

(No Model.)

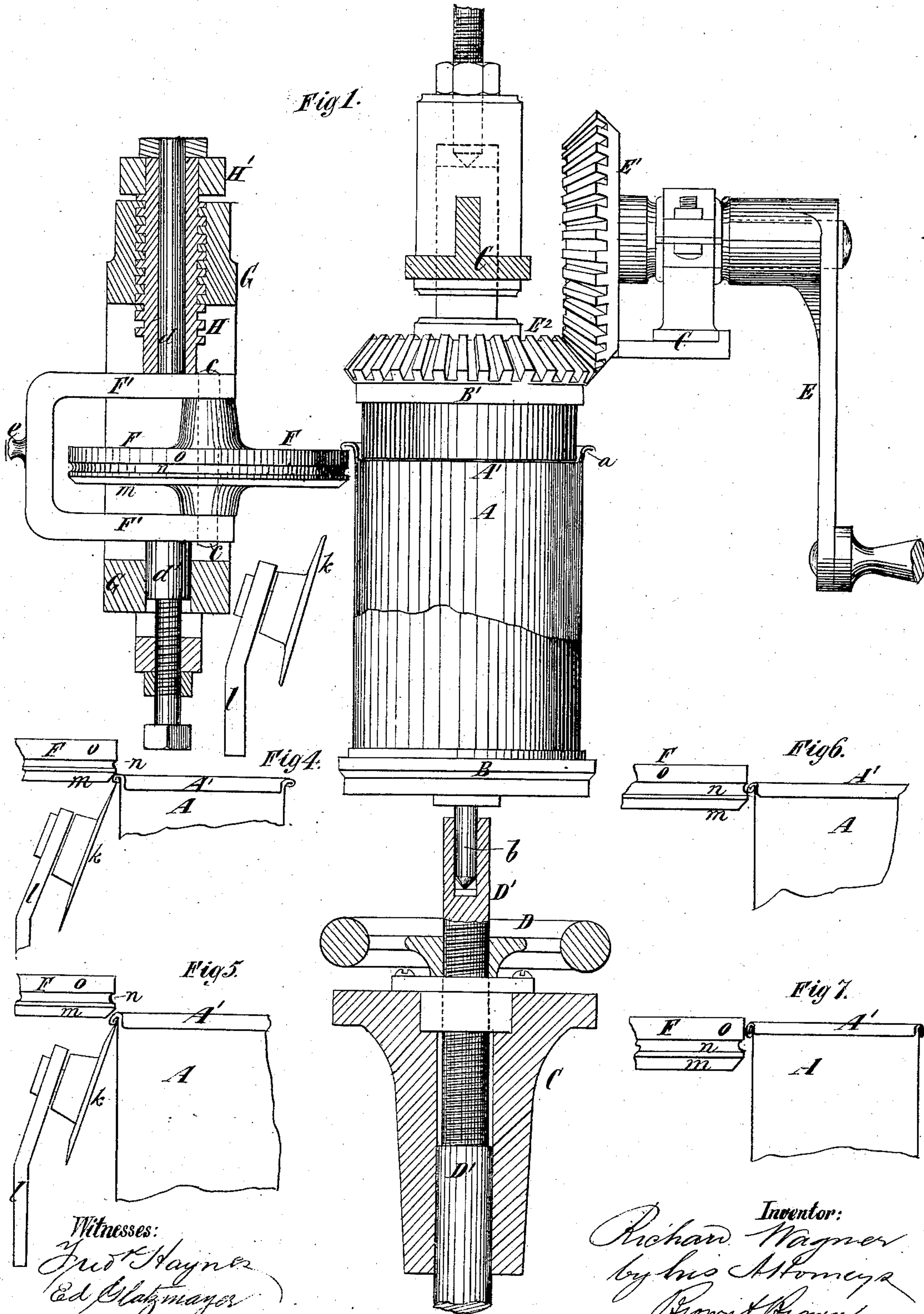
2 Sheets—Sheet 1.

R. WAGNER.

Machine for Closing the Seams of Cans.

No. 241,457.

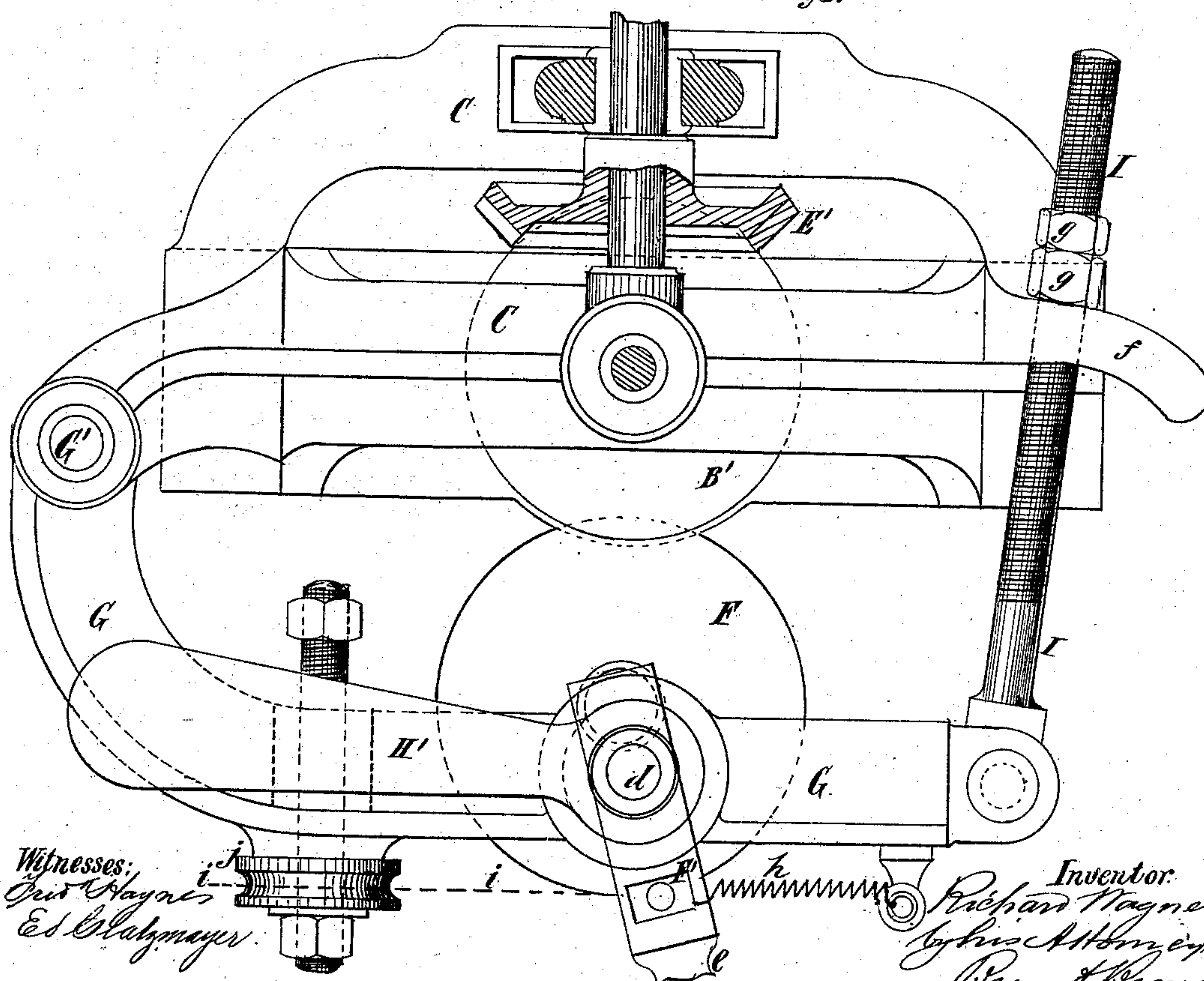
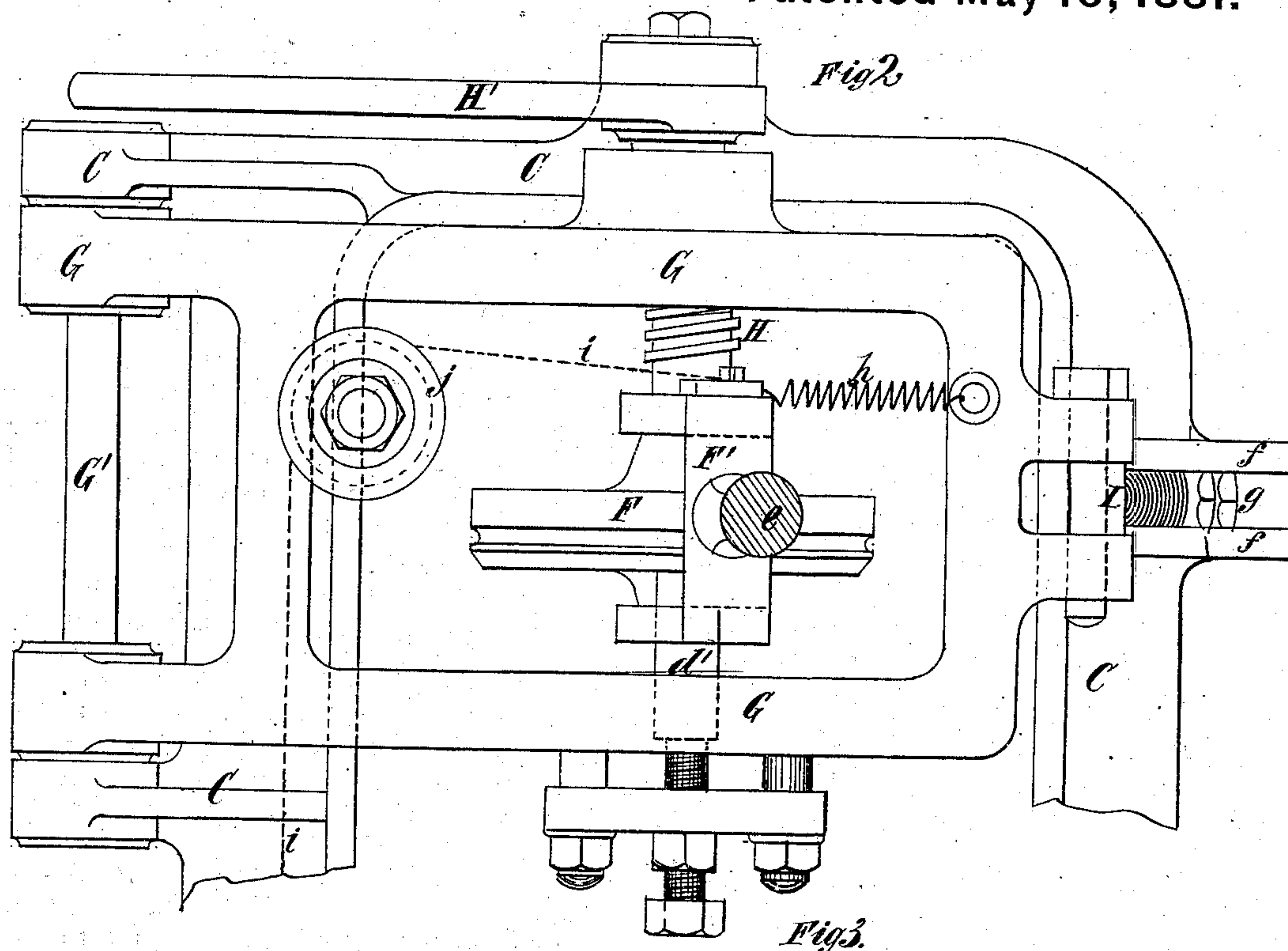
Patented May 10, 1881.



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2 Sheets—Sheet 2.

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Machine for Closing the Seams of Cans.
No. 241,457.
Patented May 10, 1881.



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UNITED STATES PATENT OFFICE.

RICHARD WAGNER, OF CHEMNITZ, GERMANY.

MACHINE FOR CLOSING THE SEAMS OF CANS.

SPECIFICATION forming part of Letters Patent No. 241,457, dated May 10, 1881.

Application filed January 10, 1881. (No model.) Patented in England March 9, 1880, in Germany June 26, 1879, in France January 28, 1880, in Italy March 31, 1880, and in Austria April 17, 1880.

To all whom it may concern:

Be it known that I, RICHARD WAGNER, of Chemnitz, in the Empire of Germany, have invented certain new and useful Improvements in Machines for Closing the Seams of Cans, of which the following is a specification.

The invention consists in the combination, with holding and clamping disks adapted to hold a can between them and impart a rotary motion to it, of a seaming wheel or roller and mechanism of a novel character, hereinafter particularly described, for holding and adjusting said wheel or roller, whereby provision is afforded for conveniently adjusting the wheel or roller to suit cans of different diameters, and for moving it to and from cans of uniform diameter to operate upon them. I also employ, in connection with the above-named rotary clamping devices or disks and adjustable wheel or roller, a vertically-adjustable knife-edged disk adapted to be adjusted upward and inward by suitable mechanism to turn the edge of the cover of the can upward while the seam is pressed downward and inward by an inclined surface upon the horizontal adjustable wheel or roller. The head or cover of the can is bent so as to form an inverted-U-shaped flange or rim which receives the outwardly-flared end of the body, and the seaming or closing is done by successive applications of the wheel or roller acting in conjunction with the knife-edged disk.

It also consists in certain novel features of construction and combinations of parts, to be hereinafter described.

The accompanying drawings represent only such parts of my machine as are necessary to explain its construction and operation.

Figure 1 represents a partially sectional end view of my machine, showing the first operation of closing the can. Fig. 2 represents a side elevation thereof. Fig. 3 represents a plan thereof. Figs. 4 and 5 are detail views, illustrating the position of the wheel or roller and knife-edged disk relatively to the seam at successive operations in the closing of the can; and Figs. 6 and 7 are similar views in which the knife-edged disk is not shown.

Similar letters of reference designate corresponding parts in all the figures.

A designates the body of the can, and A' the head or cover thereof, which, before being placed in this machine, is furnished with an inverted-U-shaped rim, which receives the outwardly-flared lip *a* of the body of the can, as shown clearly in Fig. 1.

B B' designate disks which are brought to bear, the one, B, upon the bottom, and the other, B', upon the top of the can, to clamp the latter securely between them. The upper disk, B', is here shown suspended from the frame C of the machine, while the lower one, B, is shown as adapted to be moved vertically by means of a hand-wheel, D, actuating a screw-threaded spindle, D', which constitutes a step for the spindle *b* of the said disk, so that a can may be quickly secured and released. Rotary motion may be imparted to the disks B B', and through them to the can, by any suitable mechanism. In the present instance this is effected by a crank, E, which transmits its motion through bevel-gears E' E².

F designates a seaming wheel or roller adapted to rotate freely upon a vertical spindle, *c*. In the present example of my invention the said wheel or roller is supported in a holder or frame, F', which is provided with journals *d d'*, supported in suitable bearings in a frame, G, hinged by a pintle or pin, G', to the main frame C of the machine. As here represented, the upward-projecting journal *d* of the frame F is supported in a hollow screw, H, having a thread of quick pitch, and adapted to be turned by a handle, H', while the lower journal, *d'*, is supported by a set-screw, *d*², which may be raised or lowered to raise or lower the wheel or roller F relatively to the seam of the can, the screw H being turned upward to permit the raising of said wheel or roller and frame, or turned downward to hold said frame against vertical movement when said frame and wheel or roller are lowered.

It will be observed that the journals *d d'*, upon which the holder or frame F is supported, are eccentric to the spindle *c* of the wheel or roller F, and hence that a partial turning of said frame or holder, which may be effected through a handle or arm, *e*, will cause the wheel or roller to approach or recede from the can which is to be operated upon.

I designates a screw extending from the free end of the frame G, and projecting between lugs *f* upon the main frame C. The said screw is furnished with nuts *g g*, by which the frame
 5 may be drawn inward, so as to bring the wheel or roller F against the seam of the can. This construction provides for adjusting the wheel or roller into position to conveniently act upon
 10 cans of different sizes, while the eccentricity of the journals of the wheel or roller holder, or frame to the spindle of the wheel or roller, provides for a quick adjustment of the wheel or roller to act upon the cans of a uniform size.

To the handle or cam *e* is connected a spring, *h*, for swinging or turning the wheel or roller
 15 holder or frame F' to remove the wheel or roller from the seam of a can; and *i* designates a chain or connection connected to the arm or handle *e* and passing over a pulley, *j*, downward to a treadle or lever. (Not here shown.)
 20 By actuating the treadle or lever the wheel or roller is brought to bear upon the seam.

Any convenient motive power may be employed for operating the machine to rotate the
 25 can, or it may be operated by hand.

For acting in conjunction with the wheel or disk F, I employ a knife-edged disk, *k*, which is pivoted to any suitable support, *l*, which is provided with any means (not here shown) for
 30 raising and lowering the disk, and at the same time move it slightly toward or away from the side of the can-body. The operation of this disk will be clearly described hereinafter.

In the operation of my machine the wheel or
 35 roller F is first brought into the position shown in Fig. 1, and being pressed against the rotating can is rotated by friction and turns the downwardly-projecting edge of the rim of the can-cover A' inward under the flaring lip *a* of
 40 the can-body. The wheel or roller is next adjusted to the position shown in Fig. 4, and the knife-edged disk *k* having been adjusted so as to bring its edge under the seam, the wheel or roller is pressed inward, and by the inclined
 45 surface *m* of the said wheel or roller the seam is turned down to the position shown in Fig. 5, at an angle of forty-five degrees (more or less) to the head of the can. The disk *k* being lowered out of the way, the wheel or roller is ad-
 50 justed so as to bring a groove, *n*, in its periphery opposite the seam, as shown in Fig. 6,

and the lower edge of the seam is turned inward. The wheel or roller being next adjusted so as to bring a cylindrical portion of its periphery *o* against the seam, as shown in Fig. 7,
 55 the seam is closed down tightly against and parallel with the side of the can-body, and is completed, thus making a tight and smooth joint or seam without solder. To make the joint perfectly air-tight I may interpose a thin film
 60 of chemically-pure vegetable paper throughout the seam before closing.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the holding and clamp-
 65 ing disks B B', the wheel or roller F, the frame or holder F', provided with journals *d d'*, eccentric to the axis of said wheel or roller, the hinged frame G, containing bearings for said journals, the screw I, and lugs *f f*, forming a
 70 bearing for said screw I, whereby provision is afforded for adjusting the wheel or roller to suit cans of different diameters, and for moving it to and from the can to operate upon it, substantially as specified. 75

2. The combination of the holding and clamp-
 80 ing disks B B', the wheel or roller F, the frame or holder F', provided with journals *d d'*, the hollow screw H, forming a bearing for the journal *d*, and the set-screw *d*², whereby provision
 85 is afforded for adjusting the wheel or roller vertically, substantially as specified.

3. The combination of the can holding and clamping disks B B', the wheel or roller F at the side of said disks, adapted to be adjusted
 90 vertically and moved horizontally toward and from the disks, and the knife-edged disk *k* arranged to be adjusted by mechanism vertically and toward and from a can, substantially as and for the purpose specified. 95

4. The combination of the holding and clamp-
 95 ing disks B B', the wheel or roller F, the frame F', carrying the same, and supported upon journals eccentric to the center of the wheel or roller, the spring *h*, connection *i*, and pulley *j*, all arranged substantially as and for the purpose specified.

RICHARD WAGNER.

Witnesses:

AUGUSTUS WEERTHE,
 GERHARD KOENIG.