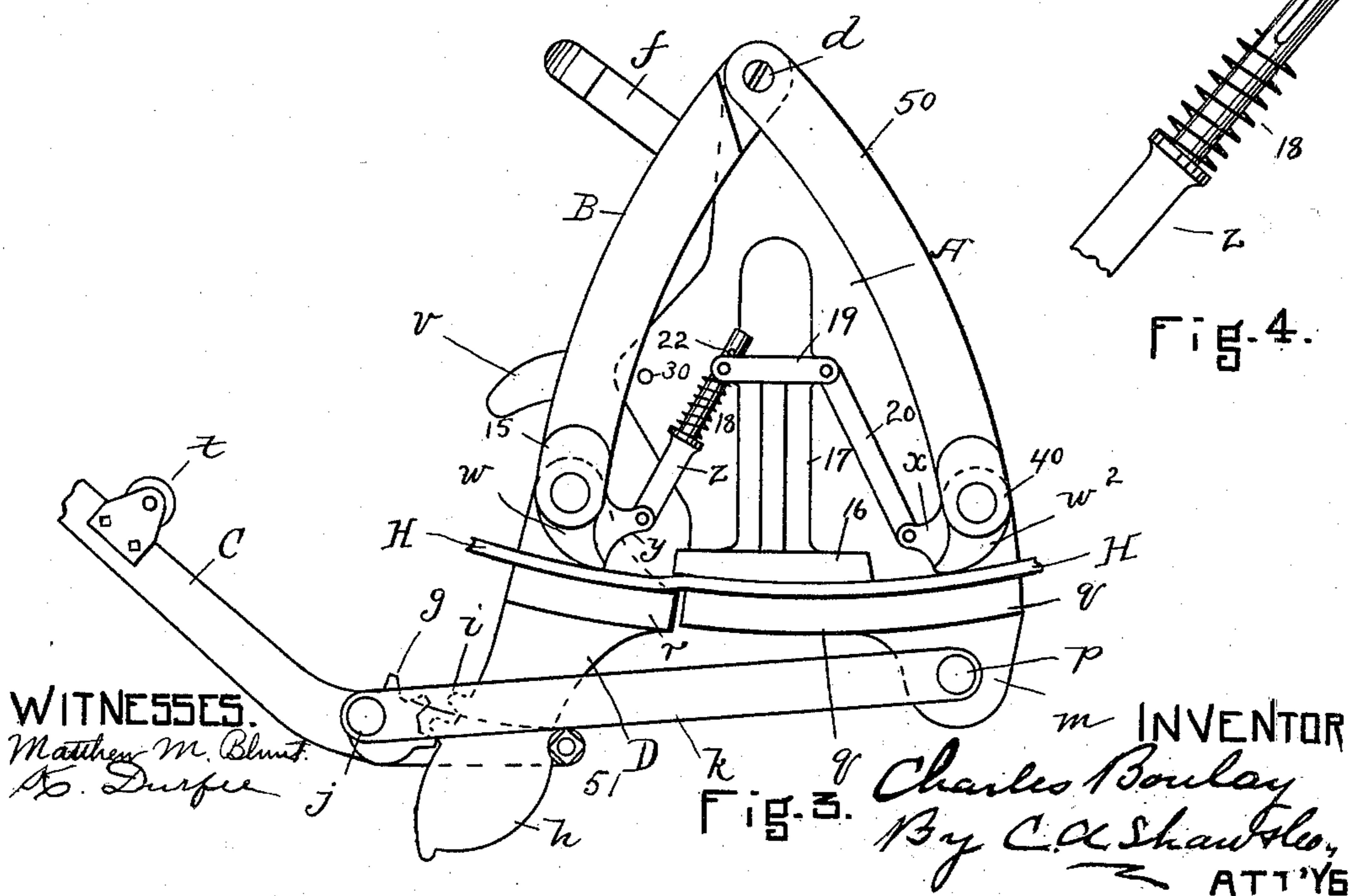
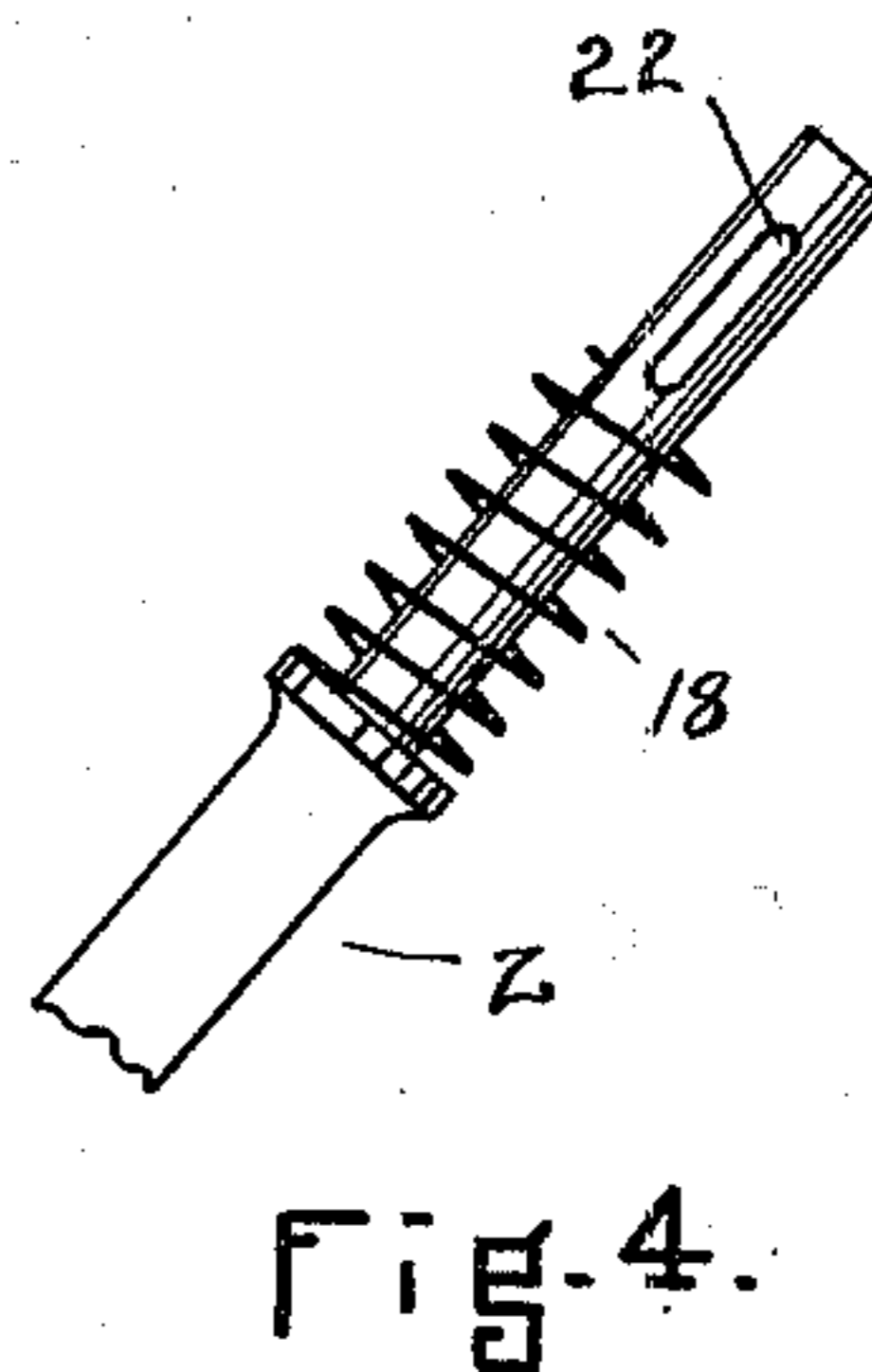
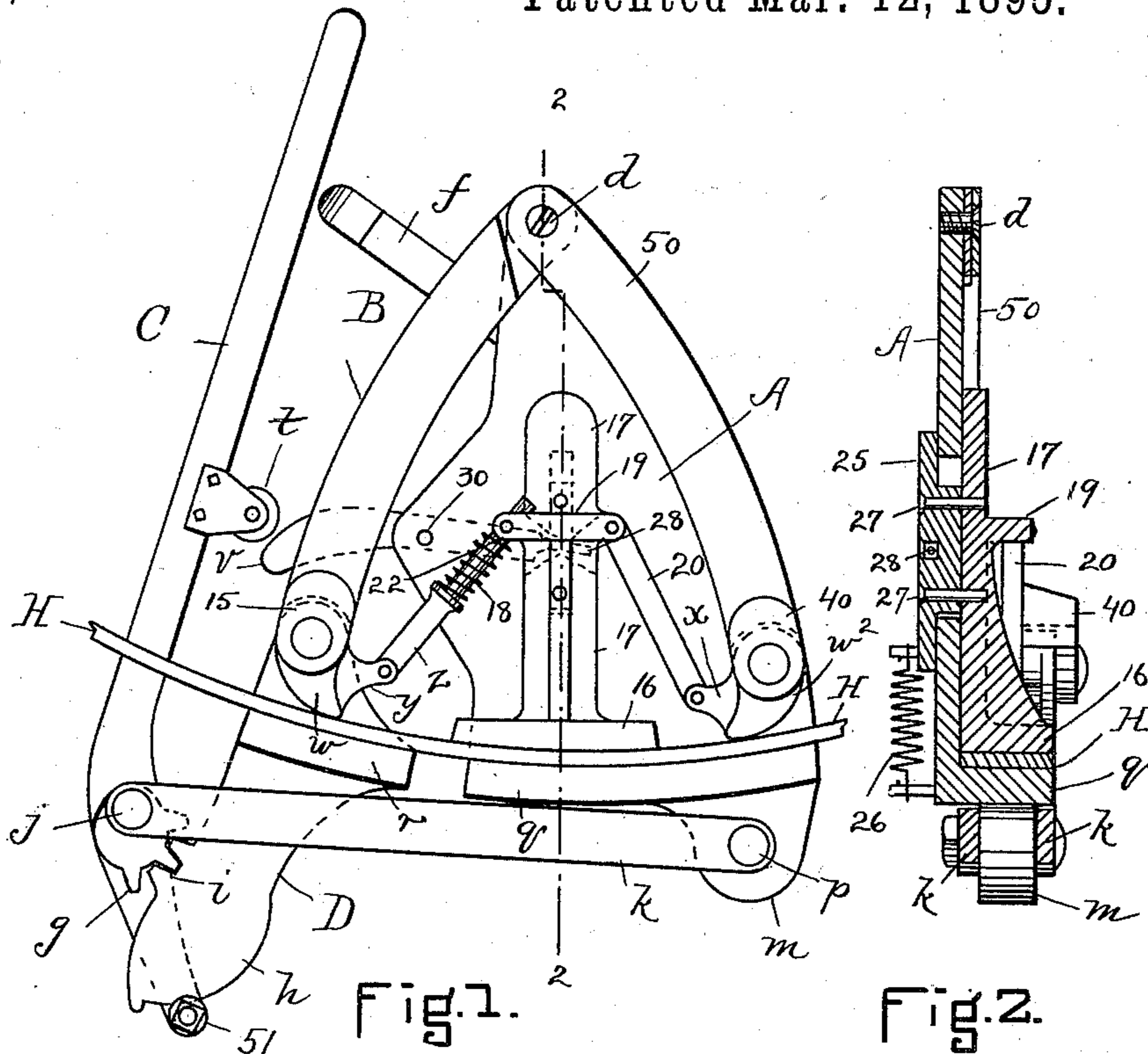


(No Model.)

C. BOULAY.  
MACHINE FOR UPSETTING TIRES.

No. 535,481.

Patented Mar. 12, 1895.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

CHARLES BOULAY, OF BARRE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF  
TO LEONIDE BRODEUR, OF SAME PLACE.

## MACHINE FOR UPSETTING TIRES.

SPECIFICATION forming part of Letters Patent No. 535,481, dated March 12, 1895.

Application filed January 2, 1895. Serial No. 533,526. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES BOULAY, of Barre, in the county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Machines for Upsetting Wagon-Tires, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved machine for upsetting wagon-tires; Fig. 2, a vertical transverse section of the same taken on line 2, 2, in Fig. 1; Fig. 3, a front elevation showing the operating lever thrown outward; and Fig. 4 a view illustrating details.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to a machine for automatically clamping a wagon-tire and upsetting the same while the metal is hot the object being to overcome the objections incident to the ordinary methods of upsetting tires where the metal is liable to cool while the tire is being clamped.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings A, represents the body of the machine which consists of a plate having a reinforced or beaded edge, 50, said body being approximately triangular in section. An arm, B, is pivoted at, *d*, to the apex of said body to swing laterally. On the lower end of the body there is an arc-shaped lug, *q*, curved on a circle of which the pivot, *d*, is a center.

The arm, B, bears a flange, *r*, curved on the same arc and registering with the flange or lug, *q*, when the parts are in their normal position. Projecting downwardly from the flange, *r*, there is a lug, D, which is provided with a cam track or face, *h*.

On the lower end of the body to a lug, *m*, there is a vertically swinging forked arm, *k*, pivoted, said arm passing astride the lug, D. In the free ends of said arm the lever, C, is

pivoted at, *j*. The short arm of the lever has a roller, 51, working on the cam surface, *h*. The pivot lug of said lever is provided with a segment gear, *g*, which meshes with teeth, *i*, on the outer edge of the lug, D.

Pivoted in suitable bearing, 15, on the arm, B, there is a dog, *w*. On the lower end of the bead, 50, of the body, A, there is a similar dog, *w*<sup>2</sup>, pivoted. These dogs are designed to clamp the tire, H, against the flanges, *r*, *q*, respectively, as hereinafter described.

A slide bar, 17, is fitted to move vertically in a suitable slot in the body, A, and bears on its lower end a clamping-shoe, 16, on the front of the body.

At the rear of the body a bar, 25, is connected with the slide, 17, by screws, 27. A coiled spring, 26, connects the lower end of the bar, 25, with the body and acts contractively to pull said bar downward.

A cam-lever, *v*, is pivoted at, 30, to the rear face of the body, its outer end projecting beyond the arm, B, in position to be engaged by a roller, *t*, on the lever, C. The inner end of the cam-lever projects into a socket, 28, (see Fig. 2) in the sliding-bar, 25.

A lever, *z*, has one end pivoted in lugs, *y*, on the dog, *w*, its opposite end being slotted at, 22, to receive a pivot on a lug, 19, on the slide, 17, said slot permitting slight lost motion. A coiled spring, 18, is interposed between a shoulder on the lever, *z*, and said lug. A similar lever, 20, pivotally connects the lug, 19, on the slide with lugs, *x*, on the dog, *w*<sup>2</sup>.

Near the apex of the body on the arm, B, there is a spring catch, *f*, for the lever, C. When the parts are in the position shown in Fig. 1, the lever, C, is forced from left to right as viewed in said figure until it is engaged and caught by the spring catch, *f*. The roller, *t*, contacting with the cam, *v*, forces the outer end of said cam-lever downward and the inner end of said lever being simultaneously elevated carries the slide, 17, upward. This draws the clamping shoe, 16, away from the bed or flange, *q*, and by means of the connecting levers, *z*, and, 20, draws the dogs, *w*, *w*<sup>2</sup>, out of contact with the flange, *r*, and said bed or flange, *q*. Sufficient space is thus afforded between the clamping shoe and dogs and the beds, *r*, *q*, to admit the tire, H.

The lever, C, being released from the catch, *f*, the spring, 26, draws the slide, 17, downward engaging the shoe, 16, with the tire and simultaneously spreading the dogs, *w, w*<sup>2</sup>, into  
 5 contact with said tire securely clamping the same against the two flanges, *r, q*. Said lever, C, is now thrown outward by the operator. This causes the forked arm, *k*, to throw downward, as shown in Fig. 3, while simultaneously  
 10 the gear, *g*, on said lever throws the arm, B, inward on its pivot, *d*, and the cam-wheel, 51, working on the cam surface, *h*, of the lug, D, on said arm guides the same so that the flange, *r*, is crowded against the tire which is  
 15 tightly held by the clamps upsetting the same and contracting the diameter thereof at this point in a manner which will be understood by those conversant with such matters.

The slide, 22, of the connecting lever, *z*, permits this movement without operating the  
 20 slide, 17.

It will be seen that by the use of my device after the lever, C, is caught by the spring, *f*, elevating the clamping dogs and shoes one  
 25 continuous outward movement of said lever effects the secure clamping of the heated tire in the machine and the upsetting of the same, the operation being so rapid that the metal has no opportunity for cooling.

30 Having thus explained my invention, what I claim is—

1. A body provided with a segmental base; a segment pivoted to said body; a spring-tensioned clamp for securing the tire to said seg-  
 35 ment; a lever and connecting mechanism for

actuating said pivoted segment; and devices operated by a movement of said lever for releasing said clamp.

2. In a machine for upsetting tires, a body provided with a segmental base in combina- 40 tion with a segment pivotally connected with said body; spring-tensioned dogs on the body and segment for clamping the tire thereto; a lever pivoted on said body for actuating said segment; and a projection on the lever for 45 engaging a cam on the segment for directing the course thereof.

3. In a machine for upsetting tires, a body provided with a segmental base in combina- 50 tion with a segment pivotally connected with said body; spring-tensioned dogs on the body and segment for clamping the tire thereto; a lever pivoted on said body for actuating said segment; and a projection on the lever for 55 engaging a cam on the segment for directing the course thereof; and a cam mechanism actuated by contact of the lever for releasing said dog.

4. The body provided with the base, *q*, in combination with the arm, B, carrying the 50 segment, *r*; the spring-tensioned dogs, *w, w*<sup>2</sup>, on said arm and body; the lever, C, pivoted to said body and geared to said arm; and a cam on the arm engaging a projection on said lever, all being arranged to operate substan- 65 tially as and for the purpose set forth.

CHARLES BOULAY.

Witnesses:

JOHN C. BARTHOLOMEW,  
 GEO. F. CORNEE.