I. L. MESSENGER.

WOOD SCREW.

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1,000,280. Patented Aug. 8, 1911.

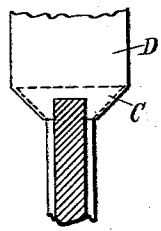

Fig. 4.

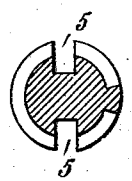

Fig. 3.

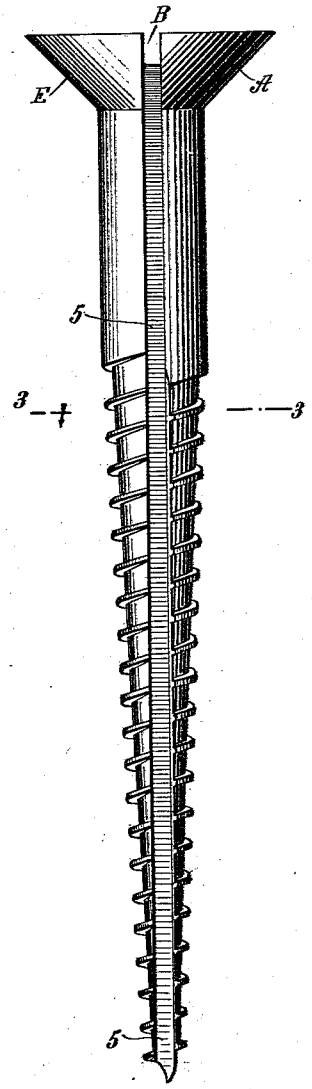

Fig. 1.

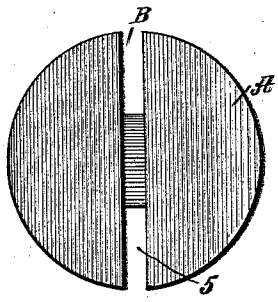

Fig. 2.

WITNESSES:

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ISAIAH LEWIS MESSENGER, OF DE RUYTER, NEW YORK, ASSIGNOR OF ONE-HALF TO R. DE WITT BURDICK AND ONE-EIGHTH TO IRWIN H. BABCOCK, OF DE RUYTER, NEW YORK.

WOOD-SCREW.

1,000,280. Specification of Letters Patent. **Patented Aug. 8, 1911.**

Application filed June 20, 1910. Serial No. 567,856.

To all whom it may concern:

Be it known that I, ISAIAH L. MESSENGER, a citizen of the United States, and a resident of De Ruyter, in the county of Madison and State of New York, have invented a new and Improved Wood-Screw, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a screw of the character described, the weight whereof is diminished without impairment of the strength; to provide a screw the threads whereof are sectioned to form a plurality of cutting edges for the threads and a relief passage in the barrel of the screw; to provide a screw of the character set forth, the head whereof permits the use of a counter-sinking driver; and to provide a screw of the character set forth the construction whereof is economical, efficient and durable.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side elevation, on a magnified scale, showing a wood screw constructed and arranged in accordance with the present invention; Fig. 2 is a top view of the head of a screw so constructed; Fig. 3 is a cross section of the same taken on the line 3—3 in Fig. 1; and Fig. 4 is a detail view, on an enlarged scale, of the screw, showing a counter-sunk driver in conjunction therewith.

A wood screw, constructed in accordance with the present invention, differs from the ordinary screw in that the opposite sides thereof and longitudinally disposed thereon, are formed channels 5, 5. The channels 5, 5 are constructed to as large dimensions as consistent with the holding purpose of the screw. The larger the channels the lighter the screws. In some instances the wire from which the screws are made when thus constructed is rolled to have formed therein the channels 5, 5. With wire thus formed a preferred method of producing the screw threads is to roll the same in die plates adapted to form the threads. By thus forming the threads in half sections it will be seen that the edge of the thread adjacent to the channels 5, 5 constitutes in each section a cutting edge adapted to sink or drive into the wood structure as the screw is turned. Further, it will be seen that by reason of the interposed channels 5, 5 a small proportion of the wood which in the ordinary screw would follow the pitch of the thread, is missed by the thread, and the cutting edge of the succeeding section of thread shaves the wood in making a path for the said succeeding thread sections. This shaving is delivered into the channel 5 at the end of the section which is cut, the channels 5, 5 forming throat or relief passages for the shavings thus accumulated, and so relieving the frictional tension of the wood on the threads and barrel of the screw. The channels 5, 5 are extended through the head A of the screw and meet the saw-cut B, as shown in the drawings. By forming the channels 5, 5 in the head in the manner described there is provided a means for the introduction of the cutting edge C of the driver blade D below the inclined wall E of the head A. The cutting edge C of the driver D is sharpened to form a boring tool to ream a hole in the wood in advance of the head A to seat the said head in the wood by the one and same operation whereby the said screw is driven.

With a screw thus constructed it is obvious that the saving in weight is material. In practice I find that I can save at least 25% of the total bulk weight in screws thus constructed. This saving in freight rates results in an advantage to screws of this character. It will also be seen that in the operation of driving, where it is desired to ream out the counter-sink for the head A. the screw thus constructed permits the use of the special tool designed for this purpose, which tool may be operated simultaneously with the driving of the screw. By reason of the shave of the sides of the cut of the screw the preliminary dulling is obviated. Each thread thus shaves a minute but sufficient portion of the wood which is delivered upward through the channels 5.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

A wood screw having a groove extending across its head for the reception of a screw driver and provided with straight longitudinally extending grooves in diametrically opposite sides of its body, said grooves being

of the same size as the groove of the head and leading therefrom to the point of the screw, whereby a continuous passage extending from the point on one side across the head and to the point on the opposite side, is formed in the screw.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ISAIAH LEWIS MESSENGER.

Witnesses:
HIRAM D. MESSENGER,
HENRY A. BORGELDT.