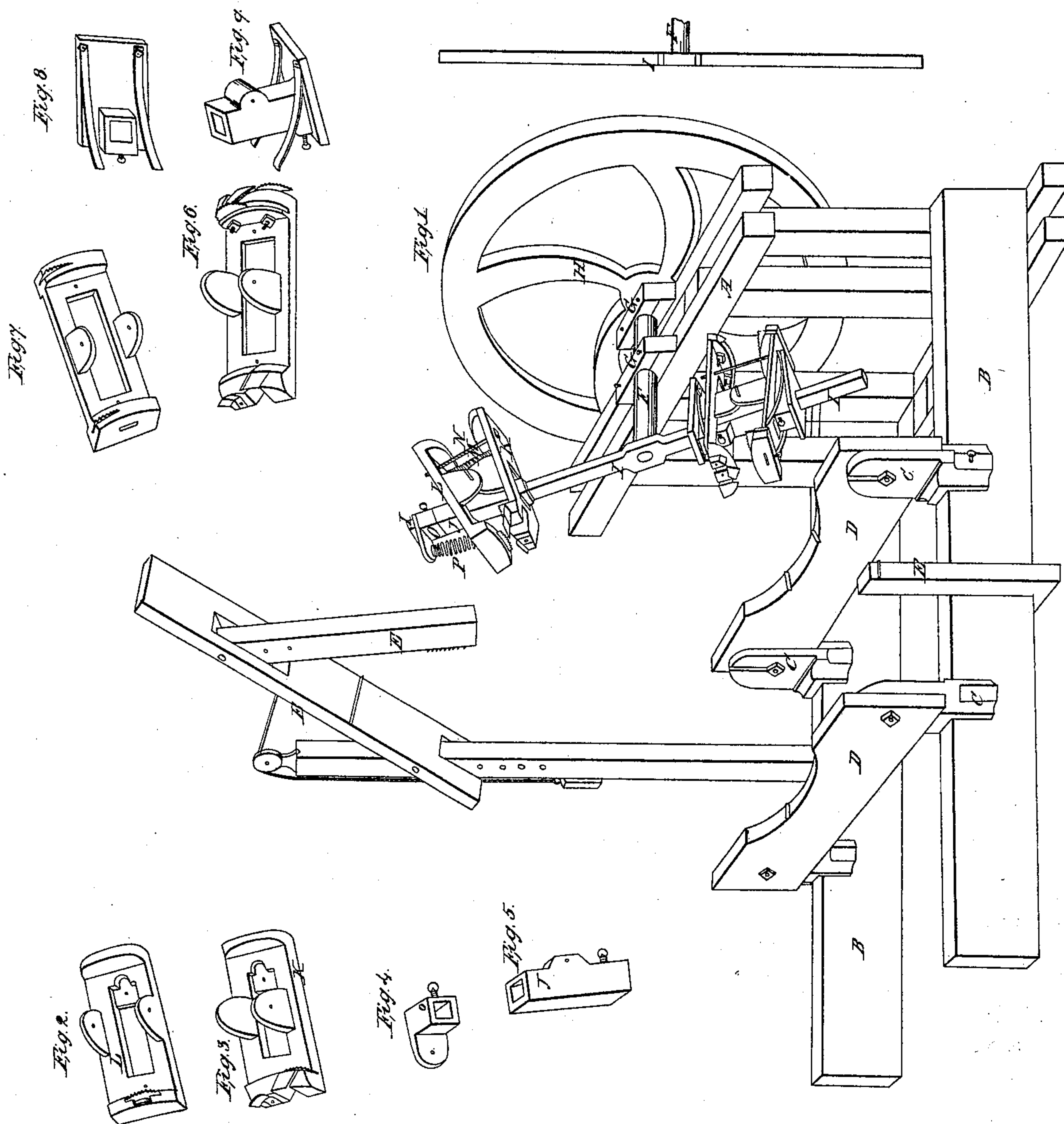


G. H. Swan,  
Crozing Stares.

*N<sup>o</sup> 13,045.*

*Patented June 12, 1855.*



# UNITED STATES PATENT OFFICE.

GEORGE H. SWAN, OF BRIDGEPORT, CONNECTICUT.

## STAVE-MACHINE.

Specification of Letters Patent No. 13,045, dated June 12, 1855.

*To all whom it may concern:*

Be it known that I, GEO. H. SWAN, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and useful Machine for the purpose of Lev-  
5 eling, Chamfering, Crozing, and Howeling Barrels, Kegs, &c.; and I do declare that the following is a full and clear description of the construction and operation of  
10 the same, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1 (one) is a perspective view in which letter A, is a frame supporting shaft.

15 Letters, B, B is sills to barrel stand.

C, C, C, C, are slides on said sills with flanges and slot or groove with bolt playing in said slot and passing through and attaching cross sills or receivers D, D, for  
20 the cask being made of different widths for the different size casks or to be elevated or lowered by means of said slots and bolts, letters E, E, leverage for confining the cask while being operated upon; letter F main  
25 shaft running in boxes G, G, letter H, driving or balance wheel, letter I arm attached to shaft F, letters J, long slide sliding on arm I, and making fast at any point from the shaft with thumb or set screw, letters K  
30 lever nearest to the shaft or inside lever carrying the croze, chamfer, and howeling knives and a saw or knife cutting in toward the outside of the staves at the extreme top of the chamfer exactly opposite the leveling  
35 saw or knife on lever L, cutting toward the inside of the staves and meeting, forming the top of cask, levers K and L both acting on one center pin or bolt, letter M spiral spring attached to levers K and L between  
40 and pressing apart the opposite ends to which the knives are attached consequently pressing the knives together to any point or depth that the gaging or connecting rod N will admit; letter O, short slide and also

making fast to the arm I, by means of 45 thumb or set screw with flange attached to receive spiral spring P, which also connects to the lever L, and pressing the end of the lever carrying the leveling saw or knife tight to the outside of the barrel and gov- 50 erning lever  $\frac{1}{2}$ , by the gaging or connecting rod N, and consequently giving a uniform depth of cut to the work in every part being round or not as the levers are balanced off by putting a set of knives on each end or 55 the equivalent in weight consequently getting the same pressure of spring at all points of the work, and Figs. 2, 3, 4, 5, are sectional views of the same.

The set of levers on the lower end of the 60 arm I, as represented in the drawing Fig. 1, is merely to show one plan of using a different kind of spring and Figs. 6, 7, 8, 9, are sectional views of the same.

What I claim as my invention is— 65

The chamfering, leveling, crozing and howeling barrels, kegs &c. in fact anything requiring a croze chamfer howel or bevel by means of the two levers operated upon by springs and gaging or connecting rod in 70 such a manner as to gage the work from the outside of the cask being round or not working exactly to the shape of the head truss hoop with any kind of croze knives, saws necessary to give the desired croze or 75 groove chamfer or bevel howel and level and the two levers are attached to the slide by pin or bolt acting on one or separate centers and that slide made fast to the arm by thumb or set screw at any point from 80 the shaft or doing away with the slide and putting the pin or bolt directly through the arm at any point from the shaft required consequently adjustable to any size.

GEO. H. SWAN.

Witnesses:

STEPHEN S. STEVENS,  
TRAVERS SWAN.