# A. S. GEAR.

## Molding-Machine.

No. 165,669. Patented July 20, 1875.

Fig. 2.

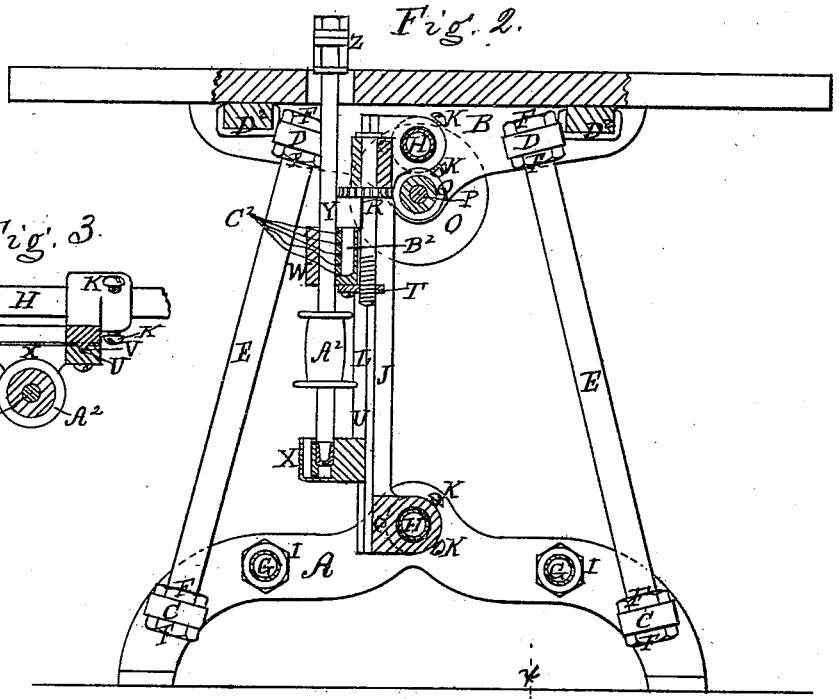
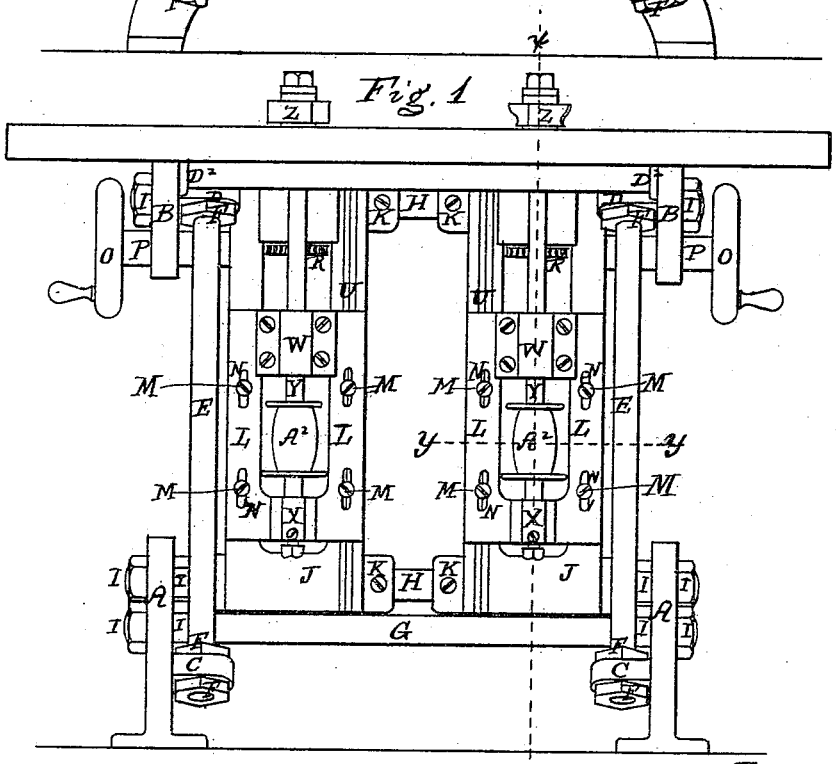


Fig. 3.



Fig. 1



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## IMPROVEMENT IN MOLDING-MACHINES.

Specification forming part of Letters Patent No. **165,669**, dated July 20, 1875; application filed February 6, 1875.

*To all whom it may concern:*

Be it known that I, ALONZO STOCKBRIDGE GEAR, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Molding-Machines; and I do hereby declare that the following taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates to that class of machinery known as variety molding or irregular planing-machines; and consists principally in the peculiar manner of construction.

In making my frame, I use but four castings, two at the top and two at the bottom, those on each side being exactly the reverse of those on the other. I connect these castings together laterally and vertically by pipe, securing the whole by check-nuts. On the central horizontal pipes I place my yokes, which are so constructed as to be made adjustable, and held firmly in position by set-screws, thus avoiding any finish to those parts.

The yokes being constructed separately, are arranged in such a manner that the slide in which the cutter-spindle runs is moved up and down upon them by the ordinary worm screw and gear, but is made in a peculiar manner, inasmuch as one side is fitted with a flat or V-shaped groove, which serves to keep it in position laterally, while the other side moves on a flat planed surface. It is held firmly in place against the yoke by means of bolts, the slide being slotted so as to allow it to be moved up or down by the worm and gear, as desired.

The table and cutters are constructed in any ordinary manner.

In the drawing which accompanies and forms a part of this specification, Figure 1 is a front elevation of a molding-machine constructed in the manner described. Fig. 2 is a vertical section on line *x x*, and Fig. 3 is a horizontal section on line *y y*.

A B represent the castings, which are furnished with lugs or ears C D, through which pass the rods or pipes E, said rods being held in position by nuts F, the whole, taken together, forming the sides of my frame, which are connected together by the horizontal rods or pipes G H and nuts I. On the central rods H are placed the yokes J, which are adjusted and held in position by set-screws K. On the front of these yokes are slides L, which are held in position vertically by bolts M and are provided with slots N to admit of their being raised or lowered by means of wheels O, shafts P turning in bosses on the castings B, worm-screws Q, gears R, screws S, and nuts T.

To prevent any lateral movement of the slides, I place upon one side of either the yoke or the slide a projection, U, preferably of a V-shape, and fitting in a corresponding groove, V, on the other, the opposite side of the slide moving upon a perfectly flat surface.

These slides, being made adjustable for the purpose of raising or lowering the cutters, are furnished with bearings W and steps X, in which rotate the vertical spindles Y, having at their upper ends cutters Z, and between the bearings the pulleys $A^2$.

Both upper and lower bearings may be constructed alike, but at present I prefer to use as the lower bearing or step the device well known as "Dunklie's Self-Oiling Step for Vertical Spindles," while the upper bearing I furnish with an oil-reservoir, $B^2$, and drill through from the bearing to the reservoir several small holes, $C^2$, which may or may not be plugged with pine wood or any other suitable porous substance, which will allow sufficient oil to penetrate through and properly lubricate the spindle, and at the same time obviate the necessity of frequent oiling, which, with the present construction, is necessitated by the extreme rapidity with which the spindles revolve.

The castings which form the upper part of the frame are provided with sockets $D^2$ into which fit the cross-bars which hold the several pieces of the table together.

I claim—

1. In a molding-machine, a frame consisting of the castings A B, held firmly in position by the hollow rods E, G, and H, said rods H forming the supports for the yokes J, and vertical spindles Y, substantially as herein described.

2. In a molding-machine, a frame made up of castings and hollow tubes, as described, in combination with the laterally-adjustable yokes J, spindles Y, and cutters Z, substantially as and for the purpose herein set forth.

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