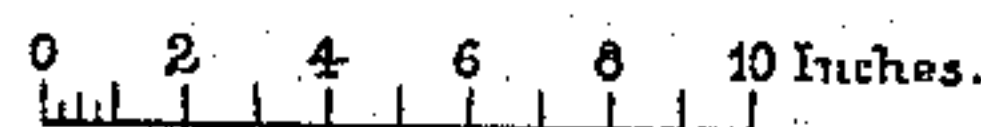


Improvement in Machines for Heading Pickets.

Patented May 14, 1872.



H. G. Snyder
— Geo. B. Snyder

Henry D. Heiser
by their attorney J. D. Nelson

Man E. Dey.
Arnold Heermann.

UNITED STATES PATENT OFFICE.

HENRY D. HEISER, HENRY F. SNYDER, AND GEORGE S. SNYDER, OF WILLIAMSPORT, ASSIGNORS TO HENRY F. SNYDER AND GEORGE S. SNYDER, OF SAME PLACE, AND ANTES SNYDER, OF FREEPORT, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR HEADING PICKETS.

Specification forming part of Letters Patent No. 126,634, dated May 14, 1872.

Specification describing an Improvement in Picket-Heading Machines, invented by H. D. HEISER, HENRY F. SNYDER, and GEORGE S. SNYDER, of Williamsport, Lycoming county, State of Pennsylvania.

It has long been the practice to produce the pointed ends on sawed strips of stuff for pickets by a cutting operation, instead of sawing. It has been found that a cutter properly formed and sliding in close contact with a support below, of the proper form, will shear off the wood and produce a satisfactory point for ornamental fence-work. Our invention is designed to facilitate this work.

We will proceed to describe what we consider the best means of carrying out this invention. The accompanying drawing forms a part of this specification.

Figure 1 is a front elevation; Fig. 2 is a horizontal section on the line S S in Fig. 1; and Fig. 3 is an end elevation.

The drawing represents the novel parts with as much of the ordinary parts as is necessary to indicate their relations thereto. The remaining figures represent modifications of some of the details.

Fig. 4 is a plan view of the arm A', having the several movable gauges mounted on a slide, which may be adjusted out and in. Fig. 5 is a plan view of another modification of the corresponding parts with a single gauge adapted to be conveniently adjusted out and in, and to be locked instantly in various positions by dropping a locking projection into one of the holes represented. (We consider this modification preferable to the others for some reasons.) Fig. 6 is a side elevation, partly in section, representing the same parts. Fig. 7 is a cross-section on the line T T in Fig. 6.

Similar letters of reference indicate corresponding parts in all the figures.

A is a fixed frame-work supporting a stationary knife, *a*, and supporting on a rigid lateral arm, A¹, a series of guides and gauges adapted to insure a correct position of the picket stuff in being presented to the knives. We will indicate by the single letter B the entire moving-knife, and by the letters B¹ B², &c., distinct parts thereof. B¹ is a large curve

produced in the knife, so as to form nearly a half of a hollow cylinder, or, rather, of a slightly-tapering cone, with the larger end downward. This is adapted to cut out a curved piece from one side of the picket near its upper end. B² is a plane portion of the knife, held in a position oblique to the axis of the picket and adapted to cut the main part of the tapering top. B³ is a curve at one end of this incline, and adapted to round the top or point of the picket. The edge of the bed-knife *a* is ground or otherwise formed of a shape to match very closely to the curved and inclined knife B¹ B² B³, which latter knife is carried on a massive slide, C, guided in fixed ways, A² A², and operated by a pitman from a crank carried on a shaft supported in the bearing in the framing below; which parts will present no difficulty to good mechanics. There may be the ordinary provisions for compensating for wear of the slides, so as to hold the knife always firmly, and cause it to reciprocate with absolute steadiness of motion. The gauges *a*¹ may be adjusted backward and forward to allow for different widths of pickets. The main body of the table or top of the machine is sunk below the plane on which the picket is to rest and the picket supported on ridges or narrow elevations, *a*³, as shown. Referring to Figs. 1 and 2, M M, &c., are hinged gauges adapted each to be tipped back out of the way, or to be folded down, and serve a useful purpose, as may be required. The function of these gauges is to receive the lower end or foot of the picket, and thus cause the knife B, by its removal of a greater or less portion of the wood, to reduce the picket to a given length. In order to make various lengths of pickets and to change the length with facility, we provide a considerable number of these gauges M. When either one is in use it will cut all the pickets to the length to which that is adjusted. We can adjust a number of the gauges and change readily from one length of picket to another, according as the length of the picket stuff shall run.

To adjust the length of the pickets with nicety, we change the position of the gauges outward and inward on the arm A¹. This may be done with appropriate nicety by simply re-

moving the nuts indicated in dotted lines in Fig. 1 and lifting out the brackets which support the given gauge-center and change them to other holes. A series of holes, close together, may be provided, and to allow of still greater nicety of adjustment there may be two or more lines of holes set zigzag to each other, as will be obvious. In Figs. 4, 5, 6, and 7 there appear the same or nearly the same folding gauge or gauges represented by M' with modifications in the means of mounting and adjustment.

Referring to Fig. 4 a series of the folding gauges M' are mounted on a single piece, N , which is held by screw-bolts m , which are capable of being adjusted in slots in the arm A^1 of the frame-work. This allows all the gauges to be adjusted together outward or inward on the arm A^1 .

Referring to Figs. 5, 6, and 7, a single folding gauge or a somewhat equivalent turning piece, M' , is mounted on a long rod, P , and is capable of sliding thereon. The piece M' is provided with a convenient handle, and with a projection, M'' , which is adapted to engage or lock in holes R in different positions as will be obvious.

When the stuff is long and it is desired to produce long pickets, the attendant lifts the piece M' by the hand until its projection M'' is disengaged from the hole R , in which it has been resting, and then slides the piece M' along on the rod P until it arrives over another hole, R , when the piece M' is depressed and its projection M'' is allowed to engage in the new hole R and remain there locked so as required.

The cross-section, Fig. 7, represents this modification with the folded gauge M' elevated to allow its being changed into a new position.

When a number of gauges are used, as in Figs. 1, 2, 3, and in Fig. 4, by placing them just six inches apart they can provide, by simply folding backward and forward as required, for the great majority of variations in lengths required. The trade has accustomed itself to regular gradations of length with just six inches difference. The ridges on the upper surface of the supporting arm A^1 hold the bolt of wood up above the sawdust and the like encumbering material.

When a piece of wood is pushed along on a plane surface it is liable to roll the chips and analogous loose matter under it, and be lifted out of its true position. The ridges avoid this difficulty, because the ridges themselves are so narrow that the sawdust and like matter is easily pushed off, and even after the dust has accumulated in the spaces between, up to the level of the top of the ridges, it will be pushed easily away and will not roll.

The fixed ways $A^2 A^3$, which guide the slide

C in its vertical reciprocations, extend down into the framing A , and for convenience of manufacture are made in a separate piece and bolted on as shown. This will be obvious without many words, but the advantages accruing from the manufacture of the slide C in two pieces deserves more explanation.

The main body C does not match to the back of the knife B , but is made with a plane face, and receives thereon a changeable front piece C' , which latter is carefully matched to the knife and strongly secured by firmly bolting.

To change the form of the outline of the picket-head it is only necessary to change the knives and to provide a corresponding-formed piece, C , and bolt it in place, instead of the one previously employed. The upper ridge which bears on the upper edge of the knife B may be made lower on some blocks C than on others, and thus the changeable condition may be made useful in allowing, by a change of blocks C' , for the use of shorter knives B after they have been reduced by grinding. The bed-knife a may be of thick hardened steel, carefully ground to the proper form, or it may be only iron or hard wood. We have experimented successfully with simple hard-wood beds or bed-knives, roughly shaped at the edge, and then trimmed to match the knife B by the action of the latter knife alone. By reason of the curved form B^3 to finish the point of the picket, and also allowing, as is important, that the knife shall extend beyond the center line of the widest pickets, I cut off to the same length pickets of varying widths and give a nicely-rounded point so as to form a good finish.

We do not claim anything shown in the patent of J. W. Clark, April 11, 1871; but

We claim as our invention—

1. The construction of the knife $B^1 B^2 B^3$, the part B^3 being rounded, as shown, moved by suitable operating means, and serving relatively to the bed-knife a , and to suitable guides and gauges, so as to produce pickets with ornamental heads and rounded points giving even lengths with variations in width, as specified.

2. The changeable gauge or gauges M carried on the arm A^1 , and adapted to serve relatively to the cutting means $B a$, and to the adjustable guides or gauges a^1 , as specified.

In testimony whereof we have hereunto set our names in presence of two subscribing witnesses.

HENRY D. HEISER.
HENRY F. SNYDER.
GEORGE S. SNYDER.

Witnesses:

T. C. ROGERS,
J. B. SHULTS.