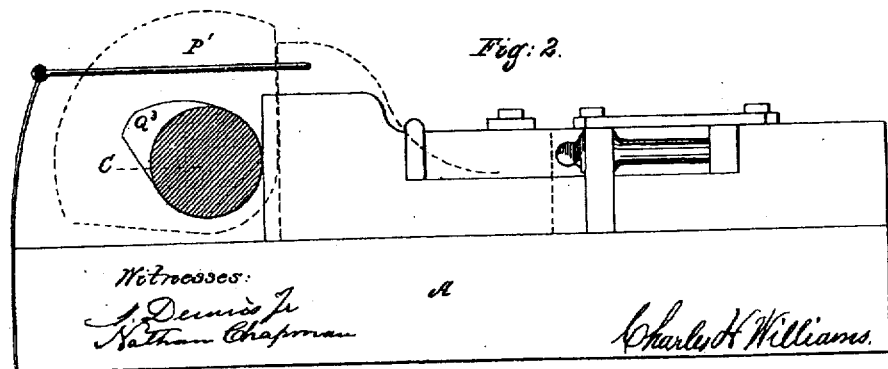
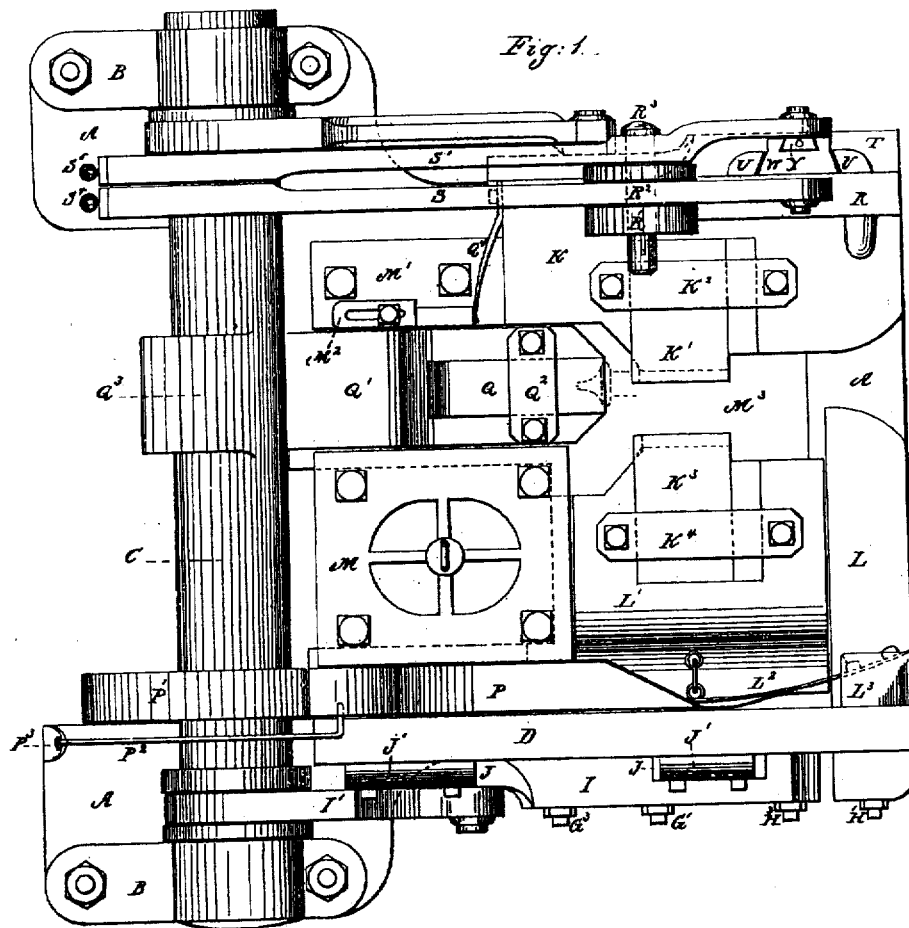


C. H. WILLIAMS.
Making Coupling Pins.

No. 110,179.

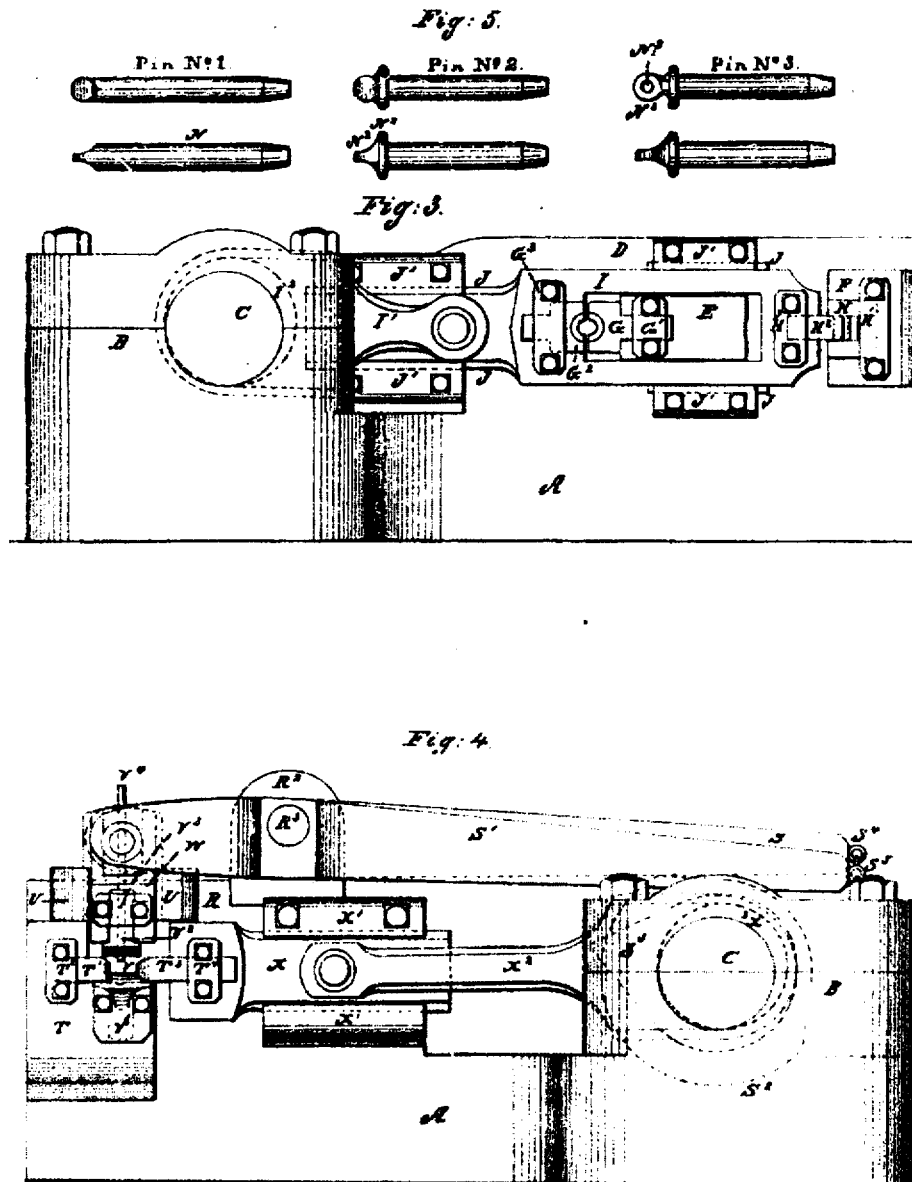
Patented Dec. 13, 1870.



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Witnesses:
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN MACHINES FOR MAKING COUPLING-PINS.

Specification forming part of Letters Patent No. 110,179, dated December 13, 1870.

To all whom it may concern :

Be it known that I, CHARLES H. WILLIAMS, of Cleveland, Cuyahoga county, in the State of Ohio, have invented certain new and useful Improvements in Machines for Making Coupling-Pins for Railroad-Cars; and I hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings forming part of this specification.

The nature of my invention consists in the particular construction and arrangement of the devices described in the following specification and represented in the drawings, for making coupling-pins for railroad-car couplings.

In the accompanying drawings, Figure 1 is a plan or top view of a machine with my improvements for making coupling-pins for railroad-cars and other articles. Fig. 2 is a section to the right of the line *z z*, Fig. 1. Fig. 3 is the left-hand side of the machine. Fig. 4 is the right-hand side. Fig. 5 shows a coupling-pin in its successive stages of manufacture.

In these drawings, A is a cast-iron bed-plate or table, which may be made in the form shown, or in such other form as will answer the purpose, and provided with journal-boxes B B for the shaft C, which may be provided with a pulley or gear to turn it and operate the machine. On the left-hand side of the plate A I make the flange D, and on the left side of the flange the lugs E and F, for seats for the dies G and H, which are fastened by the plates G¹ and H¹, as shown in the drawing, Fig. 3. I is a traversing yoke, with a slot in it, fitted to traverse on the lug E, and provided with flanges J J, arranged to traverse under the cleats J' J', when it is worked by the link I¹, which connects it to the cam P on the shaft C. This yoke I has the die G² fastened to it by the plate G³, which die corresponds with the die G, to taper and form the points of the pins, as shown in Fig. 5 of the drawings. The die H² is fastened in the end of the yoke I by the plate H³, which die H² corresponds with the die H, to swage the handle or top of the pins flat, as shown in Fig. 5. On the top of the plate A I make the lug K, to form a seat for the die K¹, which is fast-

ened by the plate K², secured by bolts. At the lower left-hand corner of the plate A I make the lug L, with a groove under its upper edge for the flange on the traversing block L¹ to traverse in. This block has a flange on the opposite edge, which traverses under the edge of the guide-block M, which is fastened to the plate A by bolts, as shown in Fig. 1. The block L¹ carries the die K², which is fastened to it by the plate K¹, and corresponds with the die K¹, and both are grooved, to clamp the shaft N of the pin and hold it while a portion of it is upset to form the head or collar N¹, the lower half of the collar being formed in the countersink in the dies, as shown by dotted lines in Fig. 1. The traversing slide P, which works against the inside of the flange D, is held in position by a flange traversing under the edge of the block M. This slide P has its forward or lower end inclined, to correspond with an incline on the block L, so that when the slide P is pushed down by the cam P¹ on the shaft C the block L and the die K² are moved toward the die K¹, to clamp and hold the shaft of the pin, as before mentioned. The heading or upsetting die Q is fastened in its stock Q¹ by the plate Q². This stock is fitted to traverse on the plate A, and has a flange on each side, one of which works under the edge of the block M, and the other under the edge of the guide-block M¹, fastened to the plate A, and it is pushed forward, to carry the die Q down to the dies K¹ and K², by the cam Q³ on the shaft C, and is forced back by the spring Q⁴ acting against a lug on the side of the stock Q¹. The slide P is drawn back by the rod P² and spring P³, fastened to the plate A, and the block L¹ is drawn back by the spring L², fastened to the lug L², as shown in the drawing.

When the slide Q¹ is thrown back by the spring Q⁴, it is stopped by the adjusting-slide M², fastened to the block M¹. By adjusting this slide M² the slide and die may be stopped, so as to graduate the quantity of iron put in the collar N¹. After the collar N¹ has been formed on the pin, the dies open and the pin drops down through the opening M² in the plate A, and rolls out at the right side of the press, to be further manipulated.

The devices for swaging the neck or handle

and punching it are shown in plan, Fig. 1, and in elevation, Fig. 4. I make a flange, R, and lugs R¹ and R², to project up from the right-hand side of the lug K, and the lugs R¹ and R² are perforated for the pin R³, which forms the fulcrum of the levers S and S¹, which are raised by the cams S² and S³ on the shaft C, (shown by dotted lines in Fig. 4,) and these levers are drawn down or against the cam by the spiral springs S⁴ and S⁵, fastened to the plate A. On the right-hand side of the machine or frame I make a lug, T, to form seats for the die T¹, which is held in place by the plate T², and also for the die V, which is held in place by the guide-rest V¹. The traverse-slide or die-box W is fitted to traverse between the lugs U U on the side of the flange R, and is worked by the lever S, fitted onto a stud in the back of the slide W. This slide W forms the seat of the die V², which is fastened to it by the plate V³. The dies V and V² are clamping-dies, which press the handle N² of the pin, and keep it flat, while the dies T¹ and T³ swage or compress and narrow the neck of the handle, as shown in No. 3, Fig. 5, and remain closed around the handle, while the punch V⁴ descends and punches the hole in the handle and finishes the pin. The die T³ has its seat in the traversing slide X, and is fastened to it by the plate T⁴. This slide traverses between the cleats X¹ X¹, and is worked by the link X², which connects it to the cam X³ on the shaft C. (Shown by dotted lines in Fig. 4.) The slide W has a recess or groove in its upper end, in which the block Y is fitted to traverse, and is worked by the lever S¹ on a stud in the side of the block. The dies V and V² are perforated for the punch V⁴, which is fastened in the block Y, and worked by it, so as to punch a hole in the handle N² after it is necked, and while it is clamped by the dies V and V².

To make coupling-pins or breech shackles

plus for cannon I take a round bar of iron of the proper size and length, and heat one end, and put it between the dies G and G² to swage the point, and after the dies have closed once upon it and opened, I turn the bar one-fourth the way around and allow the dies to close on it again, which completes the point. I then heat the other end, and put it between the dies H² and H¹ to flatten the end for the handle, and while it is still hot I put the flat end or handle up between the dies K¹ and K³, into the socket in the die Q, which socket is formed to fit the flattened end and preserve its shape, while the dies K¹ and K³ clamp the bar, and the die Q moves down onto the clamping dies and upsets the bar, or that portion of it that is between the ends of the clamping-dies and the die Q, and forms the head or collar N¹ in the countersinks in the dies, as shown by dotted lines in Fig. 1, when the die Q draws back off of the head and handle, and the clamping-dies open, and the pin falls down through the hole M³, and rolls out at the right side of the machine, where it is picked up, and while the head is still hot the handle is thrust in between the dies V and V², which clamp it and hold it flat, while the dies T¹ and T³ swage and narrow the neck of the handle, and the punch V⁴ descends and punches the hole N² in the handle, and finishes the pin.

I claim—

The above-described machine for making coupling-pins for railroad-cars, provided with the dies H¹ and H², for flattening the handle, and the dies Q and K¹ and K³, for forming the head or collar, and the dies V and V², and the dies T¹ and T³, and the punch V⁴, for necking the handle and punching the hole in it, substantially as described.

CHAS. H. WILLIAMS.

Witnesses:

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