2 Sheets--Sheet 1.

W. J. PARMELEE.

Machines for Rolling Wagon-Axles.

No. 149,058. Patented March 31, 1874.

Fig. 1

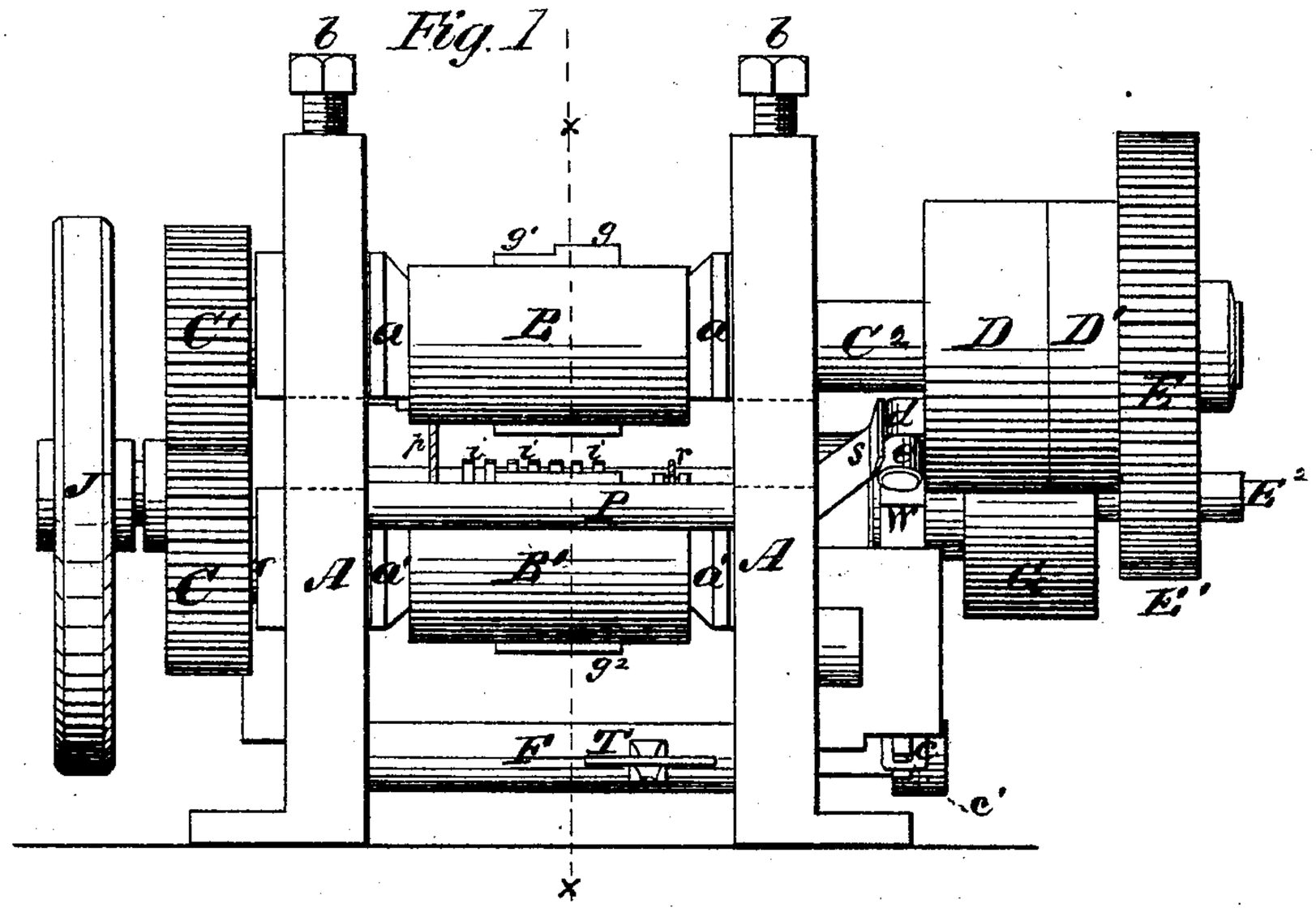
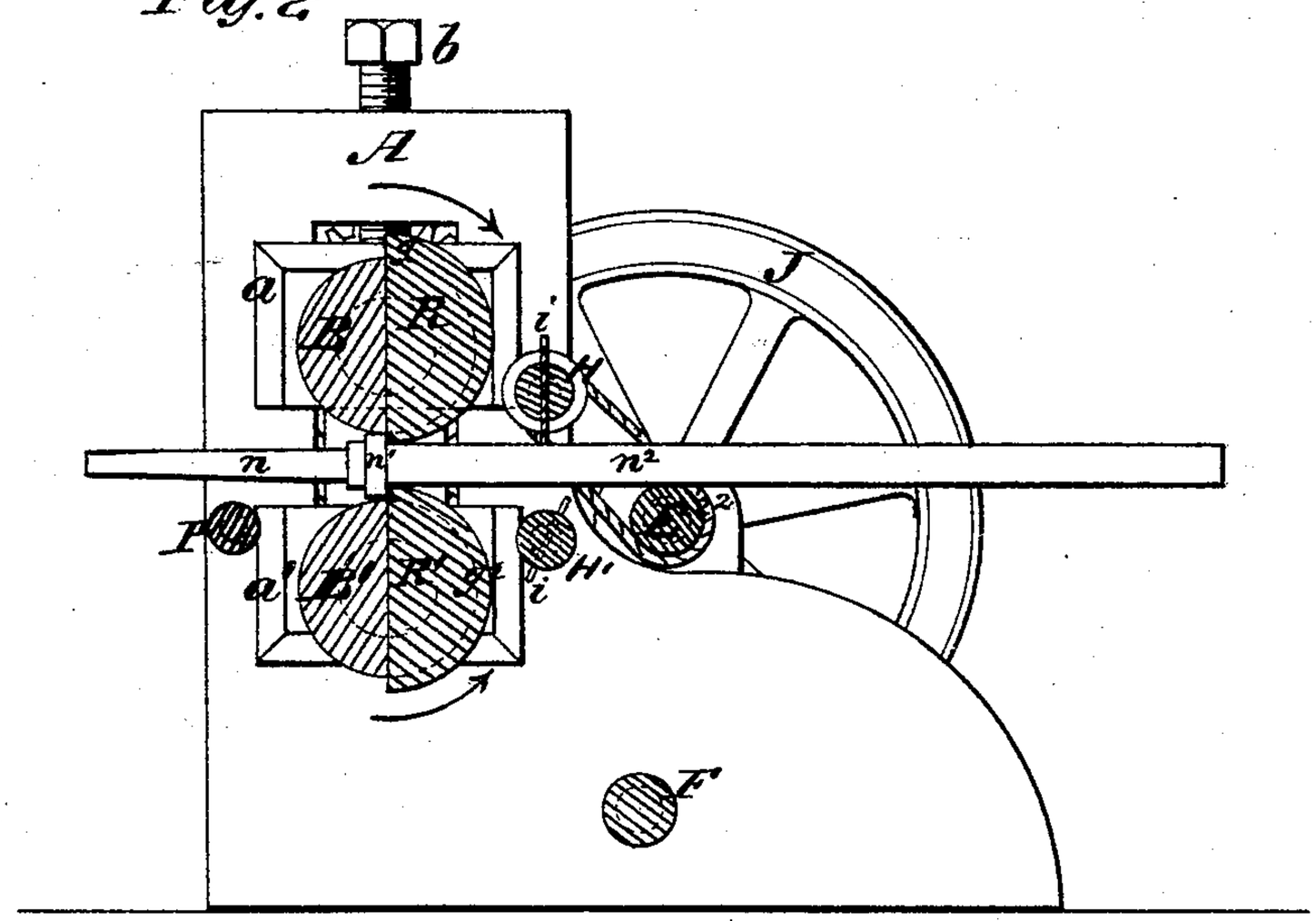


Fig. 2



Witnesses.
F. T. Campbell.
F. N. Campbell.

Inventor
W. J. Parmelee
by
Munn, Pennie & Lawrence

2 Sheets--Sheet 2.

W. J. PARMELEE.

Machines for Rolling Wagon-Axles.

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Fig. 3

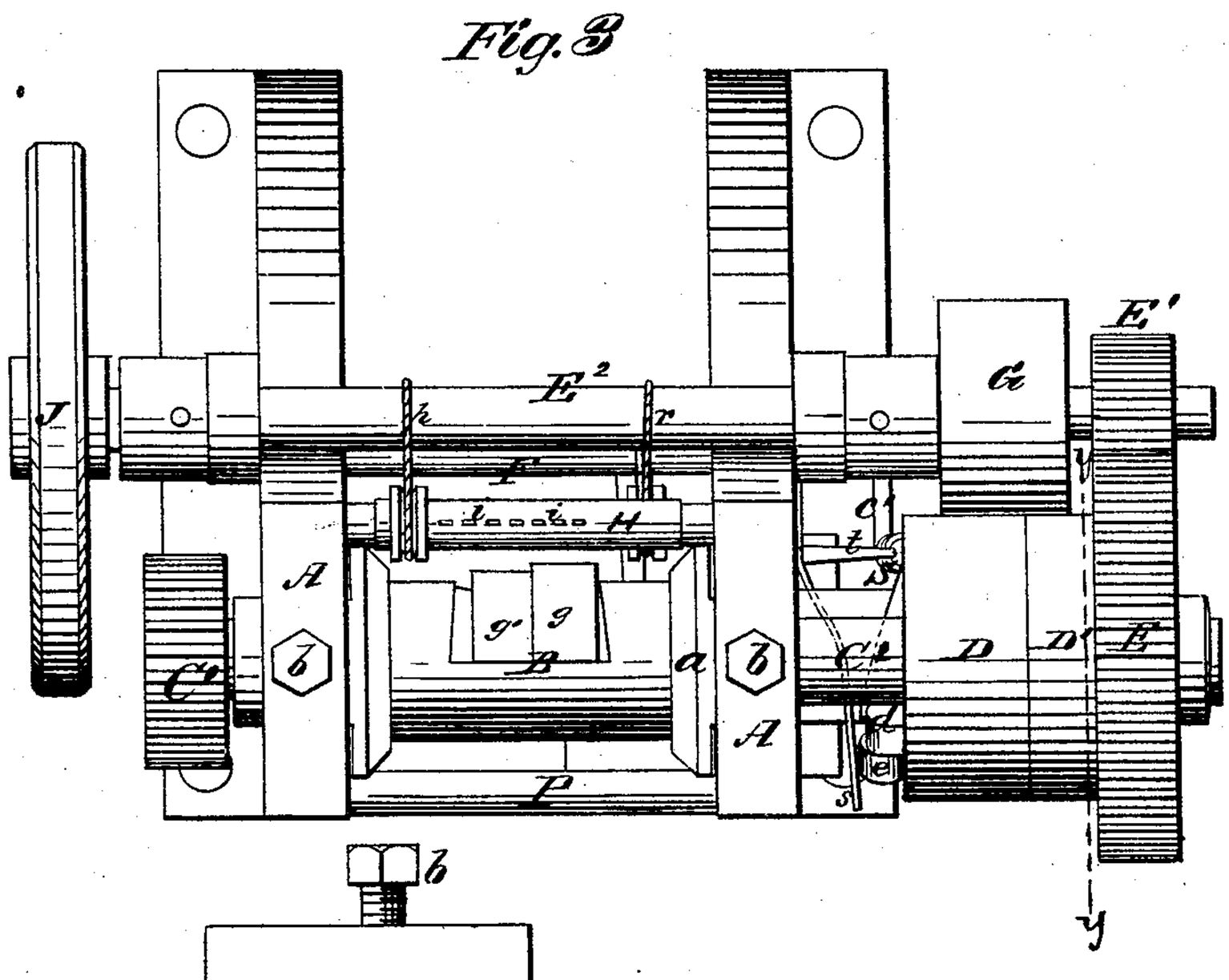
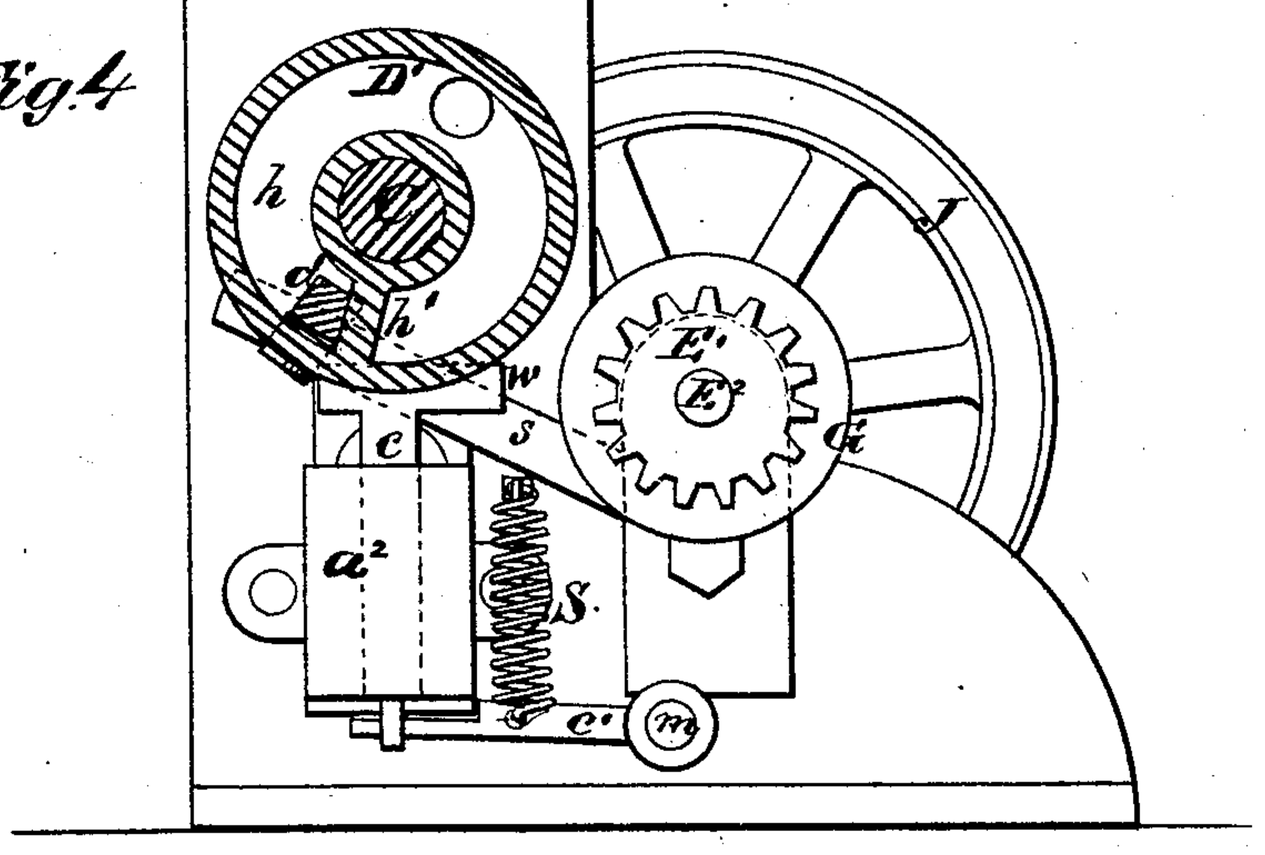
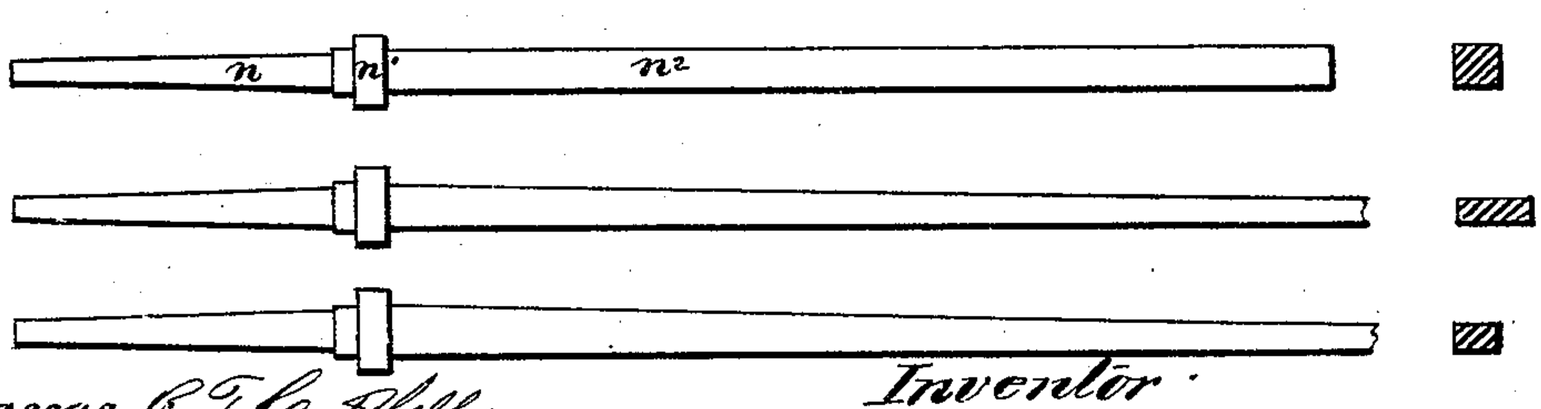


Fig. 4



Fig's 5



Witnesses: R. F. Campbell.
J. N. Campbell

Inventor:
W. J. Parmelee
by Munn, Pendleton & Lawrence

UNITED STATES PATENT OFFICE.

WOLCOTT J. PARMELEE, OF FORT PLAIN, NEW YORK.

IMPROVEMENT IN MACHINES FOR ROLLING WAGON-AXLES.

Specification forming part of Letters Patent No. **149,058**, dated March 31, 1874; application filed July 25, 1873.

To all whom it may concern:

Be it known that I, WOLCOTT J. PARMELEE, of Fort Plain, in the county of Montgomery and State of New York, have invented a new and Improved Machine for Rolling Axle-Beds; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, Plate 1, is a front elevation of the machine. Fig. 2, Plate 1, is a section taken through the machine from front to rear, as indicated by the dotted line *x x*, Fig. 1. Fig. 3, Plate 2, is a top view. Fig. 4, Plate 2, is a vertical section through dotted line *y y*, Fig. 3. Figs. 5 are views of the axle-beds during different stages of rolling them.

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

This invention relates to certain novel improvements in machinery for rolling and reducing axle-beds, wherein I employ dies which are inserted into rollers, and which present eccentric and concentric surfaces. I also employ certain novel means for automatically stopping the die-carrying rollers at the proper time, in combination with means for starting these rollers again by a movement of the foot. I furthermore employ scraping devices for clearing the axle-bars of loose scales and other substances which would impair their quality if rolled into their surfaces, all of which I will now proceed to more particularly describe.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawings, A A represent two housings, which constitute the frame of the machine, and which are in vertical plane parallel to each other. There are vertical slots made in these housings A A, in which are placed journal-boxes *a a* a^1 a^1. The upper journal-boxes receive the journals of a shaft, C^2, of the upper roller, B, and the lower journal-boxes receive the journals of the lower roller, B′, one of the journals of which is extended out, and has keyed on it a spur-wheel, C. This wheel C engages with, and is driven by, another wheel, C^1, which is on the shaft C^2 of the upper roller B, and which is of the same diameter as the wheel C. On the opposite end of the shaft C^2 to the wheel C^1 there is a fixed hub, D, a loose hub, D′, and a spur-wheel, E, which latter is formed on the loose hub D′. This loose hub and its spur-wheel E are engaged with the shaft C^2 by means of a bolt, *d*, carrying on one end an anti-friction roller, *e*. The bolt *d* passes loosely through the fixed hub D, and into a chamber, *h*, formed concentrically in the hub D′, and, by coming in contact with the abutment *h*′, (see Fig. 4,) the wheel E and its hub are clutched to the shaft C^2.

Once during every revolution of the shaft C^2 the roller *e* on bolt *d* comes in contact with a wedge, *w*, which is in its path, and which is formed on the upper end of a slide, *c*, that is guided by a block, a^2, on one of the housings A. When this takes place the bolt *d* is drawn back far enough to escape the abutment *h*′, and the wheel E and its hub will turn without turning the shaft C^2.

The wedge *w* is held up in operative position by a spring, S, acting to lift an arm, c^1, which is secured to a treadle-shaft, F, to which a treadle, T, is applied. By depressing the treadle, the wedge *w* will be thrown out of the path of the roller *e*, and will not act on the bolt *d*. When the bolt has been thrown out, it will be moved back again by a spring, *s*, by simply depressing the treadle T. The wheel E engages with, and receives motion from, a pinion-spur wheel, E^1, which is keyed on a shaft, E^2, on which shaft is keyed a belt-drum, G, and a fly-wheel, J. Motion imparted to the belt-drum shaft E^2 will, by the means above described, be communicated to the two rollers B B′ when the bolt *d* engages with the hub of wheel E.

Dovetail-slots are cut transversely through the two rollers B B′, and into these slots rolling-dies R R′ are driven. The lower rolling-die presents a rolling-surface, g^2, which is semicircular, and which is concentric to the axis of its roller B, as shown in Fig. 2. This surface g^2 is of greater radius than its roller; consequently, two shoulders, *y y*, are formed, one of which, namely, the acting one, should be under-beveled, as shown, for the purpose of pressing the metal down squarely at the axle-collars n^1, as shown in Fig. 2.

The die R of the upper roller B presents a concentric rolling-surface, g^1, and an eccentric rolling-surface, g, which latter rolls the axle-bed portion n^2, tapering from its collar outward, as indicated by the dotted line on this bed in Fig. 2. In front of the space between the rollers B B′ is a support, P, which may be fixed or allowed to turn, for the purpose of supporting the axle-beds while introducing them into or removing them from the machine. Behind the rollers B B′ are two rotary bars, H H′, which are arranged one above the other, so that the axle-beds will pass between them while they are being drawn between the rollers. These bars are rotated in opposite directions by means of bands p r, which pass around them, and also around the shaft E^2. Into these bars I insert a number of metallic scrapers, i, which collectively constitute combs, and are intended for scraping off scale and other refuse matter from the axle-beds as they are drawn back between the rolling-dies, thus preventing such matter from being rolled into the surfaces of the beds and impairing their quality. The upper journal-boxes of the roller B bear upward against two adjusting-screws, b b, which allow the roller B to be adjusted at different distances from the lower roller. The screws b b may be adjustable separately; or they may be geared together, so that they will both turn together.

After a journal, n, and collar n^1 are formed on a bar which, in cross-section, is rectangular, this bar is adjusted between the rollers B B′, when the shortest radiuses are opposite, and as the rollers revolve the bar is grasped at its collar n^1, (where the rolling commences,) between the concentric die-surface g^2 and the eccentric die-surface g. The bar is thus tapered and flattened out from the collar n^1 to its extremity. The next operation is to turn the bar one-quarter around and pass it between the two concentric surfaces g^2 g^1, which finish it.

During the operation of rolling the bars, it is necessary to have the rollers B B′ stop for allowing the bars to be adjusted and readjusted between the dies. This is done by the wedge w acting on the bolt d, and drawing back this bolt free from the hub of wheel E^1. When the bolt is thus drawn back, it is arrested by the wedge, and pressed against the latter by the spring s. The rollers B B′ will then remain stationary until the operator depresses the treadle and allows the spring s to thrust the bolt d into the chamber h of hub D′, after which the abutment h', as it comes around, will impinge against the bolt d, and thus engage the wheel E with the roller-shaft C, which shaft transmits motion to the shaft of the lower roller through the medium of the wheels C^1 C, as before described. Thus it will be seen that the operator can, at will, stop or start the die-carrying rollers.

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

1. The combination of the rollers B B′, the two dies R R′, shaped as at g^1 g^1 to give the specified form to an axle which has a collar upon it, and the automatic stop-motion, substantially as herein described.

2. The hub D′, formed on wheel E, and constructed with a chamber, h, and abutment h', in combination with the fixed hub D′, its bolt d, wedge w, springs s and S, arm c', and treadle T, all arranged substantially as and for the purposes set forth.

3. The combination, with the rollers and dies which shape the axles, of oppositely-revolving combs i on rolling-bars H H′, the said combination being such that the shaping and scaling operations are carried on at one and the same movement, substantially as herein described.

WOLCOTT J. PARMELEE.

Witnesses:
CHARLES ZIELLEY,
HIRAM J. GAGE.