

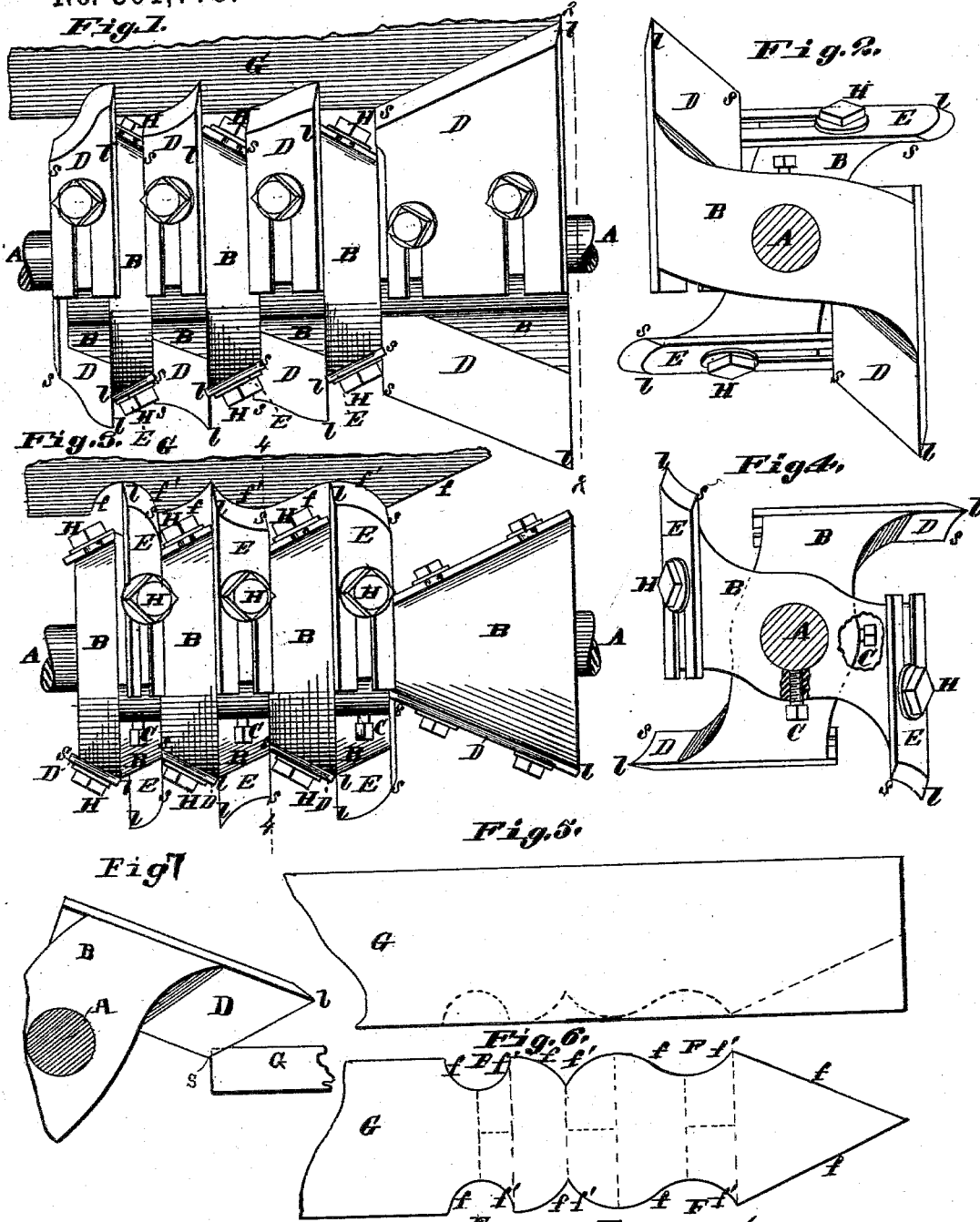
(Model.)

N. W. THOMPSON.

CUTTER HEAD.

No. 301,775.

Patented July 8, 1884.



Attest:
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UNITED STATES PATENT OFFICE.

NAPOLEON W. THOMPSON, OF ST. LOUIS, MISSOURI.

CUTTER-HEAD.

SPECIFICATION forming part of Letters Patent No. 301,775, dated July 8, 1884.

Application filed October 15, 1883. (Model.)

To all whom it may concern:

Be it known that I, NAPOLEON W. THOMPSON, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Rotary Cutter-Heads, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to those cutter-heads in which the cutting-blades or cutters are arranged obliquely to the shaft on which they are mounted, and their edges are arranged to cut from their shorter sides toward their longer sides with a shaving or shear cut, with the grain of the material operated upon instead of against it.

My improvement consists in a cutter-head having two or more cutters with edges projecting farther from the cutter shaft or axis at one edge than at the other, and with the cutters set obliquely upon the head-sections of the shaft, in such manner that the shorter side of the cutter shall be in advance of the longer side to such a degree that in forming transverse cuts in wood the cut shall not be against the grain, but with it, the longer side of the cutting-blade of one head-section being contiguous to or overlapping the path of the longer side of the cutting-blade of the next head-section of a pair of head-sections, whose cutting-blades are arranged with opposite obliquity, so as to cut the opposite sides of a single groove or channel alternately, so that each cutter clears the way for the other by cutting to the bottom of the groove or channel. By the duplication of cutters I make a cutter-head that will do that which has not heretofore been accomplished—that is, I make a smooth groove or channel transverse to the grain of the wood by a single passage and with flat bits.

Heretofore, it is believed that in forming any grooves or channels by means of rotary cutter-heads a similarly-shaped cutter or projection on a cutter has always been used. Now, it will be seen that as the work is fed to the cutter the cut is made from the inside or bottom of the groove or channel outward, and consequently against the grain of the wood, thus making a rough face, as the cutter tends to tear the wood. This difficulty

is overcome by making the cutter for cutting the two sides of the groove in two or more parts, and inclining them in opposite directions, and projecting in different directions from the shaft, and with the short sides of the cutters set in advance, so that the cut is not made against the grain, and each cutter clears the way for the other by cutting to the middle of the groove.

In illustrating my invention I show a cutter-head consisting of a number of sections, each carrying two similarly-shaped cutters, so that each section is balanced upon the cutter-shaft. The head shown is suited for forming the heads of wooden palings.

Figure 1 is a side view of the cutter-head, showing one set of cutters vertical and the other set horizontal; and Fig. 3 is a similar view, except that the cutters are shown in the reverse positions. Fig. 2 is a transverse section at 2 2, Fig. 1, showing the cutter-head in end view. Fig. 4 is a transverse section at 4 4, Fig. 3. Figs. 5 and 6 are diagrams showing, respectively, the paling-head before and after shaping. Fig. 7 is a section of paling, showing the action of a cutter, the latter being in elevation.

A is the cutter-shaft, turning in bearings upon any suitable frame or table. B are a number of head-sections upon the shaft and secured to it by set-screws C, (or other means.) Each section is shown as carrying two cutters of similar form and arrangement. The cutters are made in two sets, D and E, the cutters D forming those sides, *f*, of the grooves F which are nearest to the foot of the paling G, and the cutters E forming the opposite slopes or sides, *f'*, of the grooves. The cutters are secured to the head by screws H, or in any suitable way. The longer side of each cutter is marked *l*, and the shorter side *s*. The cutters are set obliquely upon the head-sections in such a way that the short side *s* of the cutter is in advance of the long side *l*, for the purpose before explained.

I claim—

In a rotary cutter-head, the combination of a shaft, A, head-sections B, secured to said shaft, cutting-blades formed with one long edge, *l*, and one short edge, *s*, and inclined cutting-edge extending from the short edge to

the long edge, the cutting-blades being arranged in pairs D E on the head-sections, a pair for each groove to cut the opposite sides of the groove, each cutting-blade having its
5 short edge nearer to the shaft than the long edge, and each pair of head-sections located side by side to permit the long edges to work in the same or adjacent planes alternately, the short edges to work into the material in ad-

vance of the long edges, and each cutting-blade clearing the way for the other cutting-blade by cutting to the bottom of the groove with the grain from opposite sides of the groove, as set forth.

NAPOLEON W. THOMPSON.

In presence of—

SAML. KNIGHT,

GEO. H. KNIGHT.