

No. 667,213

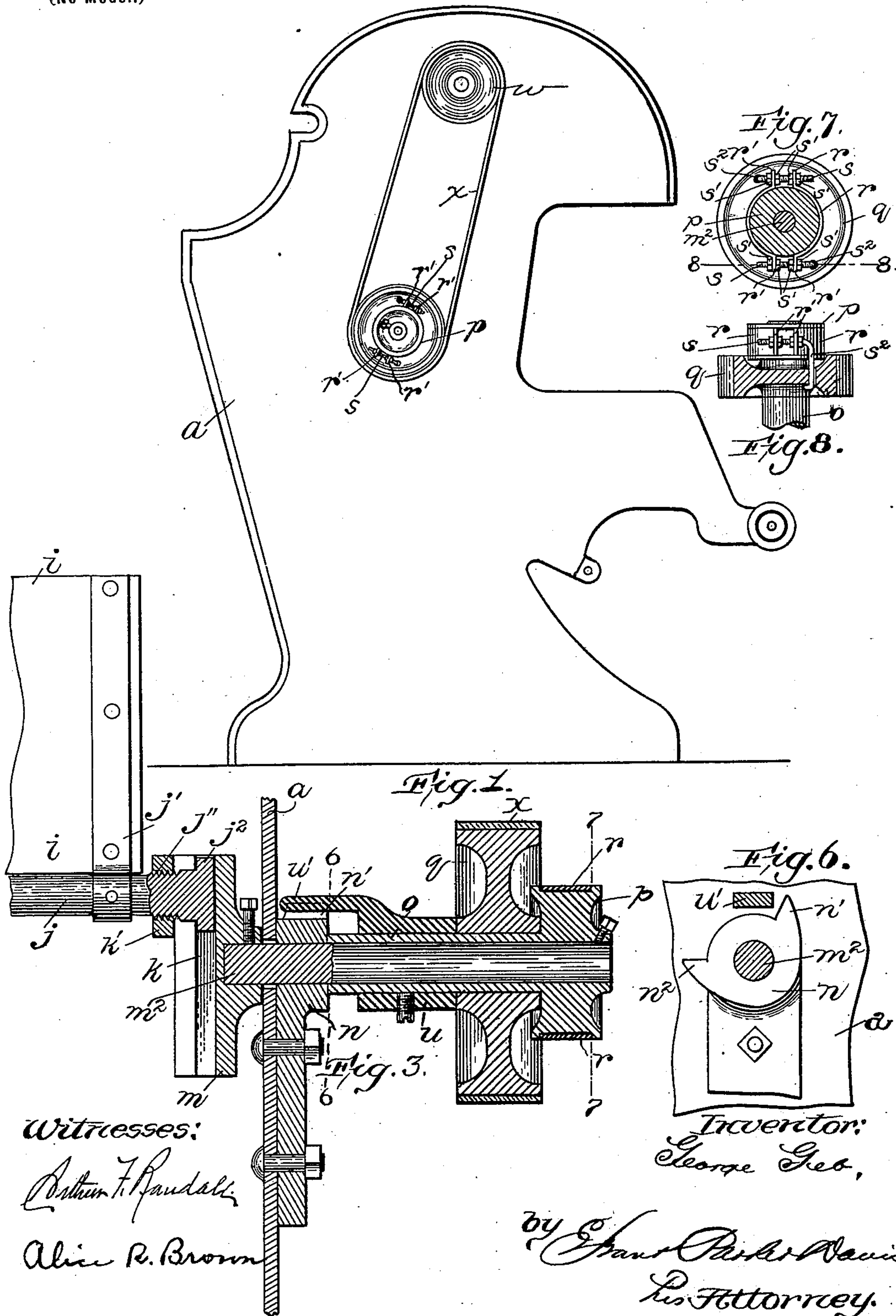
Patented Feb. 5, 1901.

G. GEB.  
CARD FEEDING MACHINE.

(Application filed July 21, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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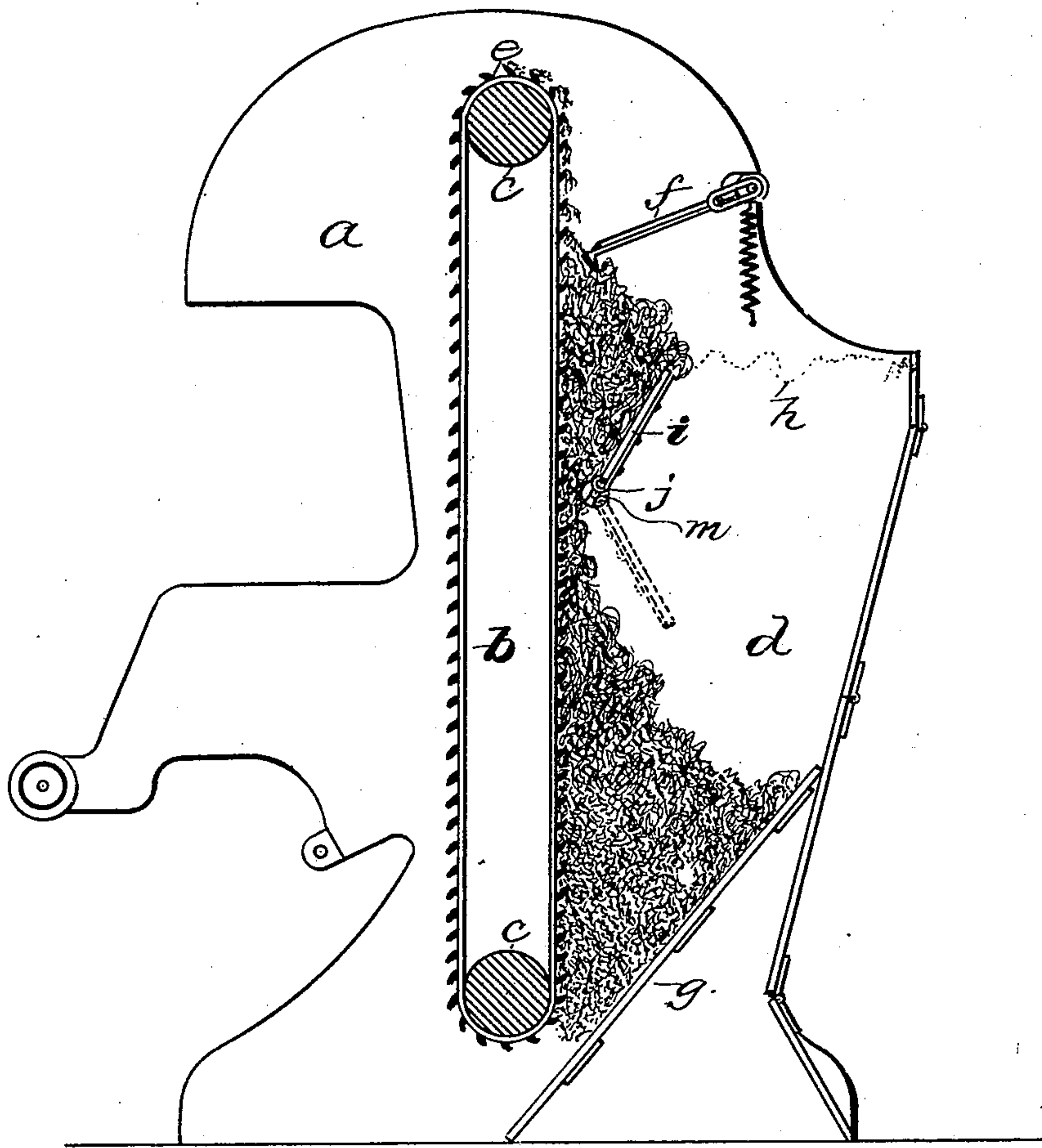


Fig. 2.

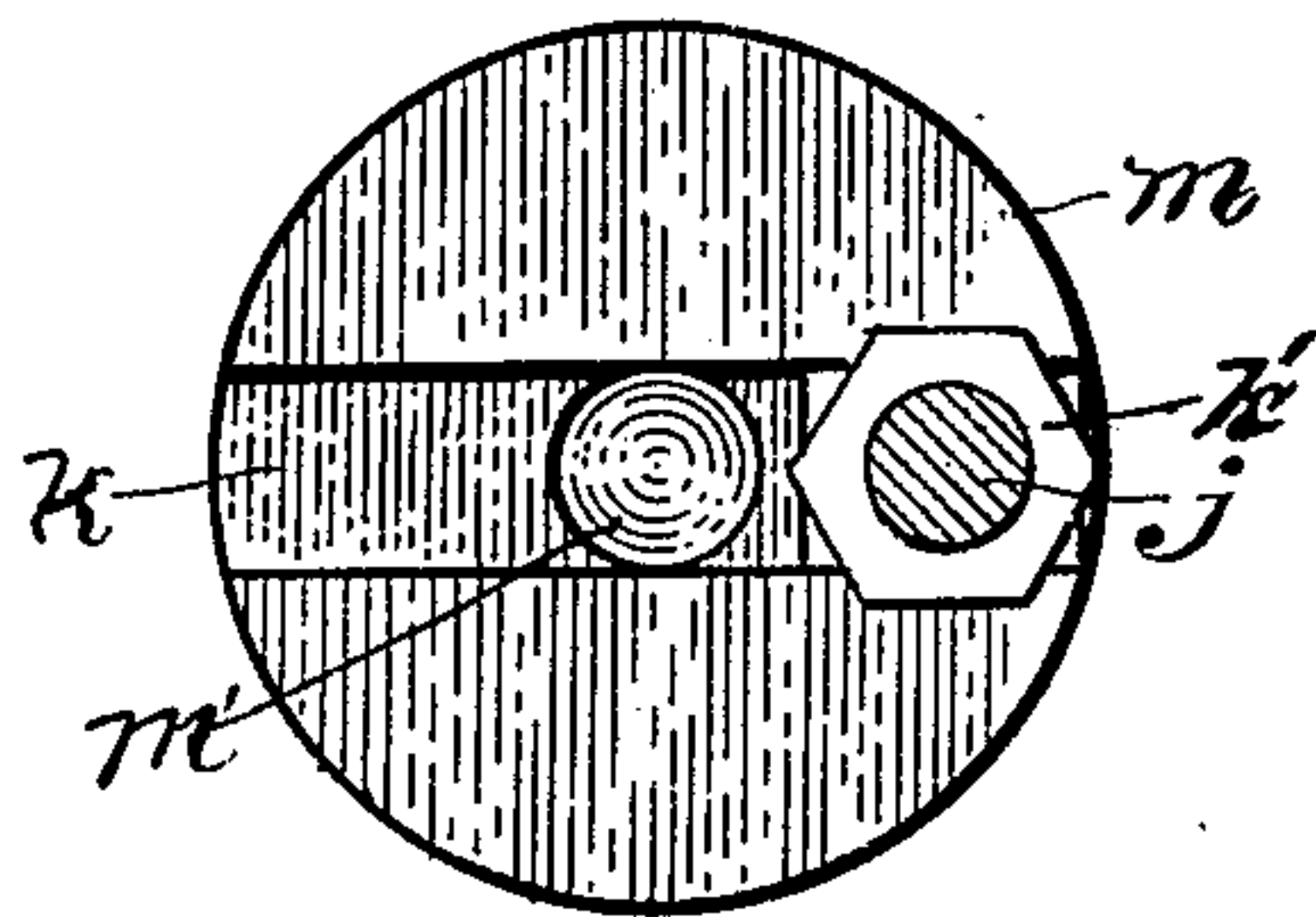


Fig. 4

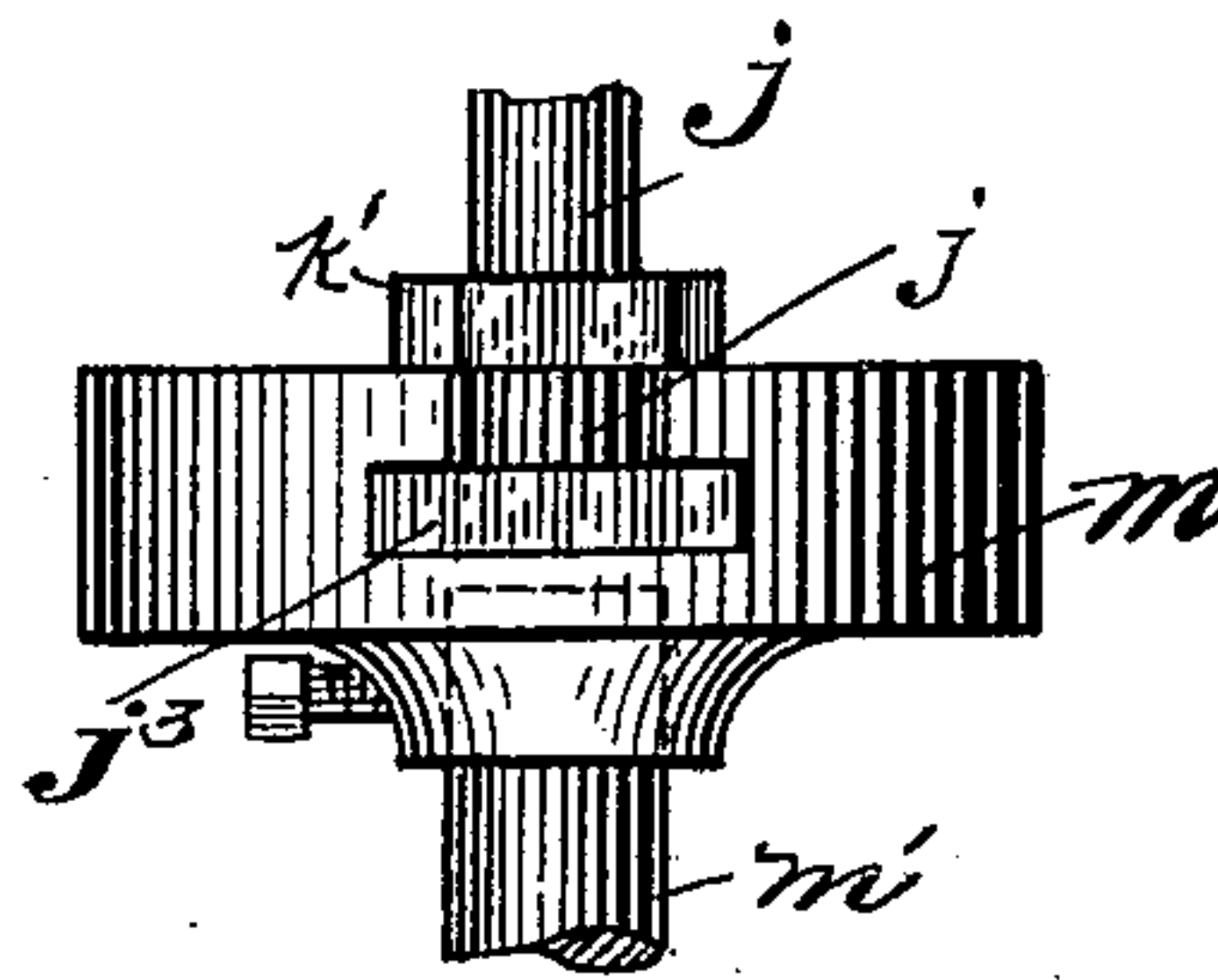


Fig. 5.

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# UNITED STATES PATENT OFFICE.

GEORGE GEB, OF MANTON, MASSACHUSETTS.

## CARD-FEEDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 667,213, dated February 5, 1901.

Application filed July 21, 1900. Serial No. 24,353. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE GEB, of Manton, in the county of Providence and State of Massachusetts, have invented certain new and useful Improvements in Card-Feeding Machines, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

This invention has relation to that type or kind of card-feeding machines commonly known as the "Bramwell," in which the stock in the box is carried up in relatively regular quantity by means of a "spike-apron," to be first delivered to a weighing device and then discharged and fed forward to the cards in even quantity.

It is the purpose of my invention to secure as nearly as is practicable with simple means an even load or quantity of material or stock on the spike-apron whether the box be full, partially full, or nearly empty. It is well known that under common conditions when the box is full the stock will bear against substantially the whole upward-moving portion of the apron below the evening-comb and that when the box is but partially full the stock will bear against but a part of the upward-moving portion of the apron. The consequence of this is an uneven feed of material to the scales—that is, more stock is delivered within a given time to the scales when the box is full than in the same time when the box is nearly empty. By my invention this objection is practically overcome, and the means employed in its accomplishment are so simple and inexpensive in view of the saving and good results accomplished as to make the invention of very great importance in the art of card-feeding machines.

The invention may be embodied in the arrangement of an evening-board in the box of the feeder with one edge thereof pivoted or journaled in suitable bearings at a suitable point in proximity to the path of the upward-moving portion of the feed-apron and intermediate the top and bottom thereof, controlling said board, so that it may be held inclined downwardly when the box is full and moved to upward-inclined position as the box emp-

ties, so that in the latter position it will keep the stock pressed against the feed-apron above the line of the top of the stock in the box with substantially the same effect as would be the case if the box were full. I may control the position of the board by means of a friction device, which acts on the board with a tendency to turn it upward, but in its broad sense any other means acting with substantially the same effect would subserve the prime purposes of the invention.

Reference is to be had to the annexed drawings, and to the letters of reference marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is an outside view of a Bramwell feeder-case stripped of all mechanism or devices excepting such as relate to my invention. Fig. 2 is a vertical sectional view of the same, none of the mechanism except such as coöperates with or forms a part of my invention being shown. Fig. 3 is a longitudinal sectional view, on an enlarged scale, showing the frictional board-impelling means and its stop, together with one of the adjustable board-holders and a sufficient portion of the board for purposes of illustration. Figs. 4 and 5 are, respectively, a face and plan view of the other of the board-holders with its supporting shaft or stud. Fig. 6 is a section on line 6 6 of Fig. 3. Fig. 7 is a section on line 7 7 of Fig. 3, the scale being reduced; and Fig. 8 is a section on line 8 8 of Fig. 7.

In the drawings, *a* designates the casing.

*b* is the usual spike or lifting apron, running over pulleys or similar bearings *c*, so as to lift the stock or wool in the box at *d* up to the point *e*, where it is discharged on appropriate devices, which carry it forward or into the scales, (not shown,) by which it is weighed, and conveyed to the carding-machine in a way so commonly known as to need no explanation to those skilled in the art.

*f* designates the evening-comb, which is operated by appropriate mechanism in proximity to the spike-apron, so as to knock off bunches or undue quantities of wool that may be caught by the apron and carried up and



which would otherwise be carried over and dumped on the means conducting the material to the scales.

$g$  is an inclined board at the bottom of the box, which keeps the material up against the apron, so that the last particles or portions thereof will be brought into contact with the apron. As hereinbefore explained, when the box is full, as indicated at the dotted lines  $h$  in Fig. 2, the stock would be brought to bear against the apron up to near the point where the evening or knocking-off comb acts, and hence the apron would be more freely supplied with material than when the box is partially empty, as shown by the full lines in said Fig. 2.

To overcome the difficulties mentioned and recited at the outset of this specification, I provide an evening or feeding board  $i$ , of sufficient strength, which extends along the entire width of the box, being adjustably supported at each end in holders journaled in bearings on the casing and so arranged as that when the box is full said board will be inclined downwardly to the position indicated by the broken lines in said Fig. 2, and as the box empties the said board will be caused to gradually rise from the position shown in broken lines to the position shown in full lines, and so keep the stock pressed against the apron from its lower lifting-point to the point where the knocking-off or evening comb  $f$  operates. The board  $i$  will be pressed up by frictionally-operating means, hereinafter to be explained, so as to press the stock between it and the apron with some force against the apron. As the machine operates the comb  $f$  will knock off the bunches and unduly large portions from the apron upon the board and keep the stock between the board and the apron even. If, however, there should be too much stock combed off, the board will be pressed back and the undue quantity between it and the apron would fall back into the box below the board, and the operation would keep on until all the stock in the box is fed to the apron and carried up and over to the scales, it making no difference as to the quantity of stock in the use of my invention whether the box be full, partially full, or nearly empty, since the board  $i$  will keep the stock in the bottom of the box pressed against the apron, while that combed off above the pivotal point of the board will be supported by the board  $i$  and pressed against the apron, as will be fully understood by an inspection of Fig. 2. The board is here shown mounted upon a rod  $j$ , to which it is secured by metal straps  $j'$ , said rod being screw-threaded near each end, as shown at  $j''$  in Fig. 3, and being formed with square heads  $j^2$  and  $j^3$  at each end. Said heads engage undercut diametrical grooves  $k$ , formed in the faces of disks  $m$ , secured to studs or shafts  $m'$  and  $m^2$ . Nuts  $k'$  engage the screw-threaded portions of the rod  $j$  and come up against the faces of the disks  $m$  to

hold the board at different adjustments to which it can be brought by sliding the heads  $j^2$  and  $j^3$  in the grooves  $k$ , thereby carrying the board nearer to or farther from the apron, as the case may be, for the obtainment of greater or less amount of stock between the board and the apron as circumstances may require—that is to say, if the board operates near the apron a less amount of stock will be held between it and the apron than would be the case if it were adjusted farther from the apron. The shaft or stud  $m^2$ , carrying one of the disks  $m$ , journals in a bearing  $n$ , fastened against the outer side of the casing, said bearing being formed with lugs  $n'$  and  $n^2$  about ninety degrees apart for a purpose hereinafter explained. A sleeve  $o$  is secured on the shaft  $m^2$  and has compound- ed with it a frictional wheel  $p$ , and turning loosely normally on the sleeve adjacent to said wheel is a pulley  $q$ , driven through the medium of a band  $x$ , connecting it with a pulley  $w$  on the upper apron-shaft. Segmental straps  $r$  embrace the periphery of the wheel  $p$  and have outstanding end portions or ears  $r'$  confronting each other and formed with alining openings. Bolts  $s$  pass through the confronting pairs of ears, respectively, and stop-nuts  $s'$  are applied to said bolts on both sides of each of the ears, the bolts having bent end portions  $s^2$ , which engage sockets in the pulley  $q$  and are confined therein. It will be seen that by this construction the wheel  $p$  will be turned through an adjustable frictional connection with the pulley  $q$ , and the board  $i$  thereby held up against the collection of wool doffed from the spike-apron.

In order to appropriately limit the movement of the board in both directions, I provide the stop-lugs  $n'$  and  $n^2$ , heretofore mentioned, and secure to the sleeve  $o$  a collar  $u$ , formed with a projection  $u'$ , which works between said lugs, whereby the board is prevented from being turned farther upward than is shown by full lines in Fig. 2 or from going downward farther than is shown by the dotted lines.

The bolt-and-nut connection between the pulley  $q$  and straps  $r$  serves to regulate the friction with which the pulley turns, and so regulates the tension that is put on the board, with a tendency of turning it upward, as stated.

In operation when the box is full the board will be down in the dotted-line position, Fig. 2, the stock resting thereon and rolling over it and the board performing no service in the matter of feeding the stock to the apron; but as the stock becomes reduced the weight or pressure on the board is lessened, and the board will be raised upward by the frictional means described, pressing the stock contained upon it with substantially the same force against the spike-apron as the stock was pressed against the spike-apron by its own weight before the board began to rise, and after the stock shall have been almost exhausted



from the box the material combed off by the knocking-off comb *f* will come between the board and apron and still keep the apron fully supplied.

5 I have found by actual experience that this invention performs fully the offices herein ascribed to it and that it operates so that the box need have little or no attention from the time it is filled until the stock is substantially  
10 exhausted therefrom.

While it is true that after the scale-pan has received a certain predetermined weight of wool the spike-apron is automatically stopped, yet whatever wool has been carried past the  
15 top of the apron or the point designated *e* in Fig. 2 will nevertheless pass to the scale-pan, and hence it is highly essential to render as nearly uniform as possible the work of the spike-apron, notwithstanding its automatic  
20 stoppage when the scale-pan receives a predetermined complement of wool.

The provisions for adjustment of the board are not essential, and the board might be mounted directly on the supporting shafts or  
25 shaft, omitting the disks and appurtenances. Other modifications may be made without departing from the spirit and scope of the invention.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

35 1. In a card-feeding machine, the combination with the spike-apron, of a board pivoted at one edge in proximity to the apron at a point intermediate the top and bottom of the acting stretch thereof, so that the weight of  
40 the stock may turn the free edge of the board downward and means for yieldingly pressing the said free edge upward against the stock, substantially as described.

2. In a card-feeding machine, the combination with the feed-box and spike-apron, of a  
45 pivoted board; means operating upon the board with a tendency to press it against the stock, and means for adjusting the board radially of the pivotal supports to vary the dis-

tance of its pivoted edge from the spike-apron, 50 substantially as described.

3. In a card-feeder the combination with the casing or frame and the spike-apron, of a board or the like located intermediate the top and bottom of the acting stretch of the 55 apron and arranged to form a pocket for the reception of material falling backward from the top part of the apron, said board being movably mounted in the casing so as to be capable of assuming an upwardly or a down- 60 wardly inclined position relative to the apron; and means yieldingly impelling the board upward and toward the apron.

4. In a card-feeder the combination with the spike-apron, of a board or the like extend- 65 ing crosswise of the apron and pivotally supported along its lower edge at a point intermediate the top and bottom of the acting stretch of the apron so as to swing toward and away from the latter and also to a downwardly- 70 directed position; and means yieldingly impelling the board upwardly and toward the apron.

5. In a card-feeder, the combination with the spike-apron, of a board or the like extend- 75 ing crosswise of the apron and pivotally supported along its lower edge so as to swing toward and away from the apron, and frictionally-driven means for impelling said board to- 80 ward the apron.

6. In a card-feeder, the combination with the spike-apron, of a board or the like extend- ing crosswise of the apron and pivotally sup- 85 ported along its lower edge so as to swing toward and away from the apron, and frictionally-driven means for impelling said board toward the apron, said means comprising a wheel and straps over the periphery thereof and connected with a driving member.

In testimony whereof I have signed my 90 name to this specification, in the presence of two subscribing witnesses, this 16th day of July, A. D. 1900.

GEORGE GEB.

Witnesses:

JOHN CUDDY,  
CHARLES R. BATES.