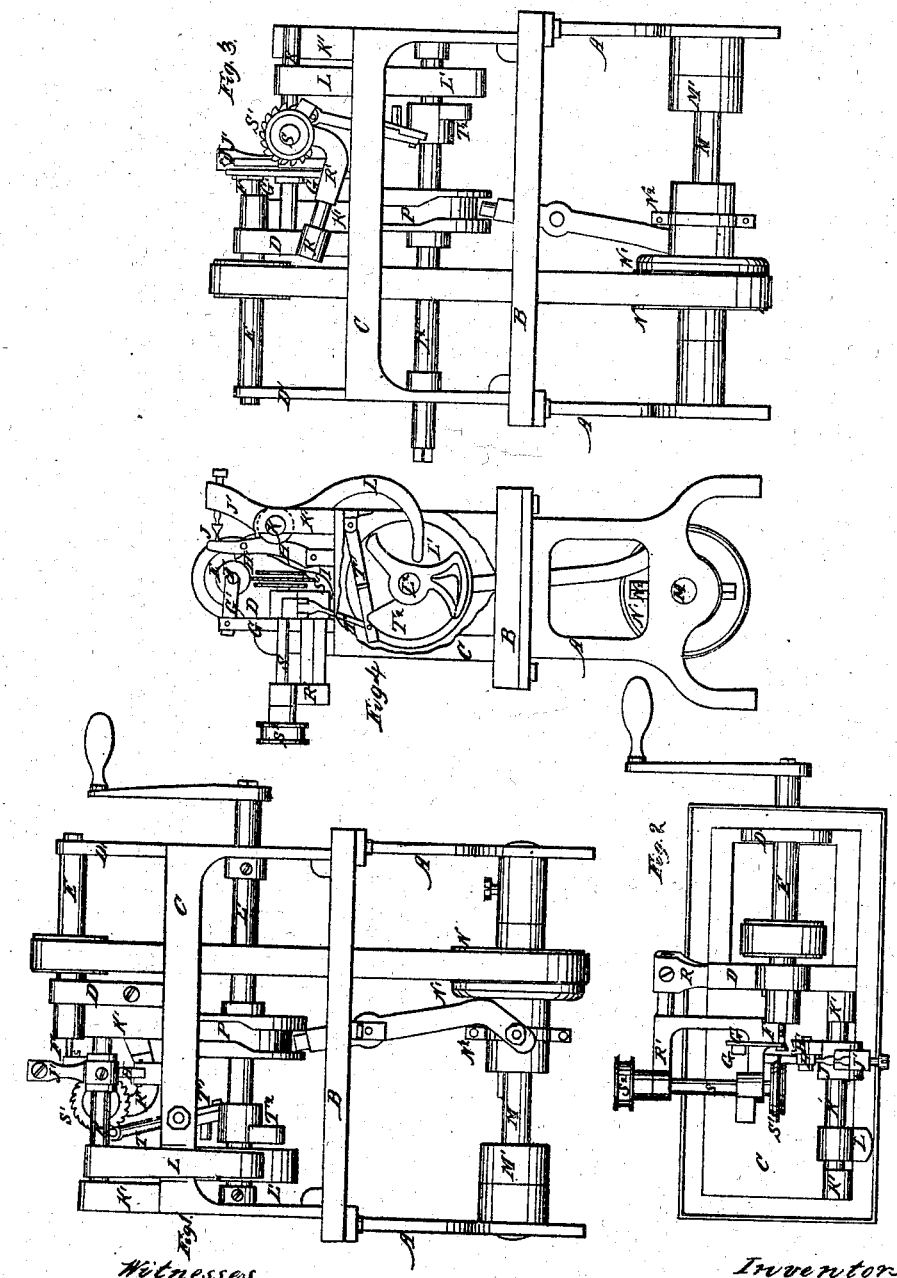
D. M. ROBERTSON & J. A. BIDWELL.

MACHINE FOR SHAVING AND NICKING WOOD SCREWS.

No. 47,861. Patented May 23, 1865.



Witnesses.

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UNITED STATES PATENT OFFICE.

DANIEL M. ROBERTSON, OF EAST BOSTON, AND JASON A. BIDWELL, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINE FOR SHAVING AND NICKING WOOD-SCREWS.

Specification forming part of Letters Patent No. **47,861**, dated May 23, 1865.

To all whom it may concern:

Be it known that we, DANIEL M. ROBERTSON, of East Boston, and JASON A. BIDWELL, of Boston, both in the county of Suffolk and State of Massachusetts, have invented a new, useful, and improved machine for shaving, nicking, and reshaving the heads of wood-screws; and we do hereby declare that the following specification with the accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use our said invention or improvement without further invention or experiment.

The nature of our invention and improvement in machines for shaving, nicking, and reshaving the heads of wood screws or blanks consists in a vibrating adjustable saw-frame hung and operated to nick the screws or blanks; also, in binding or fastening the rotary nicking-saw by a screw nut on each side of the saw, one with a right-hand and the other with a left-hand screw, and both arranged to screw against the saw.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction, referring to the accompanying drawings, in which the same letters indicate like parts in each of the figures.

Figure 1 is a front elevation of the machine. Fig. 2 is a plan of the top. Fig. 3 is an elevation of the rear. Fig. 4 is an elevation of the left-hand end.

In the drawings, A A are the ends of the frame firmly fastened to the platform B. The upper frame, C, is also firmly fastened to the top of the platform B. The parts above mentioned may be made in the form shown, or in such other form as will answer the purpose.

The stands D D′ project up from the frame C to support the arbor E, which is fitted to turn freely, and provided with a pulley for the band E′, which turns it. This arbor E carries the screw or blank F to be shaved, nicked, and reshaved, and may be provided with a gripping apparatus or other device to hold the screws or blanks.

G is a stand fastened to the frame C to support the back rest, G′, which holds the blank while it is being shaved and nicked.

H is an arm hinged to the frame C to carry the tool H′, which shaves the head of the blank F. This arm H is pressed from the blank by the spring I, and, is pressed against it by the shave J and arm J′ from the rock-shaft K, which turns in the stands K′ K′ on the frame C, and is worked by the crooked arm L, acted on by the cam L′ on the shaft L^2, which turns in the ends of the frame C, and may be turned by a pulley or gear fastened to it for that purpose.

M is a shaft turning in the ends A A, and it is provided with a pulley, M′, for the belt which is to drive the machine. The shaft M is fitted to turn loose in the pulley N, which carries the band E′, and is locked to the shaft M by the friction-clutch N′, which traverses freely on the shaft, and turned by the feather or spline N^2 in the shaft M, fitted to a groove in the inside of the clutch N′. There is a groove around the hub of the clutch for the yoke N^2, which is acted on by the lever O to traverse the clutch against the pulley N to turn it with the shaft, and from the pulley to let it stop. The lever O vibrates on a screw in a stand fastened to the under side of the platform B, as shown in Fig. 1, and is worked by the grooved cam P on the shaft L^2, which carries it. The groove in the cam P is so constructed as to alternately press the clutch against the pulley, and turn it, and from the pulley to release it and let it stop, while the shaft continues turning.

The rock-shaft R turns in the stand D, and forms the fulcrum of the carriage R′, which vibrates and carries the shaft S and nicking-saw S′. This shaft and saw are turned by a band from some moving power to the pulley S^2 on the shaft. The carriage R′ is raised to carry the nicking-saw to the screw or blank by the link T from the lever T′, which has its fulcrum in a stand fastened to the frame C, and is raised by the cam T^2 on the shaft L^2. The arms of the saw-frame R′ are arranged to be moved in the rock-shaft R to adjust the saw, and are fastened by set-screws, to hold them in the position required.

The saw S′ is fastened and adjusted by a nut on each side, arranged with right and left hand threads, so that both nuts screw toward the saw and, bind, it between them—that is, the nut at the end of the saw-shaft has a right-hand thread and the nut behind the saw has a left-hand thread, and the resistance of the

screw-head when it is being nicked tends to turn the saw and nuts in a direction to screw both nuts toward the saw and bind it tighter.

This machine may be put in operation by bands from some moving power to the pulleys M′ and S^2, also to a pulley on the shaft L^2. A screw or blank is put into the end of the arbor E, then the clutch N′ comes to the pulley N and turns it, carrying the arbor E at the same time the tool H′ is brought against the head of the blank F by the cam L′ and shaves it; when the cam P moves the clutch from the pulley N, letting it stop with the arbor and blank; when the cam T^2 raises the carriage R′ with the saw S′, which cuts the nick or score in the head of the screw and drops down again; when the clutch comes to the pulley N and turns it, and the arm V on the cam L′ brings the tool H′ up to the blank and reshaves it, and then falls back, so that the screw or blank may be removed from the arbor and, another, inserted to be shaved, nicked, and reshaved as above described.

Having described our invention and improvement, we claim—

1. The vibrating adjustable saw-frame R′, in combination with the link T and cam T^2, which operate the frame and move the saw as described.

2. The rotating saw S′, in combination with the right and left hand screw-nuts, arranged to adjust and hold the saw opposite the center of the arbor E, substantially as described.

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