

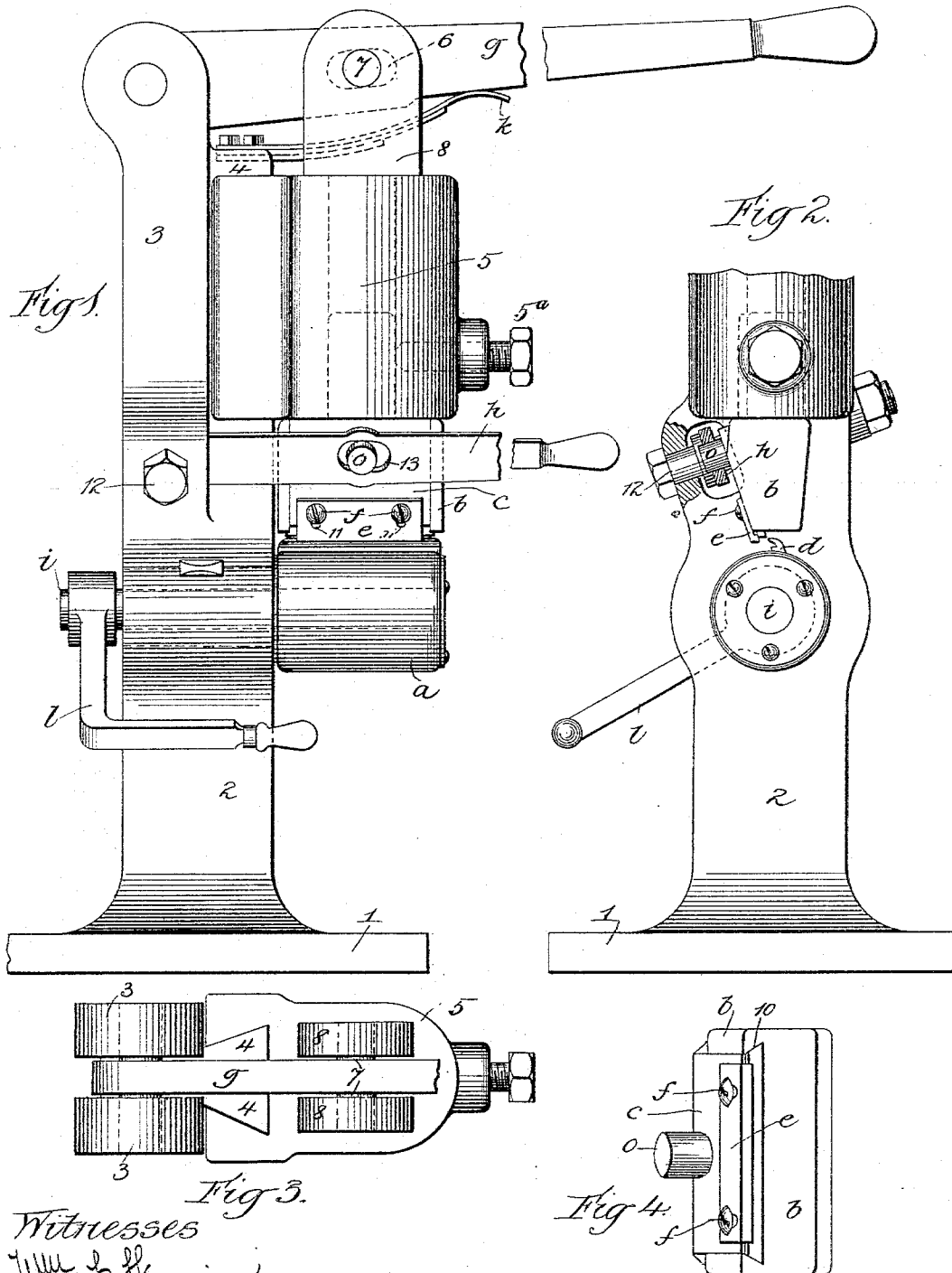
(No Model.)

2 Sheets—Sheet 1.

G. F. VOGEL.
SEAMING MACHINE.

No. 531,814.

Patented Jan. 1, 1895.



Witnesses
Will. L. Huming
Wm. M. Rheum.

Inventor
Gustav Friedrich Vogel
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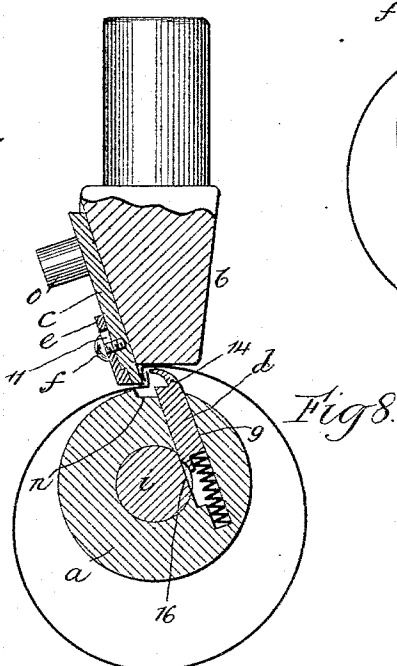
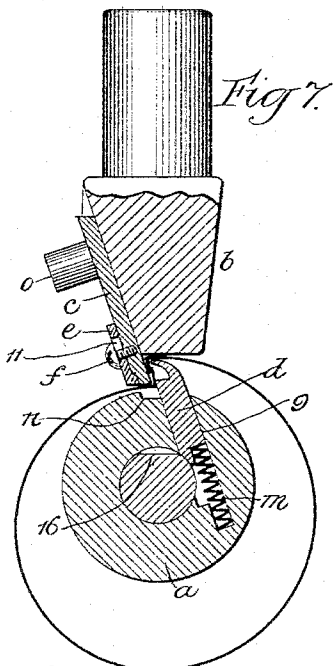
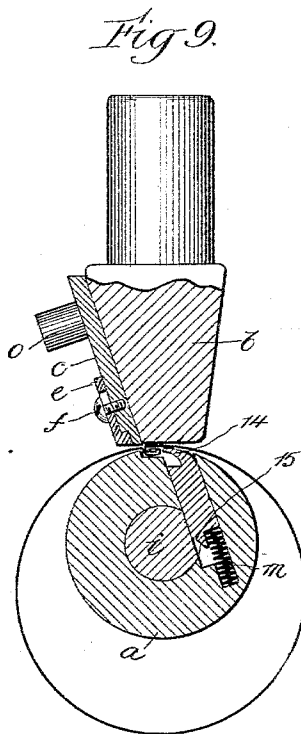
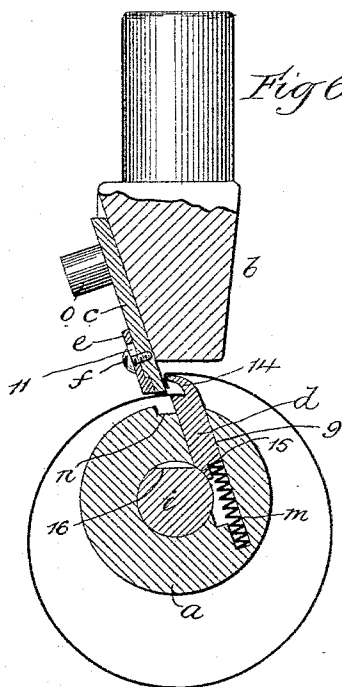
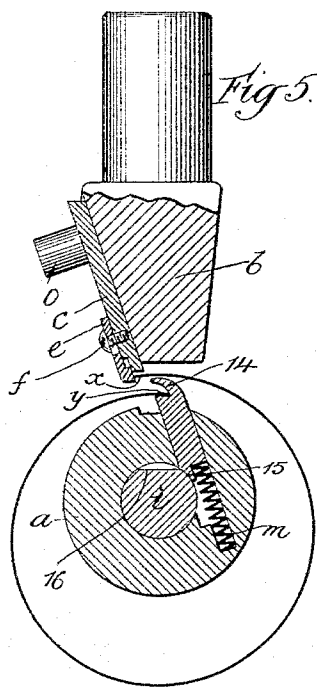
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2 Sheets—Sheet 2.

G. F. VOGEL.
SEAMING MACHINE.

No. 531,814.

Patented Jan. 1, 1895.



Witnesses
Wm. S. Fleming
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Inventor
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UNITED STATES PATENT OFFICE.

GUSTAV FRIEDRICH VOGEL, OF CELLE, GERMANY, ASSIGNOR TO FREDERICK P. DE JONGE, OF AMSTERDAM, NETHERLANDS.

SEAMING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 531,814, dated January 1, 1895.

Application filed February 28, 1893. Renewed November 24, 1894. Serial No. 529,823. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV FRIEDRICH VOGEL, a subject of the King of Saxony and of the German Emperor, residing in the town of Celle, near Aue, in the Kingdom of Saxony, German Empire, have invented certain new and useful Improvements in Seaming-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a novel construction in seaming machines, adapted for use more particularly in rigidly seaming together the ends of a bent tin plate to form a can-body, the object being to provide a machine of this kind that is simple and durable in construction and efficient in operation.

The invention consists in the features of construction and combinations of parts hereinafter fully described and specifically claimed.

In the accompanying drawings illustrating my invention,—Figure 1 is a side elevation of a seaming machine constructed in accordance with my invention. Fig. 2 is a front end elevation of the lower portion of the machine, partly broken away. Fig. 3 is a top plan view of the upper end portion of the machine. Fig. 4 is a bottom plan view of the die-head on an enlarged scale. Figs. 5, 6, 7, 8 and 9 are detail views partly in side elevation and in vertical section, of the die-head and plate holder, illustrating such parts in the different positions they will assume during the seaming operation.

Referring now to said drawings, 1 indicates the base of the frame of the machine having the standard 2 which is bifurcated at its upper end 3 as shown. The plate holder *a* consists of a cylindrical body secured at one end to the standard 2 of the machine (Figs. 1 and 2). Mounted upon the standard 2 and in front of the bifurcated portion 3 is an upright dovetailed guide 4 that enters a dovetailed groove in the die-head 5 and serves to guide the same. The die-head 5 can be moved up and down by a lever *g* pivoted at one end between the bifurcated portion 3 of the standard and having a slot 6 therein that receives a pin 7 carried by lugs 8 on the upper end of the die-head 5. A spring *k* is secured at one end to the standard and bears against the lower face

of the lever *g* and serves to lift the same and also the die-head 5, while pressure on the outer end of the lever *g* serves to depress the die-head. The die *b* is secured to the lower end of the die-head 5 in a familiar manner as by a set screw 5^a. The sides of the die are inclined or tapered as shown.

The plate holder *a* is provided with an inclined recess 9 to receive the seaming die *d*, and against one of the inclined sides of the die *b* is a dovetail groove 10 to receive the seaming die-plate *c* (Fig. 4). The die *d* and die-plate *c* stand with their operating edges opposite each other and their movements are such that they remain parallel with each other. A guide plate *e* is movably secured against the die-plate *c* by two screws *f* that pass through slots 11 in the guide plate *e*.

The die-plate *c* is operated by a lever *h* that is pivoted at one end upon a pivot 12 inclined at right angles to the inclination of the die-plate *c* and provided with a slot 13 that receives the pin *o* on the die-plate *c*. The cylindrically bent tin plate for a can body is placed with its edge *x* against the projecting edge of guide plate *e*, and the other edge *y* of the tin plate is placed in and against the nose projection 14 of die *d* (Fig. 5). Now we move the die-plate *c* downward by pressing upon lever *h*, whereby the edge *x* of the tin plate is bent over the nose projection 14 of die *d* to form a rectangular ledge, as shown in Fig. 6. Now by moving the die-plate *c* still farther downward, the edge *y* of the tin plate is bent to form an up-bent ledge. At the same time the lever *g* is operated to move the die *b* downward, so that the two ledges remain in the relative grasping position Fig. 7. Until now the nose projection 14 of die *d* resisted the pressure of die-plate *c*, because the die *d* rests with its lower beveled or notched edge 15 upon the spindle *i*. This spindle *i* is passed concentrically through cylinder *a* and by means of a crank *l* it can be rotated (Fig. 2). The spindle *i* is flattened on its upper side as at 16, and when rotated until the flattened surface comes parallel with die *d*, said die *d* will lose its support. Now as the die-head *b* is pushed farther downward, it pushes the die *d* into the recess 9 of the cylinder *a* compressing thereby the spiral springs *m* inserted in

the said recess 9, and while the die *b* changes its position from that shown by Fig. 8 to that shown by Fig. 9 the ledges of the tin plate are bent one over the other and it presses the thus formed seam into the seaming groove *n*, made in the die *b* or plate holder *a*, but conveniently in the upper surface of plate holder *a*. The upper end of the die *d* thus passes inwardly of the periphery of the plate holder *a*. Owing to the angular directions of the movements of the die plate and die, the end of die plate *c* will move from right to left in Figs. 5 to 9, and the seam formed thereby will be compressed between the die *b* and the cylinder or plate holder. After the die *b* has been lifted and the can body withdrawn, the springs *m* will lift the die *d* to its first position when the spindle *i* can be turned also to its former position as shown by Fig. 5.

It will be understood, of course, that although I have described the different movements of the various parts as being accomplished by hand power, yet suitable mechanism can be made for automatically operating the different parts.

I claim as my invention—

1. In a seaming machine the combination substantially as hereinbefore set forth with the frame carrying a cylindrical plate holder *a* provided with a die *d* movable therein tangentially, of a die *b* mounted also upon the frame of the machine and movable toward and away from the plate holder *a* radially with relation thereto, a die plate *c* carried by said die *b* and movable thereon at an angle to the path of the said die *b*, and devices for moving said die *b* and die plate *c* independently of each other, substantially as described.

2. In a seaming machine the combination substantially as hereinbefore set forth with the frame carrying a cylindrical plate holder *a* provided with a die *d* movable therein tangentially, of a die *b* mounted also upon the frame of the machine and movable toward and away from the plate holder *a* radially with relation thereto, a die plate *c* carried by said die *b* and movable thereon at an angle to the path of the said die *b*, a guide plate *e* upon said die plate *c*, and devices for mov-

ing said die *b* and die plate *c*, substantially as described.

3. In a seaming machine the combination substantially as hereinbefore set forth with the frame of the cylindrical plate holder *a* rigidly secured thereto, a die *d* located and movable within a tangential recess in the said plate holder *a* and having a lower notched edge 15, a spring located within said recess to hold said die at the outer limit of its movement, a spindle *i* mounted upon the frame of the machine and passing through an opening in the plate holder *a* and engaging the notched end of said die *d*, said spindle *i* being provided with a flattened side 16 to permit the passage of said die *d*, and a die *b* and a die plate *c* mounted upon the frame of the machine and provided with devices for operating the same, substantially as described.

4. In a seaming machine the combination substantially as hereinbefore set forth with the frame of a plate holder *a* having a movable die *d* normally projecting beyond the periphery of said plate holder and provided with a nose or projection 14 at its upper edge, a die *b* provided with a die plate *c*, a guide plate *e* movably secured to said die plate *c*, and normally projecting below the lower edge of the same, and devices for operating said die *b* and die plate *c*, substantially as described.

5. In a seaming machine the combination substantially as hereinbefore set forth with the frame having a plate holder *a* rigidly secured thereto and provided with a die *d* movable with relation to said plate holder, devices for holding said die rigid with the plate holder, of a die *b* mounted upon the frame of the machine and carrying a movable die plate *c*, a lever *g* for moving said die *b* toward the plate holder, a spring for moving it in the opposite direction, and a lever *g* pivoted to the frame of the machine and connected with said die plate *c* for operating the same.

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

GUSTAV FRIEDRICH VOGEL.

Witnesses:

WALDEMAR ARNO LORENZ,
CARL ROBERT KANNegiesser.