

(No Model.)

S. A. HEWITT.

SHAPING AND WELDING ROLLS.

No. 263,519.

Patented Aug. 29, 1882.

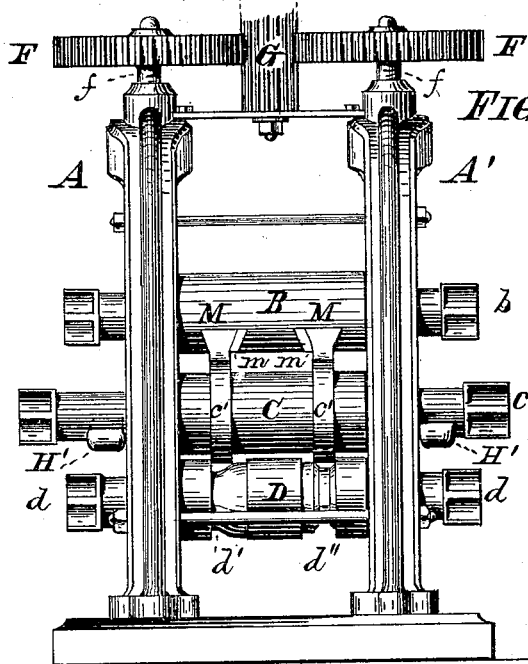


FIG. 1.

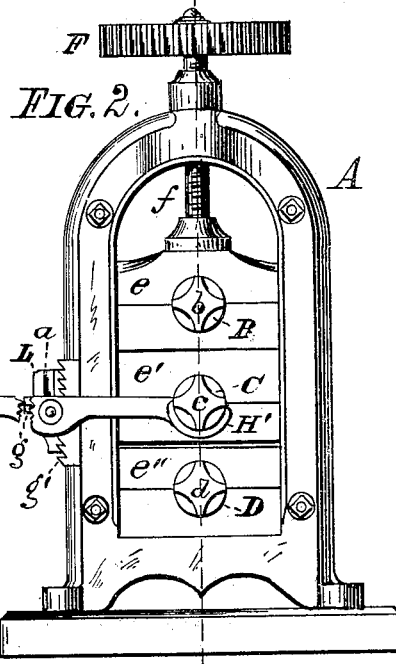


FIG. 2.

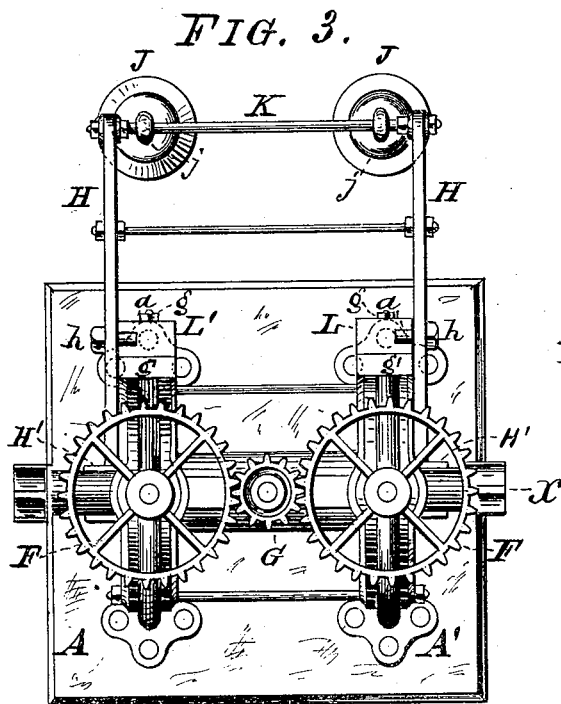


FIG. 3.

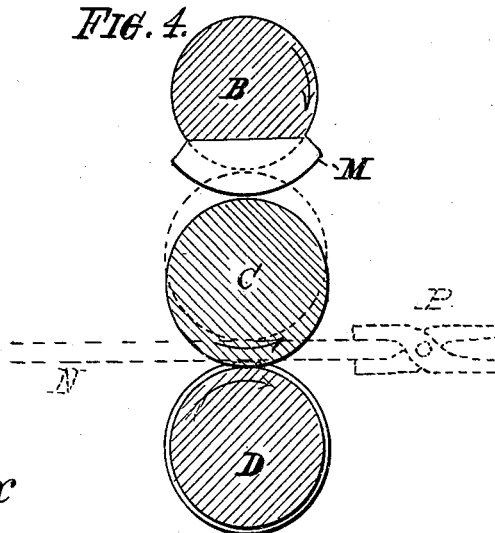


FIG. 4.



FIG. 5.

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## SHAPING AND WELDING ROLLS.

SPECIFICATION forming part of Letters Patent No. 263,519, dated August 29, 1882.

Application filed March 16, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL A. HEWITT, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on Shaping and Welding Rolls; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

The object of my present invention is the production of simple and convenient means for rolling and welding blanks for draw-shaves; and it consists essentially of such peculiar and novel combination of parts and details of construction as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already mentioned, which serve to illustrate my said invention more fully, Figure 1 is a front elevation of my improved machine. Fig. 2 is a side elevation of the same, and Fig. 3 is a plan. Fig. 4 is a sectional elevation, in line *xx* of Fig 2, of the rolls employed in this machine; and Fig. 5 is a perspective view of the shave-blank produced on the same.

Like parts are designated by corresponding letters of reference in all the figures.

A A' in these figures represent the usual standards or housing for my improved rolls, placed upon a proper and suitable foundation and braced by connecting-rods, as clearly shown in the drawings. Within this housing are placed suitable bearings or boxes, *e e' e''*, for the reception of the journals of three rolls, B, C, and D, respectively, of which the one designated by B is the upper while that marked D is the lower one. The middle roll, C, has two collars, *c' c'*, formed integral with or separate from the roller-stock C, while the lower roll, D, has two shaping-grooves, *d' d''*, formed around its periphery, the contour of which corresponds with the sectional shape of the article to be produced, there being more than one such groove to avoid the repeated changing of rolls. In the upper roll, B, there are two dovetailed slots or grooves receiving cam or otherwise shaped projections, M, locked in said grooves by wedges *m* or similar

devices. On the standards A A' are provided serrated projections *g' g'*, engaged by similarly-shaped journal-blocks, L L', having slots or grooves *a* for the reception of the fulera *h* of two levers, H, as clearly shown in the drawings. The forward ends of these levers H have shoes H' H', engaging the journals of the middle roll, C, while the rear ends of said levers are connected together by a rod, K, from which are suspended weights J by hooks *j*, so as to keep the middle roll, C, in an elevated position. The upper roll, B, is rendered adjustable by means of screws *f*, spur-wheels F, and a pinion, G, in the well-known and approved manner.

The article desired to be produced (or any other similar article, for that matter) is depicted in Fig. 5 and designated by the letter N. It represents the blank of a draw knife or shave, which is produced from a suitable bar of iron and a strip of steel in one operation, except the notches *n*, which are punched after the blank is formed. This blank I produce in the following manner: I first cut a bar of suitable iron into shorter pieces and heat the same to a red heat. I now place a suitable piece of steel along one edge of the heated iron and insert the two together into the furnace to bring the same to welding-heat, after which I take the blank (steel uppermost) to the rolls and weld the steel to the iron, and shape the blank while passing once or twice between the lower roll, D, and middle roll, C, as indicated in Fig. 4, P being the tongs by which the blank is handled.

It will now be readily observed that, owing to the counter-weights J on the levers H, the roll C has a tendency to revolve in contact with the upper roll, B, except during the time that the cams M, acting upon the collars *c' c'*, keep the same depressed, and that when the rolls are properly connected with suitable mechanism for revolving the same this rising and depressing of the roll C is repeated with every revolution of the said roll.

The projecting piece M may be of a cam or any other shape, thus producing a variety of work that cannot well be produced in any other machine.

Heretofore rolls have been used for welding

the steel onto the iron of planer and other knives, and at the same time giving shape to the article, such rolls invariably consisting of a pair, of which the lower one has the shaping-groove and the upper one a projecting block or "anvil," the article being introduced between the rolls at the time when the said projecting piece is not in contact with the lower roll, and caused to leave the same on the same side from which it was introduced between said rolls. Such rolls have the disadvantage that the projecting anvil will meet the lower roll always at the same spot, and that thereby both the anvil and the shaping-rolls are soon destroyed and worn out. In my improved three-high roll this objection and drawback is entirely avoided and the shaping-grooves and collars evenly worn, thus producing better results and preserving the rolls for a much longer time than by any other device for accomplishing the desired result.

To render the fulera for the levers H adjustable to adapt them for operation with differently-sized rolls, I form on the standards A A' serrations *g'* and on the journal-blocks L L' similar serrated projections, the parts being held together by screws *g*, Figs. 2 and 3, in a very simple manner.

It is perfectly obvious that instead of the grooves *d'* *d''* shown other grooves having a different contour may be used, thus producing a variety of work which it is impossible to produce by any other device.

Heretofore shaping-rolls have been made consisting of two rolls revolving in fixed bearings and one center or middle roll revolving in vertically-movable bearings, said upper roll being provided with eccentrics pressing upon the boxes of the middle roll in such manner as to enable the rolling of taper articles in said roll. This middle roll is provided with a lifting device consisting of bars, stirrups, and lifting-springs in such manner as to cause the said middle roll to rise and fall in accord with the circumferential movement of said eccentrics. In such a machine there are, however, several drawbacks, prominent of which is that, the vertical motion of the middle roll being a continuous one, there is not time enough for the introduction of the article to be shaped between the

shaping-rolls, whereby imperfect work is inevitably produced. This, as well as several other obvious drawbacks, is avoided in my machine, and the whole thereby rendered much more serviceable and desirable.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

1. In shaping and welding rolls, the combination, with the three rolls B, C, and D, journaled within the housing A A', of the levers H, provided on their forward end with curved bearers or shoes H', embracing the journals *c* of said roll C, and on their rear end with a rod, K, from which counter-weights J J are suspended, said levers being fulcrumed within adjustable bearing-blocks L, and the whole constructed and combined for operation substantially in the manner as and for the object specified.

2. In shaping and welding rolls, the levers H, having their fulera *h* within slots *a* of bearing-blocks L, said bearing-blocks being provided with serrations engaging similar serrations, *g'*, on the housings A A', and attached to said housings by means of bolts *g*, substantially as and for the purpose indicated.

3. The combination, with the standards A A', of the rolls B, C, and D, levers H, with shoes H' and counter-weights J J, and means, substantially as described, for adjusting the said roll B, said roll B being provided with projections M and the roll D with shaping-grooves, as and for the purpose indicated.

4. The combination, substantially as described, consisting of the three rolls B C D, journaled within the housing A A', of the elevating-levers H, with counter-weight J, screws *f*, spur-wheels E, and pinion G, said levers being provided with adjustable pivots or fulera, and the roll B provided with removable depressing mechanism, substantially as specified.

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

S. A. HEWITT.

Witnesses:

MICHAEL J. STARK,  
J. W. BEST.