

No. 672,148.

Patented Apr. 16, 1901.

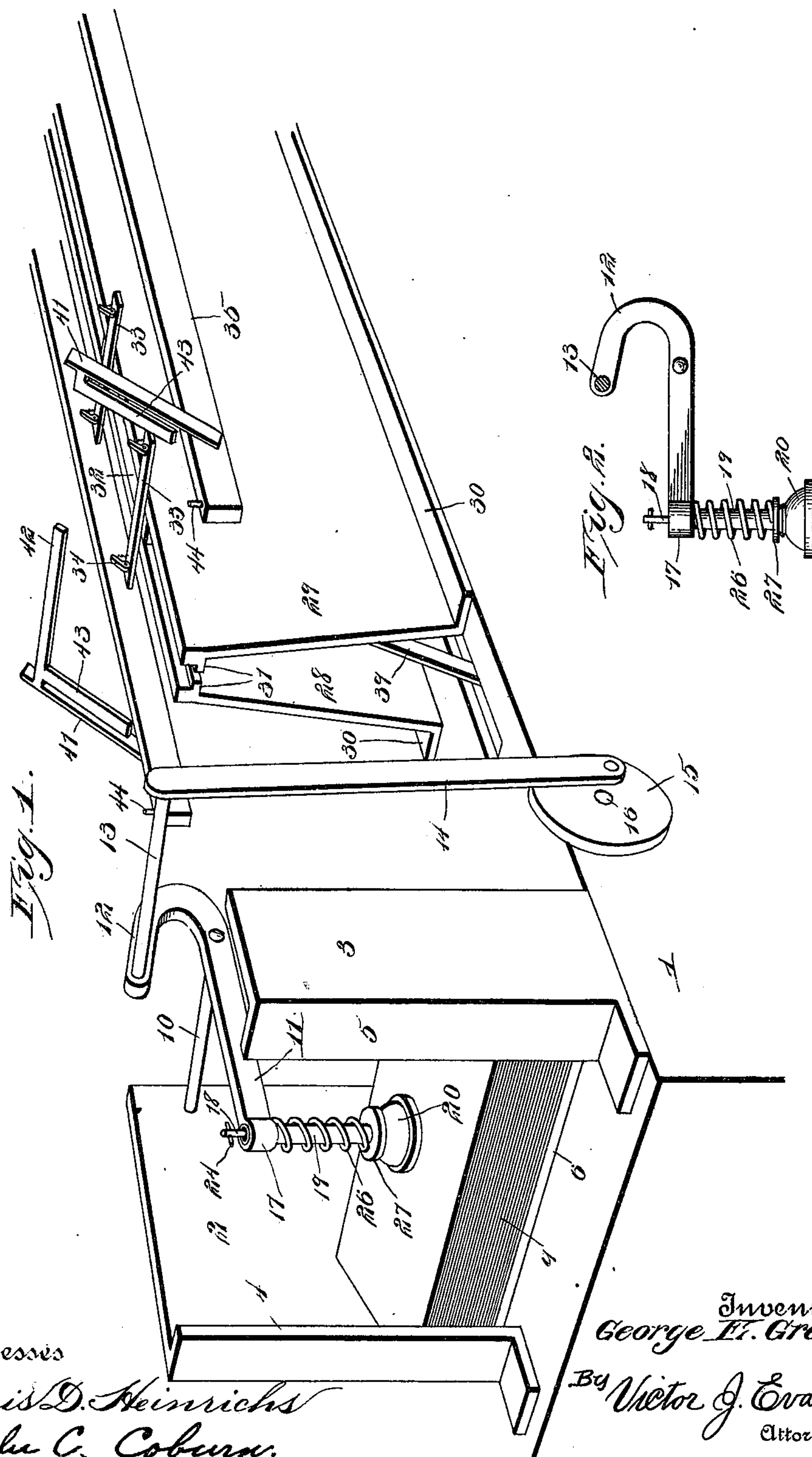
G. E. GREEN.

FEED MECHANISM FOR CAN MAKING MACHINES.

(Application filed May 10, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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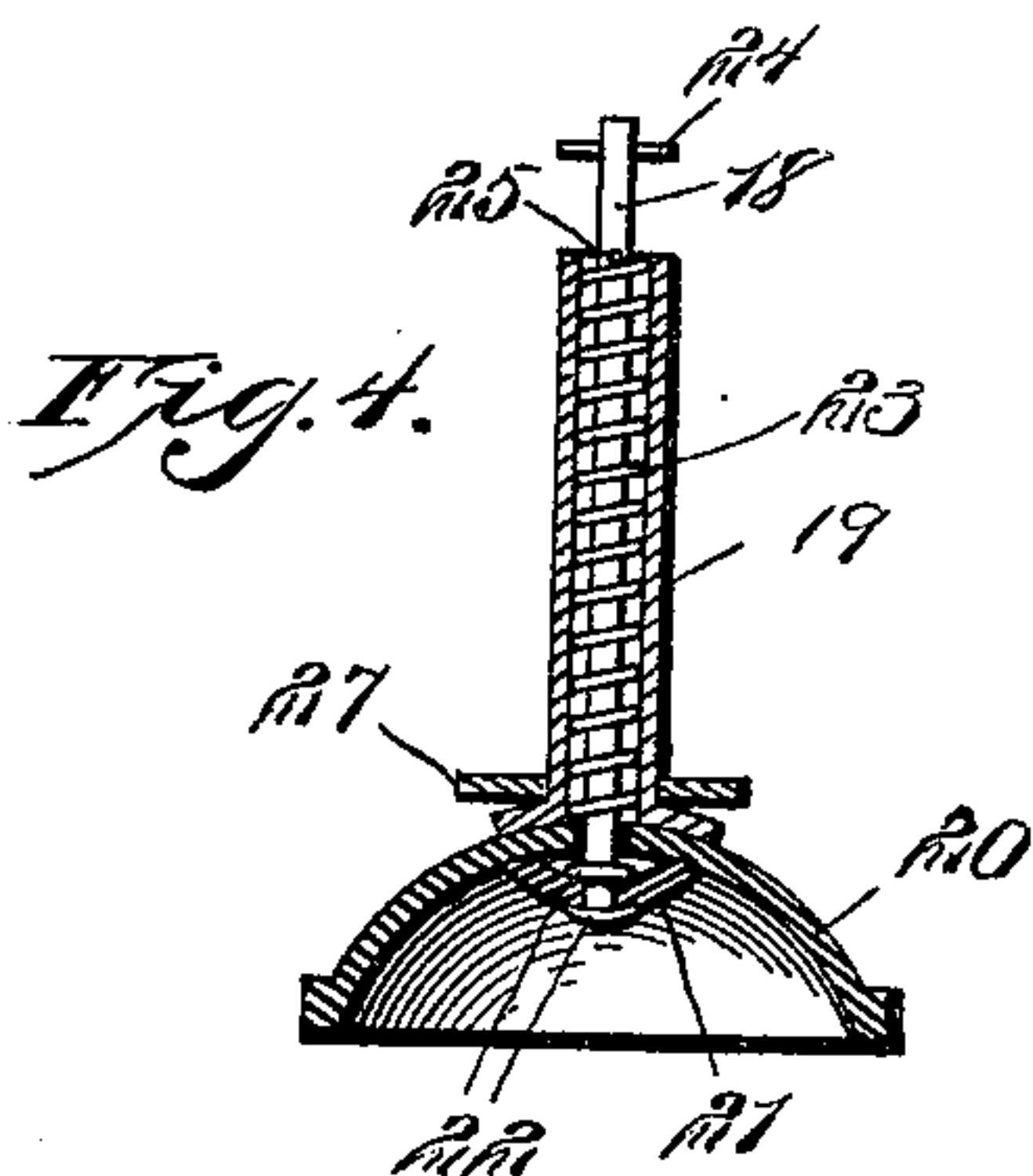
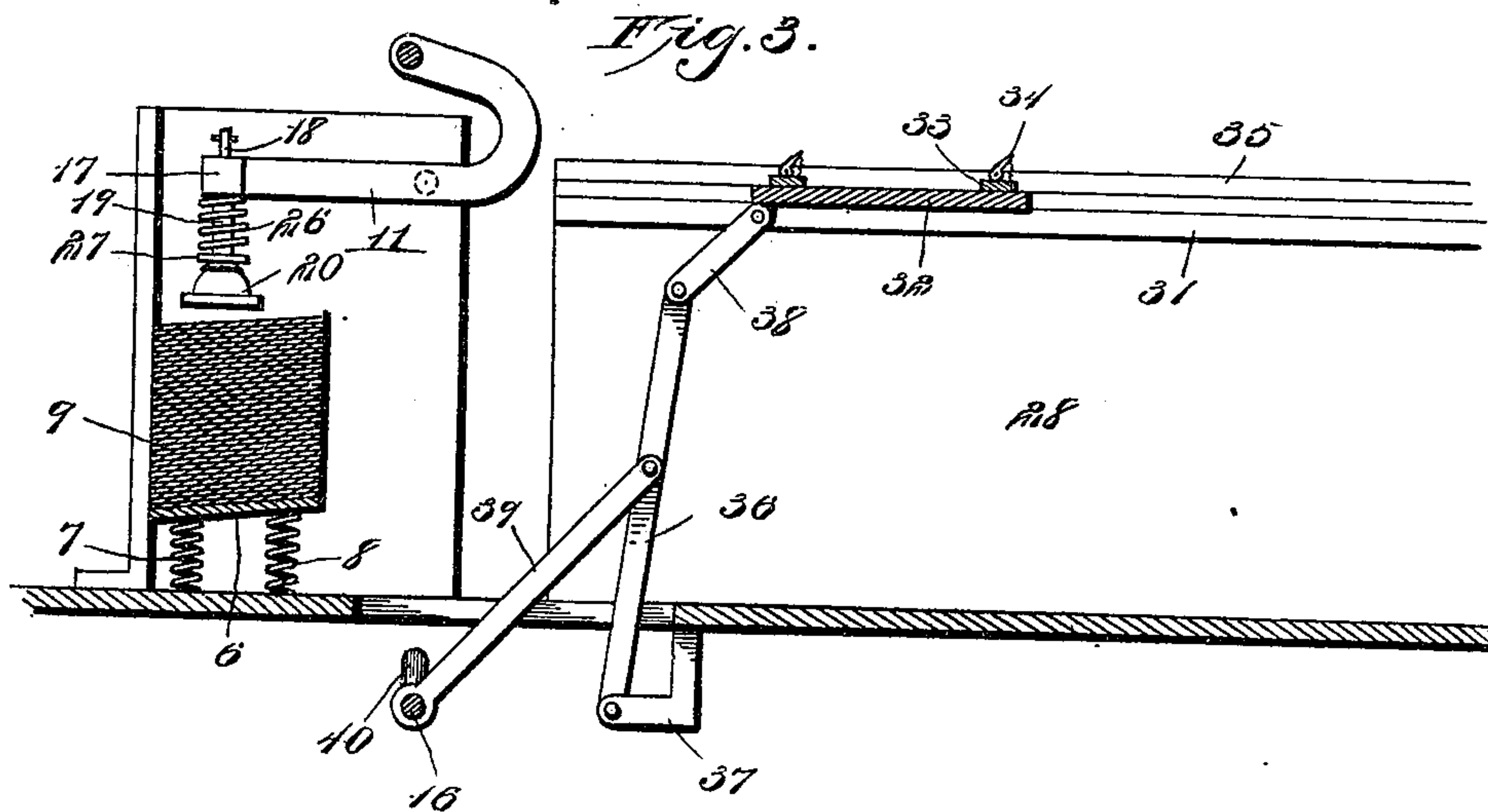
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FEED MECHANISM FOR CAN MAKING MACHINES.

(Application filed May 10, 1900.)

(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

GEORGE EDISON GREEN, OF BALTIMORE, MARYLAND.

FEED MECHANISM FOR CAN-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 672,148, dated April 16, 1901.

Application filed May 10, 1900. Serial No. 16,193. (No model.)

To all whom it may concern:

Be it known that I, GEORGE EDISON GREEN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Feed Mechanism for Can-Making Machines, of which the following is a specification.

My invention relates to feeding mechanism for can-making machines, the object being to provide effective means for lifting and feeding sheets or blanks of tin or other sheet metal to a carrier which delivers them to the dies or can-forming mechanism.

The main characteristic feature of the invention is a lifting device comprising a suction-cup of rubber or like elastic material, in combination with supporting and operating mechanism, as will be fully described hereinafter and defined in the appended claims in connection with the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is a view in perspective of a feeding device embodying the invention. Fig. 2 is a detail side elevation of the suction-cup and its supporting-lever. Fig. 3 is a vertical section of the same, and Fig. 4 is a vertical section of the plunger and suction-cup of the device detached.

The frame of the feeder consists of a base or bed 1 and parallel standards 2 and 3, secured adjacent to one end of the bed. The standards 2 and 3 are formed with inwardly-extending vertical flanges 4 and 5, which, together with the inner sides of said standards, constitute guides for a follower 6, supported upon coil-springs 7 and 8. The springs vary slightly in length, so that the follower-plate 6 inclines slightly toward the flanges 4 and 5 to prevent the inward tilting of the sheets or blanks 9, supported one above another upon the follower.

10 designates a horizontal shaft rigidly supported in a bearing formed in the standard 2, and upon this shaft is pivotally mounted a lever 11, the inner end 12 of which is curved upward and outward and fixed to a crank-arm 13, projecting horizontally from a pitman 14, eccentrically pivoted upon a wheel or disk 15, mounted upon a shaft 16. The standard 3, as shown, is of less width than the stand-

ard 2 to permit of the passage behind it of the crank-arm 13. The forward end of the lever 11 is formed with a head 17, through which extends the upper end of a valve-rod 18, surrounded by a tube 19, adapted to have a limited movement within the head, and to the lower end of said tube is secured a cup 20, of rubber or other yielding material. To the lower end of the rod 18 is attached an elastic disk valve 21, held between flanges 22 on the rod. A coil-spring 23 surrounds the rod 18 within the tube, the function of which is to retract the rod 18 and valve 21 after they have been depressed, as hereinafter explained. A cross-pin 24 at the upper end of the rod 18 limits its downward movement, and another pin 25, extending through the rod 18, confines the upper end of the spring 23. A coil-spring 26 surrounds the tube 19, one end of said spring bearing against the head 17 and the opposite end against a flange 27 on the cup 20.

Upon the bed of the machine is supported a trackway comprising oppositely-disposed plates 28 and 29, formed at their lower ends with flanges 30, by means of which they are supported upon the bed 1, and below their upper edges with inwardly-projecting flanges 31, upon which travels a carrier-block 32, to which are secured parallel transverse bars 33, provided with fingers 34, said bars traveling upon the upper edges of the plates 28 and 29. At opposite sides of the plates 28 and 29 guide-bars 35 are arranged to form a track along which the plates or blanks of tin are carried by the carriage 32. The carriage 32 is connected by a lever 36, fulcrumed upon a bracket 37, and links 38 and 39 to a crank 40, formed on the shaft 16, whereby the carriage is operated by the same mechanism which operates the feeding devices. Secured to each of the track-bars 35 is an inclined arm 41, connected at or near their upper ends by a cross-bar 42, from which extend arms 43, parallel to but at a distance from the arms 41.

The operation of the mechanism is as follows: When the lever 11 is in the position shown in Fig. 1, the suction-cup 20 is brought into contact with the uppermost plate or blank of tin on the pile 9, and said plate or blank adheres firmly to said cup by suction. The

revolution of the shaft 16 causes the lever 11 to turn upon its pivotal support 10 through the medium of the pitman 14 and crank-arm 13, carrying with it the sheet of tin, and by the continued movement of the mechanism the sheet of tin is carried rearward in a position to be delivered to the carrier 32, which through the crank 40, link 39, lever 36, and link 38 has been brought forward in position to receive the tin. When the lever 11 has reached the limit of its rearward movement, the projecting end of the rod 18 strikes the cross-bar 42, thus unseating the valve 21 and allowing air to enter the cup 20 through the tube 19 to release the sheet of tin, which drops upon the arms 43 and slides down upon the carriage 32 and is carried rearward under the arms 43 to be operated upon by the can-forming machinery. (Not shown.) The lever is returned to its first position by the further movement of the pitman 14 and crank-arm 13, and the operation is repeated indefinitely.

I provide stop-pins 44 at the front ends of the bars 35 to prevent the accidental slipping off of the sheets of tin.

I claim—

1. Feed mechanism for blanks or sheets of metal, comprising parallel guide-standards; a spring-pressed follower guided by the standards; a stationary shaft projecting from one of said standards; a lever pivotally secured on said shaft, and upwardly curved at one end; a tube suspended from said lever; a suction-cup secured to the lower end of said tube; a valve-rod extending down through the tube and cup and carrying a valve at its

lower end; and means for operating said lever.

2. Feed mechanism for can-forming machines comprising a base or support; standards rising from said base; a follower guided by said standards; a horizontal shaft projecting from one of said standards; a lever pivotally supported on said shaft formed with a head at its front end, and curved upward and forward at its rear end; a tube extending through said head; a suction-cup at the lower end of the tube, a valve-rod extending through said tube and cup and carrying a valve at its lower end; coil-springs surrounding said valve-rod and tube; a movable carriage for receiving the sheets or blanks; and mechanism for simultaneously operating the lever and carriage.

3. Feed mechanism for sheets or blanks, comprising an oscillating lever carrying a valved suction-cup, in combination with a trackway, a movable carrier on said trackway; an inclined slide to guide the blanks to the carrier; consisting of parallel inclined arms secured on opposite sides of the carrier; a cross-bar connecting said arms; and inclined arms depending from said cross-bar under which the blanks pass; and mechanism for simultaneously operating the lever and carrier.

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

GEORGE EDISON GREEN.

Witnesses:

JOHN R. SMITH,
CLINTON KOTHE.