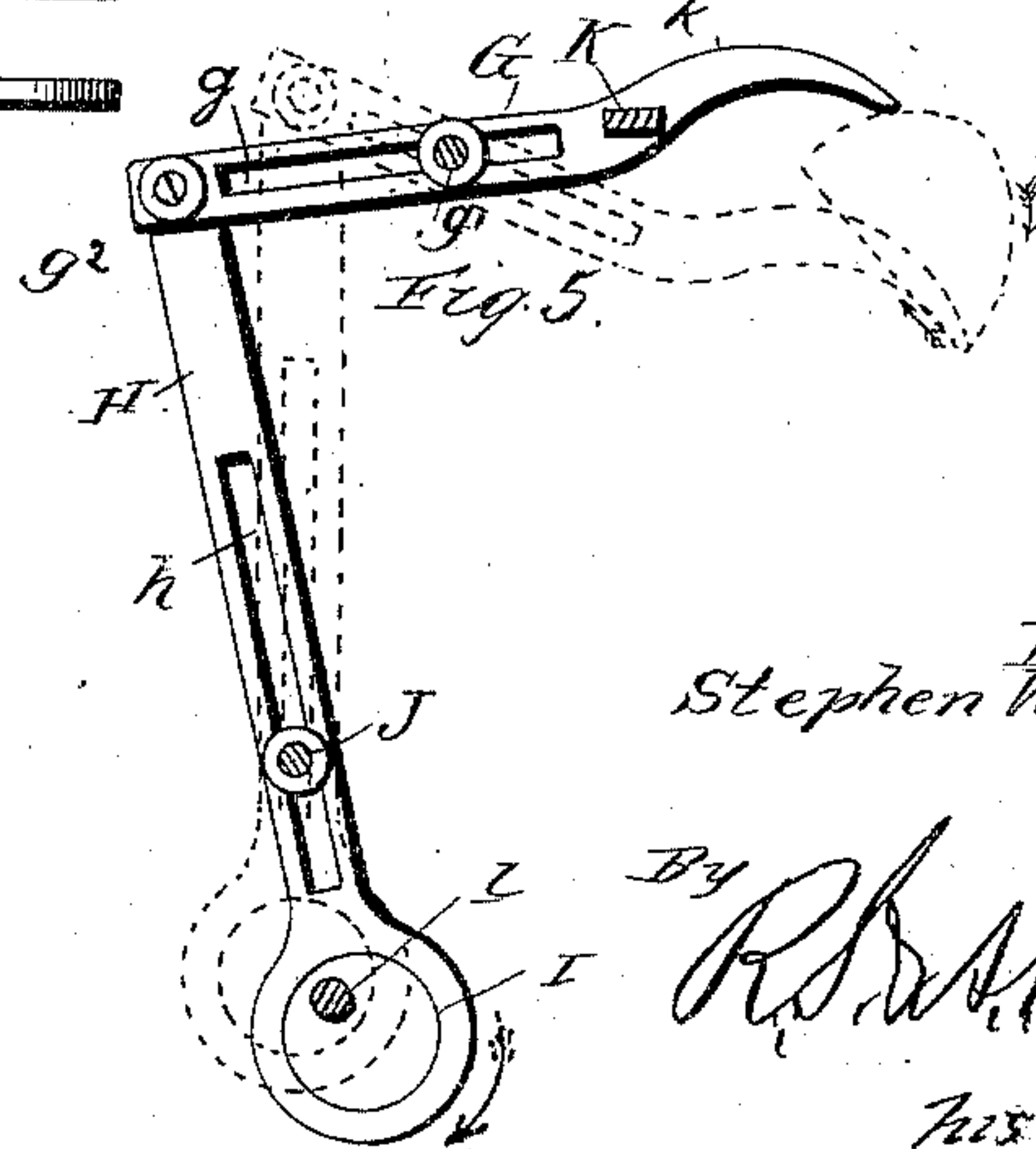
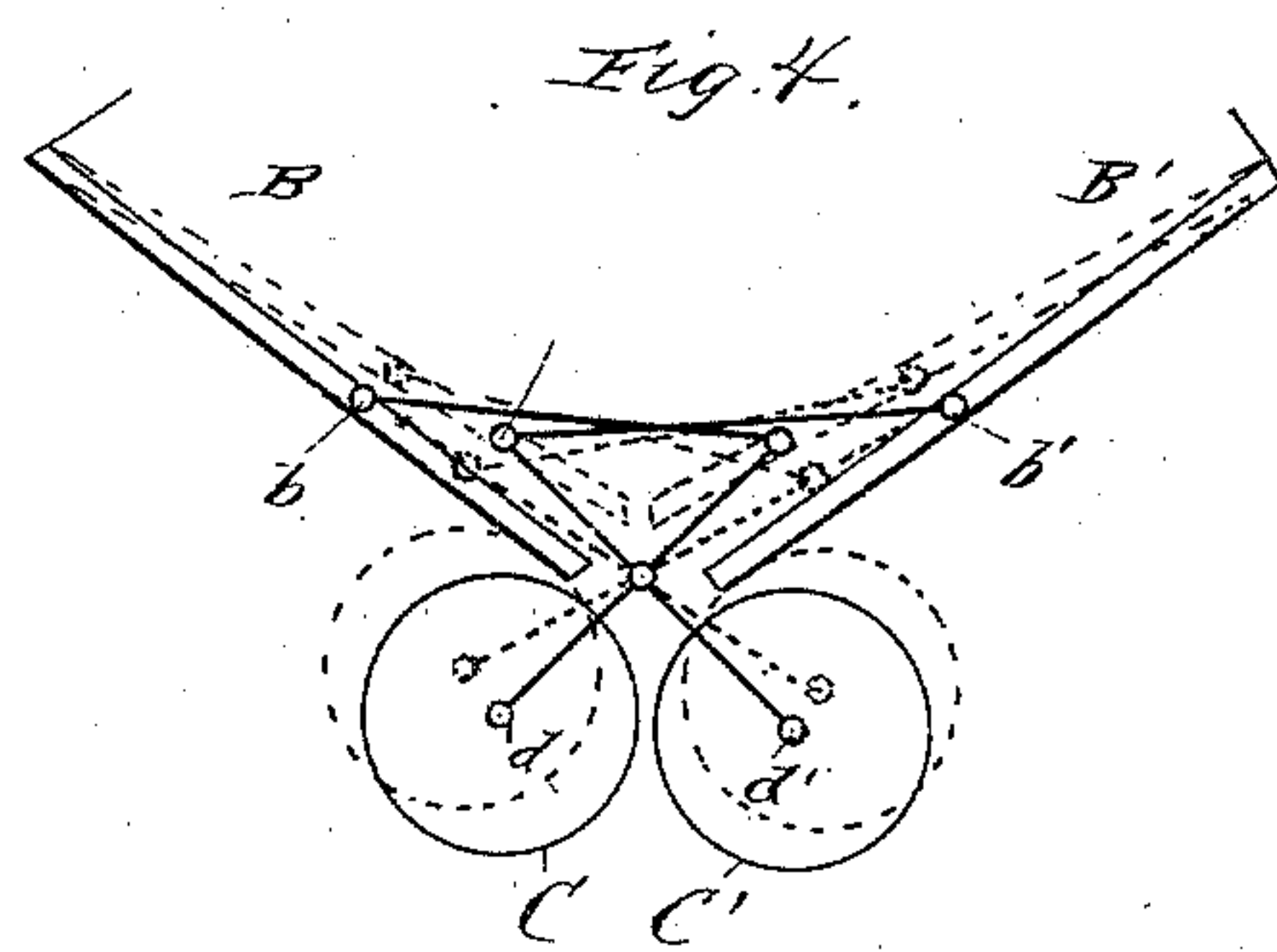
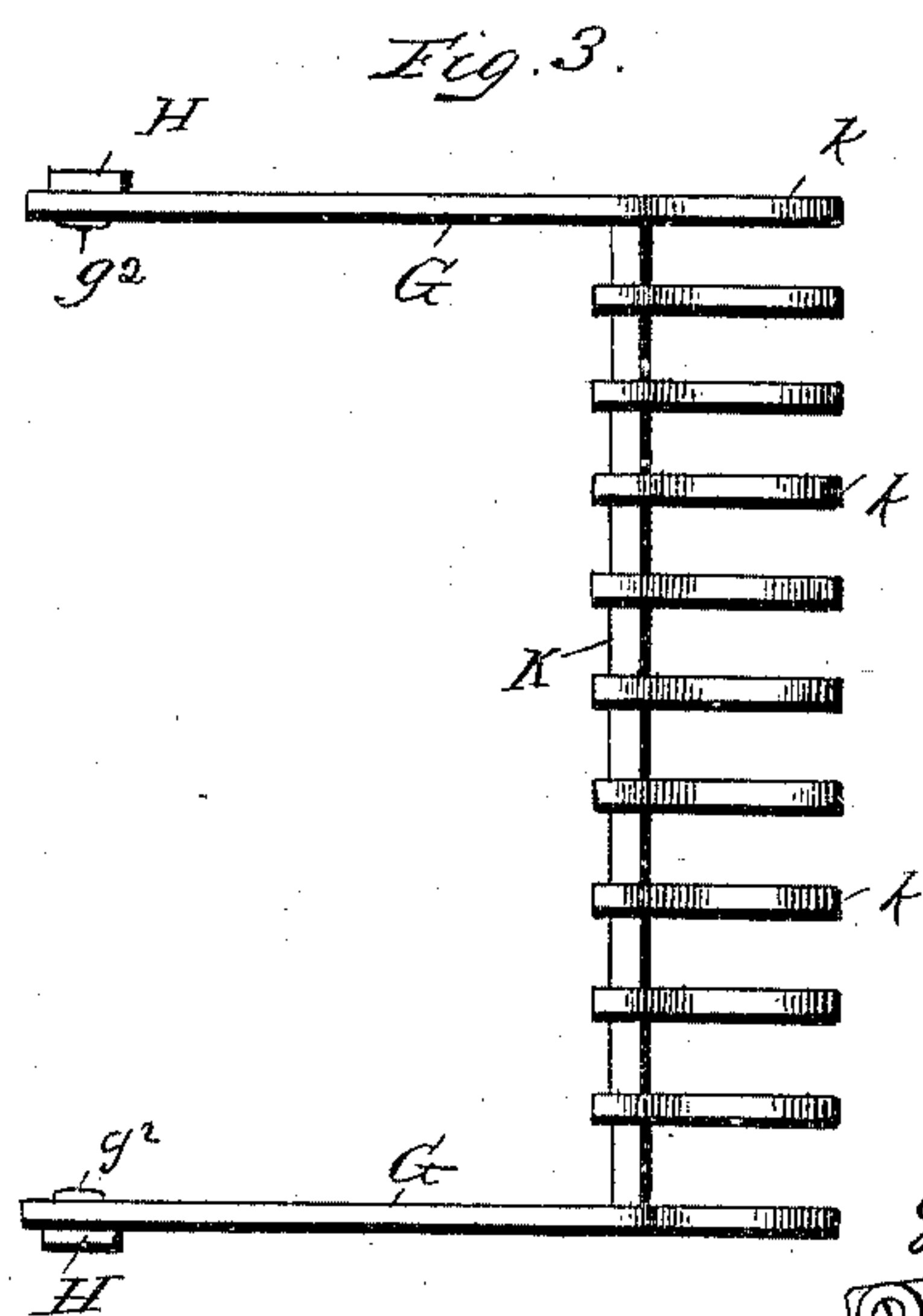
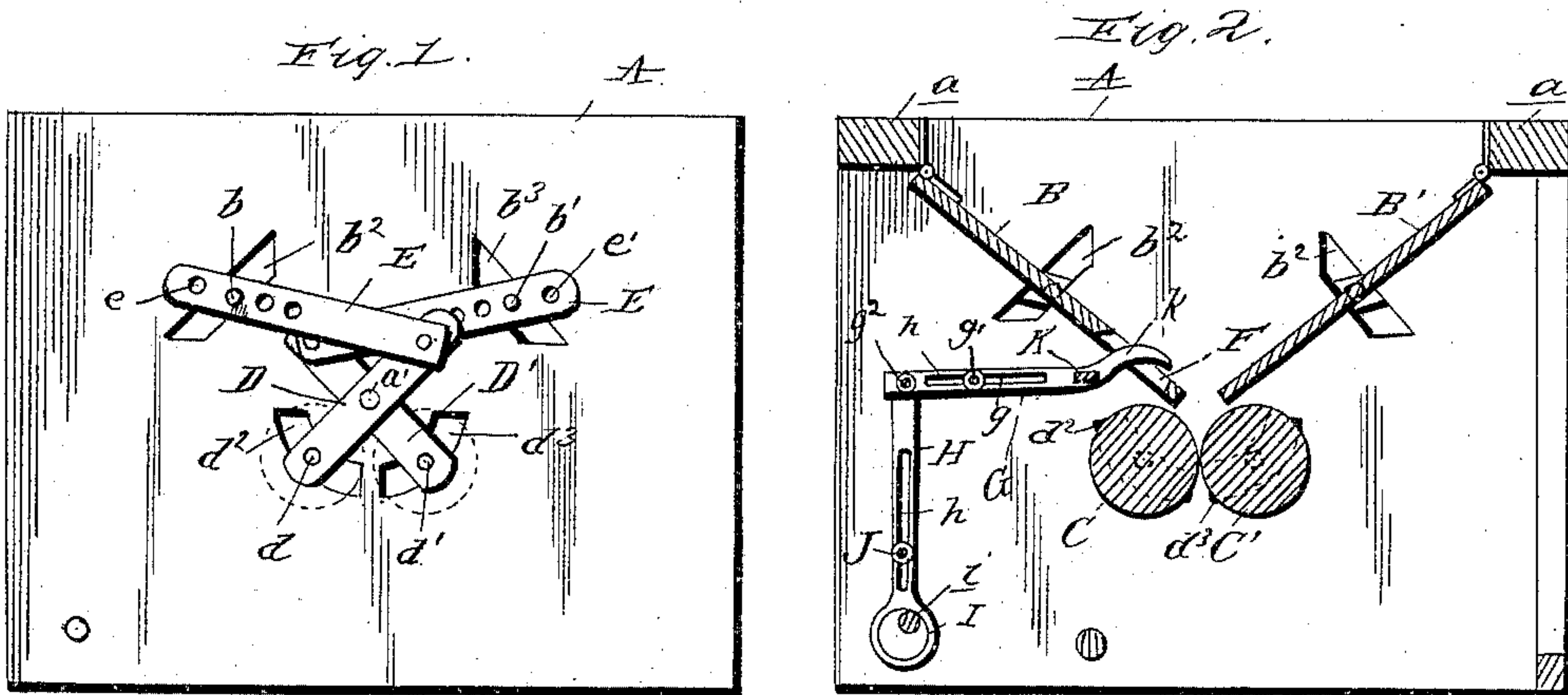


(No Model.)

S. W. WOODBURY.
COTTON FEEDER.

No. 445,916.

Patented Feb. 3, 1891.



Witnesses:
W. B. Rudder
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UNITED STATES PATENT OFFICE.

STEPHEN W. WOODBURY, OF WINCHESTER, NEW HAMPSHIRE.

COTTON-FEEDER.

SPECIFICATION forming part of Letters Patent No. 445,916, dated February 3, 1891.

Application filed November 22, 1889. Serial No. 331,176. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN W. WOODBURY, a citizen of the United States, residing at Winchester, in the county of Cheshire and State of New Hampshire, have invented certain new and useful Improvements in Cotton-Feeders; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to feeders for cotton, wool, and other fibrous stock, and aims to provide a feeder that will deliver the desired amount of stock in a given time and in a uniform manner and to devise means for positively ejecting the stock from the hopper and preventing its packing therein.

This machine is designed to be attached to what is commonly known among hat-manufacturers as "forming and blowing machines" and to what is known among woolen and cotton manufacturers as the "first breaker or cotton-lapper."

The improvement consists of the novel features which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a side view of a feeder embodying my invention. Fig. 2 is a cross-section of the machine. Fig. 3 is a top plan view of the ejecting device. Fig. 4 is a diagrammatical view showing the operation of the feed-rollers, the doors or sides of the hopper, and the levers connecting the doors and the feed-rollers. Fig. 5 is an enlarged detail view showing the operation of the ejecting device.

The sides A of the frame are suitably connected by the cross-bars *a*, and between them are placed the feed-regulating devices consisting of the movable doors B and B' and the rollers C and C'. The doors B and B' incline in opposite directions and have arms *b* and *b'* at their ends, which extend through slots *b*² *b*³ in the sides A. The journals *d* and *d'* of the feed-rollers C and C' project through slots *d*² and *d*³ in the said sides A and have bearings in the lower ends of the levers D and D', which are crossed and mounted upon

a common pivot *a'*. The upper ends of the levers D and D' are connected with the arms *b* and *b'* by the links E and E'. By this construction and arrangement of the parts obviously as the feed-rollers separate the lower edges of the doors will be brought together, thereby reducing the amount of stock fed to the rollers, and again when the rollers approach nearer the prescribed distance the lower edges of the doors will separate, thereby permitting more stock to be fed to the said rollers. The normal feeding-space between the rollers and between the lower edges of the doors is regulated by placing the arms *b* and *b'* in holes in the links E and E' at different distances from the points at which such links are connected to levers D D'.

The door B is provided near its lower edge with a series of slots F, through which ejecting-fingers *k* are adapted to work for forcing the stock from the hopper—i. e., from between the doors B and B'. The actuating-arms G are provided with slots *g*, and through these slots extend the rods *g'*, on which the actuating-arms are mounted. The levers H, having their lower ends mounted on the eccentrics I on the shaft *i*, are connected at their upper ends with the actuating-arms G by the pivots *g*². These levers have slots *h*, through which projects the rod J. As shaft *i* revolves, the levers H receive a vertical motion and a tilting movement about the rod J and impart a corresponding movement to the outer ends of the actuating-arms G, which ends travel in an elliptical path, and by reason of the actuating-arms G being mounted on the rod *g'* the ejecting-fingers *k*, which are connected with their front ends, are thrust through the upper ends of the slots F and are carried downward in a curved path, and at the limit of the downstroke of the front ends of the arms the fingers *k* are withdrawn and are carried in a straight line to the place of beginning.

In practice it has been found necessary to provide only two actuating-arms G and place them at opposite ends of the feeder-frame, the said arms being connected together near their front ends by the rod K, to which are secured the ejecting-fingers *k*, which correspond in number with the number of slots F intermediate the end slots in the said bottom B. These actuating-arms are extended at

their front ends to form ejecting-fingers, which are similar to the ejecting-fingers $\frac{1}{2}$ and which work through the said end slots E.

Having fully described my invention, what
5 I claim, and desire to secure by Letters Patent, is—

1. In a feeder, the combination, with the adjustable doors, of the feed-rollers, and means, as the levers and links, for connecting
10 the said doors and rollers to cause the doors to separate when the rollers approach, and vice versa.

2. The combination, with the doors and the feed-rollers, of the levers having fulcrums between their ends, which ends are connected
15 with the rollers and with the said doors, substantially as and for the purpose described.

3. The combination, with the doors and rollers, of the levers pivoted between their ends
20 and connected with the rollers, and links adjustably connecting the levers with the doors, substantially as and for the purpose set forth.

4. The combination, with the doors and the feed-rollers, of the crossed levers pivotally
25 supported at their point of intersection, the lower ends of the levers supporting the said rollers, and means, as the links, for adjustably connecting the upper ends of the levers with the said doors, substantially as described.

5. The combination, in a feeder, of an eject- 30
ing-finger, an actuating-arm connected with the said finger, a lever connected with the outer end of the said actuating-arm and having an eccentric connection at its lower end
35 with a power-driven shaft, and supports for the said arms and levers, intermediate their ends, which will permit a sliding and tilting movement thereon of the said arm and lever, substantially as set forth.

6. In a feeder, the combination of two act- 40
uating-arms, one at or near each end of the feeder, a support intermediate the ends of the arms for the said arms to tilt and slide on, two levers connected at their upper ends with the said arms and having eccentric connec- 45
tion at their lower ends with a power-driven shaft, and a support intermediate the ends of the said levers for them to slide and tilt on, the bar connecting the said actuating-arms at their front ends, and the ejecting-fingers con- 50
nected with the said arms, substantially as described.

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

STEPHEN W. WOODBURY.

Witnesses:

JAMES H. BLISS,

HOSEA W. BRIGHAM.