion of the elevator rope or chain that carries the lifting pulley block passes, the fast end of said chain being attached to the carrier frame. These devices are arranged so that when it is desired to raise and move the loaded hay fork attached to the pulley block, by first pulling on the elevator chain or rope, the pulley block strikes and raises the sliding block, which releases the catch from the dog in the carrier frame, and also releases the track catch from the latter, and the dog when liberated engages with elevator chain to keep it from running back. The carrier frame with its attached load is then free to be moved as required. After the load is removed the carrier frame is moved back again for another load, and the sliding block, dog, and catches automatically resume their normal position. The action is a very perfect one.

Mr. Isaac D. Johnson, of Kennett Square, Pa., has patented an improved invalid bed. This invention embraces numerous improvements which conduce materially to the conveniences of the bed and comfort of the invalid. Among these may be mentioned a sliding frame with pivoted supporting bars and balancing devices for raising and lowering a hinged head section of the bed; a spring bolt and notched bar for use in connection with the cord which is employed to raise said head section, whereby, on releasing hold of the cord, the head section is locked in position and is unlocked by the act of pulling on the cord to adjust the section; a stretcher, made of canvas or other strips provided with tightening devices, and, in combination with the stretcher, a subjacent vertically adjustable mattress adapted to pass within the frame of the stretcher; a commode made capable of a longitudinal sliding adjustment beneath the stretcher and having special openings in it for removing the utensil and other purposes, and various other useful appendages.

Mr. Christopher Lewis, of Columbus, Ohio, has patented an ingenious feed device for rolling mills. This invention has reference to a previous invention by the same party, covering a rolling mill for rolling railroad rails, etc., in which the rail had a continuous passage through a succession of reversely moving sets of rolls, and was transferred from each pair of rolls to the next pair, by means of laterally adjustable buggies, whereby labor was economized and a rapid and practical automatic action secured. The present invention relates to the construction and arrangement of a feeder for such rolling mill, or a device for transferring the bloom to the furnace, and also from the furnace to the first pair of rolls; and to this end it consists, principally, in one or more buggies pivoted at one end in line with the first pair of rolls,

and having its other end arranged to swing upon a curved track, so that it may be swung out to the line in which the bloom is withdrawn from the furnace and then returned to the line of feed to the rolls. The invention also consists in the combination with these swinging buggies of shafts, chains, drums, and chains for operating them, and also in the combination of the supporting rollers of these buggies with devices for rotating them to advance the bloom whenever the buggy is thrown into line with the rolls.

A combined tooth and colter for grain drills, by means of which grain may be drilled in stubble land and sod without previous plowing, has been patented by Messrs. Barclay Thorn and James Evans, of Junction City, Mo. The device, which may be attached to any ordinary grain drill consists of a tapering tooth, terminating in a triangular neck and a three-sided colter having its under surface plane and its upper surface sloping downward and backward from a central ridge, and its laterally extending wings rounded at the rear and converging to a point in front, whereby the said neck alone will cut the surface of the soil. The neck thus forms a narrow furrow for receiving the grain, which is dropped immediately behind it, while the wings of the colter loosen the soil on both sides of the furrow and allow the same to be thrust along their rearward slopes and escape around the angles of the neck to cover the grain. This improved tooth and colter may be used to great advantage, not only in stubble land and sod, but for drilling grain in timothy and clover lands when the latter have become partially barren.

Mr. Benjamin F. Sanders, of Boston, Mass., has patented an improved compound railroad rail, whereby stability is promoted and the repairing of railroad rails is facilitated. This rail consists of a cap bar and two side or base bars, arranged so that the joint of each bar will always be opposite two solid bars. The head of the cap bar sits down flat on the tops of the side bars, which latter are made with flanges upon the inner sides of their upper parts. These flanges, between which the stem of the cap bar passes, are beveled on their under sides, and the under side of the stem of the cap bar has outer flanges similarly beveled, whereby a dovetailed connection is formed between the three bars of the rail. The bases of the side bars, which have outer flanges that receive the spikes to fasten the rails to the ties, are so formed that the bodies of said bars incline inward. This construction, in concert with the dovetailed connection of the three bars, causes the side bars to draw down the cap bar to a firm bearing when weight is applied to the top of the rail. An anchoring plate, extending below the side bars, and having upper lugs which lap over inner flanges on the bases of the side bars, also serve to draw the upper parts of said bars inward, keys passing through the anchoring plate for the purpose. Plates are used in connection with these keys to restrain the bases of the side bars from spreading, and a stop bar is arranged between the side bars and made to engage with said bars and the cap bar, for the purpose of holding the latter bar from longitudinal movement.

Owing to their peculiar structure much inconvenience is experienced in handling heated plowshares for welding and for other purposes. This difficulty has suggested an improved tong specially adapted to clasp and hold these articles. One jaw of these tongs is formed with a broad face and with an upturned lip or flange, to fit the face and sides of the shares, and the other jaw with a face piece and upward hooked or bent extension, which latter is fitted with a screw for adjusting the tongs to fit shares of different sizes. These improved tongs have been patented by Messrs. George M. Gillett and John Tucker, of Allerton, Iowa. Their peculiar construction allows of hot plowshares being handled with great convenience and ease.

Bamboo for Oregon.

The American Consul-General at Shanghai has lately sent twenty boxes of bamboo cuttings for transplanting in Oregon. He writes to the State Department that in the Chinese Empire, south of the Yang-tze, about sixty varieties of bamboo are said to grow, although five or six furnish the principal materials used. At Foochow and Swatow the large size grows 40 to 50 feet high and 6 or 7 inches diameter; on the Island of Formosa it is found even larger.

The bamboo serves at least five hundred different purposes in China. The roots are carved into images, lantern handles, and canes, the tapering culms are used for every conceivable place where poles and ribs can be put; the leaves are worked into thatches, umbrellas, and screens; cut into splints, the wood is woven into baskets, plaited into awnings, and twisted into cables; the shavings stuff pillows; other parts supply chop-sticks for eating, beds for sleeping, brooms for sweeping, pipes for smoking, fuel for cooking, skewers for the hair, paper for writing, rods for whipping, tables to eat on, buckets for water drawing, and the tender shoots are highly esteemed as a vegetable to be eaten.

The Consul-General urges the naturalizing of the bamboo in the Southern States and on the Pacific coast.

Climate and Altitude.

The Virginia City *Enterprise* (Nevada) furnishes the following: The relations of climate to altitude are very intimate, but in most regions are not apparent—that is, not visible to the eye. Here, however, it is different. For instance, yesterday (November 15), while all the hills and mountains round about were arrayed in robes of dazzling white, there was in the center of the eastern landscape one big spot of brown. This was on the Carson River, down toward Fort

Churchill. There not only the valley land, but also all the low bordering hills remained a deep and desolate brown. It was like a dirty spot left in the middle of a newly white-washed wall. Although this spot is at no great distance from this city, the people there walk about on bare ground, while here we wade in a foot of snow. With them it is only late autumn; with us it is genuine winter. However, they have not far to go to get a taste of winter. Half a mile from their homes would take most of them up into the snow belt. Persons who have lived all their lives in prairie and other level regions have but an indistinct notion of the great influence altitude has upon climate. When their plains are bare, they do not know that winter is often but one hundred feet above their heads.

In this mountainous region we have an excellent opportunity of studying the effects of altitude. It is sometimes quite wonderful to observe the evenness of the snow line. It is drawn midway up the face of the whole line of hills as neatly as though marked with a chalk line. Sometimes it is higher, sometimes it is lower, owing to the temperature. The evenness depends a great deal upon the air. When there is much wind the snow line is not well defined, but when it is calm the strata of the atmosphere are perfectly regular. The snow line is then as level as though it were the water line of a lake.

Frequently, when no snow lies on our streets, we can see on the slope of Mt. Davidson, only 200 or 300 feet above us, the line separating us from the region of winter.

A BEAUTIFUL SIGHT.

The same paper, as above quoted, gives the following under the head of "Snow Streamers." The peak of Mt. Davidson last evening presented a most wild and wintry appearance. The snow streamers were abroad in all their glory. Last evening, however, they could hardly be called streamers. They were in reality an unending series of whirlwinds that chased each other along the crest of the mountain. The spiral columns of snow took a thousand shapes in forming and vanishing. Being strongly lighted by the setting sun, the great surging columns looked like whirls of flame and illuminated smoke rolling up from a great fire. This brilliancy was seen in places where the rays of the sun passed through the thin mist of a single snow whirl. In places where three or four columns happened for a moment to fall in line between the spectator and the sun, the whole was black as the smoke from the funnel of a steamboat. Frequently several of the colors of the rainbow would flash out around these dark columns, and a moment after all above the peak would be deep red, giving the top of the mountain the appearance of an active volcano. It would have been a fine opportunity for a scientist interested in the study of atmospheric currents. The motions of these snow whirls show us what is always taking place in the air at the top of the mountain, both winter and summer, and if on our mountain, doubtless on all mountains of like height. The straight current of the atmosphere is broken up into thousands of little whirlwinds that rise from 50 to 200 feet above the surface of the ground.

Double Hybrid Worm-proof Cotton.

Mr. L. C. White, of Jasper, Jasper County, Texas, claims that after twenty years of study and experiment he has fully succeeded in producing a worm-proof cotton. Not only is the plant worm-proof, but it produces, he says, more and larger bolls to the stalk than any other cotton, matures earlier, and has a better staple and finer lint than any other cotton grown. He wants the government to pay him a million dollars for the seed and for his theory.

If his "double-hybrid," absolutely worm-proof cotton is all he claims for it, he should be able to make a million dollars selling seed to planters much quicker than he is likely to get such a sum from the Department of Agriculture.

Separate Sounds on One Wire.

M. Maiche has found by experiment that sounds of different characters produced from two separate sources can be sent simultaneously on one wire and received separately. He used at the receiving station two telephones of different resistances, and at the transmitting station caused a musical box to be set going on a microphone of small resistance, while an induction telephone transmitter was spoken into at the same time. The musical sounds were reproduced in the telephone which had the least resistance, and the vocal sounds in the other, so that with the two telephones to the ears the music could be heard by one ear and the speech by the other.

Tench for Central Park Lakes.

Capt. Auguste Briand, of the steamship *St. Germain*, lately presented to Superintendent Conklin twenty tench, to be placed in the ponds of Central Park. The tench had been twenty-five days out of their native waters in France, and the *St. Germain* had a rough passage, but the captain succeeded in keeping the fish alive and in good condition. The tench is highly prized as a food fish in Europe. It is of a beautiful greenish olive color, darker on the back than underneath. The fish average about two pounds in weight when grown. Like the carp, they like sluggish and muddy waters. It is believed that American waters can be stocked with them without difficulty.

Capt. Briand has successfully introduced catfish and sun fish from the Park lakes into France.