

T. V. Le ROY.

MANUFACTURE OF AXLE-BOXES.

No. 182,940.

Patented Oct. 3, 1876.

Fig. 1.

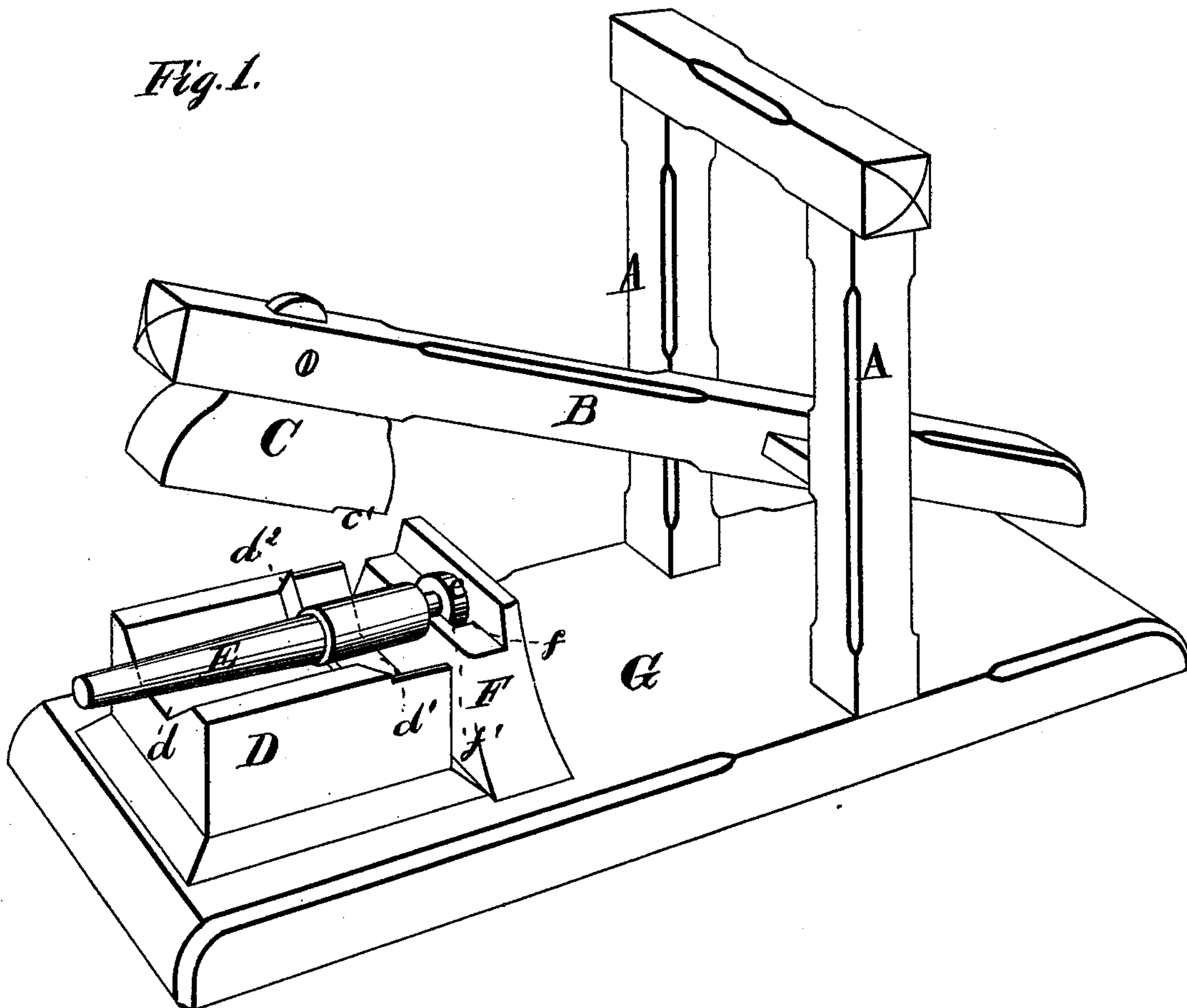


Fig. 2.

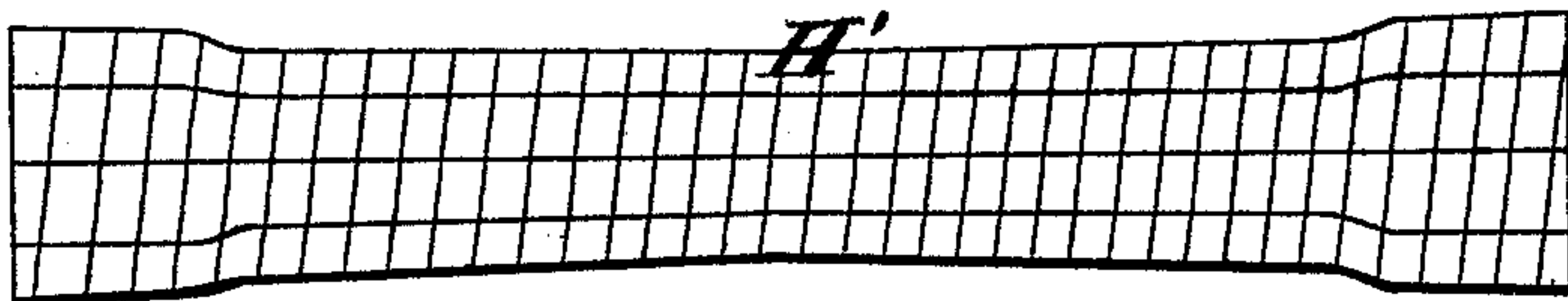
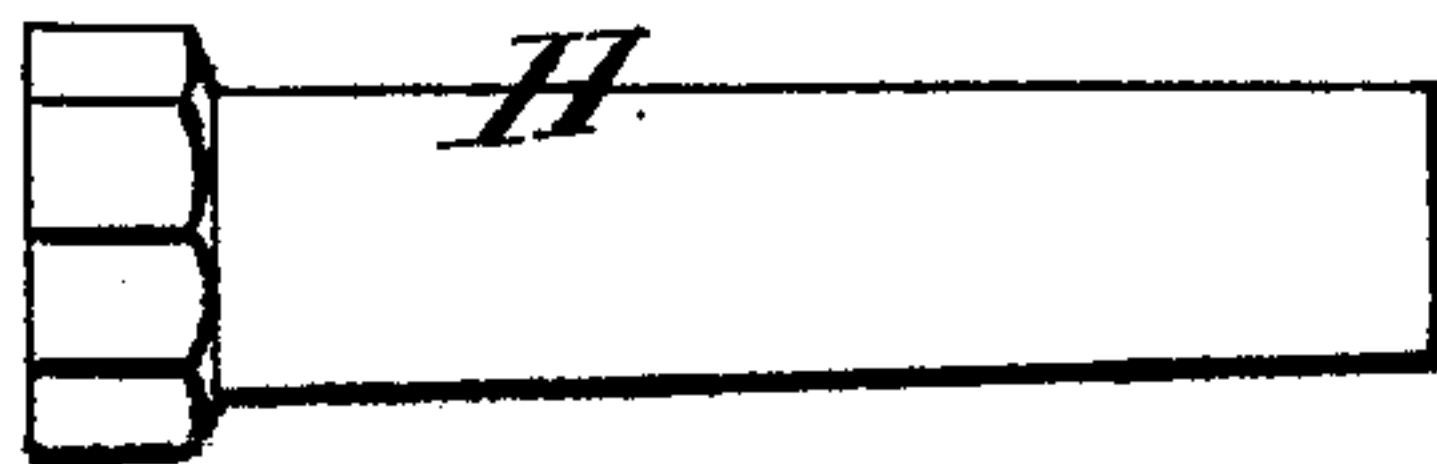


Fig. 3.



WITNESSES

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IMPROVEMENT IN THE MANUFACTURE OF AXLE-BOXES.

Specification forming part of Letters Patent No. **182,940**, dated October 3, 1876; application filed June 24, 1876.

To all whom it may concern:

Be it known that I, TUNNIS V. LE ROY, of Utica, in the county of Oneida and State of New York, have invented a new and valuable Improvement in Axle-Skeins; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a perspective view of my machine for making axle-boxes, and Fig. 2 is a plan view of the axle-skein iron in its rough state. Fig. 3 is a plan view of my axle-box when finished.

This invention consists in an axle-box made of a spirally-wound metal bar; also, in the process of manufacturing said axle-boxes, herein-after fully set forth.

In the annexed drawings, A A designate standards, to which is pivoted one end of beam B, which carries on its longer end hammer C. The under side of said hammer is provided with or formed into a die having a shoulder, *c*, and recess *c'*. Under this hammer and die I fix a stationary die, D, on a block or anvil. The surface of said stationary die is recessed so as to present grooves *d* and *d'* and shoulder *d''*. The office of dies C and D is to shape the outside of the axle-boxes while welding them together, as hereinafter described. E is a welding-pin, conforming in shape to the inside of the axle-boxes. It is held in position (so as to prevent lateral displacement) by a supporting-block, F, which is provided with a recess, *f*, and entrance *f'*, which receive and lock a collar, *e*, on the end of said welding-pin. G is a bed-piece, on which all the above parts are supported. H is an axle-box. H' designates two axle-boxes united at their smaller ends.

The process of manufacture is as follows: I weld together a bar of iron and a bar of steel, one lying flat upon the other. I then draw out this compound bar until it is about the size of a horseshoe-nail rod. I then wind this rod about the tapering mandrel or welding-pin E, with the steel inside, in the same way that twist gun-barrels are wound.

This compound rod being long enough to compose two axle-boxes, after using one half of said rod in winding one box, I begin at the other end of said rod and wind another box, the two boxes being connected by the rod at their inner ends.

These boxes are then heated and the coils welded by blows upon the ends, after which they are reduced to the proper thickness by the trip-hammer, dies, and mandrel or welding-pins already described.

The object of making the welding-pin stationary, so far as regards lateral motion, is to make the shoulders on the inside of the box correspond to the shoulders on the outside thereof. A slight vertical vibration is allowed said mandrel or welding-pin for convenience in manipulation.

By arranging my two metals as above described, I produce a device which is hard on the inner face, (which bears the friction,) and soft on the outer side, where a cheaper material will do as well. The softer metal, being less elastic, also holds the inner one from springing out of shape during the process of construction.

By winding the metal I produce a box in which the grain of the metal runs around the axle, instead of being parallel thereto, and so gives the box greater strength to endure strains; also, any flaws in the welding will occupy less space longitudinally, and will injure the wearing capacity of the axle and box less.

By winding two boxes out of one rod, I am enabled to hold one by the tongs while hammering the other, while, if each box is constructed separately, there is nothing to hold on by.

Car-axle boxes, as well as wagon-axle boxes, may be constructed by the above-described mechanism and process.

What I claim as new, and desire to secure by Letters Patent, is—

1. As an improved article of manufacture, an axle-box composed of iron and steel wound spirally, the steel being on the inner side, substantially as and for the purpose set forth.

2. The process of manufacturing axle-boxes, consisting, first, in welding a bar of iron

to a bar of steel; next, in drawing the same to a narrow rod; next, in winding said rod around a suitable mandrel, with the steel inside; then, in welding the coils by blows upon the ends of the box; and, finally, in shaping said box by suitable dies and mandrel, as above described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

T. V. LE ROY.

Witnesses:

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