

No. 705,677.

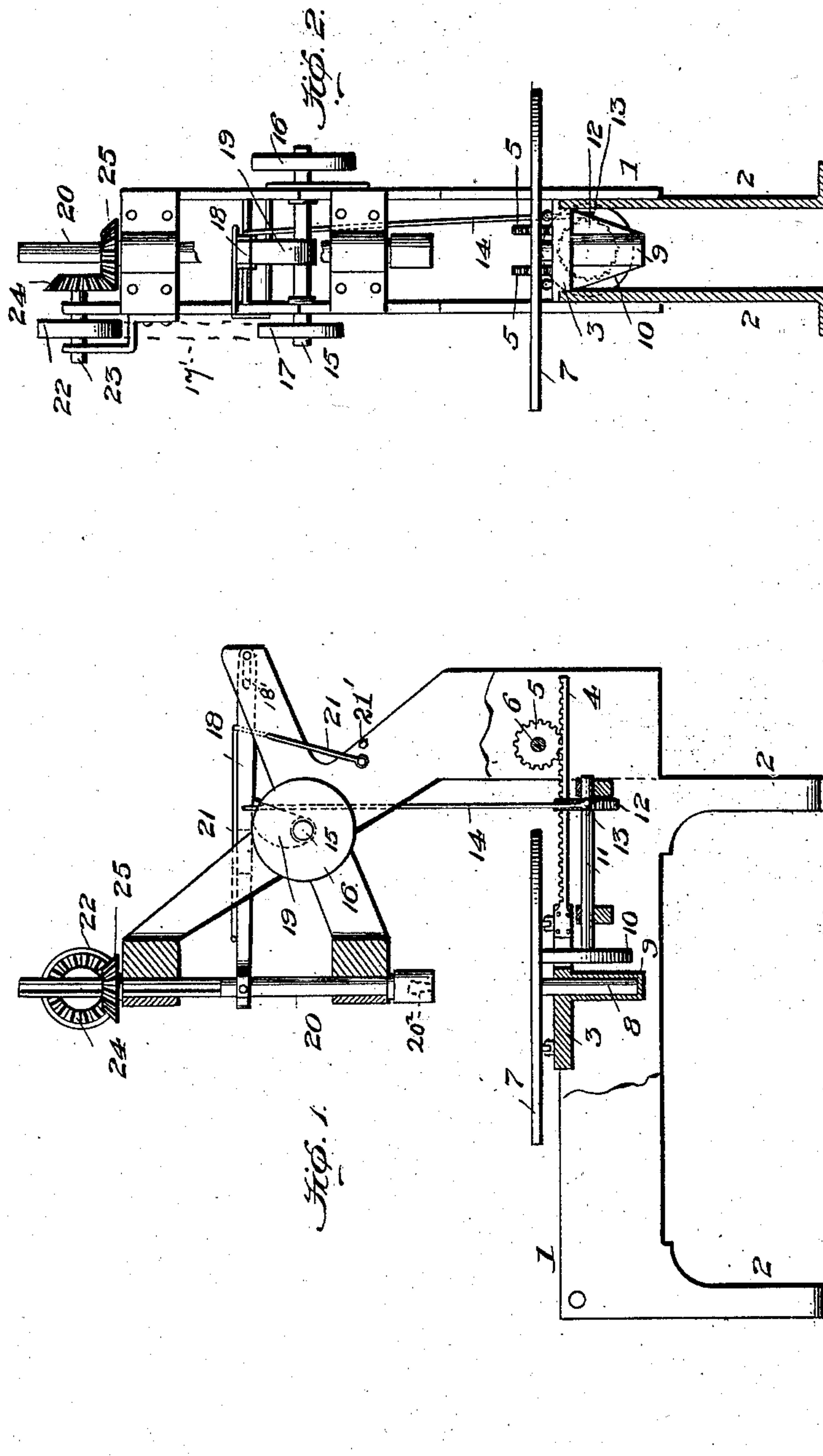
Patented July 29, 1902.

V. P. KELLER.
WHEEL MAKING MACHINE.

(Application filed Oct. 5, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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Fig. 3.

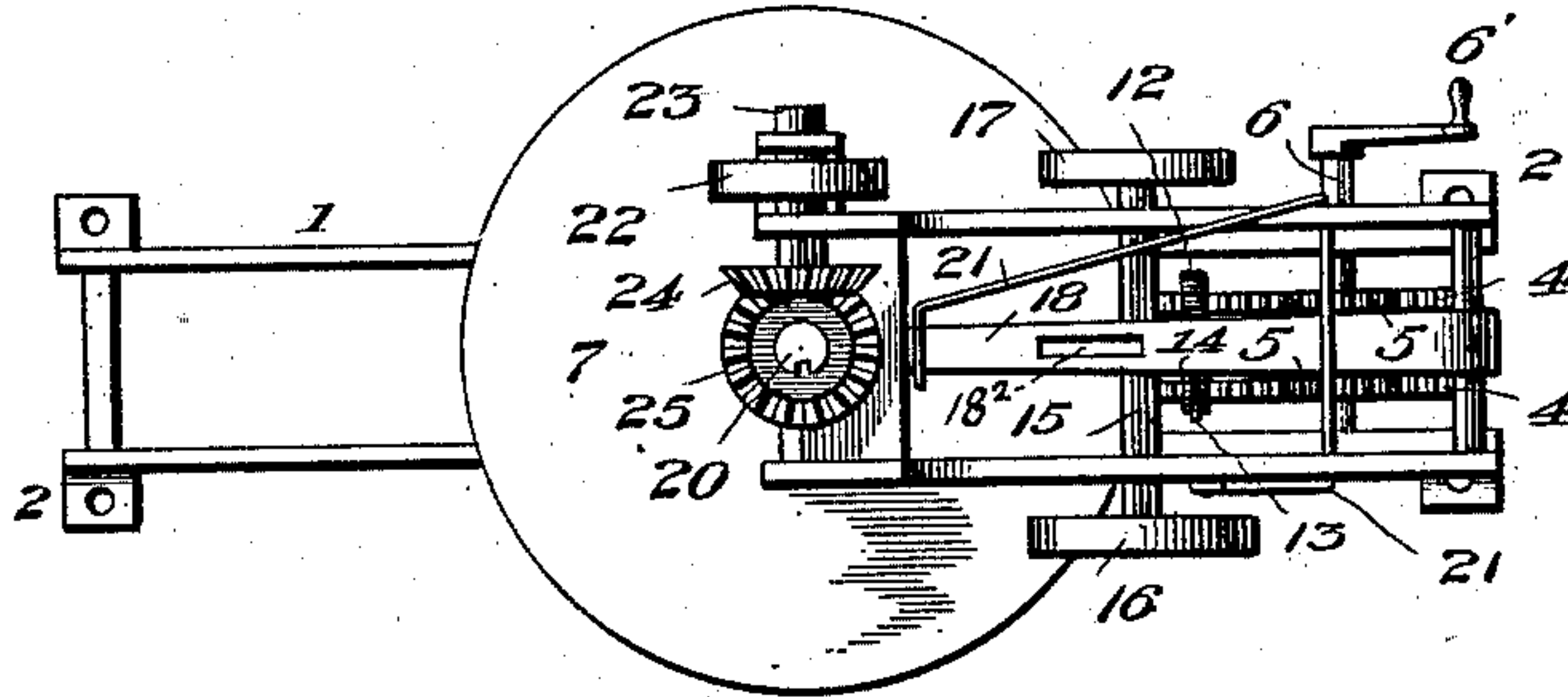


Fig. 4.

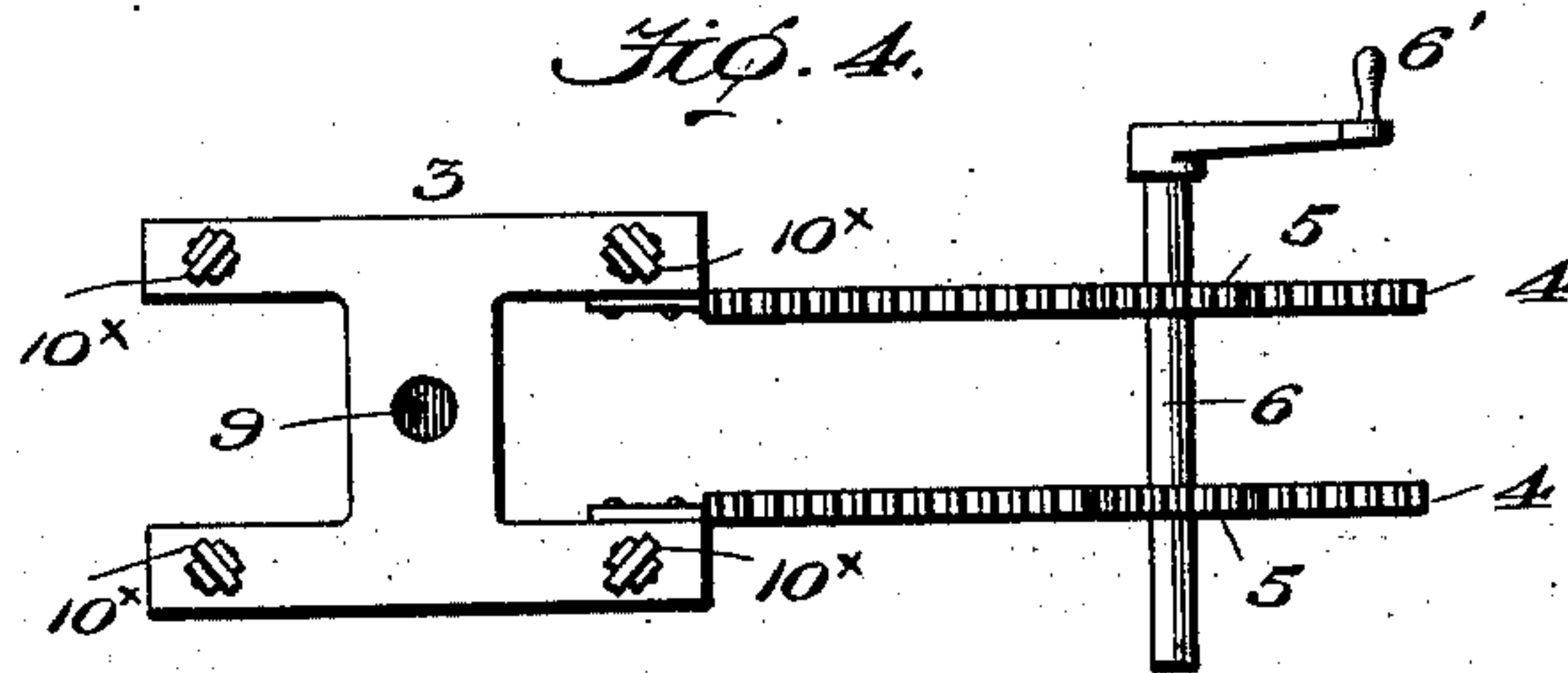


Fig. 5.

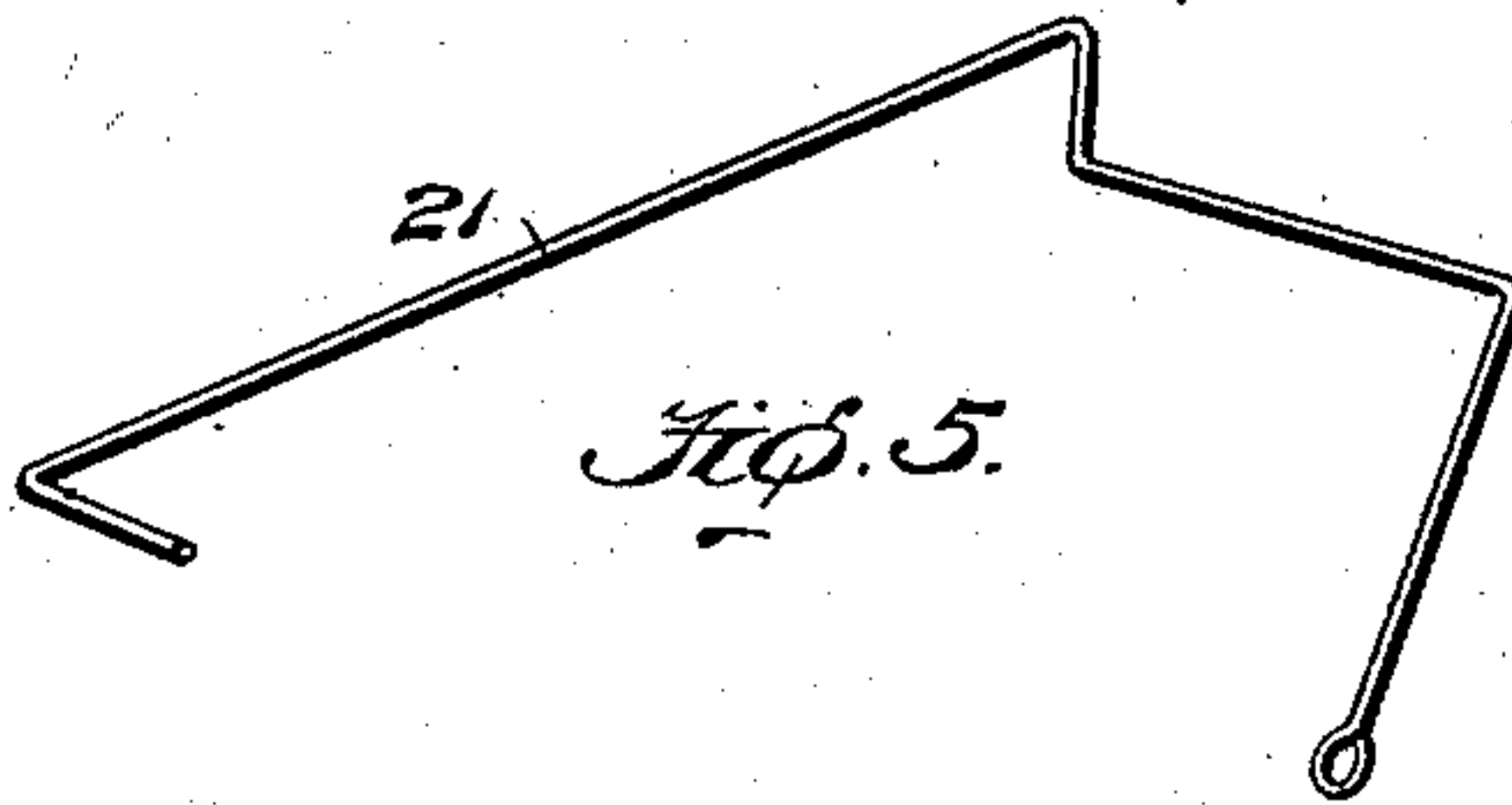
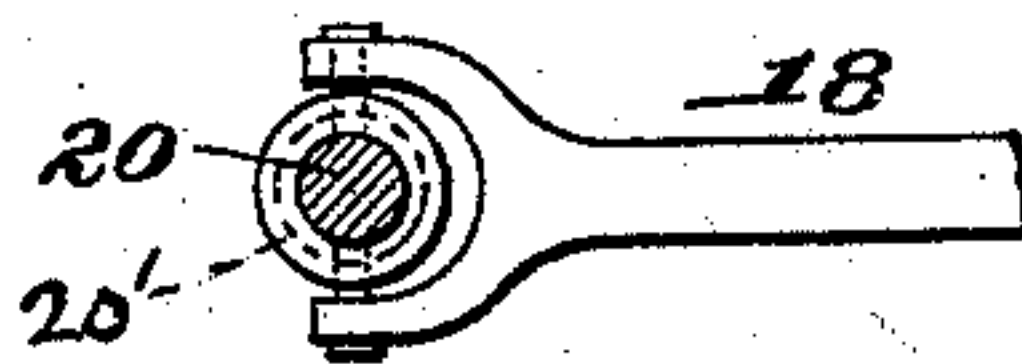


Fig. 6.



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UNITED STATES PATENT OFFICE.

VOLNEY P. KELLER, OF WAYNESVILLE, NORTH CAROLINA.

WHEEL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 705,677, dated July 29, 1902.

Application filed October 5, 1901. Serial No. 77,669. (No model.)

To all whom it may concern:

Be it known that I, VOLNEY P. KELLER, a citizen of the United States, residing at Waynesville, in the county of Haywood and State of North Carolina, have invented certain new and useful Improvements in Wheel-Making Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in abrasive wheel-molding machines in which the desired mixture of materials is pounded and twisted into a homogeneous knit mass, which gives greatest strength to the resultant mass, the action being such that all portions of the material are treated exactly alike, so that one part will not be of a different nature from the others.

The invention has for its objects, among others, to provide a simple and cheap yet efficient and durable machine for such treatment of the material, in which the material is carried by a rotatable face-plate, the latter arranged to have the same lead or advance—a fixed amount of feed—and the said face-plate carried by a sliding carriage mounted for backward-and-forward movement to adjust the face-plate to its work. Means are provided whereby the operating-tool is lifted at predetermined intervals and the device as a whole positive in its action and the feed the same for all diameters of the mass being treated.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of the machine with portions shown in section. Fig. 2 is a vertical transverse section. Fig. 3 is a top plan. Fig. 4 is a detail in plan view. Fig. 5 is a detail perspective view of the spring. Fig. 6 is a view of a detail.

Like numerals of reference indicate like parts throughout the several views.

Referring now to the details of the drawings, 1 designates the frame of the machine, supported upon suitable legs or standards 2 and constructed to receive a sliding carriage

3, which is free to move back and forth thereon, as will soon hereinafter appear, suitable antifriction-rollers 10^x or analogous means being provided, if required; but as such is a well-known expedient and well understood in the art of devices employing a sliding carriage an illustration or detailed description thereof does not seem necessary. The carriage is provided upon its under side with the rack-bar or rack-bars 4, with which engage the pinions 5, carried by the shaft 6, suitably supported in bearings in the frame of the machine and at one end provided with a crank-handle 6', by which it may be turned to move the carriage backward or forward, as may be required.

7 is a face-plate having a central depending stem or shank 8, which is fitted to revolve in a socket or the like 9 in the carriage, and frictionally engaging the under side of this face-plate is a friction-wheel 10, which is carried by a horizontal shaft 11, as shown, the said shaft being mounted to revolve in suitable bearings in the frame 1 of the machine. This face-plate is designed to receive the material to be treated and molded into the required shapes.

12 is a ratchet-wheel fast on the shaft 11, and engaging with this ratchet is the hooked end 13 of a rod 14, the arrangement and object of which will soon be made apparent.

15 is the main driving-shaft. It is mounted in suitable bearings in the frame of the machine and carries upon one end a pulley 16, which serves as the driving-pulley, receiving power from any suitable source by belt, (not shown,) and upon the other end of this driving-shaft is a pulley 17, the object of which will soon appear.

Mounted on the shaft 15 between its ends in position to act upon a lever 18 is a cam 19, the said lever 18 being forked and secured to the stem 20 by means of pins passed loosely through the fork ends and secured in a collar 20', surrounding a circular reduced portion of the stem. The other end of the lever has a slot 18' in it and is pivoted through the said slot to the frame of the machine. Whenever the cam comes in contact with the under side of the free end of the lever, the stem is raised bodily, the object being to raise the stem and the tool carried thereby and allow the same

to drop when the cam has passed its operative position, and thus give a blow to the material carried by the table or face-plate. After the cam passes a hole or slot 18² the lever drops by the combined action of gravity aided by a spring 21, which can be adjusted as may be desired to give the required blow or pressure—as, for example, by securing its end over the pin 21'. The stem 20 is provided at its lower end with a socket 20², adapted to receive the different kinds of tools which it may be desired to use.

The pulley 17 is designed to be connected by belt 17' or otherwise with the pulley 22 on the shaft 23, mounted in suitable bearings in the frame 1, and on this shaft is a bevel-gear 24, which meshes with the bevel-gear 25 on the stem, so that the stem is rotated, as will be readily understood.

The operation is apparent from the foregoing description when taken in connection with the annexed drawings and, briefly stated, is as follows: The material being placed upon the face-plate and power applied to the shaft 15, the latter being rotated, the cam 19, which is secured thereto, acting upon the under side of the lever 18, lifts the same and the stem until the cam passes a slot in the lever, which allows the lever and stem to drop, the lever and stem of course dropping together. This gives the blow for compressing and condensing the pulp in the wheel-frame (not shown) on the face-plate. This blow can be regulated—accelerated or retarded, made greater or less—by the adjustment of the spring 21, which may be adjusted in any suitable manner. During half a revolution (more or less) the stem or pestle 20 remains down, resting on the pulp. During this time the stem is revolving, caused to do so by the bevel-gears above described, and this revolving motion twists and knits the pulp or material together. When the cam again lifts the lever, the ratchet-hook 13 of the rod 14, which is fastened to the said lever, rises with it and turns the ratchet-wheel 12 partially around, which through its shaft and friction-wheel 10 turns the face-plate to a new position, whereby fresh material is brought under the stem to be acted upon in a similar manner as it again drops. This action continues till the face-plate makes one complete revolution. Then the carriage is pushed back for the next circle to be operated upon. When the face-plate has again made a whole revolution, the carriage is again pushed back, which process is continued until the periphery of the wheel is

reached, when its operation is reversed, and it is fed back until the center is again reached.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is—

1. In a machine of the class described, a rotary reciprocatory stem, combined with a movable face-plate, and a reciprocatory carriage carrying said face-plate, frictional means engaging said plate for rotating the same as set forth.

2. In a machine of the class described, a rotary reciprocatory stem, a rotary face-plate, and a reciprocatory carriage carrying the face-plate, frictional means engaging said plate for rotating the same as set forth.

3. In a machine of the class described, a rotary reciprocatory stem, means for reciprocating the same, a rotary face-plate, and a reciprocatory carriage carrying the same, frictional means engaging said plate for rotating the same as set forth.

4. In a machine of the class described, a rotary stem, means for reciprocating the same, a rotary face-plate, a carriage on which the same is rotatably held, and means for adjusting the carriage to adjust the face-plate to its work, frictional means engaging said plate for rotating the same as set forth.

5. In a machine of the class described a rotary face-plate, a rotary stem, a lever adapted to move the same vertically, a driving-shaft and a cam on said shaft adapted to engage said lever, frictional means engaging said plate for rotating the same as set forth.

6. In a machine of the class described a rotary face-plate, a rotary stem, a lever by which it is moved vertically, a driving-shaft, a cam thereon adapted to engage said lever, and means for adjusting the pressure or force given the blow by the dropping of said stem, frictional means engaging said plate for rotating the same as set forth.

7. In a machine of the class described, a rotary stem, means for reciprocating the same, a rotary face-plate, a sliding carriage, a friction-wheel for rotating the face-plate, a driving-shaft, a cam thereon, and a connection between said cam and the friction-wheel, all as and for the purpose specified.

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

VOLNEY P. KELLER.

Witnesses:

WM. C. DASHIELL,
WM. N. MOORE.