

(No Model.)

2 Sheets—Sheet 1.

M. H. NASH.  
THRESHING MACHINE.

No. 605,048.

Patented May 31, 1898.

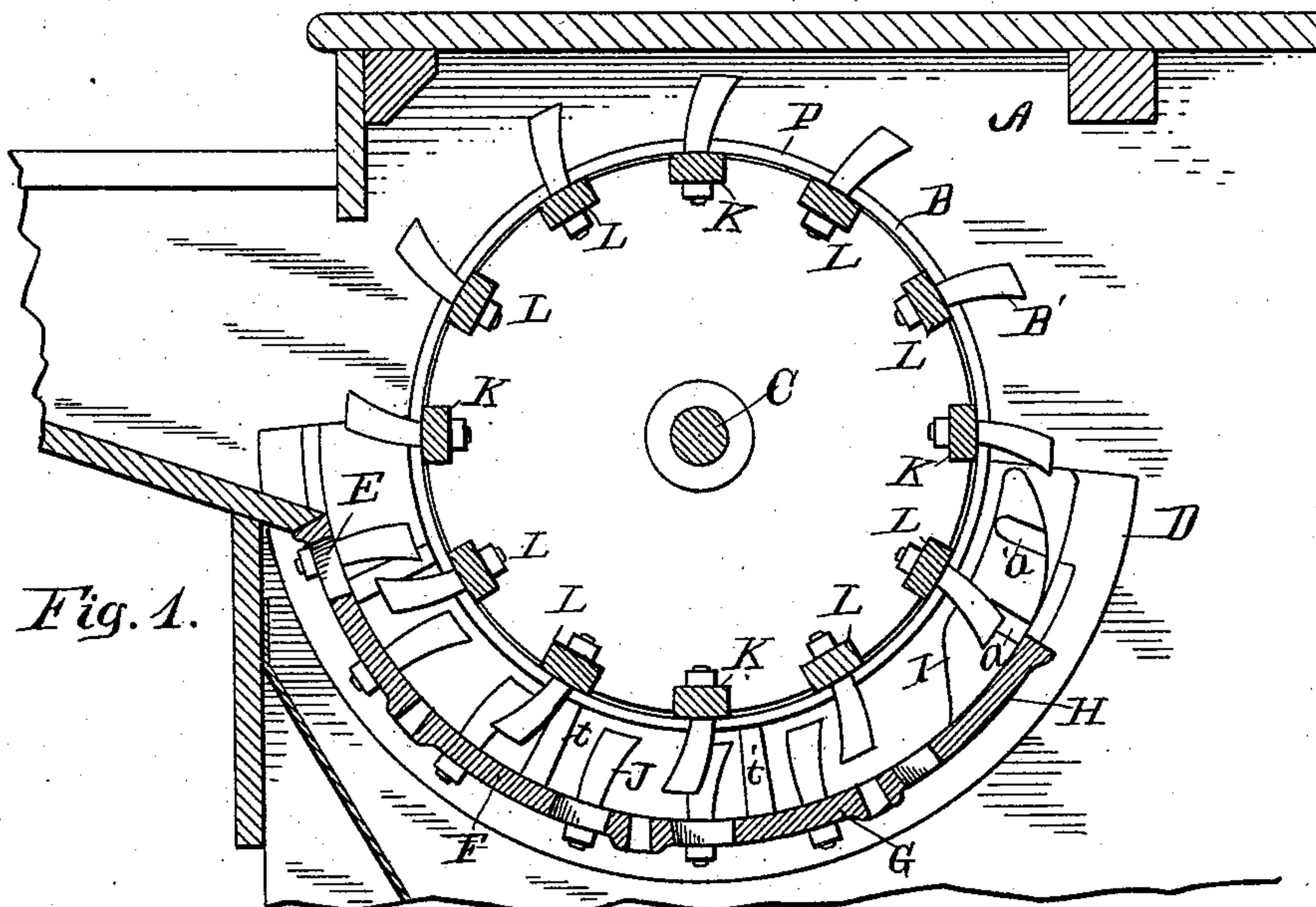


Fig. 1.

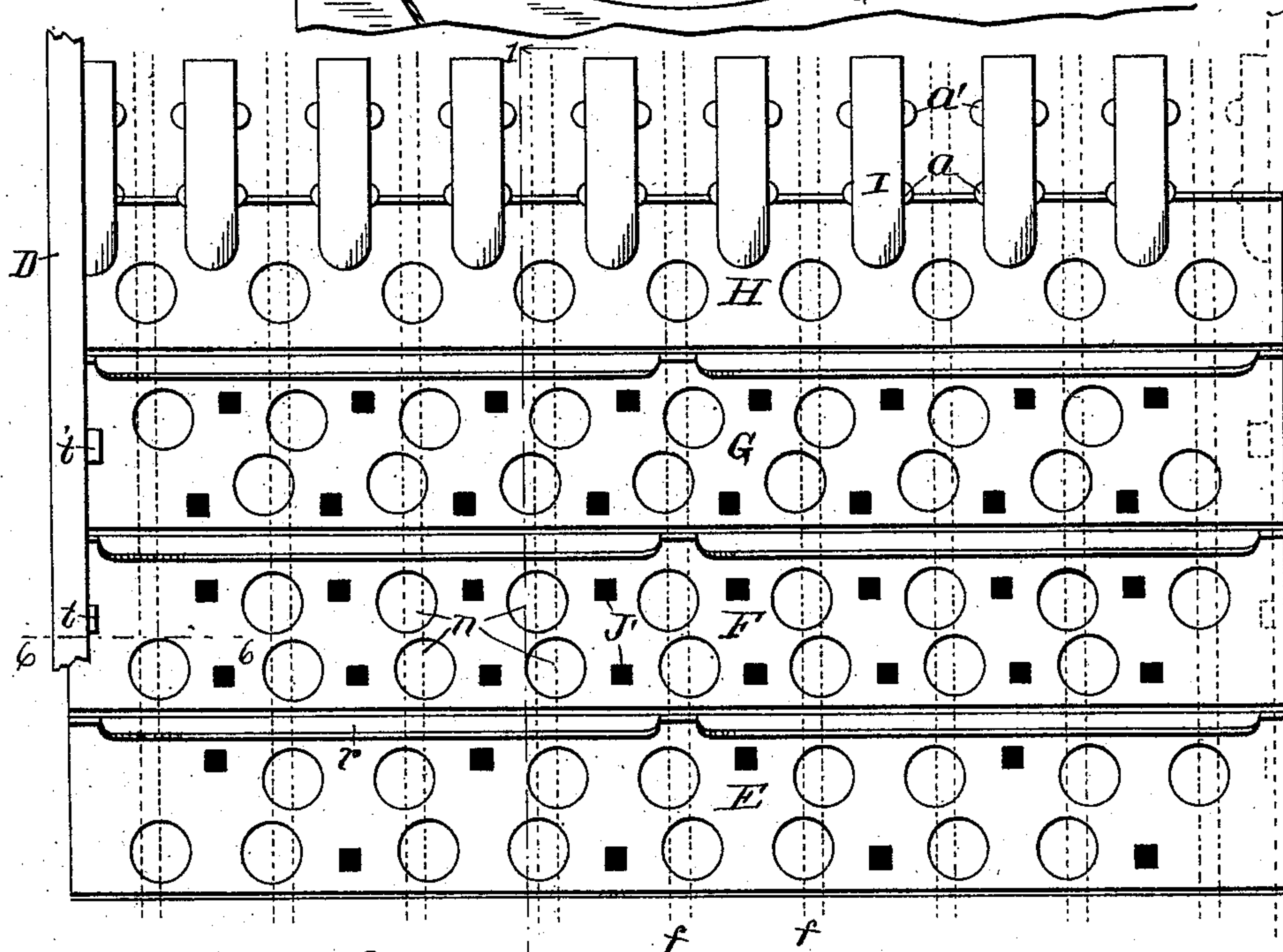


Fig. 2.

Witnesses.

Walter S. Wood  
D. C. Wood.

Inventor.

Myron H. Nash  
By Fred L. Chappell  
Attorney.

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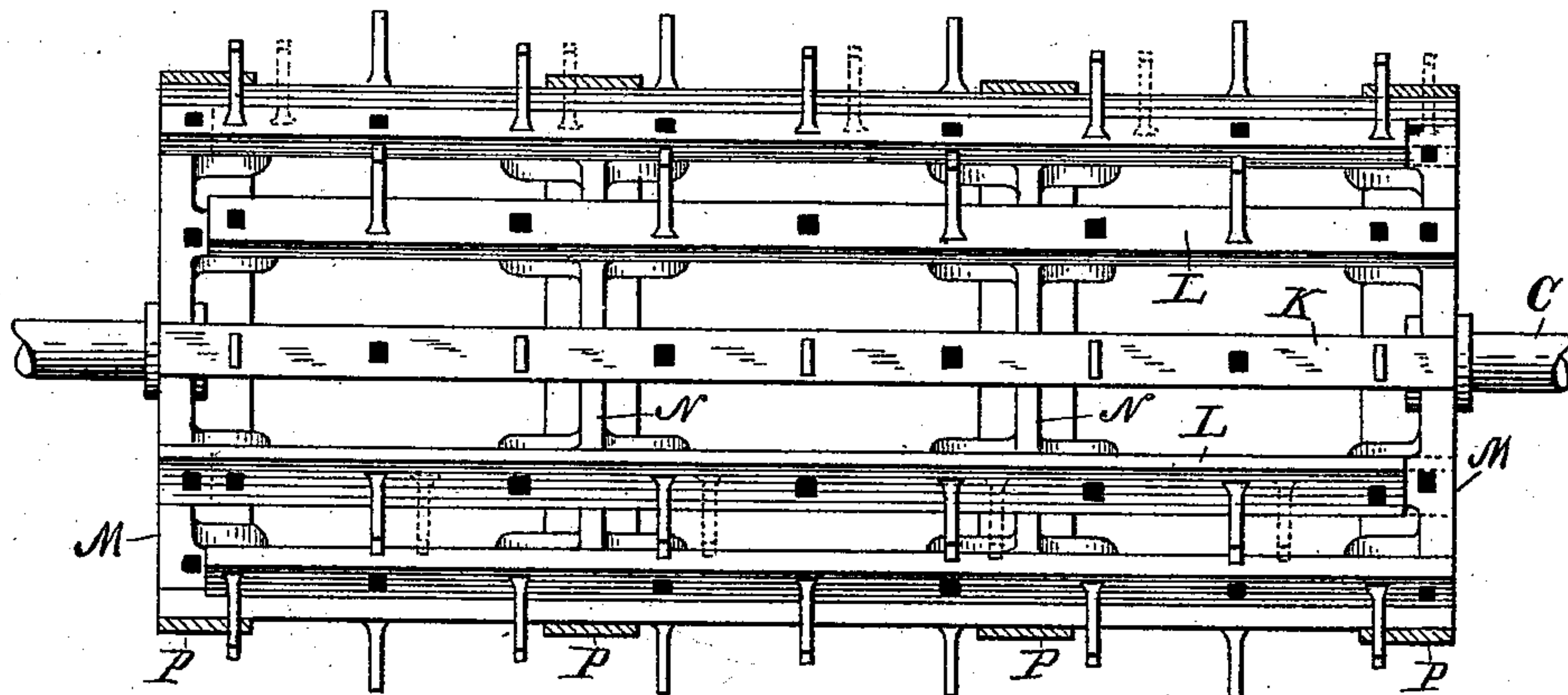


Fig. 3.

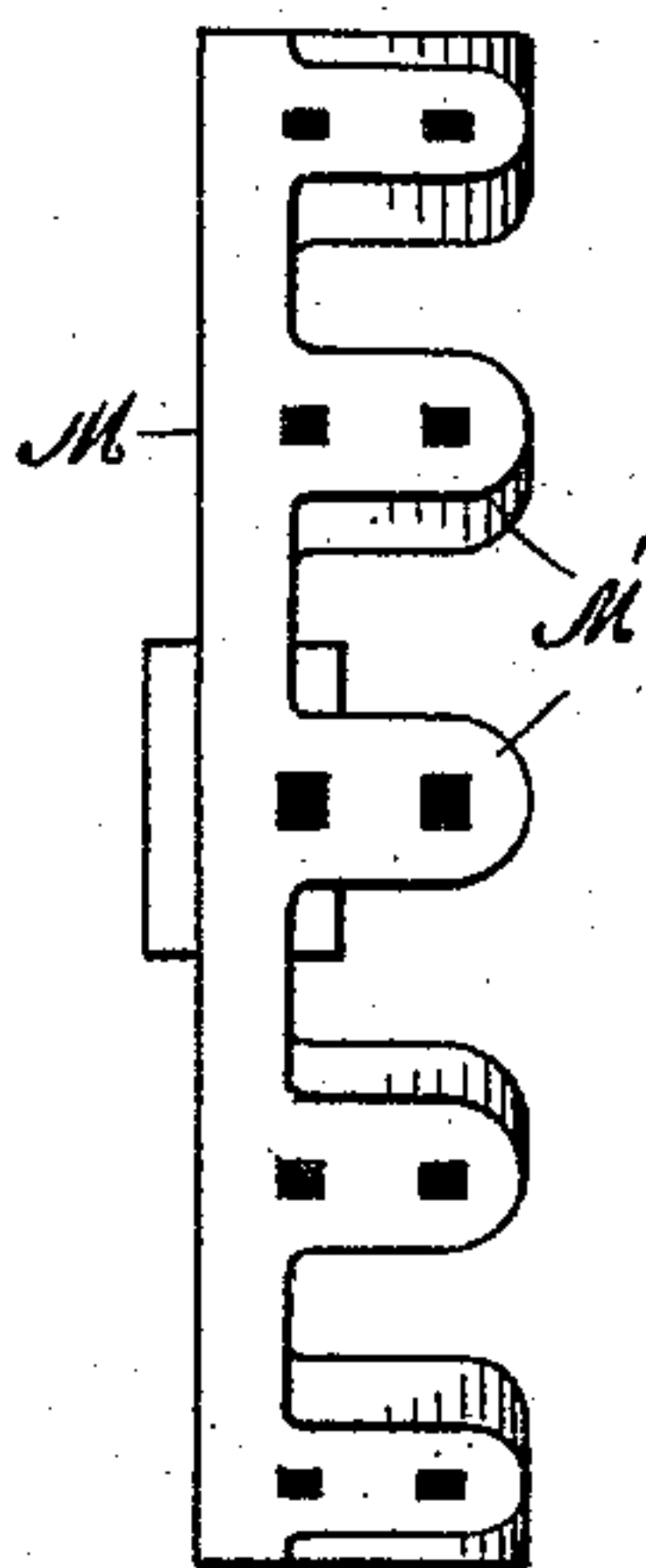


Fig. 4.

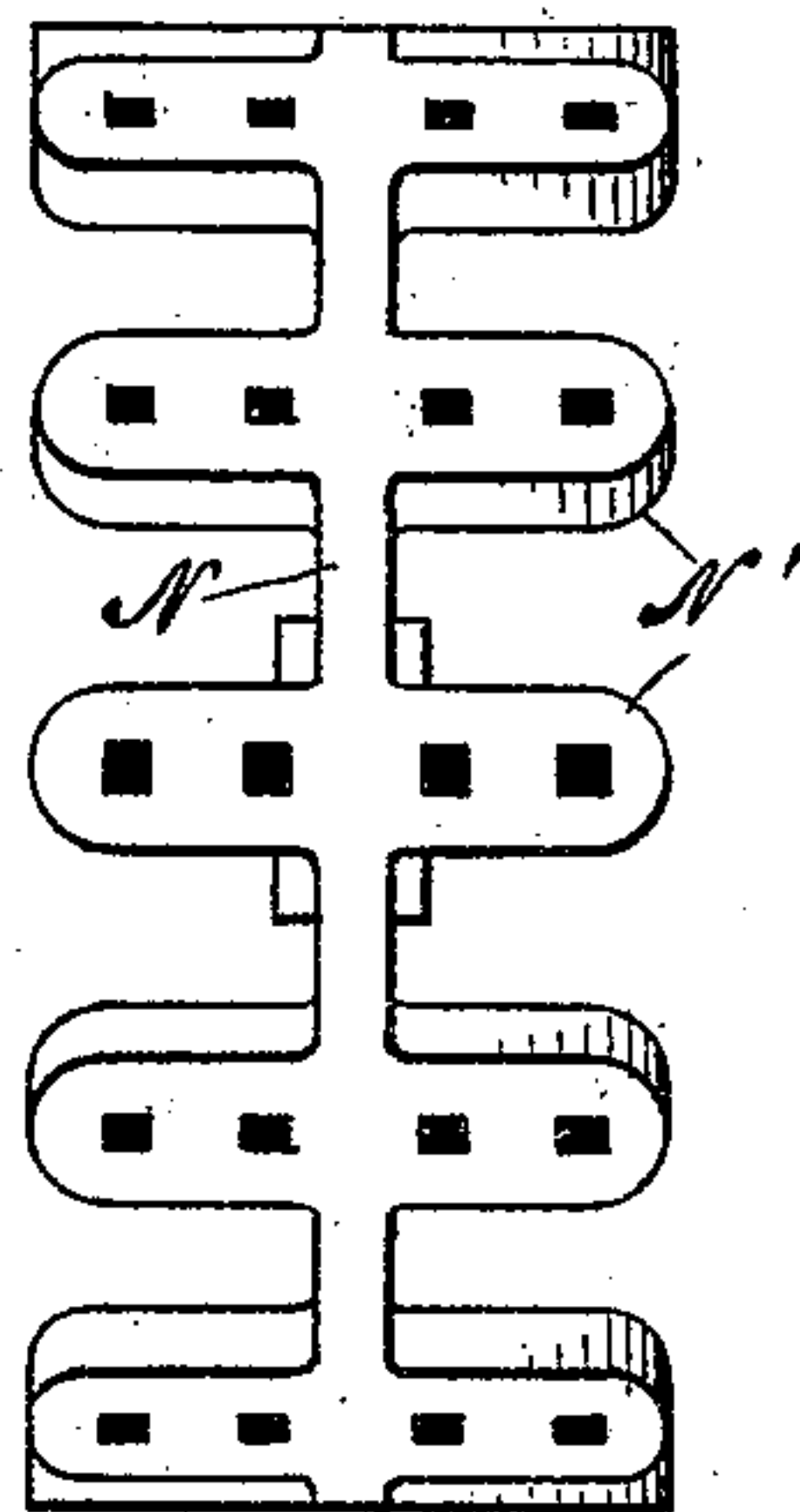


Fig. 5.

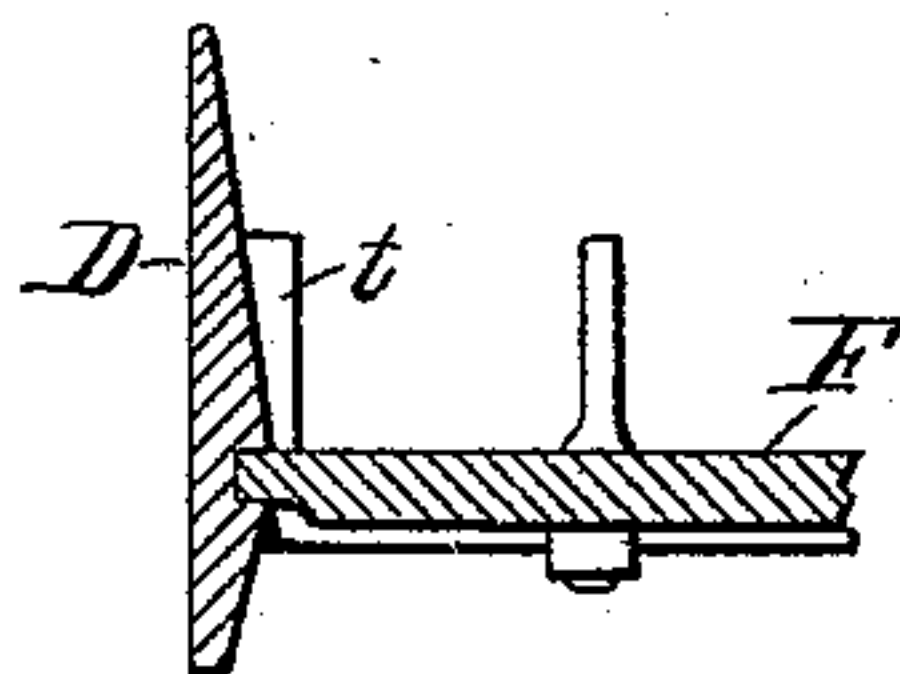


Fig. 6.

Witnesses.

Walter S. Wood  
D. C. Wood.

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# UNITED STATES PATENT OFFICE.

MYRON H. NASH, OF VICKSBURG, MICHIGAN.

## THRESHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 605,048, dated May 31, 1898.

Application filed October 16, 1896. Serial No. 609,109. (No model.)

*To all whom it may concern:*

Be it known that I, MYRON H. NASH, a citizen of the United States, residing at the village of Vicksburg, in the county of Kalamazoo and State of Michigan, have invented a certain new and useful Threshing-Machine, of which the following is a specification.

My invention relates to improvements in threshing-machines, and more particularly to improvements which will enable the user of a grain-threshing machine to change the same, so that it will be a suitable machine for threshing beans and an improved bean-thresher.

The objects of this invention are therefore, first, to provide an improved threshing-machine that can be conveniently changed from a grain-thresher to a bean-thresher; second, to provide an improved cylinder that can be conveniently changed to reduce the number of teeth to secure this desired result; third, to provide an improved concave for use in a bean-threshing machine, and further objects appearing definitely in the detailed description. I accomplish these objects of my invention by the devices and means described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical transverse section through the cylinder and concave of a threshing-machine embodying the features of my invention, taken on a line corresponding to line 1 1 of Fig. 2, looking in the direction of the little arrows at the ends of the section-lines. Fig. 2 is a top plan view of a concave of a threshing-machine made according to my invention as it would appear if the plates were straightened out in a flat plane. Fig. 3 is a top plan view of the threshing-machine cylinder, the retaining rings or bands P being shown in section and the shifted position of bars L being indicated by dotted lines. Fig. 4 is a top plan view of one of the heads of the threshing-machine cylinder. Fig. 5 is a top plan view of one of the intermediate supporting-plates within the cylinder. Fig. 6 is a detail sectional view on line 6 6 of Fig. 2.

In the drawings similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the draw-

ings, A represents the main frame or shell of a threshing-machine separator.

B represents the threshing-machine cylinder, which carries the usual cylinder-teeth B', which are secured to long bars K L L by the usual fastening. The heads of the cylinder M are provided with elongated ears M' for the attachment of the bars K, L, and L, and the intermediate plates N are provided with elongated ears N' for the same purpose, which are provided with holes therethrough to receive the teeth through the bar for the purpose of securing the teeth in place and clamping the bar to the cylinder-body. The bars K are made the full length of the cylinder, and it is not necessary to change the teeth upon these bars or to change the position of the bars. The bars L are provided with two holes at one end, one of which is for a tooth and the other for a bolt, depending on the adjustment of the same. In the view shown in Fig. 3 the bars are adjusted for use as a bean-thresher, and it will be noted that every alternate tooth around the cylinder is also removed, which makes the cylinder a very open one, which is desirable in a bean-thresher, owing to the fact that the beans require to be provided with a considerable amount of space for their passage, or else they will be broken and substantially destroyed by the threshing-machine.

When the cylinder is intended for use to thresh wheat or oats or other grain, the bars L L are adjusted to the right and the left of their present position, for which suitable space has been provided, as appears in Fig. 3. The bar L next above the bar K will be set to the left and the bar below the bar K to the right, and so on around the cylinder. The changed position of the bars L is shown by dotted lines on Fig. 3. The remaining teeth of the cylinder are then inserted at the points appearing, as indicated by the holes in the bars appearing in Fig. 3, when the cylinder is in proper adjustment for threshing grain. The bars of this cylinder are retained securely in place by the bands P P P P.

Having thus described the cylinder, I will say that in order to make the machine thoroughly successful for threshing both grain and beans it is necessary to provide it with



two separate concaves, the regular concave for wheat threshing and the special concave here illustrated when it is desired to thresh beans. This concave is made up of the usual concave plates, which are inserted in the usual way into end plates D, having suitable grooves. Projections *tt'* are provided on these end plates to correspond to the oppositely-situated concave teeth, and the one half of the large heavy tooth I at the rear end of the concave, with its projections *aa'*, are provided on each plate to correspond to the adjacent teeth. The concave in this instance is made up of plates E F G H, the plate E being placed to the front of the machine and the others back of it in the order enumerated. Across the concave I have indicated the paths of the cylinder-teeth by the dotted lines *ff'*. It will be observed that on the first plate E there is only a single concave tooth between each row of cylinder-teeth and on the second plate that there are two concave teeth between each pair positioned to stand a little closer to the path of the cylinder-teeth, that on the next plate G the concave teeth stand still closer, there being two between each row of teeth, and that on the last plate H very large teeth are provided with projecting ridges *aa'*, which approach very close to the path of the teeth of the cylinder. The position of all the concave teeth is clearly indicated by the square holes *J'*. Large round openings *n* are through the concave plates opposite the path of the cylinder-teeth and corresponding to the teeth on the concave, and the concave plates are formed so that there are transverse openings *r* of considerable size between each of them to permit any beans threshed to drop through the concave readily. The concave extends up a little to the rear of the cylinder, so that any beans threshed by it as they are passing through will merely drop upon the concave and slide back through the rear opening in the same instead of being dashed violently out, which might split or injure them. This feature is shown somewhat exaggerated in the drawings, so that it may clearly appear, it not being desirable to extend the concave so far up to the back of the cylinder.

I desire to say that when the beans are thoroughly dried and are ordinarily easy to thresh the plate H, with its heavy teeth I, may be dispensed with and a plate exactly like the plate G substituted therefor.

It will be seen from this description of my machine that when it is set to be used as a bean-thresher as the beans, with their straw or vines, are fed into it it will be brought into contact first with the widely-separated teeth at the beginning of the concave, which will readily thresh all of the drier of the beans, which will drop through the holes at that point and are saved from any hard rubbing in the remainder of the cylinder. Those that are a little more tenacious will receive a closer threshing on the next plate F, those that are

still more tenacious a still closer rubbing on the plate G, and those that are very wet and tough will receive a very severe rubbing between the cylinder-teeth and the broad teeth I to the rear, which will completely thresh all of the beans in the vines and use only the force necessary to thresh them depending on the different degrees of dryness or toughness of the straw and pods, which is the desirable thing to be accomplished in successfully threshing beans or similar products.

From what I have said it will be clear that my improved threshing-machine is capable of considerable variation without departing from my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a threshing-machine a cylinder made up of heads M, M, having elongated ears with a series of holes therein, and intermediate supporting-plates N, with ears N', thereon containing a series of holes, bars K, carrying cylinder-teeth and extending the length of the cylinder to serve as a permanent support for the same and bars L, adjacent to said bars K, of less length than the cylinder and bearing cylinder-teeth and capable of adjustment lengthwise on the cylinder to vary the rows of teeth around the cylinder to change the same from a grain to a bean thresher and vice versa as specified.

2. In a threshing-machine a cylinder made up of heads M, M, having elongated ears with a series of holes therein, and intermediate supporting-plates N, with ears N', thereon containing a series of holes, bars K, carrying cylinder-teeth to serve as a permanent support for the same, and bars L, adjacent to said bars K, of less length than the cylinder and bearing cylinder-teeth and capable of adjustment lengthwise on the cylinder to vary the rows of teeth around the cylinder and suitable bands P, P, P, around the cylinder to retain the bars in place to change the same from a grain to a bean thresher and vice versa as specified.

3. In a bean-threshing machine the combination of a suitable cylinder with teeth in rows around the same the teeth in rows alternating with each other; and a concave supported in suitable side plates D, and consisting of plate E, to the front with teeth thereon a single tooth to each row of cylinder-teeth positioned alternately toward the front and rear of the plate E, and the plate F, with a pair of teeth set a little to each side midway between the path of the cylinder-teeth and plate G, with teeth-like plate F, only closer to the path of the cylinder-teeth and the plate H, with heavy teeth I, bearing ridges *a, a'*, corresponding to the rows of cylinder-teeth, the said concave containing large openings *n*, along the path of the cylinder-teeth and spaces *r*, between the plates, coacting as specified.

4. In a threshing-machine the combination of a suitable cylinder with teeth in rows



around the same the teeth in the rows alternating with each other; and a concave supported in suitable side plates D, and consisting of plate E, to the front with teeth there-  
5 on a single tooth to each row of cylinder-teeth positioned alternately toward the front and rear of the plate E, and the plate F, with a pair of teeth to each row of cylinder-teeth set a little to each side midway between the path  
10 of the cylinder-teeth and plate G, with teeth-like plate F, only closer to the path of the cylinder-teeth the said concave containing large openings *n*, along the path of the cylinder-teeth and spaces *r*, between the plates  
15 coacting as specified.

5. In a bean-thresher the combination of a cylinder with teeth separated into regular rows

the teeth in the rows alternating with each other; a concave provided with irregular rows of teeth beginning with single alternate teeth 20 to each row of cylinder-teeth and increased in number toward the rear of the concave and varied in position in an increasing ratio from side to side toward the rear of the concave till the last teeth are in close proximity to the 25 path of the cylinder-teeth the concave being suitably perforated for the passage of the beans as specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses. 30

MYRON H. NASH. [L. S.]

Witnesses:

WALTER S. WOOD,  
J. W. ADAMS.