

No. 791,243.

PATENTED MAY 30, 1905.

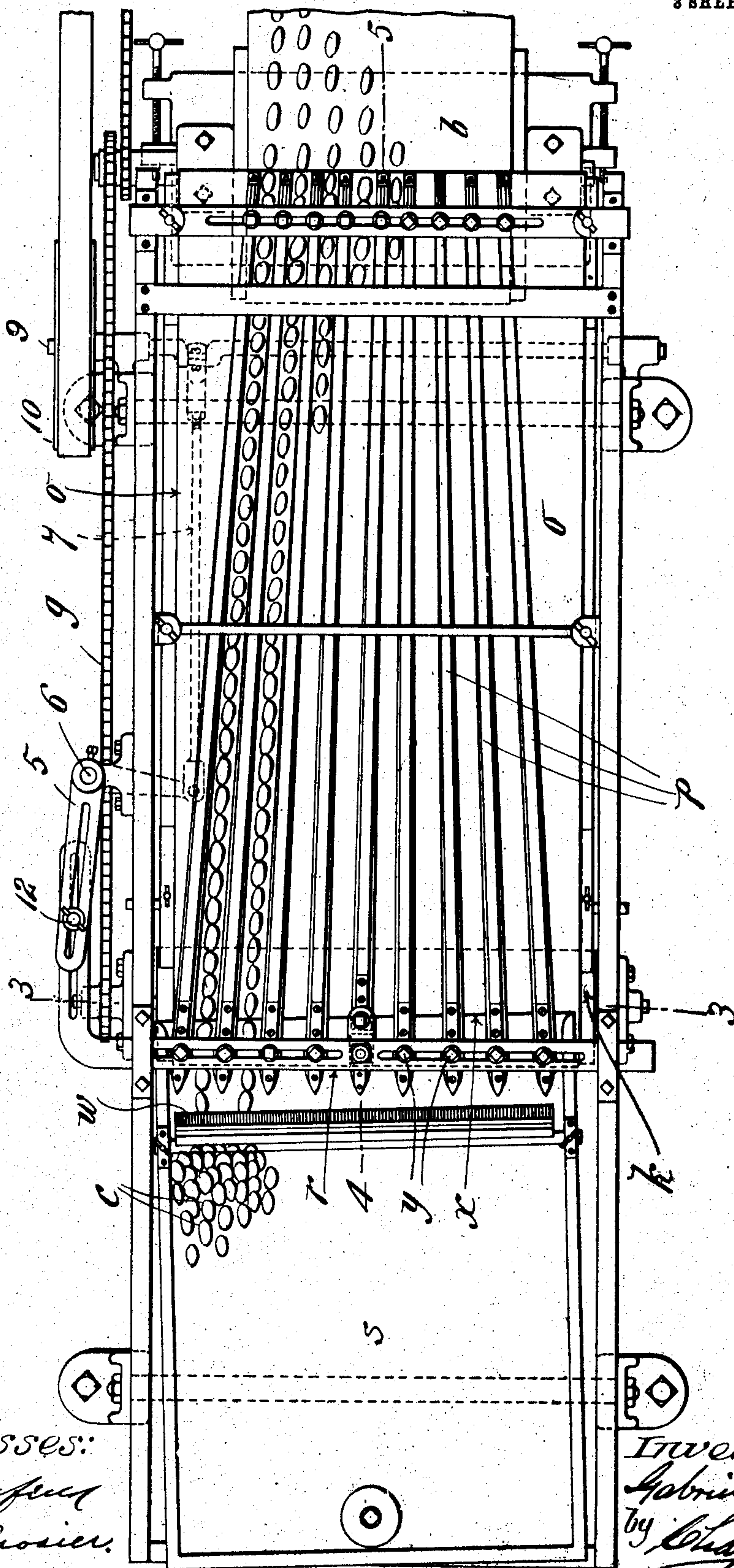
G. CARLSON.

FEEDING DEVICE FOR CONFECTIONERY MACHINES.

APPLICATION FILED AUG. 14, 1903.

3 SHEETS—SHEET 1.

Fig. 1.



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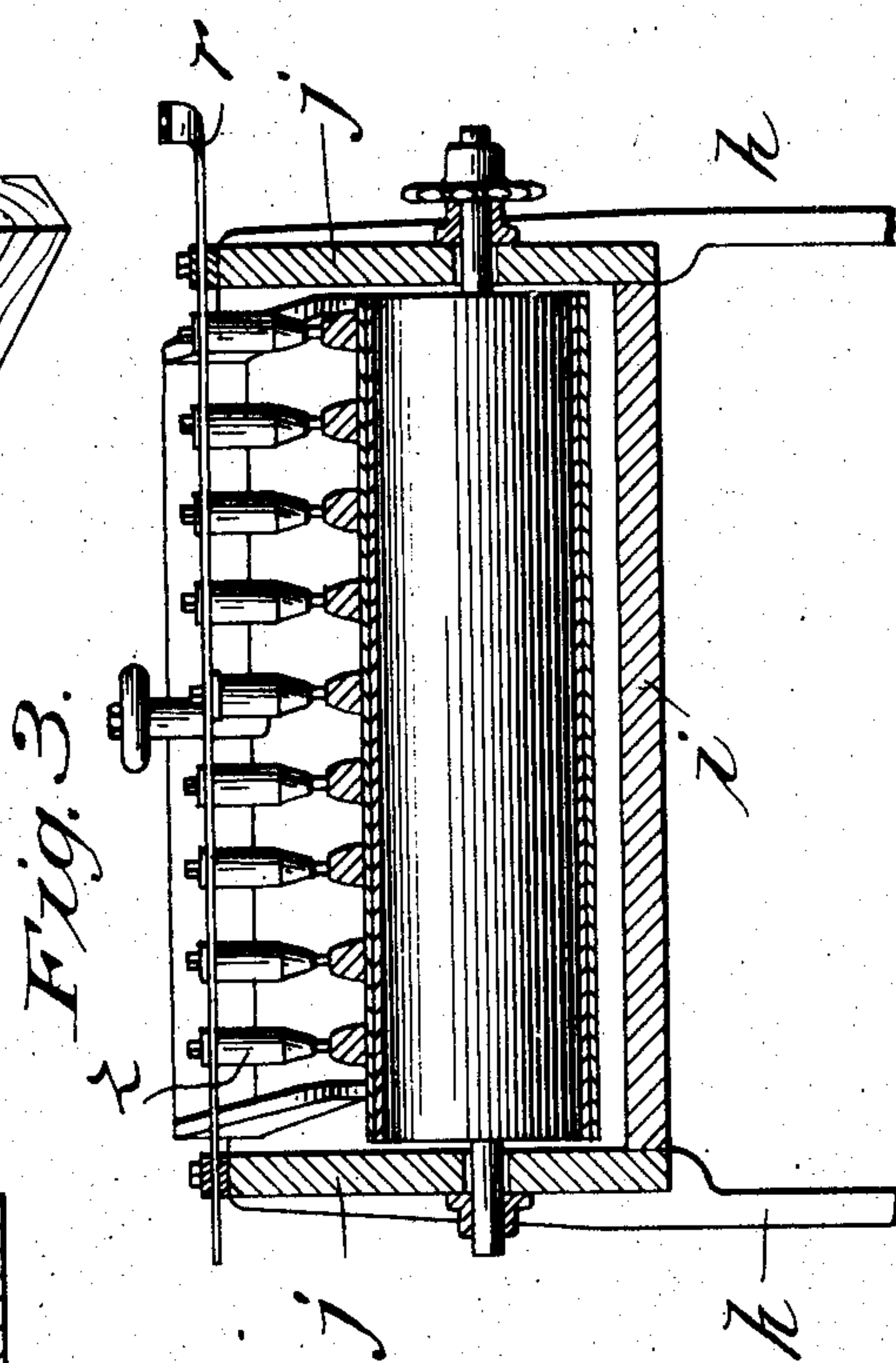
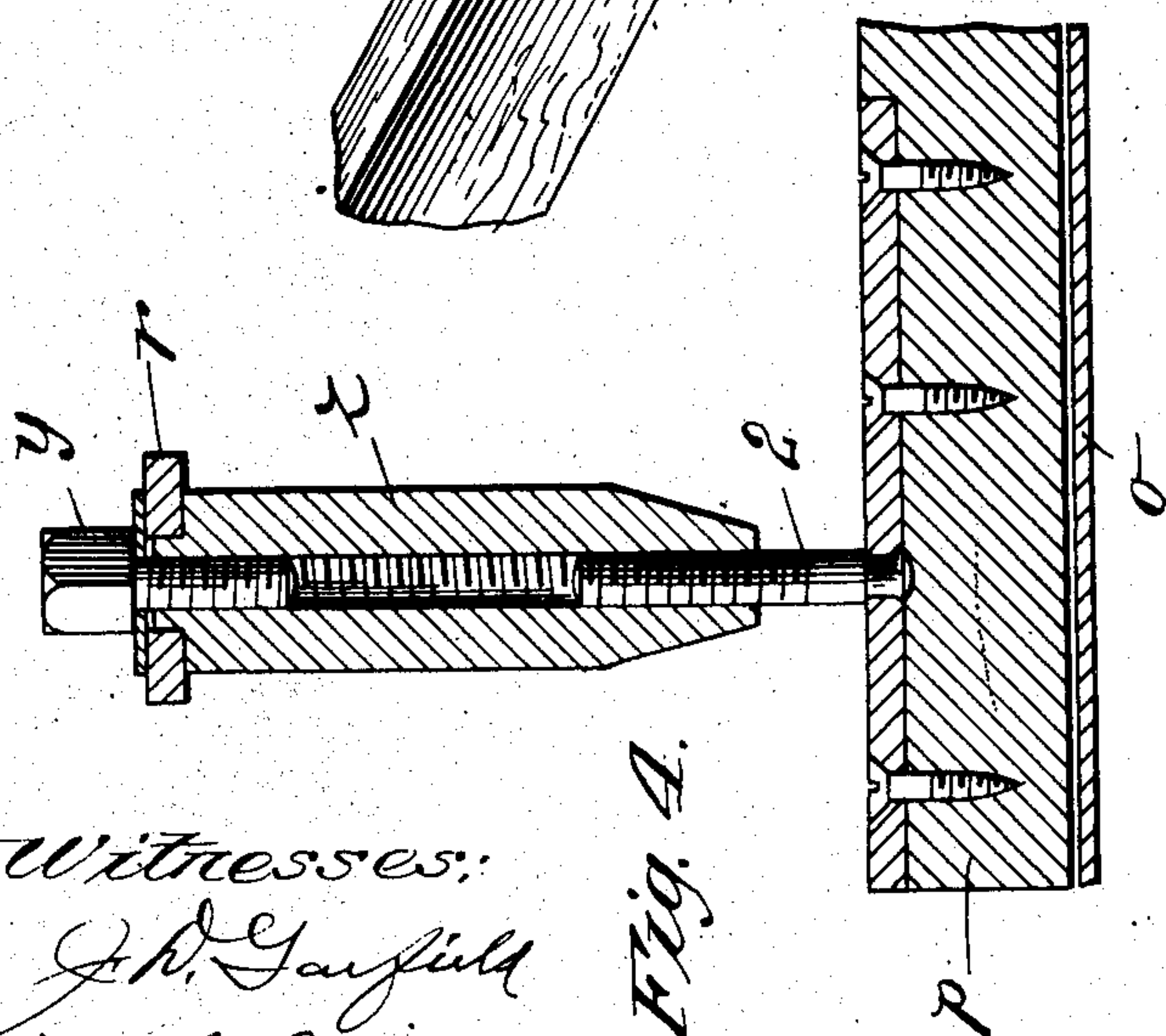
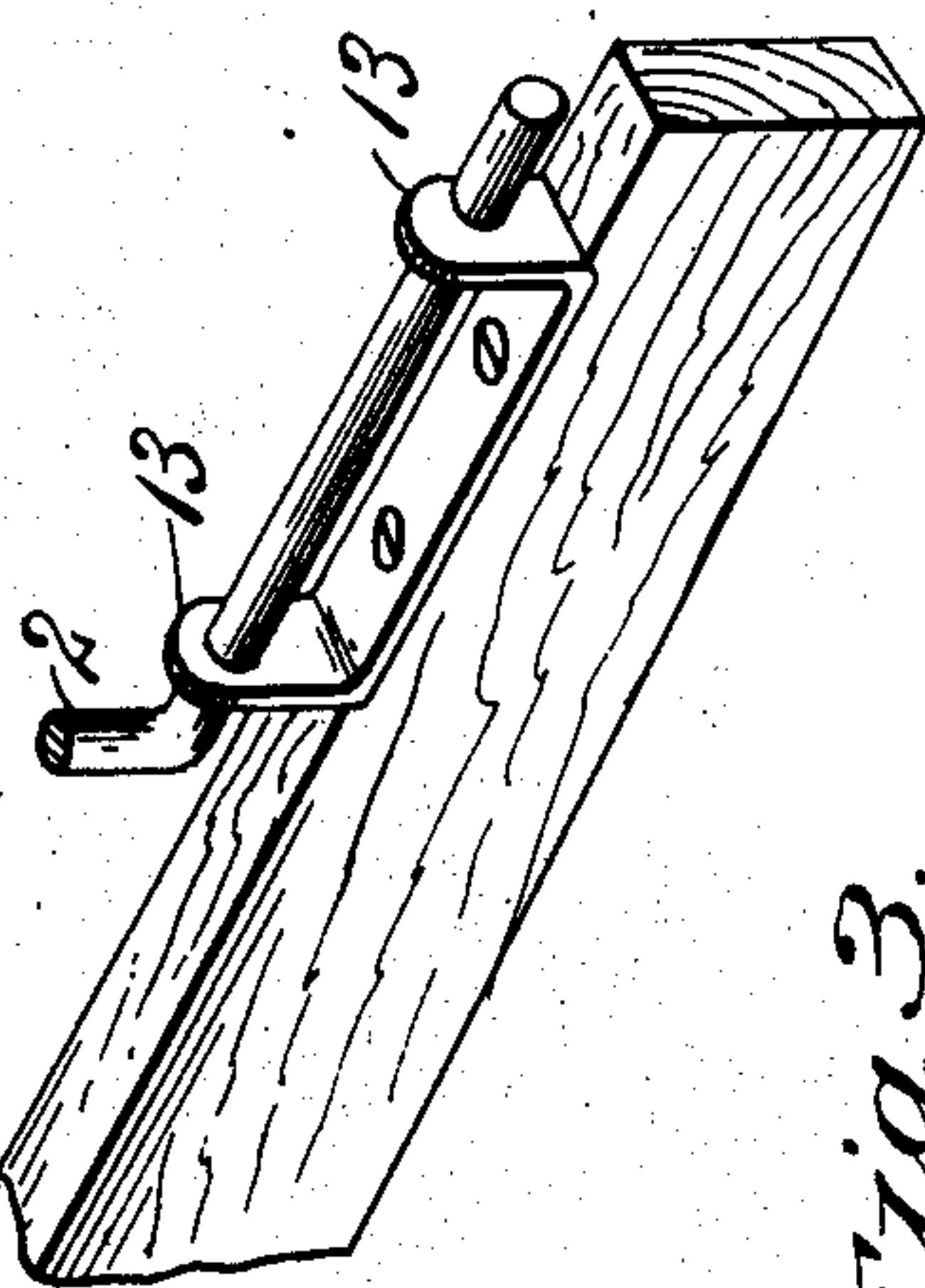
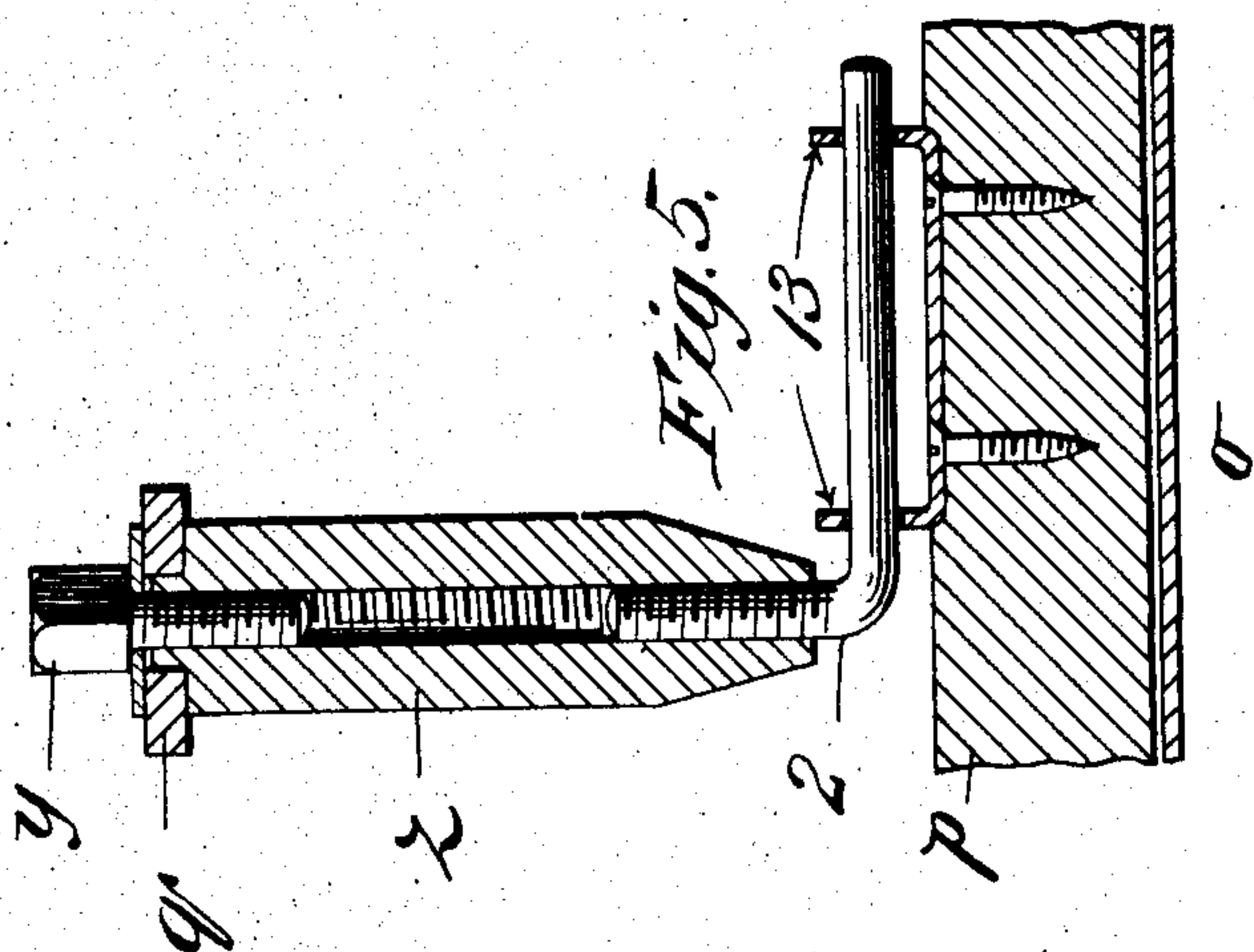
3 SHEETS—SHEET 2.

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APPLICATION FILED AUG. 14, 1903.

3 SHEETS—SHEET 3.



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Fig. 4.

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UNITED STATES PATENT OFFICE.

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FEEDING DEVICE FOR CONFECTIONERY-MACHINES.

SPECIFICATION forming part of Letters Patent No. 791,243, dated May 30, 1905.

Application filed August 14, 1903. Serial No. 169,520.

To all whom it may concern:

Be it known that I, GABRIEL CARLSON, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Feeding Devices for Confectionery-Machines, of which the following is a specification.

This invention relates to confectionery-machines, and is especially adapted for use in connection with coating-machines.

Heretofore the blank confections have been fed to the coating-machine manually. In certain classes of work it is essential that the blanks be placed with more or less uniformity on the feed-apron of the coating-machine in order that they may be properly coated and also to permit them to be economically handled in subsequent processes.

The object of the present invention is to provide a machine whereby blank confections may be deposited on the feeding devices of a coating-machine in regular alinement longitudinally and transversely and the provision of means whereby the spacing of the blank confections one relative to the other may be varied both transversely and longitudinally. The mechanism whereby these ends are attained will be now fully described in the following specification and clearly pointed out in the claims.

In the drawings forming part of this application, Figure 1 is a top plan view of a machine embodying this invention. Fig. 2 is a sectional elevation of the same, taken centrally of Fig. 1 and longitudinally thereof. Fig. 3 is a cross-sectional elevation of the machine on line 3 3, Fig. 1. Fig. 4 is an enlarged sectional elevation of adjustable supporting means for a member of the machine, said view being taken on line 4 4, Fig. 1. Fig. 5 is a sectional elevation, also somewhat enlarged, taken on line 5 5, Fig. 1, and showing an adjustable support for the opposite end of the element of the machine to that supported by the device shown in Fig. 4. Fig. 6 is a perspective view of parts of the support shown in Fig. 5. Fig. 7 is a perspective view of the support shown in Fig. 4 and certain parts associated therewith.

Referring now to the drawings, more especially at present to Fig. 2, *a* is a portion of the end frame of a coating-machine—such, for example, as forms the subject-matter of my United States Letters Patent, dated January 6, 1903, No. 717,970, *b* being the feed-apron on which the blank confections *c* are carried through the machine and coated. This apron runs over a roll *d*, whereby it is moved at that rate of speed necessary to permit the blanks to receive their coating material and to permit the latter to properly set before issuing from the machine. This roll *d* is mounted on a shaft *e*, which has on the end thereof a sprocket-wheel *f*, whereby by means of a chain *g* the blank-feeding devices which form the subject of this application are driven.

The blank-feeding device consists of a frame *h*, provided with a trough-like body, of which *i* is the bottom and *j* the sides. In this body portion there is mounted transversely thereof a roll *k*, which is rotated by means of the chain *g*. Located in the body portion of the device and supported between the two sides *j* thereof is an adjustable platform *m*, the forward end of which is located about vertically over the shaft *e* and in close proximity to the surface of the feed-apron *b*. This platform or table serves as a support for the apron *o*, which runs over the roll *k* and over the forward end of the table, said apron constituting the conveyer for carrying the confections to the apron *b* of the coating-machine.

The speed of movement of the apron *o* may be varied by replacing the sprocket-wheel *f* with one of different diameter or, obviously, by shifting the sprocket on the shaft of the roll *k*, an idler *n* for the chain being provided to make this adjustment possible.

Obviously any change in the speed of the aprons *o* and *b* one relative to the other will result in a change in the distance between the blanks *c* deposited on the apron *b* from the apron *o*.

To provide for the proper alinement of the confections as they are deposited on the apron *b*, they are guided through certain channels established adjustably on or in close relation to the apron *o*, which channels are formed by

a series of substantially parallel wooden bars *p*, adjustably supported on the slotted bars *q* and *r*, located transversely of the machine and respectively over the rolls *d* and *k*.

5 At the extreme rear end of the machine between the sides *j* is an inclined scoop-shaped receptacle *s* for the confections, which inclines downwardly toward the upper surface of the apron *o*, and the end of it overlaps said apron
10 more or less. The rear end of this receptacle is supported on a spring *t*, located on an extensible post *u*, whereby the degree of inclination of said receptacle may be varied. A shaft *v* extends across the top of the receptacle
15 and has mounted thereon a bar in the lower edge of which is a brush *w*, which normally hangs down into the receptacle *s* and serves as a sort of drag to hold back the confections *c* in the receptacle, permitting only
20 a few at a time to work forward under it. The forward edge of the receptacle *s* is substantially in the plane of the upper surface of the apron *o*, and the bars *p* extend over into the receptacle, as shown in Fig. 1, the extreme forward edge of the latter being indicated by the letter *x*. The ends of these bars
25 which extend over the bottom of the receptacle, near the edge of the latter, are supported in closed proximity to the surface of the latter on the transversely-located support *r*, which is slotted from a point near its center each way, bolts *y* extending through these
30 slots and into the ends of the sleeves *z*, (shown in Figs. 4 and 5,) a post 2, secured to the ends of these bars, being screw-threaded into the lower end of this sleeve. The bolt *y* serves to bind these sleeves to the support *r*, and by loosening this bolt and turning the sleeve the bar *p* may be raised and lowered
35 to adjust it relative to the surface of the apron *o*. One of the bars *p*—viz., the central one—does not extend over the edge of the receptacle *s*; but, as shown in Fig. 7, the end of it is cut off and permanently fastened to the bottom of said receptacle, and through this
40 end (which is indicated by *p'*) a post 3 extends upward and through the support *r*, to which it is bolted, and by means of this post an arm 4 is so secured as to extend over the adjacent end of the said central bar *p*, with
50 which it is pivotally connected in the same manner as are the ends of the other bars just described. It is thus clear that the forward end of the receptacle *s* is supported on the bar *r* by means of the post 3. This support
55 *r* has a transversely-sliding movement imparted to it by an elbow-lever 5, mounted in a shaft 6, a connecting-rod 7 extending from one arm of said lever to a crank 8 on the shaft 9, which may be rotated by a suitable
60 pulley 10.

To provide means for varying the throw of the support *r*, the end thereof and one arm of the elbow-lever 5 are slotted, a bolt 12 extending through both slots, the location of

which bolt relative to the axis of the elbow-lever will determine the transverse movement of the bar.

The forward ends of the bars *p*—that is, the ends thereof which overlie the apron *b*—are also pivotally adjusted on the support *q* in a manner in all respects similar to that described for the other ends of said bars, except that all of the bars are adjustable transversely of the apron *b*. The manner of supporting the forward ends of these bars differs slightly from the manner of supporting the ends over the roll *k*; but this difference in construction is clearly illustrated in Fig. 5, and it consists in turning the end of the post
70 2 to the position parallel with the bar *p* and passing it through the two upturned ears 13, secured to the top of the bar. This gives the bar a slight endwise adjustment, as well as a pivotal support on which they may swing in a
80 horizontal plane.

From the foregoing description of this machine it is seen that the confections *c* in the receptacle *s* are shaken down under the brush
85 *w*, which permits only a few of the confections to pass on at once, and these enter between the ends of the bars *p* which overlap the forward edge of the receptacle and one by one enter the various channels formed by these bars, and as soon as the confections pass
90 onto the apron *o* they are moved onward through these channels and delivered over the edge of the table or platform *m* onto the apron *b*, which is the feed-apron of the coating-machine and which runs at a greater rate of speed
95 than the apron *o*, the relative speeds of the two aprons being that which will effect the proper spacing between the confections in the line of their movement. As the confections pass down between the bars *p* the latter are
100 subjected to a sidewise shaking movement in their passage over the apron by the reciprocatory traverse movement of the support *r*, and the receptacle *s* swings in the same horizontal plane as these bars. Thus while the
105 relation between the ends of the bars and those confections which are on the bottom of the receptacle does not change as soon as these confections pass onto the apron *o* they are rolled from side to side during their forward
110 movement, whereby, as a matter of course, they become arranged end to end in the channels through which they are passing, with their longest axes in the direction of their movement. It is thus possible to arrange the blanks
115 having substantially the same contour—like blanks, for example, containing almonds—all in the same order of arrangement, which order is not disturbed as they pass out of the coating-machine and are put away in racks to
120 harden. This uniformity of arrangement while of not great importance for certain kinds of confections is, on the contrary, very important for certain other kinds, because of the fact that their arrangement in a certain order
125 130

and their delivery in a certain order onto the feed-apron of the coating-machine not only insures a better product as far as the uniformity of the coating is concerned, but it renders the handling of these blanks much easier both during the feeding operation and in the subsequent packing operation after the coating material has been applied.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with a machine which comprises a belt conveyer to carry pieces deposited thereon through the machine, of an automatic feeding device consisting of a hopper, bars to extend over and lengthwise of said belt conveyer to divide the surface of the latter into channels, one end of said bars being located in proximity to the outlet of said hopper, to guide the pieces into the channels.

2. The combination with a machine comprising conveyer devices to carry pieces of material through the machine, of an automatic feeding mechanism associated therewith and comprising an endwise-movable apron, a series of bars supported in proximity to the apron, the spaces between the bars constituting channels for said pieces extending lengthwise of the apron, means to swing the bars reciprocally transversely to the line of movement of the apron, and a receptacle for the pieces located at one end of said channels and downwardly inclined toward the latter.

3. In combination, a receptacle pivotally supported at one end thereof to swing in a horizontal plane, an endwise-moving feed-apron, bars extending lengthwise of said apron located in proximity to the surface thereof; pivotal supports for the ends of said bars at or near the delivery end of the apron; pivotal supports for the opposite ends of the bars consisting of a support extending transversely of

the feed-apron, and a pivotal connection between said transversely-located support and the free end of said receptacle, together with means to move this last-named support reciprocally endwise, one end of the bars on the apron extending over the contiguous edge of said receptacle, and means to move the transversely-located support of the bars and of the receptacle reciprocatingly endwise.

4. The combination with the conveyer devices of a confectionery-coating machine, of an automatic feeding mechanism therefor consisting of an endwise-movable apron upwardly inclined from said conveyer devices, a receptacle for blank confections located near one end of the feed-apron and upwardly inclined relative thereto; a series of substantially parallel bars supported in close proximity to the feed-apron the ends of which extend over the edge of said receptacle, a centrally-located pivotal support for the rear end of said receptacle, pivotal supports for said bars at the delivery end of said apron, and means to impart to the overlapping ends of the receptacle and of the bars, lateral reciprocating movements together.

5. The combination with a machine which comprises a belt conveyer to carry pieces deposited thereon through the machine, of an automatic feeding device consisting of a hopper, bars to extend over and lengthwise of said belt conveyer to divide the surface of the latter into channels, one end of said bars being located in proximity to the outlet of said hopper, to guide the pieces into the channels, and means on the hopper to prevent superposing of said pieces at the hopper-outlet.

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Witnesses:

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