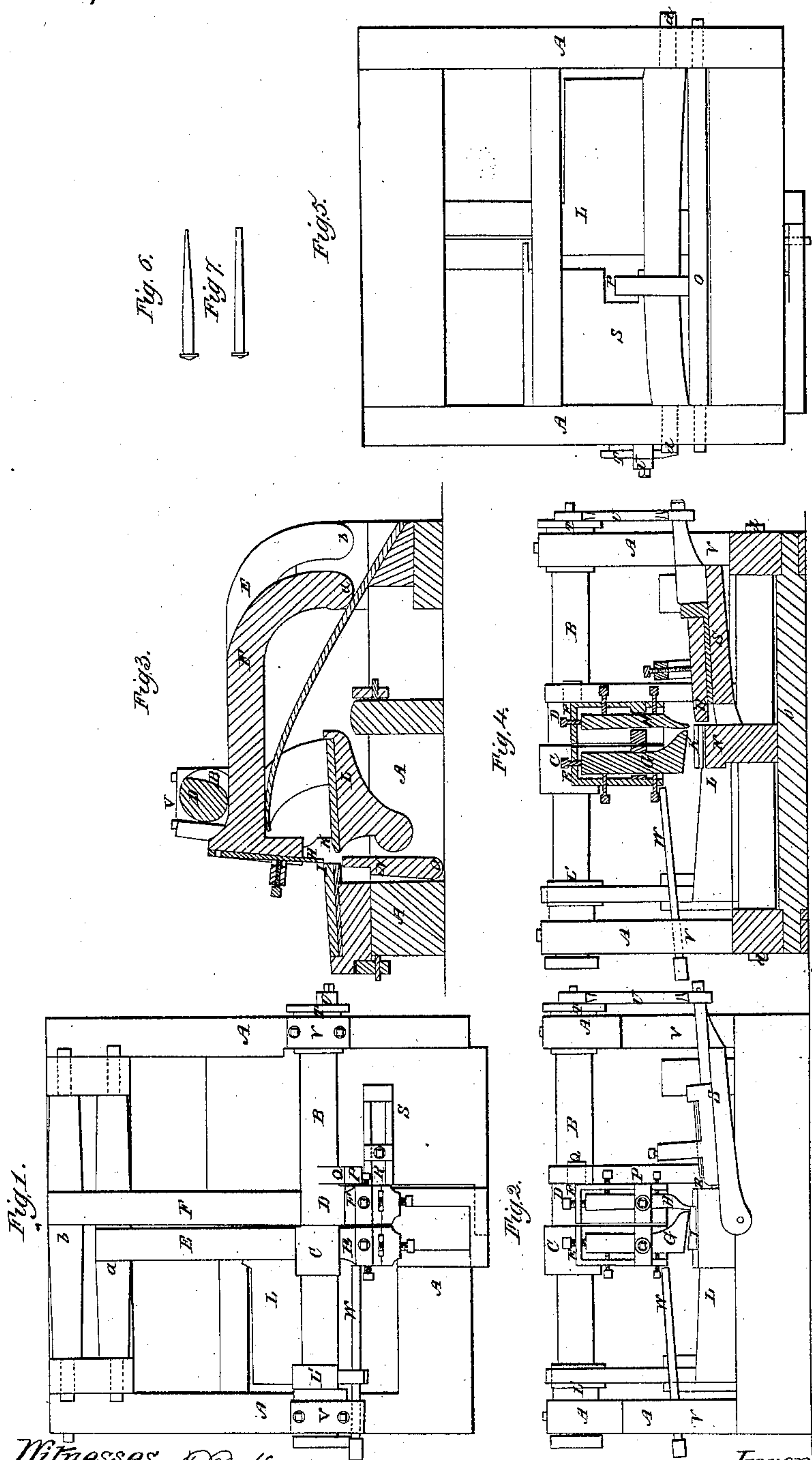


# *J. B. Kingham,* *Making Cut-Nails,*

*N<sup>o</sup> 44,637.*

*Patented Oct. 11, 1864.*



*Witnesses. J. P. Hale Jr.  
M. S. Hays.*

*Inventor.  
Jacob B. Kingman.  
by his Attorney R. M. Eddy.*



# UNITED STATES PATENT OFFICE.

JACOB B. KINGHAM, OF EAST BRIDGEWATER, MASSACHUSETTS.

## IMPROVEMENT IN NAIL-MACHINES.

Specification forming part of Letters Patent No. 44,637, dated October 11, 1864.

*To all whom it may concern:*

Be it known that I, JACOB B. KINGHAM, of East Bridgewater, in the county of Plymouth and State of Massachusetts, have invented an Improved Machine for Making Cut Nails, and particularly of the kind termed "Boat-Nails;" and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view of it; Fig. 2, a front elevation; Fig. 3, a vertical and longitudinal section; Fig. 4, a transverse and vertical section taken through the header. Fig. 5 is an under side view of the machine.

Instead of gripping the nail on two opposite sides only preparatory to and during the process of heading it, my machine grips it on its four sides, and one of the gripping dies also serves the purpose of a movable cutter to sever the nail-blank from the nail-plate; and, besides this, in my said machine there is another movable cutter and one stationary cutter employed for severing the nail-blank from the plate, and there is also a strut for steadying the movable gripper and cutter or supporting it against the strain or pressure of the header.

In the drawings, A denotes the frame of the machine, which supports a driving shaft, B, which carries at or near its middle two cams, C D. These cams are arranged directly over and are for operating or moving downward two levers, E F. These levers carry the two movable cutters G H, which are respectively affixed to the front ends of the levers, the fulcra of such levers being two shafts, *a b*. To each of the said levers there is a spring, *c*, for elevating it at proper times. In advance of the two cutters G H is the stationary cutter and gripper I, while in rear of this latter there is a movable gripper, K, which is affixed to a lever, L, whose fulcra are represented at *d d*. The said lever L is operated in one direction by a cam, L', carried by the driving-shaft, the operation of such cam being such as to so move the lever as to force the gripper K toward the gripper I, the weight of the lever of the gripper K or a spring serving to move such lever and gripper in an opposite direction, as occasion may require. Below the grippers I and K is an auxiliary gripper, N, which extends upward from a rocker-shaft,

O, from which an arm, P, projects toward and against and in front of a cam, Q, carried by the driving shaft. The cam is to cause the gripper N to be moved forward from and underneath the nail immediately after such nail may have been headed, such being in order to allow the nail to drop from the dies of the machine. Either the weight of the arm P or a spring applied to such arm or its shaft will suffice to produce a counter movement of the gripper N sufficient to bring it directly underneath the nail blank preparatory to the cutting of such blank from the nail-plate when the latter is on the die and cutter I.

R is the header, which is carried by a lever, S, worked by a crank-wheel, T, and a connecting-rod, U, the whole being arranged together and with respect to the grippers I and K as shown in the drawings.

From one of the posts V V of the frame A a strut, W, projects horizontally, or thereabout, and toward and so as to nearly, if not quite, touch the side of the head of the lever which carries the cutter and the gripper G. This strut is stationary, and operates to prevent the said gripper G from being moved laterally by the pressure of the header exerted against the end of the nail-blank while the head of such blank may be in the act of being formed or made by the header.

In the operation of the machine, the two cutters G H descend together, and co-operate with the stationary cutter and gripper I in severing a nail-blank from the nail-plate, after which, and preparatory to the advance of the header, the smaller cutter H will ascend so as to leave projecting beyond the cutter G a portion of the blank sufficient for the formation of the head of the nail, the cutter G remaining down upon the blank and pressing it firmly upon the auxiliary gripper N. At the same time the gripper K will be moved up to the blank, and with the lower part of the inner edge of the cutter I will grip the blank on its two vertical sides or edges.

From the above it will be seen that preparatory to and while being headed the nail-blank will be held firmly on its four sides or edges, and after the header may have performed its function of upsetting the end of the blank (which it will do to much better advantage when the blank is gripped on four instead of but two of its sides) the gripper N

will be moved from underneath the blank, and so as to permit it to drop out of the machine.

The nail made by this machine is far superior to that which is clamped only on two opposite sides while being headed, and which is known in the market under the name of "boat nail," (the form of which is represented in Figs. 6 and 7,) which is more or less rounded or rendered cylindrical in the vicinity of its head and for a distance therefrom equal to about one-third of the length of the nail.

The nail made by my machine has a square or rectangular tranverse section throughout its shank, and tapers gradually from the head to the point, and thus, after having been driven into wood, such nail will hold therein

to much better advantage than the rounded-shank nail.

I claim—

1. The combination of the stationary cutter and gripper I, the movable cutter and gripper G, the movable cutter H, the two movable grippers K N, and the header R, arranged as set forth, and provided with mechanism for operating them, substantially as specified.

2. The combination of the same and the steadying-strut W, the object of the latter being as hereinbefore explained.

JACOB B. KINGHAM.

Witnesses:

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