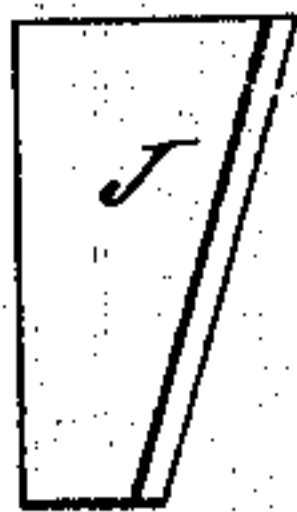


*Patented Jun. 17, 1862.*



*Inventor:*  
George M. Brown  
per *Munn & Co*  
*Attorneys*



# UNITED STATES PATENT OFFICE.

GEORGE MCKOWN, OF ALTONA, ILLINOIS.

## IMPROVEMENT IN MACHINES FOR UPSETTING TIRES.

Specification forming part of Letters Patent No. 35,616, dated June 17, 1862.

*To all whom it may concern:*

Be it known that I, GEORGE MCKOWN, of Altona, in the county of Knox and State of Illinois, have invented a new and Improved Implement or Device for Shrinking Tires; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of my invention; Fig. 2, a horizontal vertical section of the same, taken in the line *xx*, Fig. 1; Figs. 3 and 4, detached views of parts pertaining to the same.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain an implement by which the tires of wheels may be shrunk or contracted so as to fit the wheels to which they are to be applied without being cut and rewelded, one which will admit of tires being readily applied to and removed from it, and at the same time hold the tires firmly in position, so that they cannot casually move nor sag down while being operated upon.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a metal bar, which is secured horizontally to a bed-piece, B. To one end of the bar A there is permanently attached a cross-bar, C, the ends of which are perforated to receive the outer ends of levers *aa* of a toggle, D, the outer ends of said levers being bent down and rounded to form journals *b*, which fit loosely in the perforations of the bar C. The inner or opposite ends of the levers *aa* are connected by pivots *cc* to nuts *dd*, through which a screw-rod, E, passes, said rod being provided with two screws, *ee*, one of which has a right and the other a left hand thread, so as to cause the nuts *dd* to move simultaneously toward or from each other as the rod E is turned. The other levers, *ff*, of the toggle are attached at their inner ends by pivots *gg* to the nuts *dd*, the outer or opposite ends of said levers *ff* being attached by pivots *h* to a slide, G, which is fitted on the bar A, and is allowed to work freely thereon.

On the slide G, at one side, there is fitted or placed a jaw, H, the face side of which is cor-

rugated, so as to form vertical teeth *i*. This jaw is formed of a plate having a hook, *j*, at one end to catch under the front edge of the slide, the back end of the plate or jaw having a pendent projection, *k*, which extends down at the back edge of the slide G. The hook *j* and projection *k* are shown clearly in Fig. 3. The jaw H, when placed on the slide G, bears against a ledge, *l*, thereon.

I is a slot which is made obliquely in the slide G near the end opposite to that where the ledge *l* is placed or attached. The slot I has its inner end rather wider than its outer end, as shown clearly in Fig. 1, and a taper key, J, is fitted vertically therein, the inner edge of the key being beveled to form a sharp edge, as shown in Fig. 1.

To the end of the bar A opposite to that where the cross-bar C is attached there is secured permanently a cross-bar, K, which is of the same dimensions as the slide G and is provided with a ledge, *m*, and slot L, which are precisely similar to the ledge *l* and slot I of the slide G. The slot L of the bar K has a taper key, M, fitted in it which is precisely similar to the key J of the slide G. The slot L has a reverse position to the slot I of the slide G, and the inner ends of the slots are nearer each other than their outer ends, as shown in Fig. 1. The bar K is provided with a jaw, N, which is provided with a hook, *a'*, and pendent projection *b'*, and constructed precisely like the jaw H, with the exception that its teeth have a reverse raking position to those of the jaw H, as shown clearly in Fig. 1.

On the bar A, between the slide G and the bar K, there are placed a metal loop, O, and a short bar, P, the latter being of such a width that it may fit between the arms or prongs *mm* of the loop and slide freely therein. (See Fig. 1.) The loop O and bar P have their upper surfaces flush or on a level with the upper surfaces of the slide G and bar K, as shown in Fig. 2.

The operation is as follows: The tire to be shrunk or contracted is heated at the desired spot and the slide G is drawn back from the bar K the full extent of its movement. The heated portion of the tire is then placed between the slide G and bar K, the keys J M, which were previously removed, being replaced in the slots I L, so as to clamp the tire



between the keys and jaws at each side of the heated portion. The operator then, by means of a crank, turns the screw-rod E in a direction which will force the nuts *d d* of the toggle D toward each other, and the slide G will consequently be moved on the bar A in the direction indicated by the arrow 1, and as the tire is firmly clamped at each side of its heated portion said portion will be "upset" or contracted to the required dimensions to suit the wheel to which it is to be applied. The keys J M, owing to their oblique position, have a tendency to sink into the tire as the slide G is moved, and they, under said movement of the slide G, do gradually sink into the tire as their inner or sharp edges work or move, as indicated in red in Fig. 1. This movement of the keys is allowed by means of the enlarged inner ends of the slots I L, as will be fully understood by referring to Fig. 1. The loop O and bar P serve as a support or bearing for the heated portion of the tire, the bar P being moved into the loop O as the slide G is moved toward the bar K. In consequence of having

the jaws H N provided with hooks *j a'* and pendent projections *k b'* they are not displaced while the tire is being contracted or upset.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The taper keys J M, when fitted in taper oblique slots I L for the purpose of enabling them to sink into the tire under the action of the slide G, as described.

2. The loop O and bar P, constructed and arranged, as shown, for the purpose of forming a bearing or support for the heated portion of the tire, as specified.

3. The combination of the toggle D with slide G attached, the stationary bar K, jaws H N, the oblique slots I L, keys J M, and the bearing or support formed of the loop O and bar P, all arranged for joint operation, as and for the purpose set forth.

GEORGE McKOWN.

Witnesses:

B. H. SCOTT,  
FRANK ALLEN.