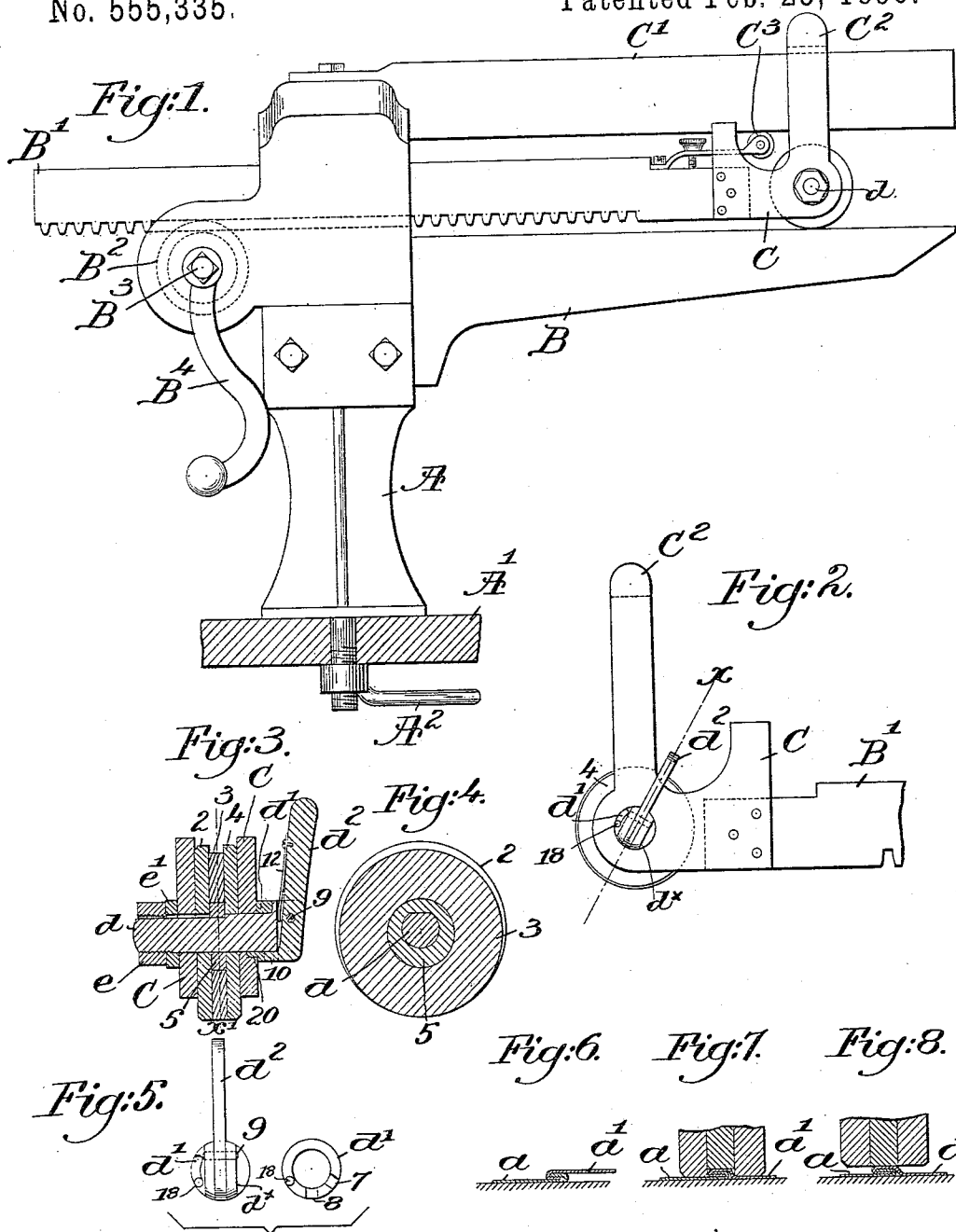


(No Model.)

C. L. RIDGWAY.
GROOVING AND SEAMING MACHINE.

No. 555,335.

Patented Feb. 25, 1896.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES L. RIDGWAY, OF BOSTON, ASSIGNOR OF ONE-HALF TO JOHN B. WILKINSON, OF EVERETT, MASSACHUSETTS.

GROOVING AND SEAMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 555,335, dated February 25, 1896.

Application filed May 28, 1894. Serial No. 512,639. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. RIDGWAY, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Grooving-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

In metal work, such as tin, sheet-iron, &c., it is customary to overturn the edges to be joined, to leave hooks which are engaged, and then the edges so interlocked are acted upon by a roll which grooves or offsets one piece of the sheet metal parallel with and close to the interlocked edges, and thereafter the metallic article is subjected to the action of a second roll or to a hammering operation to further set and flatten the seam.

This invention consists in the novel way of sustaining separable and adjustable plates constituting a grooving-wheel.

Figure 1 shows in side elevation a grooving-machine embodying my invention; Fig. 2, a rear side elevation of part of the carriage and grooving-wheel; Fig. 3, a section in the line x , Fig. 2; Fig. 4, a section in the line x' , Fig. 3; Fig. 5, a detail of one end of the axle and collar; and Figs. 6, 7, and 8 show different steps of the work to be done by this machine.

The framework A adapted to be secured to a bench A' by a nut A², the horn or support B to receive on it the work to be acted upon, the carriage C having a shank B' provided with rack-teeth and adapted to be engaged and moved by the teeth of the gear B² (shown by dotted lines) fast on a shaft B³ having a suitable handle B⁴, the track or guide C' embraced by a loop-like part C² of the head of said carriage, and the roll C³ are and may be all substantially as common in grooving-machines.

Referring to Fig. 6, let a a' represent two pieces of tin or sheet metal having their edges inturned or hooked, as usual, preparatory to forming locked seams in metal for pipes, &c. Fig. 7 shows the same pieces after the piece a' has been grooved or bent down close to the interlocked edges so as to keep the edges

locked, and in Fig. 8 the interlocked edges are flattened or set.

I will now define my invention, it lying chiefly in a novel construction of grooving-wheel.

The grooving-wheel is composed essentially of three disks 2 3 4 and a stud or axle d having an eccentric 5 represented as loose thereon, the eccentric being restrained from rotation by slabbing off a part of the shaft or axle at its top side (see Fig. 4) and making the hole in the eccentric fit it. Two of these disks, 2 and 4, fit the shaft 5 and rotate about it at opposite sides of the eccentric, while the disk 3 rotates about the eccentric as its center. One end of the stud or axle d has an enlarged head d^x (see Figs. 2 and 5) slotted or cut away near one edge to leave a notch, as at the left in Figs. 2 and 5, and its other end is threaded to receive a nut e .

The carriage C has connected to it a collar d' having at its outer side locking-notches 7 8 and a pin 18 to enter the notch in the head d^x , said pin limiting the extent of rotation of the stud or axle. The collar d' has at its inner side a pin 20 which connects the collar to the carriage. The notches 7 and 8 are adapted to be engaged by a locking device, shown as a lever d^2 pivoted at 9 on the head of the stud or axle d , said lever having a toe 10 to enter one or the other of said notches 7 or 8, according to the position desired for the plate 3 with relation to plates 2 and 4, said levers being held in one or the other position by a suitable spring or device 12.

The stud or axle has fast on it at one end a suitable nut e , and in practice a suitable antifriction-washer e' is interposed between said nut and carriage.

The eccentric 5 is embraced by the disk 3, and by turning the eccentric, which may be done by engaging the locking device d^2 and partially rotating the stud or axle d , the said disk 3 may be put more or less eccentric to the disks 2 and 4.

When the toe 10 of the locking device engages the notch 7 of the collar d' the peripheries of the disks may be out of line, as in Fig. 7, as when the seam is to be grooved, and when the other notch 8 is so engaged the pe-

ripheries of the disks will be in line, as in Figs. 3 and 8, as when the seam is to be rolled or pressed down and set, and the change in the disks of the wheel D for the different purposes may be quickly effected.

By slabbing the stud or axle off at its top side to receive the eccentric and prevent its rotation on said stud or axle, it is possible to keep the round or circular part of the stud or axle nearest the horn, so as to sustain the upward pressure or strain of the wheel on said stud or axle.

It will be understood that the chief pressure of the wheel against the stud or axle is an upward one.

The axle *d*, with its plates and attachments, may be readily inserted into any usual grooving-machine for the usual solid wheel and its axle.

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

1. In a metal-grooving machine, a horn, a guide, a carriage thereon having a toothed shank, and actuating mechanism for said shank, combined with a stud or axle, and a separable eccentric slipped thereon, each having a secant portion to secure the same in immovable relation, substantially as described,

and a roll composed of three plates, two of which embrace said stud or axle, while the third plate embraces the said separable eccentric, and means to partially rotate said stud or axle to move one of said disks on or with relation to the others of said disks by means of said eccentric, substantially as described.

2. In a grooving-machine, the combination with the carriage C, and its attached collar having notches, of an axle having at one end a head upon which is pivoted a locking device having a toe to engage said collar, a separable eccentric mounted on said axle and restrained from rotation except with said axle, and three circular plates, two of said plates surrounding said axle, the third or central plate surrounding said eccentric, whereby the said plates may all be removed by simply withdrawing said axle longitudinally from said plates and eccentric, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES L. RIDGWAY.

Witnesses:

GEO. W. GREGORY,
LAURA MANIX.