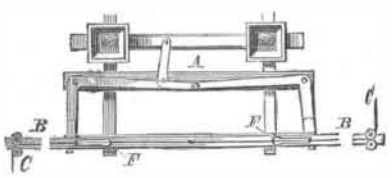
been dipped in lead and oil; upon this felt the glass is placed, and upon the glass another strip of felt. A hood is placed over the center of the rafters and ridge plates tha extends over the felting and glass, and is secured by any suitable means.

A curb is formed of a single piece of metal bent so as to inclose a chamber, and upon which the lower ends of the rafters rest. On its under side are formed angle shelves by which it is secured to the wall, and on its inner side are holes opposite the gutter on the side of the rafter through which the water of condensation escapes.

The patentee of this device is Mr. Frederick H. Leadley, of St. Louis, Mo.

A Novel Check Row Seed Planter.

A novel check row planter, in which the seed-dropping device is operated by means of a cord or rope that is staked across the field, is shown in the annexed engraving. A is a portion of the planter to which is attached the runners and seed boxes. B is a bar secured to the forward part of the planter, of such length as to reach half way to the nearest planted row on each side, and is provided at each end with two sheaves so arranged as to inclose the cord, C, and allow



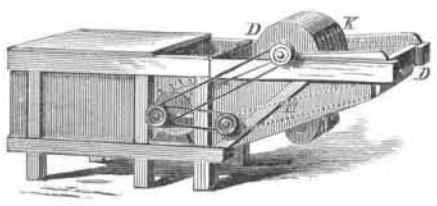
the knots on the cord to pass freely between them. At the rear of this bar are two crank levers, pivoted at their elbows to a suitable support, and having their adjacent ends pivoted together, and their opposite ends extended forward slightly beyond the bar, B. The forward ends of the crank levers are provided with journals on which are secured the loops of the guide arms, F, so that they shall be in line with the bar, B. These arms are constructed with loops at their upper ends, which are contracted at the bottom where friction rollers are placed, so that the cord, C, shall be allowed to pass freely through the contracted portions until one of its knots are drawn against the guide arm. The contracted portions obstruct the passage of the knots, so that as the planter moves forward they will be forcibly drawn against the guide arms, and the arms made to oscillate and allow the knots to pass through their loops at their larger portion. The lower ends of the guide arms are connected to the crank levers by rods that cross each other in the center, and are secured to the journaled end of the crank levers. For planting one row at a time, a dropping slide is connected to the crank levers so as to be moved back and forth on the longitudinal axis of the planter. For planting more than one row at a time, a third crank lever connected to a transverse dropping slide at one of its arms and to the former crank levers at the other is employed. By having two sheaves at each end of the bar, B, the necessity of changing the rope is avoided.

This ingenious and useful device is patented by Mr. Oliver L. Hall, of Parsons, Labette county, Kan.

A Band Cutting and Feeding Attachment for Thrashers.

Messrs. Samuel Caldwell and Jordan Burgess, of Greenfield, Highland county, Ohio, have patented a novel and ingenious improvement for cutting bands for and feeding thrashers. The accompanying engraving illustrates the device.

To the top bar of the frame, A, of a thrashing engine, and



in front of the cylinder, is hinged the inner end of a frame, D, which is supported in a horizontal position by inclined bars, E, that are attached at its outer end, and are in such position that their lower ends will rest in the angle between the front posts and the lower bars of the thrashing engine. The sides of the frames, D, have casing boards to prevent the grain from escaping laterally. Rollers are journaled to the outer end of the frame, D, and to the lower end of the inclined bars, E, over which passes an endless feed apron for carrying the grain to the thrashing cylinder. Beneath the inner part of the apron is placed a bottom to catch scattered grain, and also fan blowers, the discharge spout of which is of the same width of the endless apron, and is placed so as to direct the air blast beneath the apron and in the direction of the thrashing cylinder, thus preventing the grain from being carried back by the apron and clogging the machine. To the frame, D, at a little distance from its inner end, is journaled a shaft to which, at suitable distances, are secured circular cutters, K, made smooth or serrated, as may be desired. The cutters are driven by a belt connected with the shaft of the cylinder, and are covered by a curved plate to prevent accidents. In using, the bundles are laid upon the outer part of the endless belt, and as they are carried to the thrashing cylinder, their bands are cut by the rotating knives. The device is also hinged so as to be thrown upon the top of the thrasher for convenience in moving and to obtain access to the cylinder.

MISCELLANEOUS INVENTIONS.

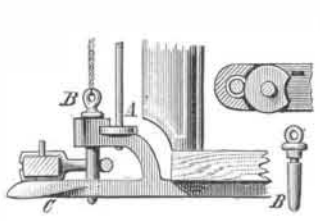
An Improved Sifter.

Mr. Augustus J. Frank, of Warsaw, Hancock county, Ill., has patented an ingenious and useful device for sifting flour or other comminuted substances. The device is shown in the accompanying engraving. A is a cup having in its lower part a sieve of curved form, the curve forming an arc of a circle, the radius of which is equal to the distance between the sieve and a slot, *a*, formed in the upper part of the cup. The cup has a handle, and a bottom below the sieve if preferred. The slot, *a*, in the cup is curved, and has its convex side down. In the opposite side of the cup, A, but near the sieve, is a slot longer than the slot, *a*, also having its convex side down. A funnel shaped vessel fits loosely into the cup, A, and

is supported by a stud and the shaker rod, that have bearings in the above described slots. A scraper is attached to the inside vessel for the purpose of sweeping the flour or other material over the sieve. When flour is poured into the inner vessel, it falls upon the sieve, and the shaker rod is moved with a reciprocating motion, causing the scraper to pass over the sieve and moving the flour, thereby distributing and sifting it.

A Novel Street Car Coupling.

A coupling of novel construction, for attaching horses to street cars and that is convenient and safe, has been lately patented by Mr. Ole A. A. Möldal, of Chicago, Cook county, Ill., and is illustrated by the annexed engraving. The engraving shows the platform, dashboard, and drawbar, C, of a street car. The forward end of the drawbar is widened and flattened to serve as a support for the double-tree, and in the bar just back of the widened part is a hole for the coupling pin. On the draw bar, at a little distance in the rear of the pin hole, is formed an arm which is curved upward and forward, and in its forward end has a hole to receive the coupling pin, the arm being of such length that the hole shall be directly over the pin hole of the draw bar. Between the curved arm and the draw bar is sufficient space to allow the double tree to have the necessary play. The forward end of the curved arm is thickened and has a recess formed in its rear side to receive the edge of a disk pivoted to it in the

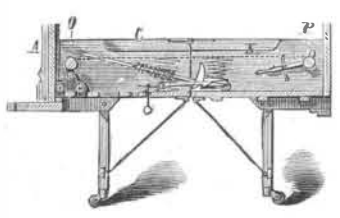


rear of the pin hole—the disk of such size as will enter an annular groove in the coupling pin, just below its head, and lock the pin securely in place. In one side of the disk is a recess of such size that when the disk is turned to bring the recess next the pin, the pin can be inserted or withdrawn freely. The rod to which the disk is attached passes up through a guide hole in an arm attached to top rail of the dash board, and has a handle hinged to its upper end in such position that when the handle is turned down upon one side of the bar, the recess in the disk will be turned away from the pin and the pin locked in place, and the handle turned in an opposite direction, the pin can be inserted and removed. The coupling pin is raised and lowered by a chain.

An Improved Folding Bed.

Messrs. Joseph Novak and Joseph Strobel, both of Chicago, Cook county, Ill., have patented certain novel and useful arrangements of parts of folding beds, which are shown in the accompanying engraving.

A is a bedstead which folds together at the center, the folding hinges of which are attached to the adjacent ends of the strip, C, hinged to the upper edges of the side-boards of the bedstead that are recessed to receive the said strips. When the bedstead is opened the strips, C, are turned down against the sides to lock it open. Latches are hinged to one part of the bottom of the bedstead in such a position that they will engage with catches attached to the bottom of the other part. The latches are held in gear with the catches by wire springs attached to them and to a hinging rod, with which the latches are rigidly attached. On the ends of the hinging rod are formed arms, which project in the opposite direction from the latches, so that the latches can be raised by operating the arms by cords attached to

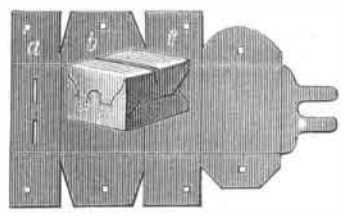


them, which pass out through the bottom of the bedstead. The bedstead is supported upon legs having casters attached to their lower ends, and are hinged at their upper ends to supports attached to the bottom of the bed.

Brace rods are hinged to the lower ends of the legs and the bottom of the bedstead near its hinged joint. With this construction the legs are in a vertical position when the bed is opened, and are held against the bottom of the bedstead when it is folded. N is a woven wire mattress, the respective ends of which are attached to the bar, O, and roller, P, and to the bar and roller are connected levers and springs, by which the mattress is given proper tension when the bedstead is open. The middle part of the mattress is supported by spiral springs secured to the bottom of the bedstead.

Paper Box.

The invention shown in the annexed engraving is a new construction of a folding box having its body and cover in one piece, so that it can be set up without paste or other adhesive material. The blank, of which the body portion of the box is formed, is cut so as to form the flaps, *a*, *b*, *c*, and the cover portion so as to form the flap, *d*, and the fastening flap. The blank is then scored in such a manner that corresponding square portions form the bottom and cover, and other corresponding rectangular portions form two sides of the box, the other two sides being closed by the folding in of the flaps of the main body of

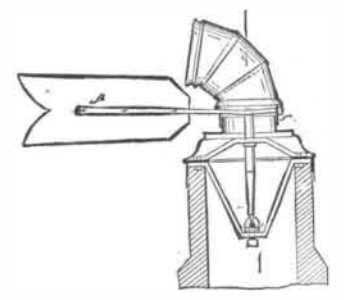


the box. The front side portion of the box has slots formed through it to receive the ends of the locking flaps. The flaps of the body and cover are perforated to receive a cord or tape to secure the box in a folded position. It will be seen that the box and cover are complete in one single piece, and that it can be cheaply made and easily set up for use without paste, and when unfolded lies in a perfectly flat condition, occupying very small space for shipping or storing.

Chimney Cowl.

Mr. Charles S. Hempstead, of Masontown, Fayette County, Pa., has patented a new and useful improvement in chimney cowls that is shown in the annexed cut.

A is a vane attached to a chimney cowl, the cowl being attached to a chimney cap, which has an ornamental outline, and is formed with a circular collar on its upper side, and from its under side extend right angled flanges, that surround the chimney on the outside and rest upon its top, as shown. To the under side of the right angle flange on the top of the chimney is attached a downwardly bent bar that extends down into the chimney, in the bottom portion of which is formed a step in which the vertical spindle of the cowl is journaled. Upon the upper side of the above mentioned flange is

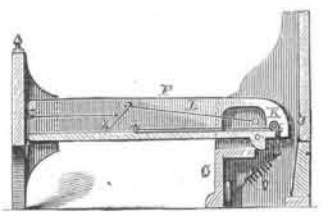


placed an upwardly bent bar, which is perforated in its center and forms the journal for the upper part of the cowl spindle which extends above the collar of the chimney cap, where it is reduced in size and forms the pivot for the arm of the vane. Upon the vane arm is placed a collar, J, which surrounds the collar of the chimney top and turns with the vane. The cowl is mounted on the upper edge of the collar, J, and is secured to it so that the cowl is adapted to be turned upon the collar for setting it, so that its opening will be toward or from the vane, as desired.

An Improved Wardrobe Bedstead.

In the accompanying engraving a novel and conveniently operated wardrobe bedstead is shown, which has lately been patented by Mr. Townsend Saxton, of Brooklyn, Kings County, N. Y.

In the engraving A is a head board, the sides, B, of which are made wide at their lower parts and gradually decrease to their upper ends. To the lower part is attached a weight which rests upon blocks secured to the sides and designed to hold the head board in place while the bed is raised or lowered. To the forward edges of the lower part of the sides, B, is attached a front board, C, from the upper edge of which a top board extends inward to such a position that the bottom of the side boards, F, will stand near it when they have been raised to a vertical position, and the space between them is closed by a moulding. The sides, F, are pivoted to the sides of the headboard by a rod attached to its sides and to the bottom of the side boards at a little distance from their ends. The upper corners of the side boards are rounded to allow the end and bottom of the boards to come as close as possible to the headboard. The ends of the side-boards are attached to the ends of a rod, J, upon which is placed a spiral spring, K, which is coiled in opposite directions from the center toward its ends. A loop is formed in the middle of the spring, through which and under the rod, J, is passed a rod, L, which passes



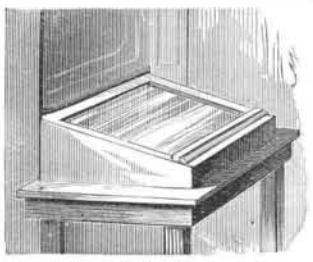
along the bottom of the bed, and its other end is passed through a staple in the bottom.

The ends of the spring, K, are extended downward to serve as levers, and to them are secured the spiral springs, O. This construction so balances the weight of the bed that it is easily raised or lowered.

The foot-board is hinged to the bottom of the side-board, so that it stands at right angles to it when the bed is lowered, and by means of rods and a lever it automatically takes a position parallel to the bottom when the bed is folded, and serves as a cornice.

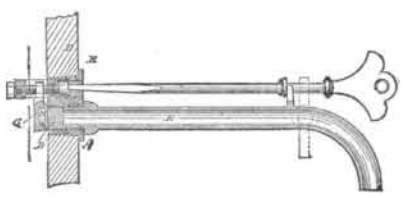
A Novel Tracing Desk.

Mr. Edward T. Gibson, of Fort Washakie, Sweetwater county, Wyoming Ter., has patented a transparent desk of novel construction for tracing purposes. This device (shown in the accompanying drawing) is a narrow table, upon which is supported an inclined desk, consisting of a three-sided rectangular base, upon which is secured in an inclined position a frame, and a plate of glass is let into the frame. Near the lower edge of the frame is secured a strip which serves as a rest for a sheet of paper placed on the glass, and a similar piece placed above the strip will hold the two sheets together. To use the desk in making tracings from sheets of paper it is to be placed close in front of a window, with the upper border of the inclined glass plate and the open side of the base toward the window. The window curtain, which should be opaque, is then lowered until it reaches the upper edge of the desk, so as to limit the entrance of the light to the open side. The object to be traced is then placed on the glass plate, and over it is placed the blank paper or lineu that is to receive the tracing. By this device the light illuminates the paper and object to be traced, so that a copy is easily taken.



An Ingenious Faucet.

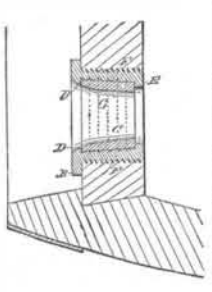
A new faucet that can be fastened in a barrel or cask, without causing a loss of any of its contents, has been recently patented by Mr. Gustav A. Naumann, of Newark, Essex county, N. J., and is shown in the annexed engraving. A screw plug, A, is provided with a flange, B, having two opposite notches for applying a key to screw it into the barrel head. It may be made beveled instead of with a thread and driven into the aperture. It is provided with a threaded aperture, D, into which a bent tube is screwed, that has a notch or recessed projection upward, when the bent end is downward. A valve, G, having a packing strip fitting over the inner end of the aperture, and is guided in its movements to and from this aperture by guides projecting from the inner surface of the plug, and are united at the ends by a transverse piece. A screw on which the valve, G, is loosely mounted, is mounted in the transverse piece. The outer end of the valve screw has a head in which is a squared aperture to receive the squared end of a key. The plug, A, is preferably secured to the barrel when it is empty, and when it is secured the valve, G, rests against the aperture, D, and closes it. If any of the liquid is to be drawn the bent tube is screwed into the aperture, D, and the key is inserted in the aperture in the head of the valve screw, and when the key is turned the valve, G, will be moved, and the aperture opened, and when the key is reversed the valve will be closed.



Bushing for Barrels.

Mr. Thomas J. Loftus, of Sacramento, Sacramento county, Cal., has patented a device for preventing the aperture in barrel heads, into which the spigot is driven, from being unduly enlarged, that is clearly shown in the accompanying engraving.

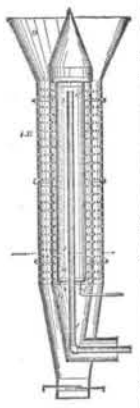
A bushing made of any suitable metal is provided with an external screw thread, and with a flange at its outer end. It is also provided with an annular recess on its inner surface, whereby an annular ridge will be formed at the outer and inner ends of the bushing. The recessed inner surface of the bushing is further provided with a series of circular grooves, forming projections toward the rear end of the bushing. The inner surface of the bushing is slightly beveled from the outer toward the inner end. A short tubular lining of wood or other suitable material is driven into the bushing until its sides pass into the recess in the inner surface of the bushing, and the same will be held by the front ridge and the circular projections. The bushing is then screwed into the aperture in the barrel head. A cork or other stopper is driven into the bushing, and when the barrel is to be tapped the cork is driven into the barrel by the spigot, and the packing of the bushing causes it to fit tightly, preventing leakage. If the opening for the spigot becomes too large the packing of the bushing may be removed and replaced by a new one, and thus remedied without requiring a new head to the barrel.



Grain Drier.

A new and useful improvement in grain driers has recently been patented by Mr. Henry R. Heffner, of Circleville, Pickaway county, Ohio, and is shown in the accompanying drawing.

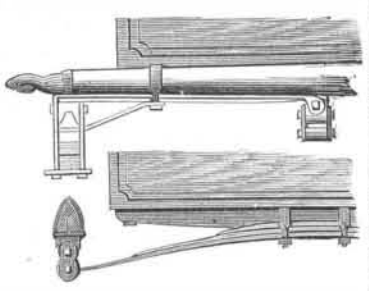
A is an upright hollow cylinder of any desirable length or size, and is finely perforated, and it may be supported in an upright position by a suitable frame. Within this cylinder is placed concentrically a smaller cylinder, B, also finely perforated, and is connected with and supported from the cylinder, A, by bolts that also serve to distribute the grain as it passes through the space between the cylinders. To the upper end of the cylinder, A, is attached a hopper to guide the grain into the space between the cylinders, and to the upper end of the cylinder, B, is attached a conical top to prevent the grain from lodging on its top. In the lower part of the cylinder, A, are located slides by which the discharge opening can be regulated to detain the grain a longer or shorter time in the drier, as its dampness may require. The moisture expelled from the grain by the heat escapes through the perforations of the cylinders. When the grain is to be dried with hot air the air is introduced at the bottom of the cylinder, B, through the outer cylinder by an air tube connected with a heating chamber. When the grain is dried by steam a steam-tight cylinder is suspended within the cylinder, B, to which steam enters through an opening in its lower end, through which passes a pipe that extends nearly to the upper end of the chamber. The cold air and water of condensation are drawn off through a small pipe also connected at the lower end of the cylinder, and passes out through the sides of the cylinders, A B. With this device steam or air may be used, and the grain used without changing the construction.



An Improvement in Side-bar Vehicles.

A new thing in side bar vehicles has lately been patented by Mr. Charles E. Lee, of Louisville, Jefferson county, Ky., and is illustrated by the accompanying engraving. In the improved vehicle the side bars are each provided on its under face with a longitudinal groove, extending the entire length of the side bar, and adapted to receive tongues of T-shaped metallic plates, the bottom plates of which are secured to the under face of each of the side bars by suitable fastenings, thus greatly strengthening the side bars and increasing their rigidity.

On the under face of the side bars, near their ends, are placed springs, the upper and lower leaves of each of which are provided with ears at their outer ends, and are secured to the bars by clips. To the ears of the springs is secured by cross bolt a coupling, to the lower end of which is attached, by a longitudinal bolt, one end of a cross spring, the opposite end of the spring being secured to an opposite coupling similarly constructed. Wooden cross bars are secured to the middle of the cross springs by means of clips, and to these bars the body of the vehicle is secured. By this construction it will be seen that the body is adapted to move up and down by means of its spring connections with the side bar.

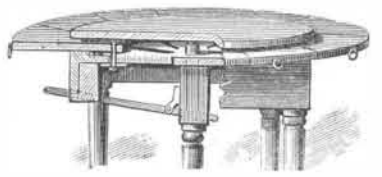


The head block is connected to the front end of the side bars on their under sides by clips which embrace the side bars and pass through the head block, and the rear end of the side bars are secured to the hind axle also by clips. By this construction the side springs are firmly attached to the side bars, head block, and hind axle, and the side bars are firmly secured to the front bolster and hind axle, forming a rigid frame, to which side and cross springs are attached.

An Extension Circular Table.

A novel and ingenious device, by which a circular dining table can be readily extended in size around its entire rim or in any portion of it, is shown in the accompanying engraving.

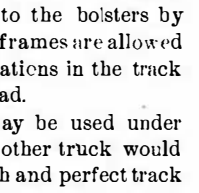
A is the main table fixed on legs and provided with a rail at and below its outer edge. At the center, in an aperture formed in the table and middle leg, is a tube that receives the pivot of a circular top piece, so that it is free to revolve. The tube rests at its lower end on a lever by which it, with the top, can be raised and lowered, and a suitable catch is provided at its outer end for retaining the lever in place. On the table, A, are rollers which support the circular top at its edges and relieve the friction. The extension portion or rim is composed of segment leaves, C C', fitted to slide radially, which, when drawn out, fit closely together and form a complete rim around the table. The segments are placed alternately above and below the fixed table, A. The upper segments, C, rest on this table and are provided with headed pins that extend through slots formed in the table, by which the segments are guided, and also retained in place when drawn out. The lower segments, C', move in apertures formed in the table rail, and are provided with headed pins passing through slots in the table, by which the rear ends of the segments are supported and their outward movement limited. The rear portions of these segments are recessed and raised to the level of segment, C, after being drawn out, and to support them in this position slide blocks are placed beneath the raised segments. By placing the segments in two sets, above and below the table, space is obtained for closing together at their inward movement; and the combined surface of each set being nearly equal to the fixed table, A, the extension more than doubles the surface of the table. The leaves may be drawn out one or more at a time, and extending the table in one or more directions. The revolving circular top is used for receiving dishes and allows them to be brought in front of each person readily.



This device is patented by Mr. John F. Schultz, of New York city.

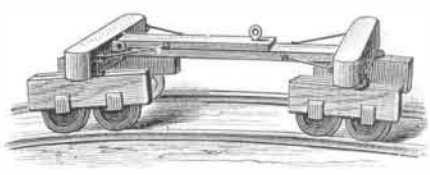
A Novel Table Leaf Support.

Messrs. Josiah H. Mosher and George E. Crane, of Portland, Ionia county, Mich., have patented a new table-leaf support, of which the accompanying engraving is an illustration. A is the arm or support for the leaf, and B is a guide plate through which the free end of the rod moves. This plate is angular in form, and the horizontal portion is formed with a slot, and the vertical portion with an opening of greater width and connected with it, thus forming shoulders at the vertex of the angle of the plate. The support is hinged to a plate, E, properly secured to the table-leaf. The main portion of the support is made of such a size as to pass freely the slot in the guide plate, but the outer end is enlarged so as to almost fill the opening in the plate, and is formed with side stops, which, when the leaf of the table is raised, engage with the shoulders of the guide plate and hold the leaf in a horizontal position. To lower the leaf, it is only necessary to raise the outer end of the support so that the shoulders will disengage each other. When the leaf drops down the support will be held by the slot of the plate, in an inclined position ready to follow down the plate to automatically engage with its shoulders when the leaf is again raised.



An Ingenious Car Truck.

The engraving is an illustration of railway car trucks of novel and ingenious construction, adapted for use upon rails without ties or upon any temporary railway having sharp curves either from a vertical or horizontal plane, such as may be laid upon an uneven surface without grading. To accomplish this result, truck frames that are swiveled independently of each other to opposite sides of the running gear, by means of bolts, pass through the ends of the bolsters. Each truck frame is provided with two wheels, arranged one in front of the other, and the wheels are constructed with a double flange, adapted to overlap the rail on both sides, so that they shall be braced without the use of ties. The tread of the wheel is made slightly broader than the rail, in order that the wheels shall keep the track in turning a sharp curve. It is obvious that with this construction there is less wear and strain on the rails than where the trucks are rigidly connected together.



Each of the bolsters is provided with a reach that is hinged so as to oscillate vertically, and they overlap each other so as to be secured and adjusted by means of a bolt passing through perforations in both, and are braced on opposite sides by rods that are connected to the bolsters by flexible joints. By this means the truck frames are allowed to accommodate themselves to any undulations in the track without disturbing the position of the load.

It will be seen that this car truck may be used under exceptional conditions where almost any other truck would be useless, owing to the fact that a smooth and perfect track is a condition of their usefulness. This invention is patented by Messrs. Alanson A. Blackman, Elhanan Blackman, and Hyrcanus Blackman, all of Snohomish, Snohomish county, Washington Ter.