

(No Model.)

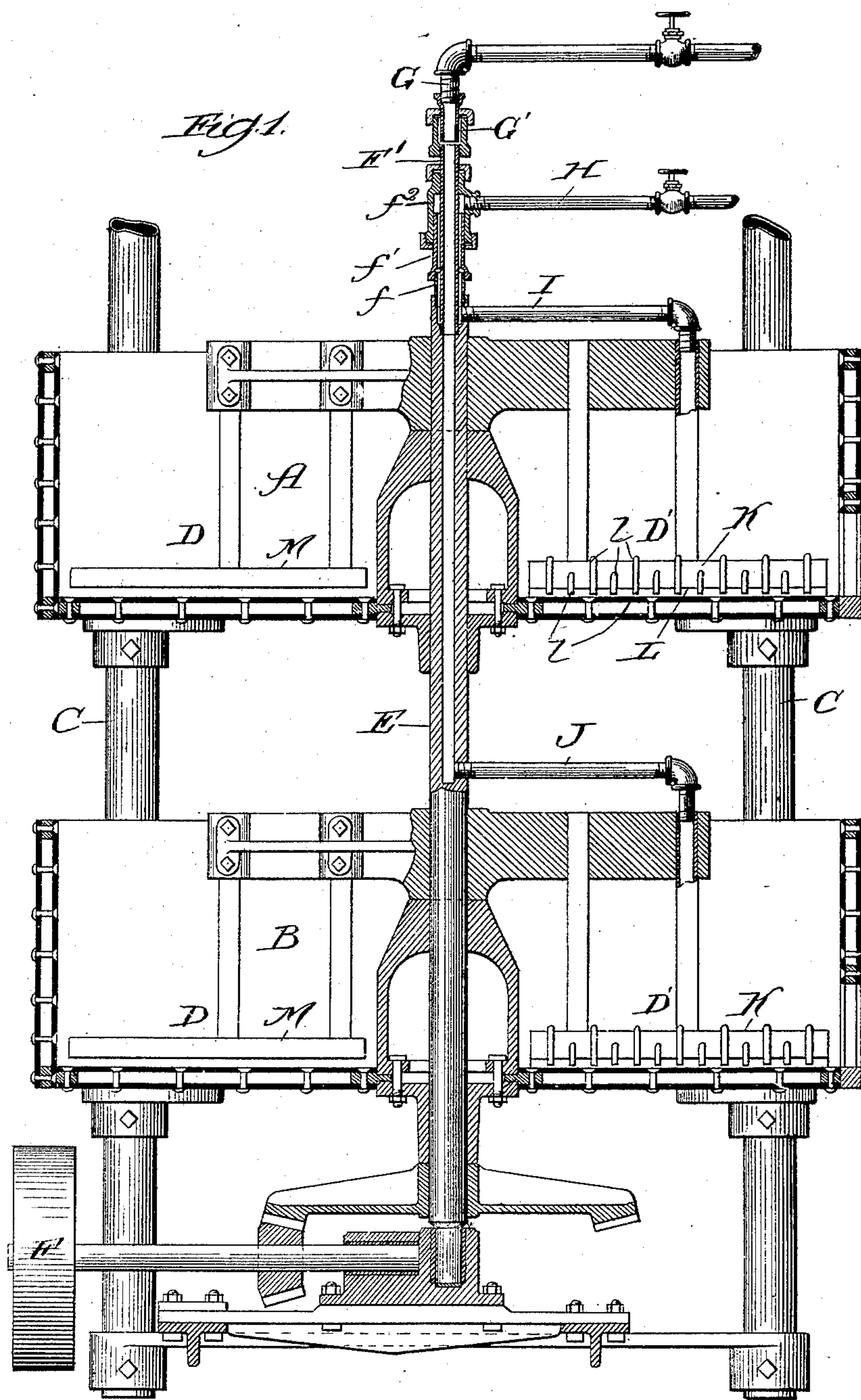
2 Sheets—Sheet 1.

O. R. NELSON.

MACHINE FOR MIXING AND TEMPERING LINSEED MEAL.

No. 442,081.

Patented Dec. 2, 1890.



Witnesses:

Edw. Taylor
Clifford W. White.

Inventor:

Oliver R. Nelson,
By Ranning & Ranning & Payson,
Attys

(No Model.)

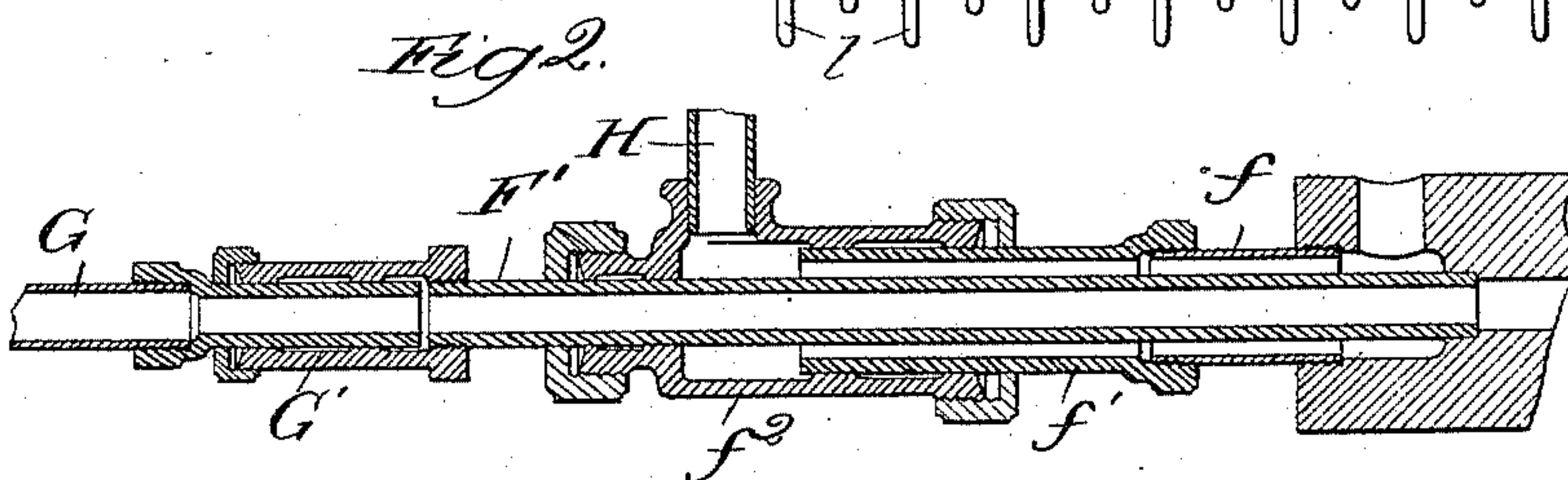
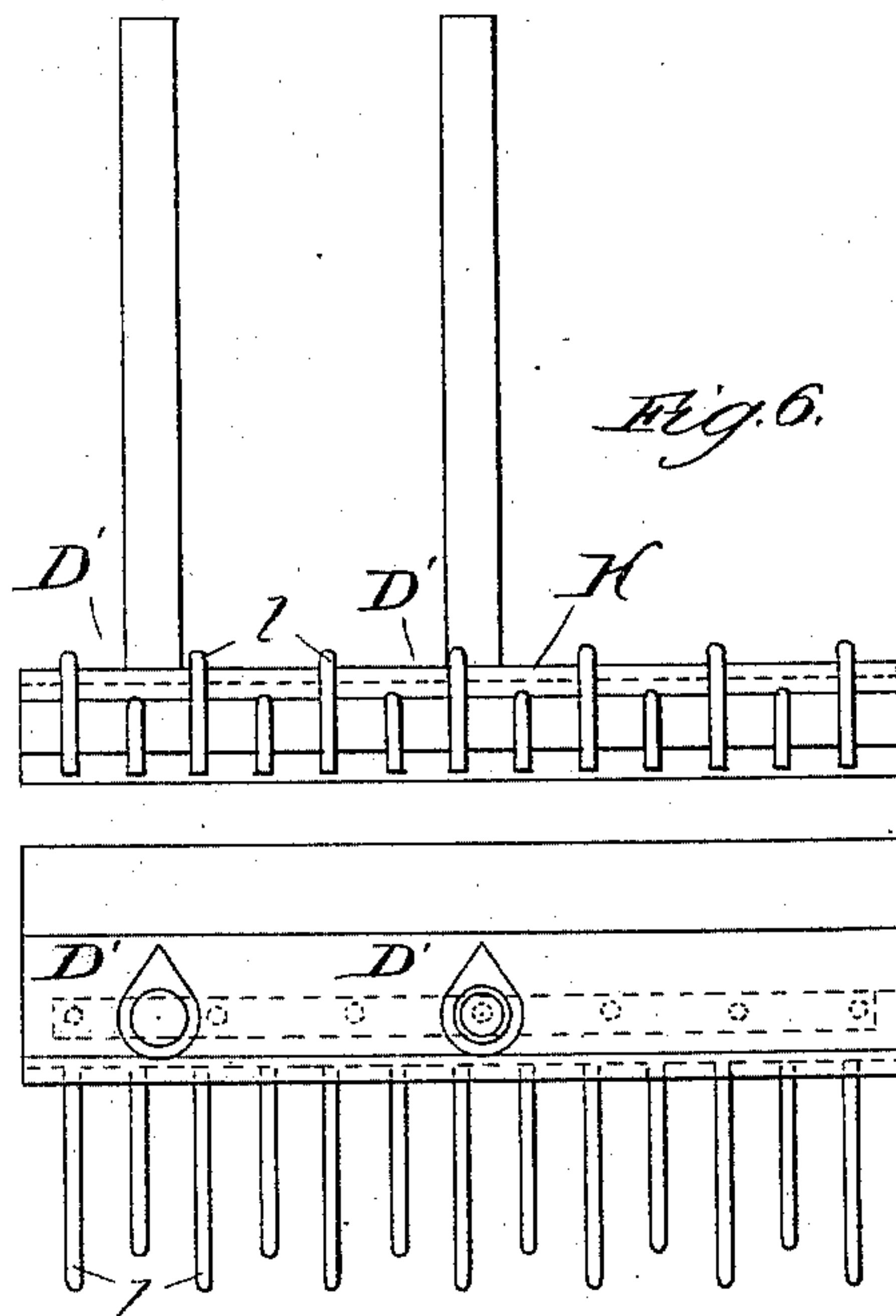
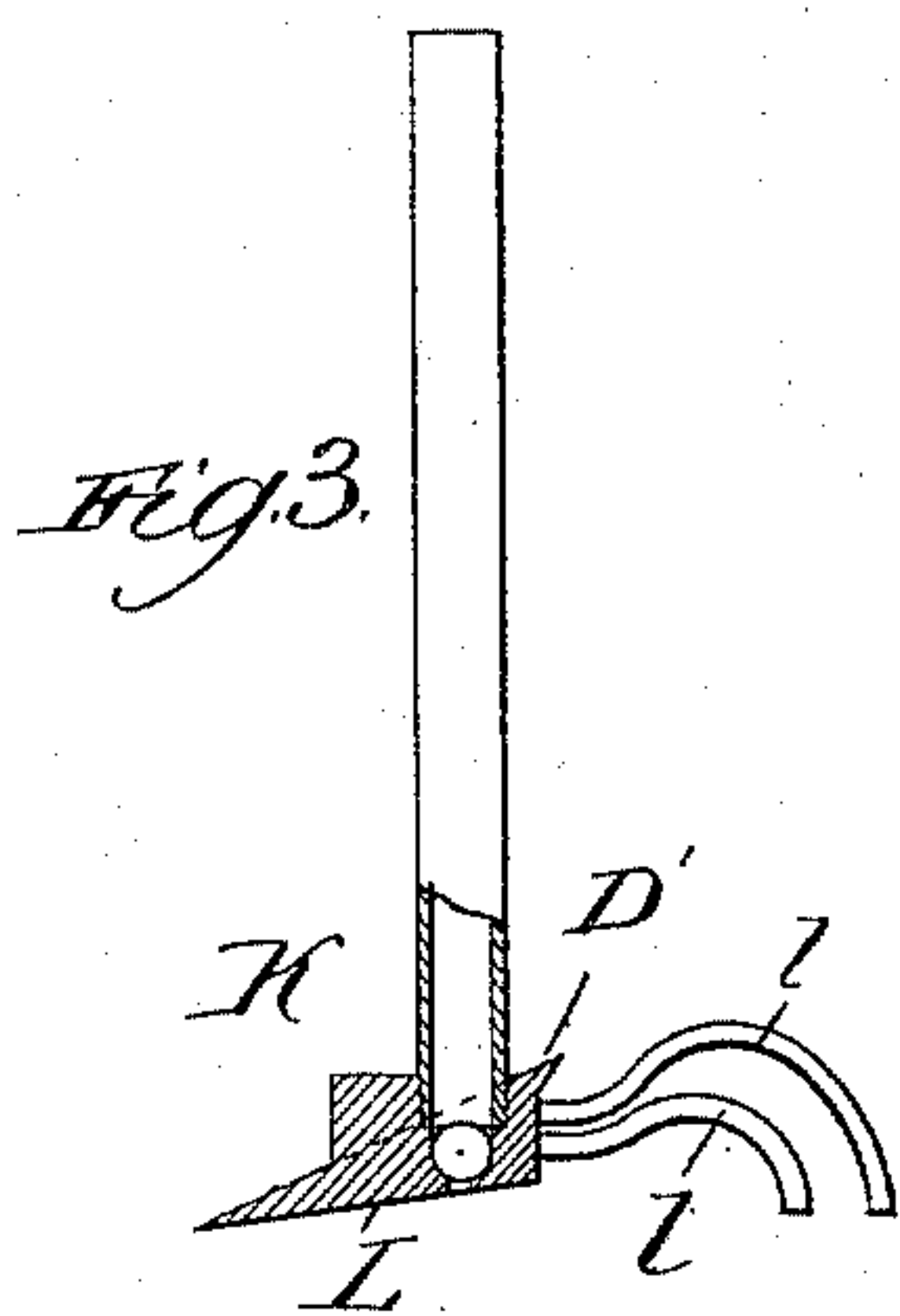
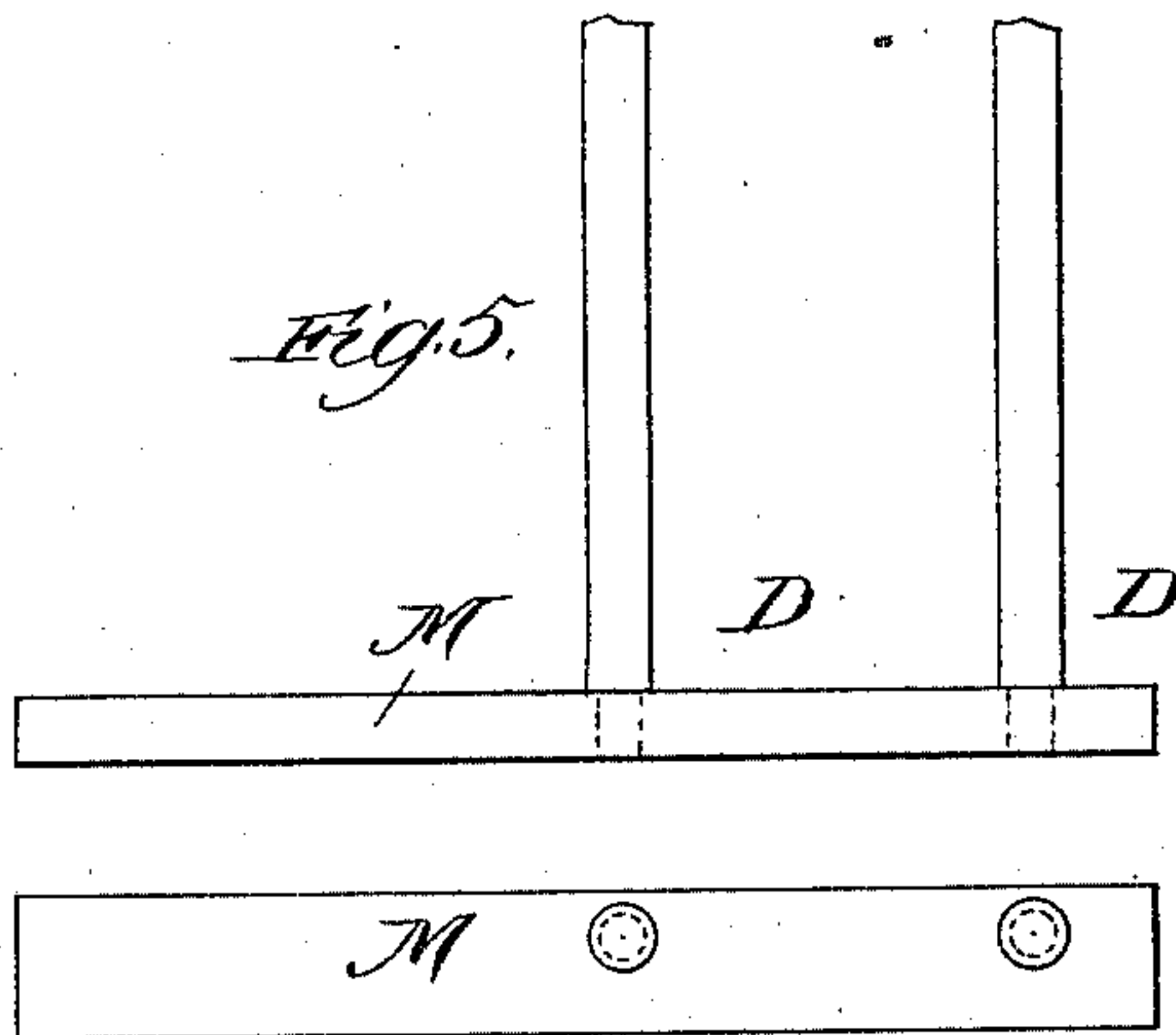
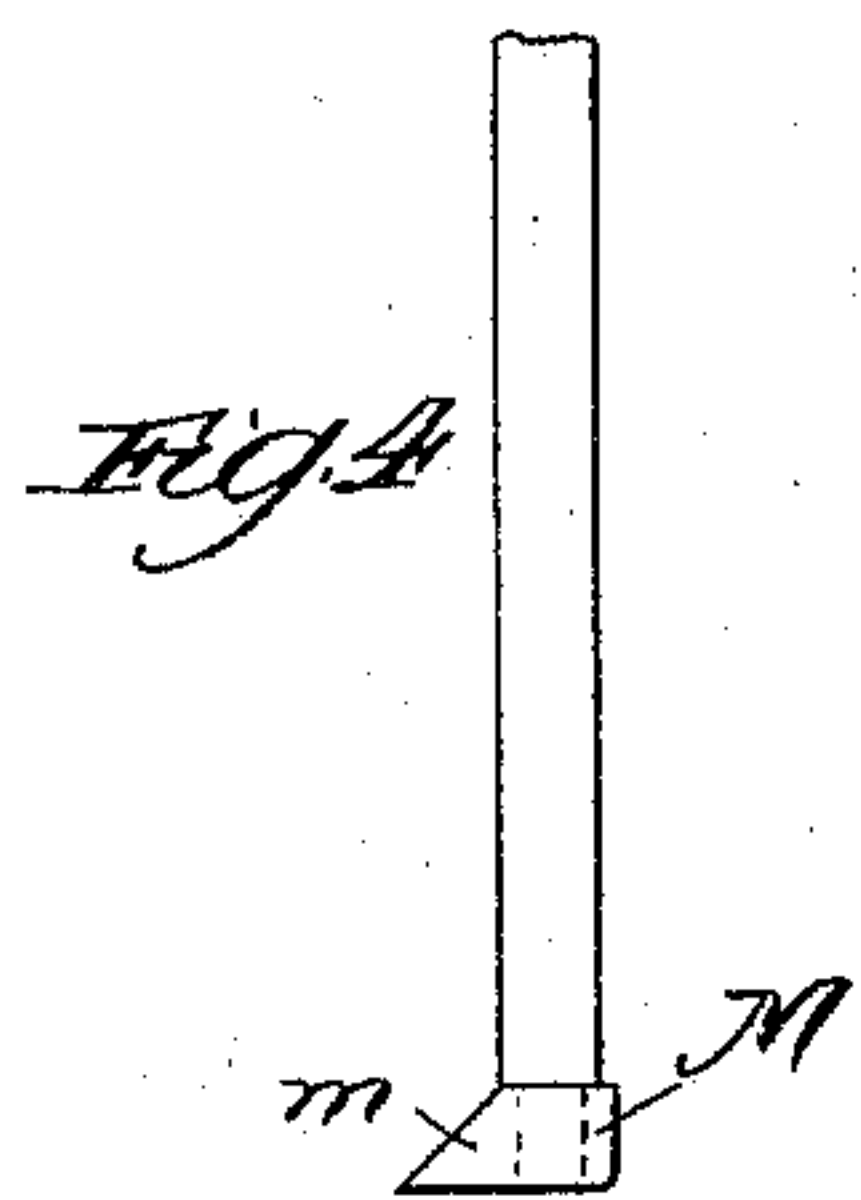
2 Sheets—Sheet 2.

O. R. NELSON.

MACHINE FOR MIXING AND TEMPERING LINSEED MEAL.

No. 442,081.

Patented Dec. 2, 1890.



Witnesses:
Ed. E. Gayles,
Clifford N. White.

Inventor:
Oliver R. Nelson,
By Banning & Banning & Payson,
Attys.

UNITED STATES PATENT OFFICE.

OLIVER R. NELSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WRIGHT & HILLS LINSEED OIL COMPANY, OF SAME PLACE.

MACHINE FOR MIXING AND TEMPERING LINSEED-MEAL.

SPECIFICATION forming part of Letters Patent No. 442,081, dated December 2, 1890.

Application filed August 7, 1890. Serial No. 361,400. (No model.)

To all whom it may concern:

Be it known that I, OLIVER R. NELSON, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Machines for Mixing and Tempering Linseed-Meal, of which the following is a specification.

The object of my invention is to make a machine in which the meal of flaxseed or linseed or meal of other seeds or grains may be mixed and tempered or moistened, so that the oil can be more fully and completely expressed therefrom; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a vertical section taken through my improved machine. Fig. 2 is a longitudinal section, enlarged, of one of the parts; and Figs. 3, 4, 5, and 6 are views of certain details of construction hereinafter described.

In making my improved machine for mixing or tempering and moistening meals of flax and other seeds, so as to secure a more perfect yield of oil therefrom, I arrange, preferably, at least two tubs or kettles A and B in and upon suitable standards or frame-work C. These tubs are provided on the inside with revolving rakes or stirrers D and D', supported upon and carried around by means of a revoluble shaft E, which may be rotated by beveled gears or other convenient means. I have shown the shaft as rotated by beveled gears through means of a belt, which may be applied to the pulley F, although other means for rotating the shaft may be employed.

In order to moisten or temper the meal being mixed and operated upon in the kettles or tubs A and B, I make the upper portion of the shaft E hollow. Immediately at the upper end I enlarge this hole and insert in it a pipe F', which extends up a desired distance, and which of course revolves with the shaft. This pipe is of smaller diameter than the enlarged hole at the top of the shaft, so as to leave an annular space around it. I then screw into the end of the shaft a hollow pipe or section f, which still leaves an annular space around the pipe F'. On the upper end of this pipe f, I screw another hollow pipe or section f', which extends up around the pipe

F', still leaving an annular space around it. I arrange an expansion-joint f² with a side outlet for the introduction of a pipe around the section f' and extend it up around the pipe F'. Both the upper and the lower ends of this expansion-joint are properly packed, so that the water or steam admitted in through the side outlet cannot escape, but so that the pipe F' may rotate in the packing. In this way I will have an annular space around the pipe F' to the point where it is connected to the shaft, so that by providing a side opening at the lower end of this space I can carry the water or steam admitted into it to any point desired and at the same time carry water or steam down through the pipes F' and the hole in the shaft to a point convenient to carry it off at one side to the place where I may desire to use it. I carry a pipe G into a hollow expansible joint G', connecting with the top of the pipe F', and another pipe H into the side outlet in the expansible joint f². Water or steam admitted into the pipe G is carried down through the pipe F' and the shaft E, while the water or steam admitted through the pipe H is passed down in the annular space surrounding the pipe F'. A pipe I is inserted near the bottom of the space around the pipe F' and carried into the upper one of the tubs or kettles at the top, and another pipe J is carried from the shaft E out or near the lower end of the hole in it and led into the lower one of the tubs or kettles. In this way the water or steam introduced through the pipe G would be carried down through the pipe F' and the shaft E and through the pipe J into the tub B, and water or steam introduced through the pipe H into the space around the pipe F' would be carried through the pipe I into the tub A. In this way I am able to supply the meal being treated in the one tub with steam or water, as may be necessary to moisten it without at the same time supplying steam or water to the meal in the other kettle. Each batch of meal being treated can therefore be moistened or tempered, as may be desired, without affecting the other.

In order to secure a more complete and perfect distribution of the moisture in the meal being treated, I prefer to carry the pipes I and J down near the bottom of their respective

tubs and to provide the lower end of the pipe with a cross bar or pipe K, communicating with the pipes introducing the water and the steam. These pipes K are provided with perforations on the bottom side, as shown in Fig. 3, to permit the water or steam to escape or pass out upon or in close proximity to the bottom of the tub. In this way it will diffuse itself or permeate the meal being treated and subject all portions of it to the moistening or tempering effect. These pipes K are also provided with rakes or stirrers L to agitate and stir up the material being treated to secure its perfect and complete agitation and mixture. These rakes are preferably made of the form shown in Fig. 3, in which they are given a shape approximating that of a plow. The points of the rakes pass along upon or close to the bottom of the tub and stir or plow up the material being treated. These rakes are also provided with rearwardly - extending curved rods l, arranged at different heights, and, preferably, with the low and high ones alternating. This causes the material as it passes over behind the rakes to be still more thoroughly stirred or agitated. On opposite sides of the shafts are arranged bars M, provided with stirrers m, for assisting in the agitation and mixture of the meal.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a machine for treating the meals of linseed or other oil seeds, the combination of

kettles or tubs in which the meal is to be treated, a revoluble shaft passing through the tubs and hollow in its upper portion, a pipe arranged in the end of the shaft and extended up, an expansible joint arranged around such pipe, with an annular space between them, pipes leading into the pipe extended up from the shaft and into the annular space between such pipe and the expansible joint, and pipes leading from such space and from the hollow shaft to the tubs, substantially as described.

2. In a machine for treating the meals of linseed or other oil seeds, the combination of kettles or tubs in which the meal is to be treated, a revoluble shaft passing through the tubs and hollow in its upper portion, a pipe arranged in the end of the shaft and extended up, an expansible joint arranged around such pipe, with an annular space between them, pipes leading into the pipe extended up from the shaft and into the annular space between such pipe and the expansible joint, and pipes leading from such space and from the hollow shaft to the tubs and terminating in cross perforated pipes approximately at the bottom of the tubs to distribute water or steam through the bottom portions of the meal being treated, substantially as described.

OLIVER R. NELSON.

Witnesses:

THOMAS A. BANNING,
EPHRAIM BANNING.