No. 704,700. Patented July 15, 1902.

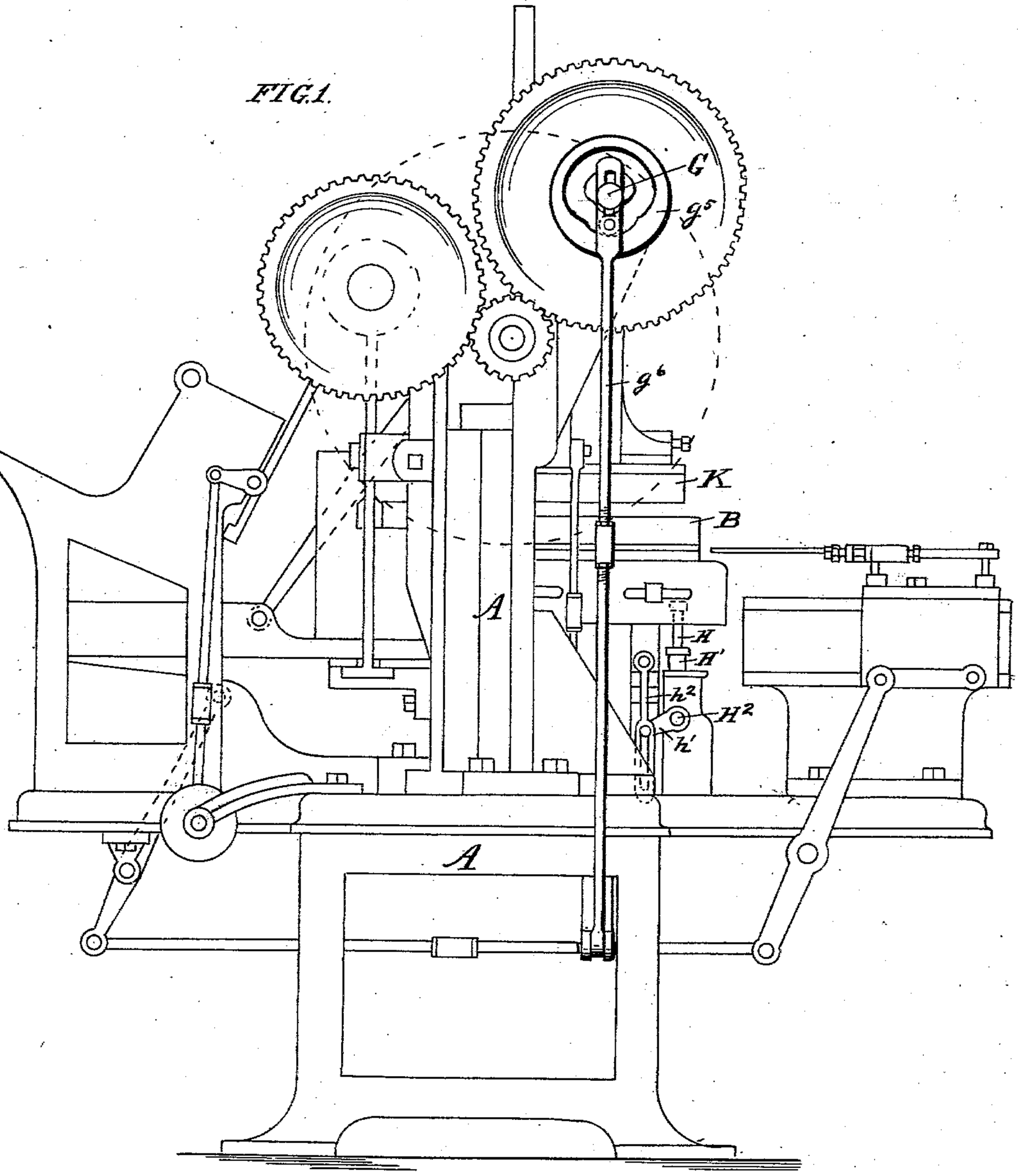
# J. G. HODGSON.

## CAN BODY FORMING MACHINE.

(Application filed Oct. 22, 1900.)

(No Model.) 3 Sheets—Sheet 1.

FIG. 1.




WITNESSES:
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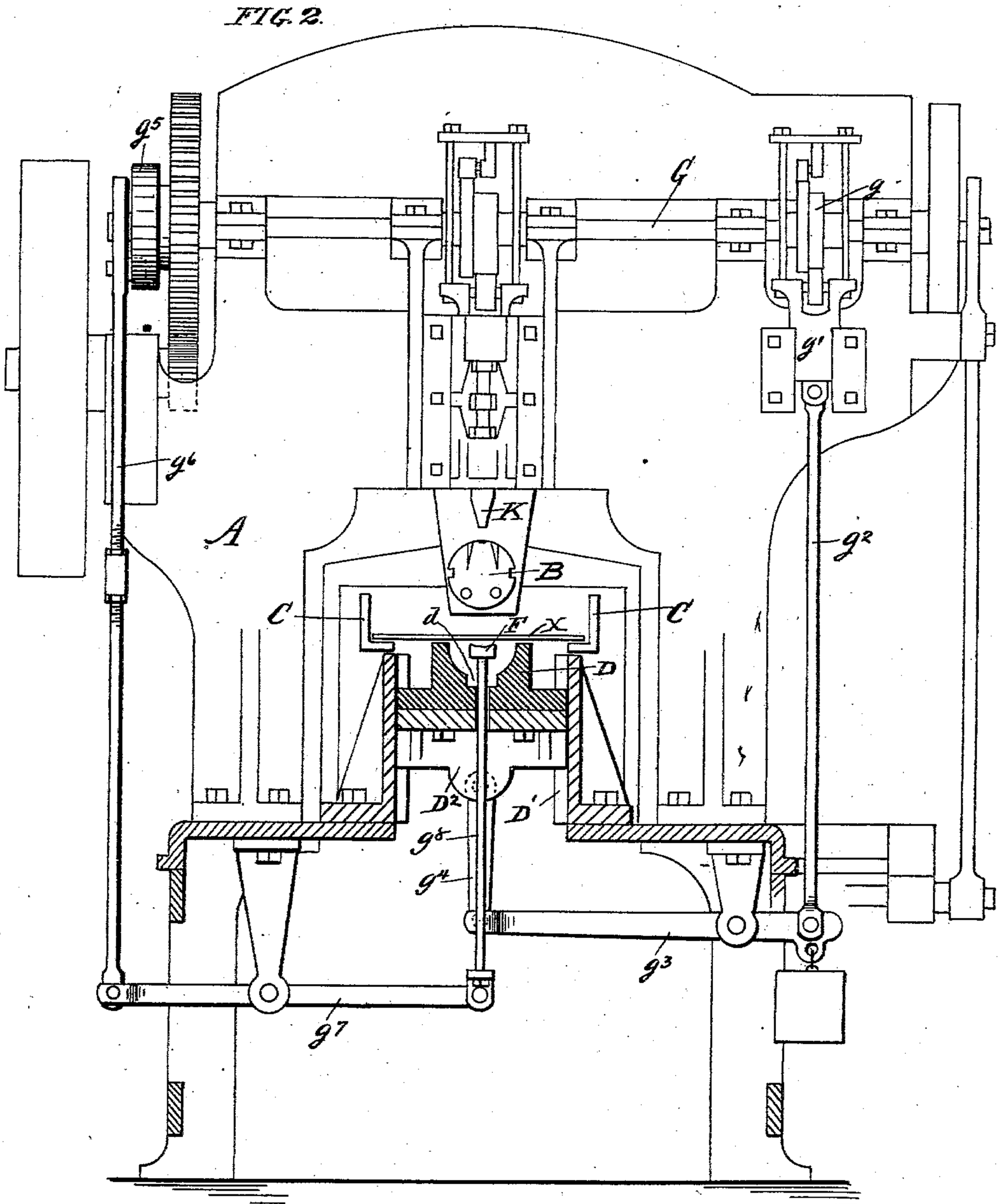
## CAN BODY FORMING MACHINE.

(Application filed Oct. 22, 1900.)

(No Model.) 3 Sheets—Sheet 2.

FIG. 2.

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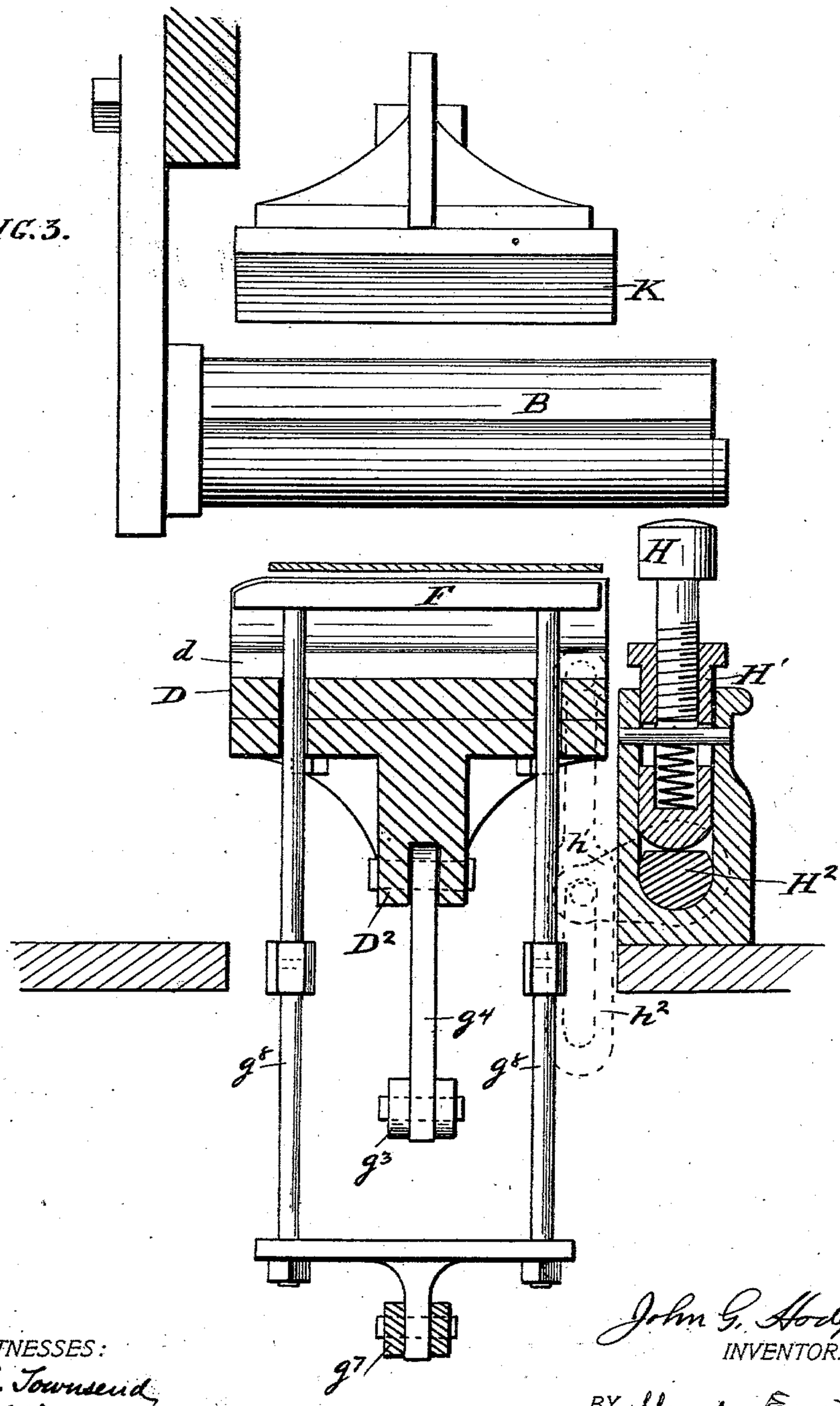
## CAN BODY FORMING MACHINE.

(Application filed Oct. 22, 1900.)

(No Model.) 3 Sheets—Sheet 3.

FIG. 3.

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# UNITED STATES PATENT OFFICE.

JOHN G. HODGSON, OF MAYWOOD, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AMERICAN CAN COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## CAN-BODY-FORMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 704,700, dated July 15, 1902.

Application filed October 22, 1900. Serial No. 33,966. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN G. HODGSON, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Can-Body-Forming Machines, of which the following is a specification.

My invention relates to improvements in can-body-forming machines. It relates more particularly to improvements upon the machines of the kind or class heretofore patented in Letters Patent No. 250,266 to Frank M. Leavitt, dated November 29, 1881, and No. 395,795 to Edwin Norton, dated January 8, 1889. Heretofore in the practical operation of such can-body-forming machines certain slight imperfections or irregularities in the size of the can-bodies is sometimes produced by slight movements of the blank, which are liable sometimes to occur after the can-body-forming die lifts the blank from the gages and begins to bend it around the horn.

The object of my invention is to provide a simple and efficient means for practically overcoming this difficulty and securing with certainty the required regularity and uniformity in the sizes of the can-body and at both ends thereof.

My invention consists in the means I have devised for practically accomplishing this result—that is to say, it consists, essentially, in combination with the horn and body-former and the gages or guides upon or by which the blank is supported, of a positively-operated clamp within the former which operates to positively and firmly clamp the blank against the horn before the former begins to bend the flexible sheet-metal blank around the horn, thus preventing any possibility of the blank moving or turning or getting askew prior to the time when the former itself firmly clamps the blank in position about the horn.

My invention also consists in the novel devices and in the novel combinations of parts and devices herein shown and described, and specified in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a can-body-forming machine embodying my invention. Fig. 2 is a front view partly in vertical section, and Fig. 3 is an enlarged detail vertical longitudinal section showing my positive blank-clamping mechanism and certain parts of the body-forming machine which coöperate therewith.

In said drawings, A represents the frame of the machine. B is the horn about which the sheet-metal blank $x$ is to be wrapped or formed; C, the gages or guides upon which the blank rests; D, the former, moving up and down in the guides D′ and which is adapted to embrace the lower half of the horn and partially bend or fold the blank around the same, and F is a clamp fitting in a groove $d$ in the lower portion of the former and which operates to clamp the middle portion of the blank positively and firmly against the horn just before the former D begins to bend the flexible sheet-metal blank about the horn, thus preventing any possibility of the blank turning or getting askew at the time it is being first bent and while it is necessarily somewhat loosely held, owing to its flexibility, between the lower portion of the horn, which it touches on one side, and the two upper outer edges of the former D, which it touches on the other side. As the former moves upward, lifting the blank from the gages or guides C, the clamp F moves along with the former; but just before the outer edges of the former would begin to bend the blank the upward movement of the clamp F is slightly accelerated, so as to cause the blank to be firmly and positively grasped and clamped between the clamp F and the lower surface of the horn before the bending operation begins. The cross-head $D^2$, upon which the former is carried, is reciprocated as required by means of a cam $g$ on the cam-shaft G through suitable connecting mechanism, preferably consisting of a slide $g'$, link $g^2$, lever $g^3$, and link $g^4$.

The clamp F is positively operated as required to positively and firmly clamp the blank against the horn by a cam $g^5$ on the cam-shaft G, through the connecting slide or link $g^6$, lever $g^7$, and connecting bars or rods $g^8$ $g^8$, which pass through the former D at

each end thereof, as will be readily understood from Figs. 3 and 2 of the drawings.

H is a movable support by which the outer end of the horn B is supported while the side seam of the can-body is being bumped or compressed against the horn by the seam-bumper die K. This support is adjustable by screw-threads in a slide H′, which is moved up and down as required by a rocking cam $H^2$, which is actuated by an arm $h'$, connected by a slotted link $h^2$ with the former D.

As the general construction and operation of the body-forming machines to which my improvement is applied are well known to those skilled in the art, I have only particularly illustrated in the drawings those parts of the machine necessary for a full and clear understanding of my improvement. The patents before referred to fully show and describe the other parts of the machine.

I claim—

1. In a can-body-forming machine, the combination with the horn, of a reciprocating can-body former D below the horn and provided with a central groove *d* therein, guides for supporting the blank below the horn and above said former, and a positively-operated independently-reciprocating clamp F within said groove in the former D for firmly and positively clamping the blank against the horn, the upper edges of said former D supporting the blank as it is lifted thereby against the horn, and said clamp F operating to clamp the blank against the horn before the blank is bent about the horn by the further upward movement of said former D, substantially as specified.

2. In a can-body-forming machine, the combination with the horn, of a reciprocating former D below the horn and provided with a central groove *d* therein, guides for supporting the blank below the horn and above the former, and an independently-reciprocating clamp F fitting within said groove in the former, and mechanism for positively operating the clamp to hold the blank rigidly and firmly against the horn, the upper edges of said former D supporting the blank as it is lifted thereby against the horn, and said clamp F operating to clamp the blank against the horn before the blank is bent about the horn by the further upward movement of said former D, substantially as specified.

3. In a can-body-forming machine, the combination with the horn, of a reciprocating body-former D below the horn provided with a central groove *d* therein, guides for supporting the blank below the horn and above the former, a cam and connecting mechanism for positively reciprocating the former, an independently-reciprocating clamp fitting within said groove in the former D for clamping the blank against the horn, and a cam and connecting mechanism for positively operating said clamp, the upper edges of said former D supporting the blank as it is lifted thereby against the horn, and said clamp F operating to clamp the blank against the horn before the blank is bent about the horn by the further upward movement of said former D, subtantially as specified.

JOHN G. HODGSON.

Witnesses:
EDMUND ADCOCK,
H. M. MUNDAY.