(No Model.) 2 Sheets—Sheet 1.

H. SCHAAKE.

ATTACHMENT FOR FEED MECHANISM OF SEAMING MACHINES.

No. 566,097. Patented Aug. 18, 1896.

Fig. 1.

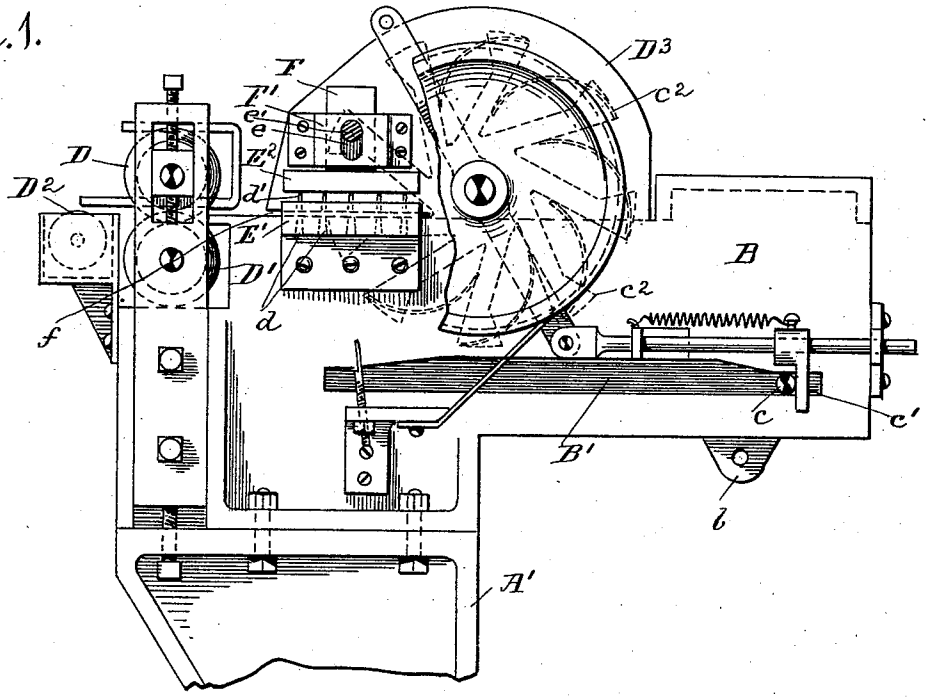
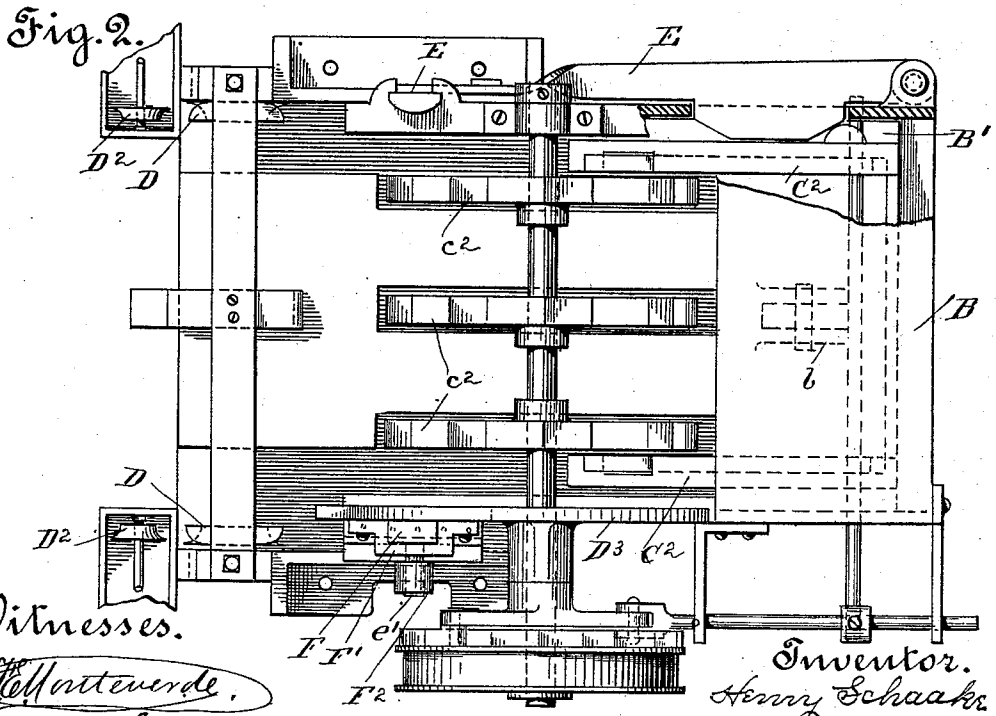


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

H. SCHAAKE.

ATTACHMENT FOR FEED MECHANISM OF SEAMING MACHINES.

No. 566,097. Patented Aug. 18, 1896.

Fig. 3.

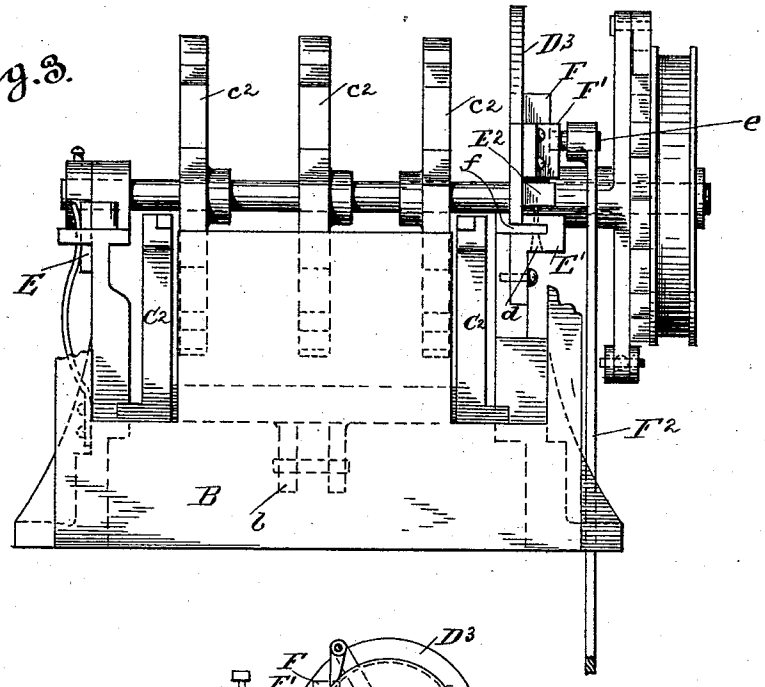
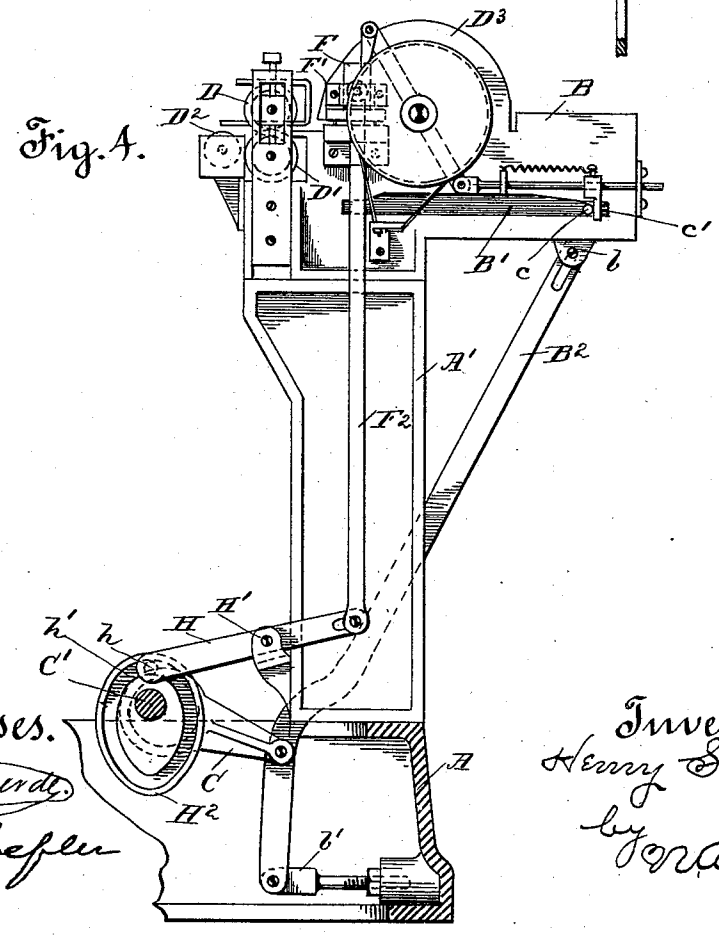


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY SCHAAKE, OF SAN FRANCISCO, CALIFORNIA.

ATTACHMENT FOR FEED MECHANISM OF SEAMING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 566,097, dated August 18, 1896.

Application filed April 24, 1894. Serial No. 508,860. (No model.)

To all whom it may concern:

Be it known that I, HENRY SCHAAKE, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Attachments for Feed Mechanism of Seaming-Machines; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

The present invention has relation to a certain new and useful attachment for soldering, forming, or seaming machines for can-bodies, which consists in the arrangement of parts and details of construction, as will be hereinafter more fully set forth in the drawings, and described and pointed out in the specification.

The object of my invention is to combine with a soldering, seaming, or forming machine for can-bodies a perforating device for the sheet metal, whereby the metal as fed to the forming mechanism of the seamer, or after the sheet of metal has been formed over the forming horn or mandrel of the seaming-machine, shall have one side or edge thereof stamped, so as to provide a series of perforations or apertures through which the solder, when applied to the can-body, will flow when applied to the lap of the seam, and thus form a secure union between the overlapping edges of the body, whereby a tight, strong, and firm seam is produced.

Referring to the drawings forming a part of this application, Figure 1 is a side elevation of the feed mechanism for supplying the can-body blanks to the seaming-machine, showing the perforator connected thereto, the delivery-wheel of the feed device being partly broken away. Fig. 2 is a top plan of the feed mechanism. Fig. 3 is an end elevation of the device illustrated by Fig. 2; and Fig. 4 is a side elevation of the feed mechanism, fully showing the devices for operating said mechanism and the perforating device.

In the present instance I have shown my attachment in connection with the feed mechanism fully set forth in Letters Patent of the United States No. 489,484, granted to C. B. Kendall and Henry Schaake on the 10th day of January, 1893, for an improved can-seaming machine, to which Letters Patent reference is hereto made.

I do not wish to be understood as confining myself to the use of a perforating device in connection with this form of a feed mechanism, for I am well aware that it may be made use of in connection with any form of feed mechanism or seaming-machine, it only being required that the perforator shall stamp or perforate the metal before the application of solder thereto.

The letter A is used to indicate the frame of an ordinary can-seaming machine, to which is bolted or otherwise secured the support or standard A′, to which support or standard is attached the outer casing or frame B of the feed mechanism. (See Fig. 4.) This casing is immovable and within the same is located the sliding frame or box B′. This box or frame is reciprocated within the outer frame or casing through the medium of the rod B^2, which is secured at its upper end to downwardly-extending projection *b* of the sliding frame, while the lower end is pivotally secured to the bracket *b*′, and said rod is operated through suitable intermediate connections by means of the eccentric C, located upon the driving-shaft C′. As this eccentric is rotated, by means of the driving-shaft C′, the rod B^2 is given a forward and backward throw, which imparts a reciprocating movement to the inner box or frame B′.

To the sides of the sliding frame the nipper-arms C^2 are pivoted, said arms being raised and lowered as the rolls *c*, which are connected thereto in any suitable manner, work within the elongated slots or openings *c*′ cut within the sides of the outer casing.

The delivery-wheel of the feed mechanism is composed of three disks provided with radial arms, between which the body-blanks are held by springs or clips c^2. As the sliding frame is moved or carried forward, the forward end portion of the nipper-arms grasp the ends of the sheet or body-blank projecting beyond the sides of the delivery-wheel and removes the said sheet or body-blank from between the arms of the delivery-wheel, and as the sliding frame continues its forward movement the body-blank is carried forward by the nipper-arms and placed between the

crimping-rolls D D′, located in front of the flux-applying wheels D^2, and is finally deposited within the body-forming clamp of the seaming-machine. (Not shown.)

To one side of the delivery-wheel frame is attached the gage-plate D^3, against which the edge of the can-body blank, held within the delivery-wheel, bears by means of the spring-pressure bar E. To one side of the gage-plate is located the perforating device, which, in the present instance, is shown as having its lower section or bed-plate E′ secured to the side of the outer frame or casing B. This bed-plate is provided with a series of openings *d*, through which the small pieces of metal punched from the body-blank make their escape.

The head-block E^2 is provided with a series of punches *d*′, which are adapted to fit within the countersunk holes or openings *d* of the bed-plate. The stem F of the head-block works within the strap or plate F′, which strap or plate is bolted to the gage-plate and serves to maintain the head-block in true line with the bed-plate in order that the punches carried by the head-block will register with the countersunk holes of the bed-plate when lowered.

Within the face of the guide plate or strap F′ there is cut an elongated opening *e*, through which a pin *e*′ extends, which pin connects the stem of the head-block E^2 with the lift-rod F^2 at its upper end. The lower end of this lift-rod is pivoted to the outer end of the lever H, which lever is fulcrumed to the standard A′ by means of the bracket H′. The inner end of this lever is provided with a laterally-projecting pin or stud *h*, which works within the eccentric groove *h*′, cut within the cam H^2, mounted upon the shaft C′.

As the sheet of metal is placed in line with the crimping-rolls by the rotation of the delivery-wheel, the tension of the spring-plate or pressure-bar E moves the plate to one side, causing the same to move through the slot *f*, cut within the gage-plate, until the side or edge of the can-body blank rests upon the bed-plate of the perforator. The rotation of the shaft C′ then, through its connecting mechanism, causes the head-block of the perforator to descend until the punches carried thereby perforate the edge of the sheet-metal blank. As the punches are carried upward the sliding frame carrying the nipper-arms is moved forward, which causes the perforated body-blank to move beneath the forming horn or mandrel of the seaming-machine in the ordinary manner.

So far as I am aware I am the first ever to combine with a soldering or seaming machine, or the feed mechanism thereof, a device for perforating the sheet-metal blank automatically. Consequently I wish to be understood as claiming this feature broadly.

Having thus described my invention, what I claim as new, and desire to secure protection in by Letters Patent of the United States, is—

1. The combination with the feed mechanism for a seaming-machine, of devices for receiving the can-body blank and moving the same toward the seaming-machine, a device for perforating the lap edge of the can-body blank as moved toward the seaming-machine, a spring-gaging device adapted to bear on one end of the can-body blank to push the opposite end thereof in line with the perforator as moved toward the seaming-machine, and of mechanism for operating the perforator.

2. The combination with the frame, the feeding-wheel thereon, and the crimping-rolls at the front end of the same, of a reciprocating punch mounted on the side of the frame between the feeding-wheel and the crimping-rolls, a spring device on the opposite side of the frame to force the can-blanks to the punch, and mechanism for vertically reciprocating the punch.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY SCHAAKE.

Witnesses:
N. A. ACKER,
LEE D. CRAIG.