

No. 723,383.

PATENTED MAR. 24, 1903.

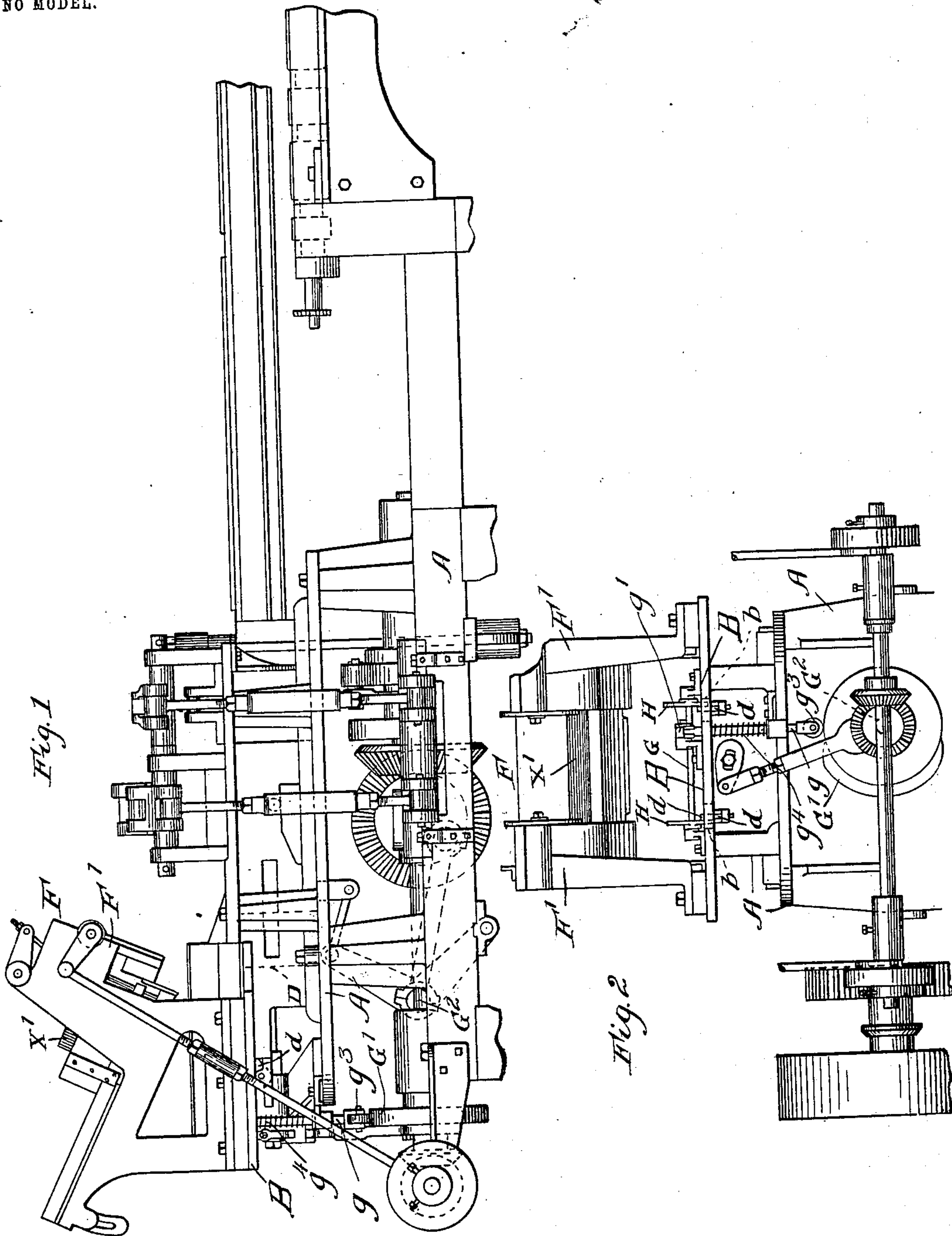
T. J. HARBEN.

CAN BODY BLANK FEED MECHANISM FOR CAN BODY MAKING MACHINES.

APPLICATION FILED NOV. 28, 1902.

2 SHEETS—SHEET 1.

NO MODEL.



Witnesses:

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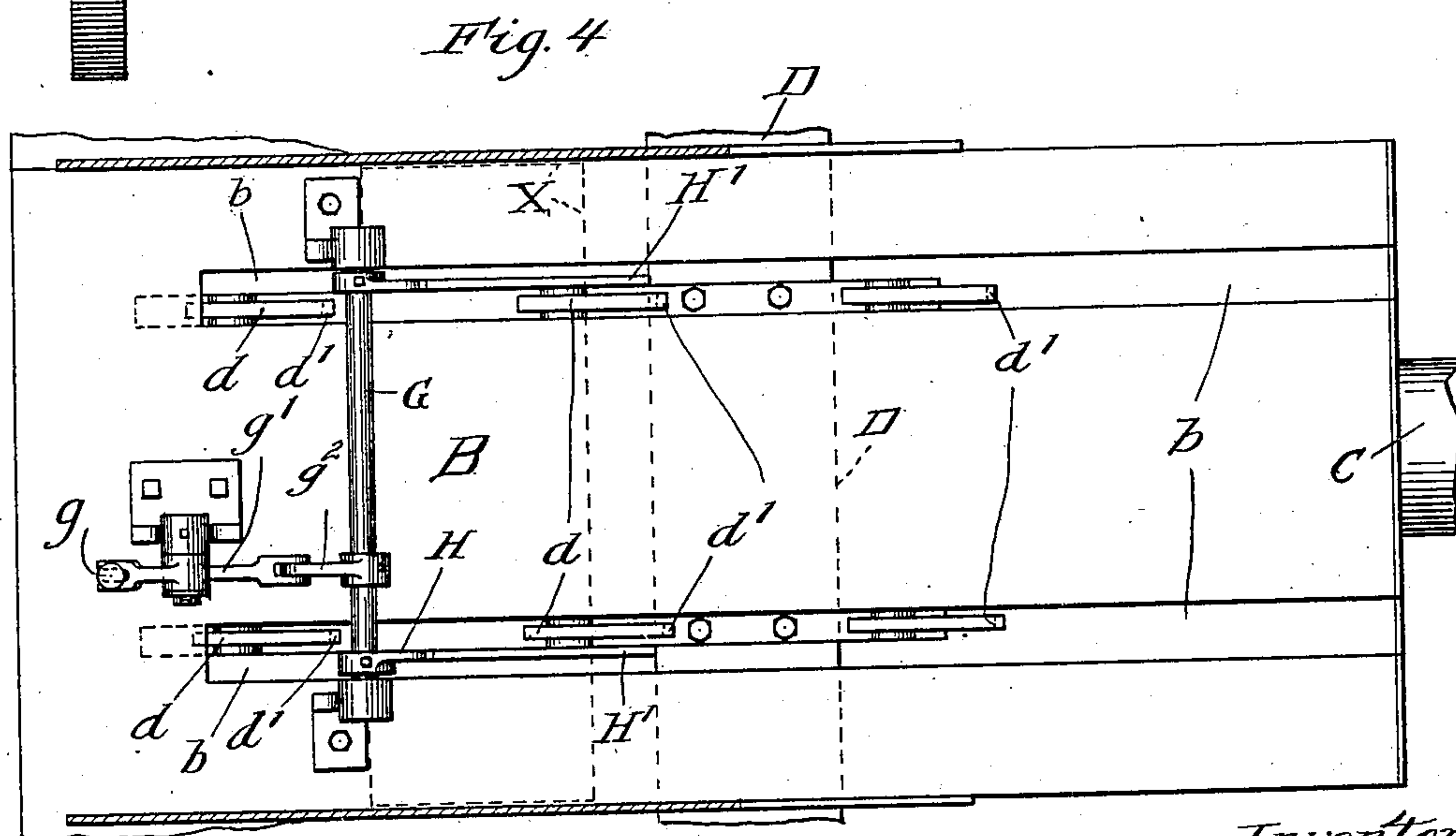
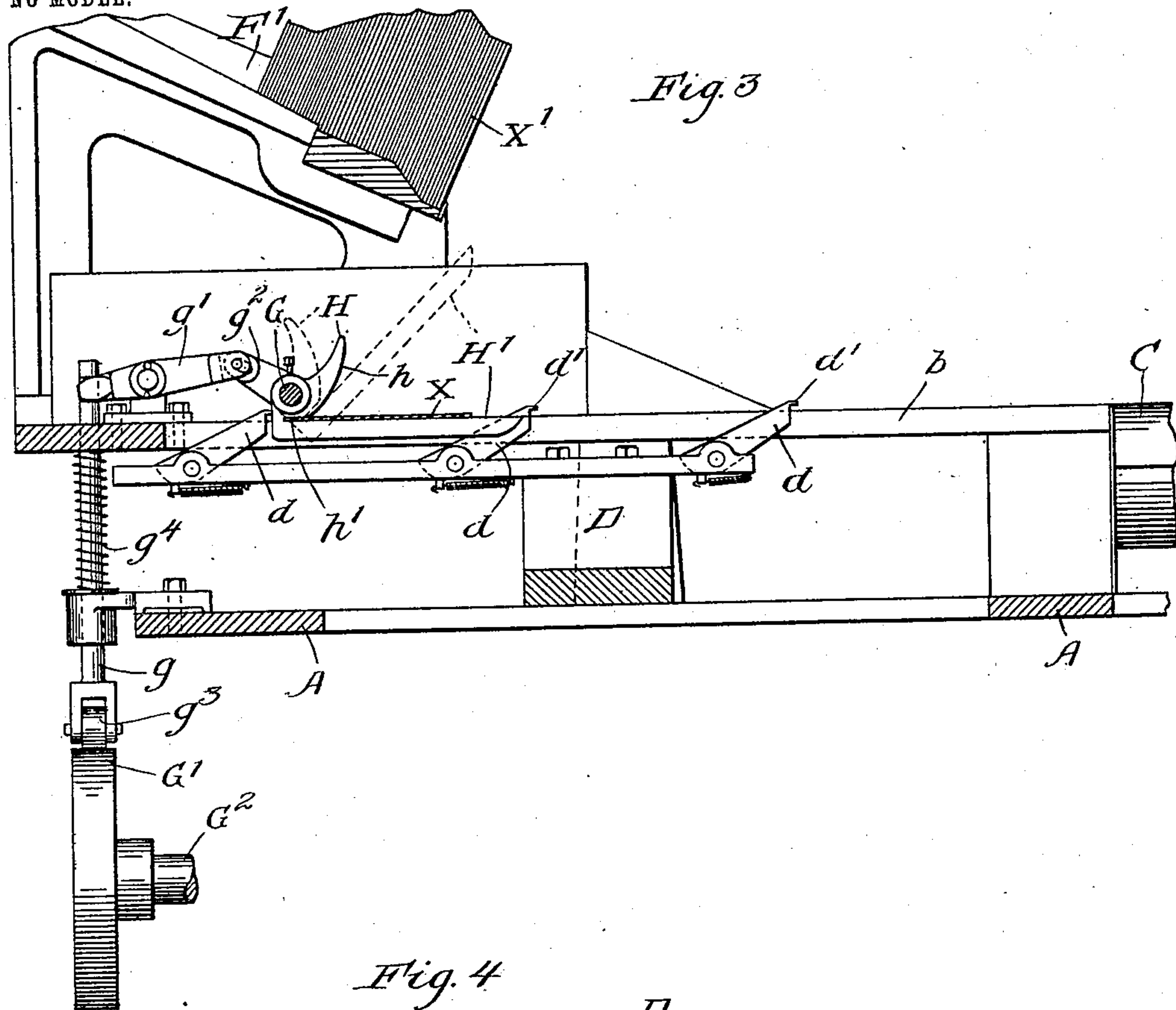
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UNITED STATES PATENT OFFICE.

THOMAS JACKSON HARBEN, OF HOOPESTON, ILLINOIS, ASSIGNOR TO
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CAN-BODY-BLANK-FEED MECHANISM FOR CAN-BODY-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 723,383, dated March 24, 1903.

Application filed November 28, 1902. Serial No. 132,998. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JACKSON HARBEN, a citizen of the United States, residing in Hoopeston, in the county of Vermilion and State of Illinois, have invented a new and useful Improvement in Can-Body-Blank-Feed Mechanism for Can-Body-Making Machines, of which the following is a specification.

My invention relates to improvements in mechanism for automatically feeding can-body blanks in can-body-making machines.

Heretofore in can-body-making machines of the well-known Norton type—such as, for example, illustrated in the Edwin Norton patent, No. 395,795, of January 8, 1889, and having automatic blank-feeding mechanisms for delivering the blanks one by one from a pile or stack—such, for example, as that shown and described in the Peter Jordan patent, No. 436,792, of September 23, 1890, or the F. M. Leavitt and John G. Hodgson patent, No. 522,261, of July 3, 1894—some difficulty and annoyance have sometimes been experienced in the operation of the machines due to the failure of the dogs or pawls on the horizontally-reciprocating feed-slide to properly engage and feed forward the blank, especially if the same happens to be bent or curved upward, so that it does not lie flat and smooth on the feed-table.

It is the object of my invention to provide a device to overcome this difficulty; and my invention consists in the means I employ to practically accomplish this object or result—that is to say, it consists, in connection with the feed-table and horizontally-reciprocating feed-slide having the pawls or pushers for pushing the blank forward, of one or more, preferably two, movable arms or devices above the feed-table operating to press and smooth the blank flat thereon, so as to insure its engagement by the pawls or pushers on the horizontally-reciprocating feed-slide.

It further consists in providing the blank pressing or smoothing arms with secondary arms for receiving the blank as it is discharged from the self-feeder above and lowering the same onto the feed-table to better insure its lying in proper position thereon.

My invention also consists in the novel con-

struction of parts and devices and in the novel combinations of parts and devices herein shown and described.

In the accompanying drawings, forming a part of this specification, I have illustrated my invention as applied to a can-body-making machine of the well-known Norton type—such, for example, as that shown and described in the Norton patent, No. 395,795, before mentioned, and provided with a self-feeder for the blanks of the style now well known and in common use and which is shown and described in the Jordan patent, No. 436,792, and Leavitt and Hodgson patent, No. 522,261, before referred to, although my invention may be employed upon can-body-making machines of any well-known type or kind and provided with self-feeders for the blanks of any other suitable form or kind, and as the construction of the can-body-making machine itself and of the can-body-blank feeder are both well known I have in the accompanying drawings shown only sufficient of the parts of the can-body mechanism and feeder to illustrate the connection of my improvement thereto.

In said drawings, Figure 1 is a side elevation of a portion of a can-body-making machine to which my invention is applied. Fig. 2 is an end view. Fig. 3 is a detail central vertical section, and Fig. 4 is a detail plan view partly in horizontal section.

In the drawings, A represents the frame of the machine.

B is the feed-table of a can-body-making machine, and C the horn thereof.

D is a horizontally-reciprocating feed-slide having three pairs of can-body-blank pushers or feed-pawls *d*, by which the blank X is fed or pushed forward along the feed-table B, as required in the machine to first form the hooks or edge folds along the edge of the blank and then bend or form it around the horn C to produce the can-body.

F is the self-feeder for the blanks, the same comprising a holder F' for the stack or pile of blanks X' and a suitable feed device—such, for example, as that shown and described in said Patent No. 436,792 or No. 522,261—by which the blanks are separated and discharged from the pile one by one upon the

feed-table B below, in position to be engaged by the pawls or pushers d of the horizontally-reciprocating feed-slide D.

H H are a pair of movable, preferably rocking or vibratory, arms or devices which are mounted above the feed-table just in advance of the rearmost pawls or pushers d on the feed-slide D when it is retracted and which operate to press or smooth the blank x flat upon the feed-table, so that its rear edge will be certain to be properly engaged by the feed-pawls d . These blank presser or smoother arms H H are preferably furnished with curved or shoe-shaped lower faces h , so that the swinging or rocking movement will cause their heel portions to properly press down upon the rear edge of the blank. The blank pressing or smoothing arms H are also preferably provided with supplemental lower arms or fingers H', which are preferably made integral with the arms H and which serve to receive the blank x as it is discharged from the holder F' and deliver it upon the feed-table B, thus insuring its being deposited upon the feed-table in proper position and also causing its rear edge to slide down under the heel of the presser or smoother arm H and into the slot h' at the angle or junction of the arms H H'. The feed pawls or pushers d are provided, or preferably provided, at their upper ends with lips d' , which overhang the rear edge of the blank and clamp it upon the feed-table, and thus prevent the rear edge of the blank, if it happens to be bent or curved out of shape, from springing upward and becoming disengaged from the pawl or pusher d . The feed-table B is provided with longitudinal slots $b b$ to receive the lower blank-supporting arms H and H'. The blank pressing or smoothing arms H are preferably secured to a rock-shaft G, which is automatically operated in proper unison with the feed-slide D and feeder F by means of a cam G' on the shaft G², through the connecting-link g , lever g' connecting with arms g^2 on the rock-shaft G. The link g is provided with a friction-roller g^3 and with a spring g^4 .

I claim—

1. In a can-body-making machine, the combination with a feed-table, of a reciprocating slide furnished with feed pawls or pushers, of a blank-feeder above the feed-table for delivering the blanks one by one thereon, and a pair of rocking arms having curved lower faces for pressing or smoothing the blank upon the feed-table and insuring its engagement by the pawls or pushers on the feed-slide, and a pair of blank-receiving arms connected to said blank-pressing arms and op-

erating to lower the blanks upon the feed-table as they are discharged by the feeder, substantially as specified.

2. In a can-body-making machine, the combination with a feed-table and a horizontally-reciprocating feed-slide having pawls or pushers, of a movable can-body-blank-pressing device engaging the rear edge of the blank above the feed-table for pressing or smoothing the blank on the feed-table to insure the engagement of its rear edge by the pawls or pushers on the feed-slide, substantially as specified.

3. In a can-body-making machine, the combination with a feed-table and a horizontally-reciprocating feed-slide having pawls or pushers, of a movable can-body-blank-pressing device engaging the rear edge of the blank above the feed-table for pressing or smoothing the blank on the feed-table to insure the engagement of its rear edge by the pawls or pushers on the feed-slide, said pawls or pushers on the feed-slide having projecting lips to overlap the rear edge of the blank, substantially as specified.

4. The combination with a can-body-blank-feed table of a feed-slide having pawls or pushers, of a vibrating device having an upper and lower arm with a slot between them for registering and receiving the rear edge of the blank and insuring its proper engagement by the pawls or pushers on the feed-slide, substantially as specified.

5. The combination with a can-body-blank-feed table and feeder, of a feed-slide having pawls or pushers and a pair of vibrating devices having each an upper and a lower arm with a slot between them to receive and register the rear edge of the blank to insure its engagement by the pawls or pushers on the feed-slide, substantially as specified.

6. The combination with a can-body-feed table and feeder above the same, of a horizontally-reciprocating feed-slide furnished with pawls or pushers, of a vibrating device for receiving and supporting and lowering the can-body blank from the feeder onto the feed-table, substantially as specified.

7. The combination with a can-body-feed table, of a horizontally-reciprocating feed-slide having pawls or pushers, a feeder above the feed-table, and a pair of rocking arms for receiving the blank as it is discharged from the feeder and delivering it upon the feed-table, substantially as specified.

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Witnesses:

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