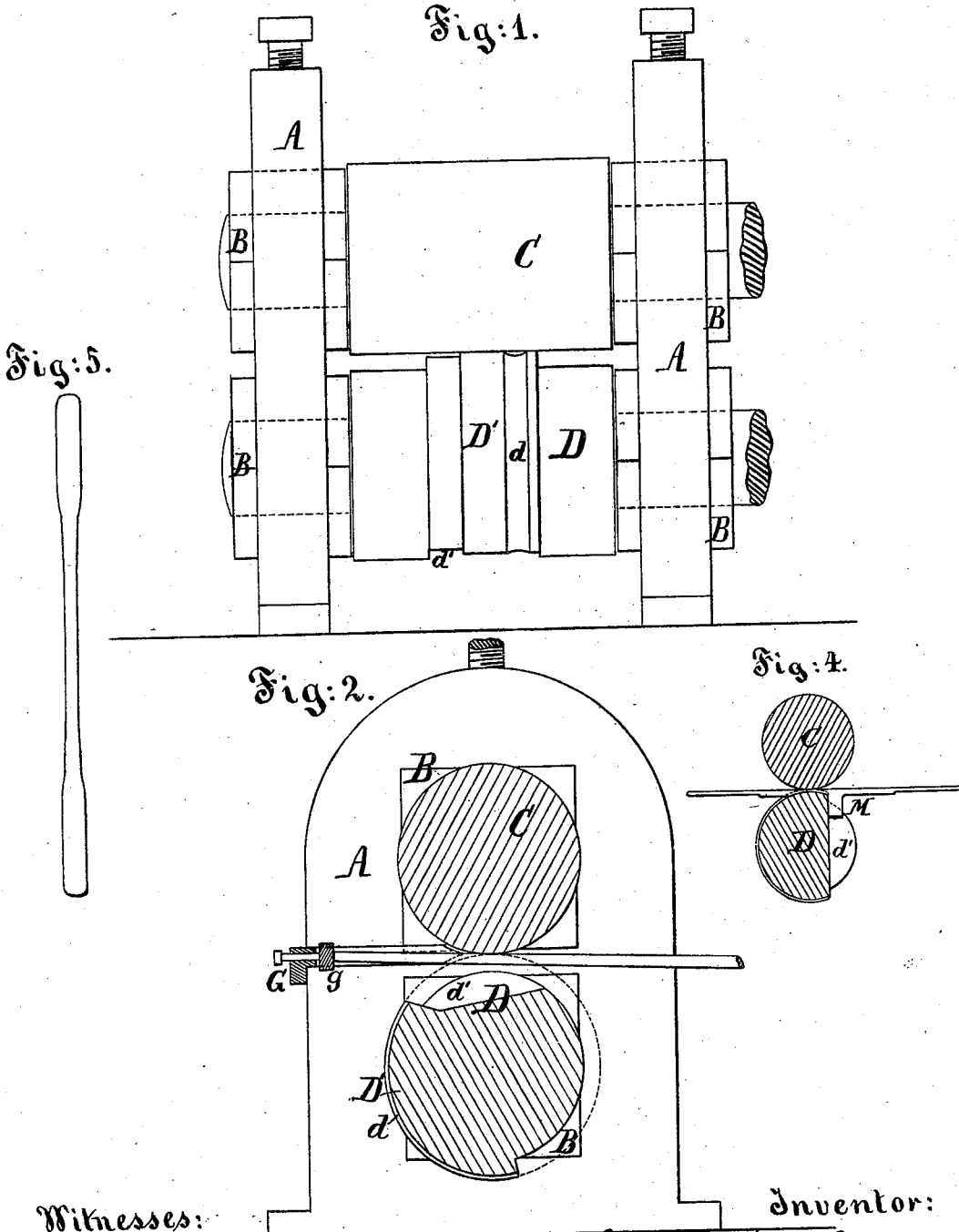


G. DOUGLASS.

MACHINE FOR ROLLING BLANKS FOR SUCKER-ROD JOINTS.

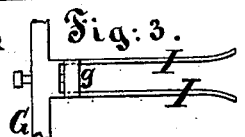
No. 189,201.

Patented April 3, 1877.



Witnesses:

A. Henry Gentner
C. C. Stilson



Inventor:

George Douglass
by his attorney
H. Stearns
New York.

UNITED STATES PATENT OFFICE.

GEORGE DOUGLASS, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR ROLLING BLANKS FOR SUCKER-ROD JOINTS.

Specification forming part of Letters Patent No. 189,201, dated April 3, 1877; application filed February 5, 1877.

To all whom it may concern:

Be it known that I, GEORGE DOUGLASS, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Rolling Shapes in Iron and other metals, of which the following is a specification:

I form a pair of rolls with a groove or grooves in one or both, adapted to impress the proper form on the metal being treated, and provide a cavity in one or both rolls to allow the metal to be thrust in easily against the motion of the rolls, with a gage to prevent the metal being so thrust too far. I provide guides standing in such position as to compel the metal to assume and maintain the proper position, however far it may be thrust through the rolls, and however carelessly or unskillfully it may be held afterward.

The following is a description of what I consider the best means of carrying out the invention as adapted to drawing the forked ends of sucker-rod joints.

The accompanying drawings form a part of this specification.

Figure 1 is a front view, Fig. 2 is a cross-section, and Fig. 3 is a plan view, of the guides and gage alone. Fig. 4 is a cross-section, on a smaller scale, showing a peculiar function performed by the cavity in the roll in rolling a certain form of forging. Fig. 5 is a plan view of the blank after it has been struck by suitable dies in a drop-press previously to treating it in the rolls.

Similar letters of reference indicate like parts in all the figures.

A is the fixed frame-work or housing, carrying boxes B, which support the bearings of rollers C D. These rolls are turned with a continuous motion toward each other, as in ordinary iron rolling, being geared and driven by mechanism not represented. The upper roller C is a plain cylinder. The lower roller D is formed with a projection, D', having a groove, *d*, adapted to give the final shape to the article. There may be one or more other surfaces adapted to initiate the treatment and approximately reduce the iron to its proper form, but such need not be specially described.

The projection of the die or working portion of the surface D' may be considerably great-

er than the main surface of the roll D, or the roll may be made larger, so as, like the working part D', to nearly touch the roll C. A cavity, *d'*, is made in the body of the roll D, immediately in advance of the die D'.

In operating with my rolls, the iron is thrust backward through the cavity *d'* when it is presented, and is caught between the die D' and the roll C and moved forward again. A cross-bar, G, bolted on the back of the housing presents a surface, *g*, adapted to serve as a gage to prevent the thrusting of the iron too far backward through the rolls when the cavity *d'* is presented. This gage may be made adjustable by a screw or other suitable means, if desired. The same cross-bar G also supports two long arms, I I, which extend from each side of the gage forward nearly into the bite between the rolls. Their ends adjacent to the rolls should be carefully adapted to the rolls, so as to apply quite closely. These ends should also be flared a little, as indicated in the plan view, Fig. 3. The width between these guides I I should be only a little greater than the width of the article to be manufactured. The flaring of the front ends of these guides I I adapts them to better receive the iron when it is thrust through a little out of the proper position. The main inner surfaces of the guides control the position of the iron, and compel it to traverse backward directly to the gage and to strike the gage with certainty. After it has been seized and commenced to be carried forward by the rolls, the guides compel the iron to be delivered accurately in the groove *d* during the whole of the forward motion. The guides avoid a possibility of missing the gage in thrusting the iron back, and avoid a possibility of the iron becoming misplaced and producing a "fin" on the edge or a "saw"-edge in being moved forward.

The die D' may be, and, preferably, is, made separate from the roll and fitted removably therein, being secured by any ordinary or suitable means, to allow of ready removal and renewal of dies, as may be required.

By one mode of forming the forging, a considerable projection extends out at right angles therefrom, as indicated by M in Fig. 4. The recess *d'*, as arranged, receives such pro-

jection and allows the forging to be rolled successively from a point close up to the projection.

In order to obtain an increased width of the rolled portions I treat them each with one blow in a suitable drop before putting them into the rolls. The condition after being thus struck is shown in Fig. 5.

I propose in most cases to produce the blank in form for rolling by first flattening each end of a bar, as shown in Fig. 5, then cutting the bar nearly off at the center, doubling it upon itself and welding it at and near the point of doubling. The parts not welded being now strained apart form a T-shaped blank, the welded part forming a short and thick body, while the unwelded parts extending at right

angles therefrom, in opposite directions, constitute long and flattened arms, which arms alone are treated in the rolls, as indicated in Fig. 4.

I claim as my invention—

In combination with the rolls C D, having a groove and a cavity, *d'*, the guides I I, adapted to receive the end of the metal and to guide it in its backward and forward movement, as and for the purposes herein specified.

In testimony whereof I have hereunto set my hand this 31st day of January, 1877, in the presence of two subscribing witnesses.

GEORGE DOUGLASS.

Witnesses:

GEO. A. STAPLES,
L. R. CRITTENDEN.