

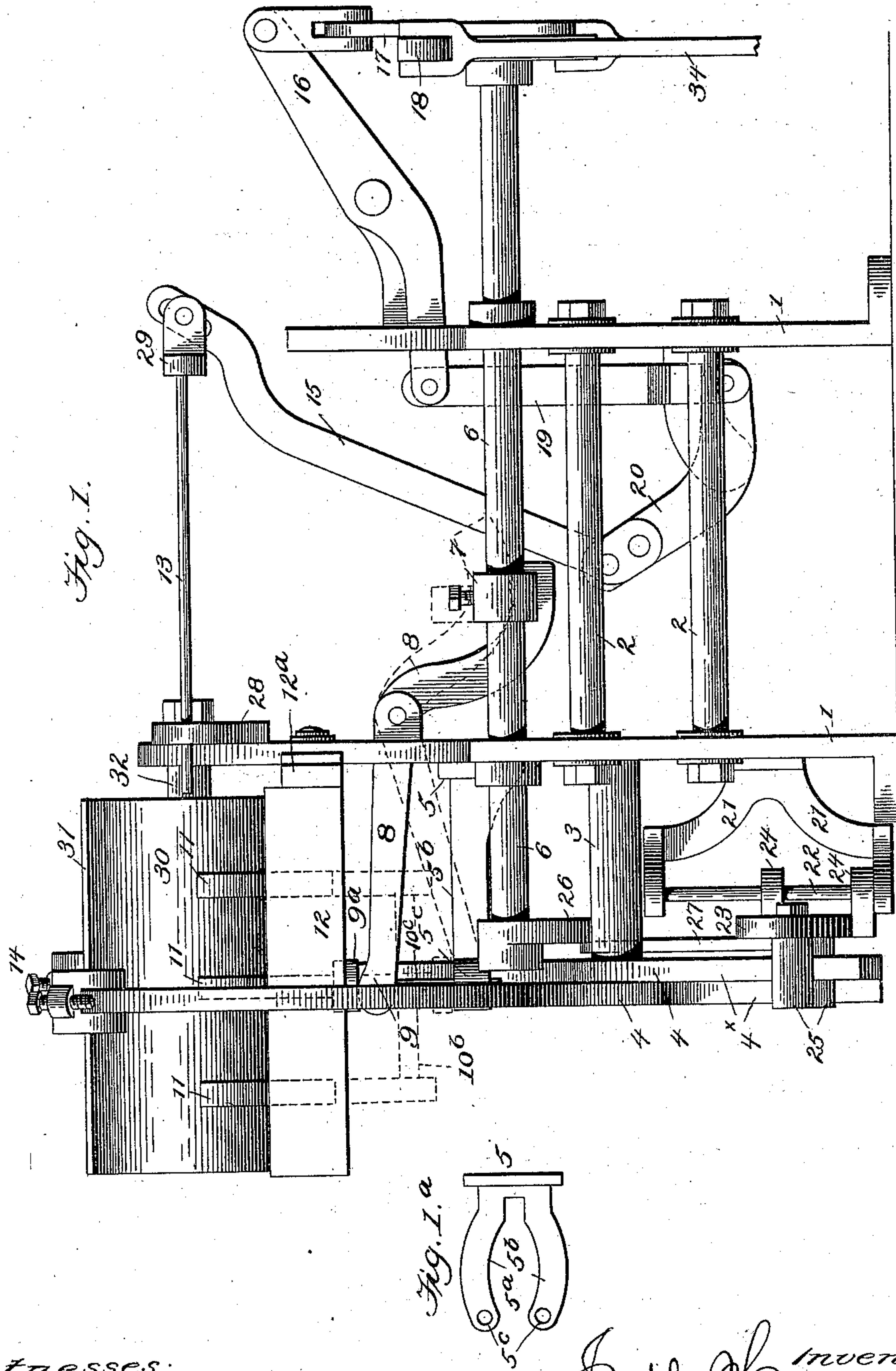
(No Model.)

3 Sheets—Sheet 1.

J. HAAS.  
CAN BODY FORMING MACHINE.

No. 547,348.

Patented Oct. 1, 1895.



Witnesses:  
Edwin L. Bradford  
Saml D. Jacobson

Inventor:  
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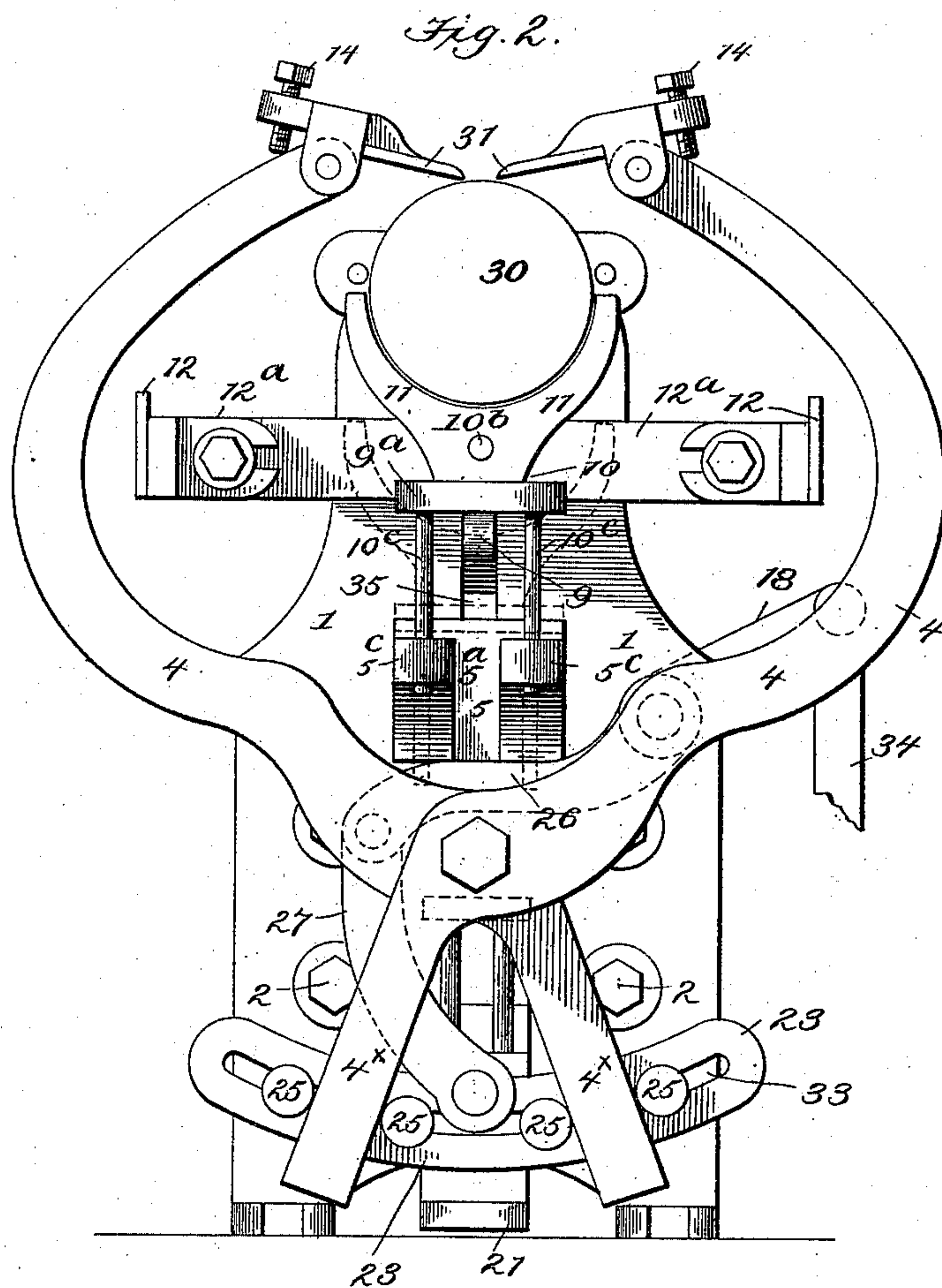
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3 Sheets—Sheet 2.

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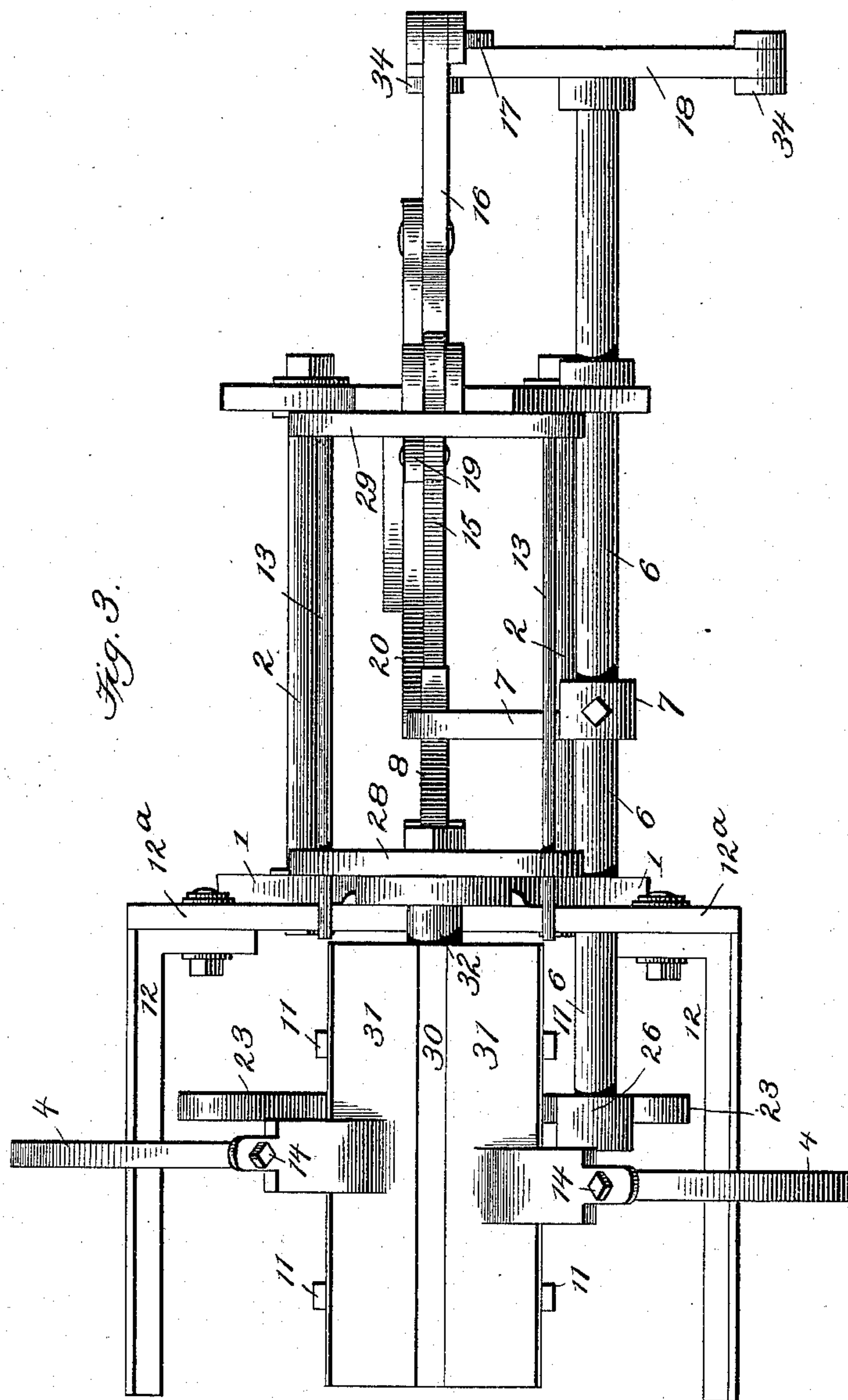
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# UNITED STATES PATENT OFFICE.

JOSEPH HAAS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SIMON S. MYERS, OF SAME PLACE.

## CAN-BODY-FORMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 547,348, dated October 1, 1895.

Application filed June 14, 1895. Serial No. 552,759. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH HAAS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Can-Body-Forming Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to can-body-forming machines, and has for its object the provision of novel and effective means for bending the can-bodies of sheet metal, seaming the same, and discharging them when formed.

My invention consists of devices for bending metal and in the construction and arrangement of several parts of a machine for the purpose set forth and in combinations thereof, all as hereinafter fully described, illustrated in the drawings, and specifically pointed out in the claims.

Referring to the accompanying drawings, wherein like numerals of reference point out similar parts on each figure, Figure 1 is a side elevation of a machine constructed according to my invention. Fig. 1<sup>a</sup> is a detail top plan view of a portion of the machine. Fig. 2 is an end view thereof. Fig. 3 is a plan view.

In the drawings the numeral 1 designates the frame, consisting of opposite end supports or uprights, held in position by tie-rods 2, said uprights having overturned feet or suitable means for fastening to a base. From the front upright extends horizontally a supporting-rod 3, having pivotally attached to the outer end thereof a pair of clamping-arms 4, with lower extensions 4<sup>x</sup>, for a purpose presently described. Above the rod 3 is a bracket 5, secured at its rear end to the front upright 1, its opposite end having two forwardly-extending arms 5<sup>b</sup>, having vertically-disposed apertured guides 5<sup>c</sup> at their free ends. The arms 5<sup>b</sup> are integral with the bracket 5, which has a bifurcation 5<sup>a</sup> intermediate of said arms.

Passing through both uprights 1, adjacent to one side thereof, is a rock-shaft 6, to which is secured an arm 7, extending inwardly, adjusted upon said shaft to engage the rear end of a lifting-arm 8, the rear end of the latter

arm being downwardly curved and the front portion thereof projecting through slot 1<sup>a</sup> in the front upright 1 above the bracket 5. The outer end 9 of the arm 8 is rounded to reduce friction when actuating a bottom plate 9<sup>a</sup>, secured to the lower end of the bending-frame 10, which consists of a series of yokes 11, disposed in longitudinal alignment and having invertedly-curved seats, the said yokes being held in proper position by a rod or bar 10<sup>b</sup>, extending through the lower portion of the central yoke and from thence through the yokes at either side thereof to hold the front and rear yokes at uniform distance from said central one and to serve as a support for maintaining them permanently at a given distance from each other.

Depending from the plate 9<sup>a</sup> are vertical guide-rods 10<sup>c</sup>, which pass through apertures in ends of the arms 5<sup>b</sup>. By this means the bending-frame is raised and lowered when motion is imparted thereto through actuation of rock-shaft 6.

On opposite sides of the bending-frame are flanged bars 12, which extend outwardly at right angles from a transverse bar 12<sup>a</sup>, secured at the upper end of the front frame-support 1. Said flanged bars are located on a level with the upper parts of the yokes 11, when they are in the position shown in dotted lines, Fig. 1, and serve as a support for holding the sheets of metal from which the cans are formed, which, as will be understood, can be slid from the front of the device inwardly, resting upon the upper face of the grooved bars 12. A head-plate 28 is secured to the upper rear surface of the front upright piece 1, having apertures at opposite ends thereof, through which extend movable rods 13, which rods, after the can-bodies are turned on the former, are projected forwardly to remove said bodies in succession as completed. The former is illustrated in the drawings as circular in cross-section; but I do not desire to limit the operation to forming strictly tubular cans, as they may be made oviform, rectangular, hexagonal, or of any desired design, in which case the former 30 and yokes 11 will necessarily be shaped to provide means to bend the metal to a predetermined conformation. It will also be understood that cans



need not be the exact length of the former 30, and that as many can be overturned thereon as their size relates to the full length of said former.

5 The rods 13 are secured at their rear ends to a head 29, which is provided with rearward ears, into which is pivoted the upper end of a connecting-bar 15, the lower end of which is pivoted to the front of a lever 20, which lever is attached to a projection extending forwardly from the rear upright 1.

To the rear end of the lever 20 the lower end of a connecting-bar 19 is movably attached, the upper end of said connecting-bar 15 being pivoted to the forward end of a lever 16, which extends through a vertical slot in the rear upright 1.

The rear end of the lever 16 is pivoted to the upper end of a connecting-bar 17, which at its lower end is secured to one end of a rock-arm 18, secured to the rock-shaft 6. The opposite end of the arm 18 is adapted to have operating mechanism applied thereto for actuating the several parts of the machine.

25 On the front end of the rock-shaft 6 is keyed a rock-arm 26, extending transversely under the arms of the bracket 5, and movably secured to the inner end of said rock-arm is another connecting-bar 27, the latter having its lower end movably attached to a curved bar 23, provided with slots 33, in which are adjustably mounted a series of rollers 25, between which extend the lower ends of the clamp 4.

35 The rollers 25, adjusted, as described, in the slots 33, hold the lower ends of the clamp 4 in limited position, as plainly illustrated in Fig. 2 of the drawings.

The rear portion of the curved bar 23 is 40 formed or provided with upper and lower rearwardly-extending lugs 24, having aligning orifices for passage therethrough of vertical guide-rods 22. A bracket 21 extends forwardly at the lower end of front upright 1 of the frame rearward of the curved bar 23, into which is firmly secured the guide-rods 22, said rods passing through the lugs 24, as previously set forth, which lugs by such arrangement have free vertical movement, 50 whereby the adjacent working parts will be maintained steady and in proper working position. The rollers 25 are adapted to be adjusted at any desired point of the respective slots 33, and when the device is in operation the extensions of the arms 4 are acted on by said rollers as the curved bar 23 is lowered to close the upper ends of the arms to draw the metal over the former 30, supported on the upper end of the front upright 1 of the frame.

60 The upper ends of the arms 4 are provided with jaws 31, which are removably held on the said arms by set-screws 14, said jaws extending the full length of the former 30.

In operation the sheet metal is placed in 65 the supports 12 above the bending-frame, and by a proper operation of the mechanism the said bending-frame is raised to carry the

sheet metal up against the former 30. After the bending-frame has been operated to force the sheet metal against the former the clamping-arms 4 are actuated to bring the ends of the sheet which project closely over the former through the medium of the jaws 31. After this is completed the rods 13 are thrust forward on opposite sides of the outer surface of the body against the edge of the turned metal and thereby removes each can-body from the former, discharging it down a chute or into any suitable receptacle. It will be understood that the several parts may 80 be adjusted to form different sizes and shapes of can-bodies.

Having thus fully described my invention and the manner of its operation, what I claim, and desire to secure by Letters Patent of the 85 United States of America, is—

1. In a machine of the class described, the combination of a former, firmly adjusted to, and extending horizontally from, the forward end, a vertically moving bending frame under said former, consisting of a series of yokes connected in longitudinal alignment, having 90 invertedly curved seats conforming with the shape of the former, a pair of pivoted clamp arms having lower extensions diverging in opposite directions and means for operating said parts, substantially as described.

2. In a machine of the class described, the combination of a former, means for bending sheet metal thereover, clamp arms having 100 lower extensions, a vertically movable bar, and rollers carried by said bar and engaging said extensions of the clamp arms, substantially as described.

3. In a machine of the class described, the 105 combination of a former, a bending frame comprising a series of yokes, guide rods depending from said bending frame, a bracket having arms through which said guide rods pass, and means for raising said bending frame, substantially as described.

4. In a machine of the class described, the combination of a former, a bending frame comprising a series of yokes, guide rods depending from said bending frame, a bracket 115 having arms through which said guide rods pass, a lifting arm engaging the under side of said bending frame, a rock shaft, and another arm secured to the rock shaft and engaging the said lifting arm, substantially as described.

5. In a machine of the class described, the combination of a former, bending mechanism coacting with said former, a pair of clamping arms having lower extensions, a vertically 125 movable bar, rollers adjustably mounted in said bar, guide rods engaging said bar and means for operating the several parts substantially as described.

6. In a machine of the class described, a 130 rigidly adjusted horizontally extending former having underneath a series of invertedly curved yokes connected at required distances apart in longitudinal alignment by a rod



firmly adjusted through orifices at their lower  
turn, a pair of pivoted clamping arms having  
lower extensions diverging in opposite direc-  
tions held in position by pairs of rollers ad-  
5 justable within a slot of a vertically movable  
curved bar, the upper terminals of said piv-  
oted clamping arms being provided with re-  
movable jaws extending the full length of  
the former, said jaws being held in position  
10 by set screws, a rock shaft, removing rods, a  
connecting bar attached to said rods a lever

to which said bar is secured, a second con-  
necting bar also attached to said lever, a sec-  
ond lever to which the second connecting rod  
is secured, and a rockarm attached to the sec- 15  
ond lever and the rockshaft, substantially as  
described.

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Witnesses:

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