

J. Geysen,

Fly Wheel.

N^o 23,299.

Patented Mar. 22, 1859.

Fig 2.

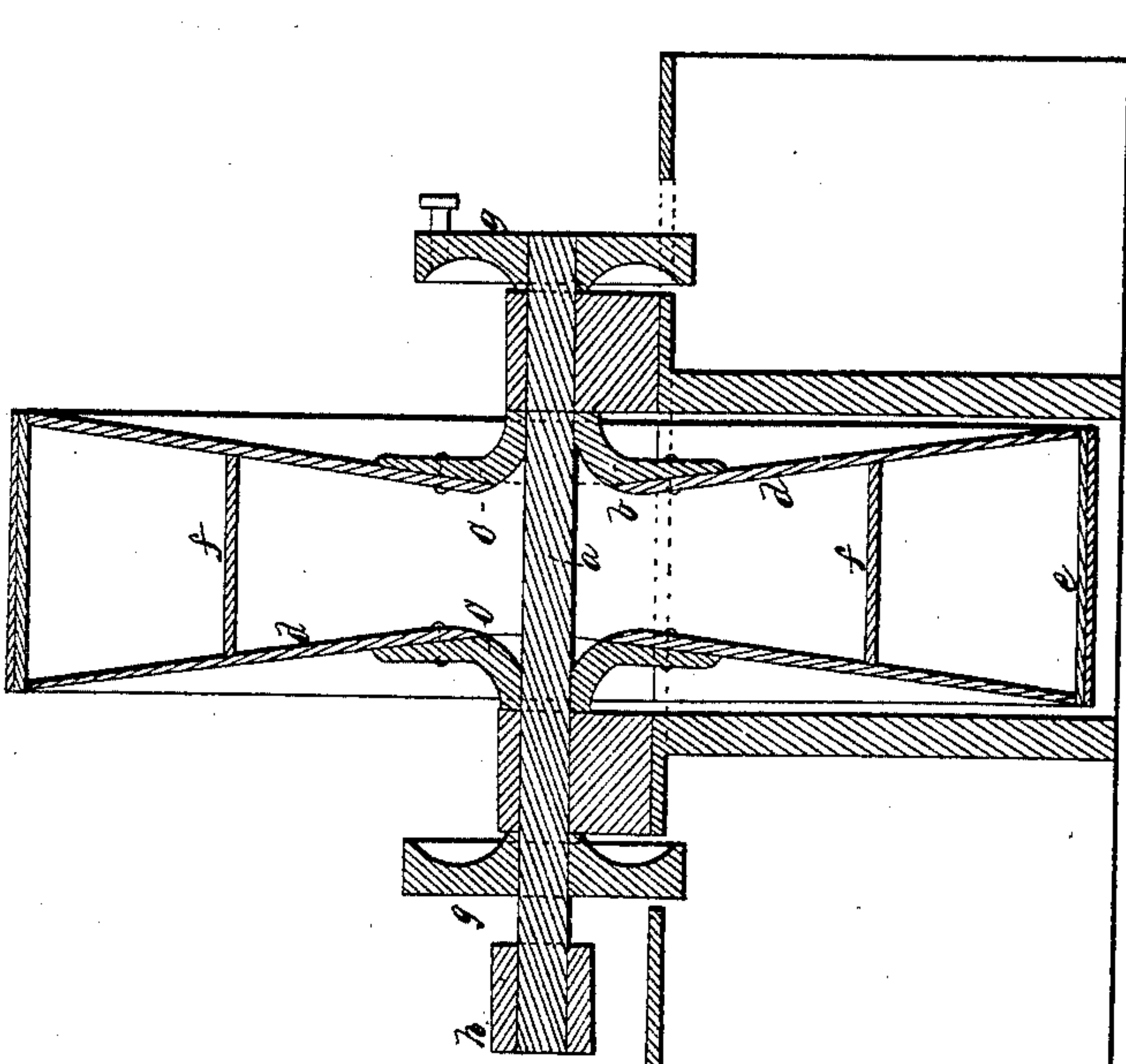
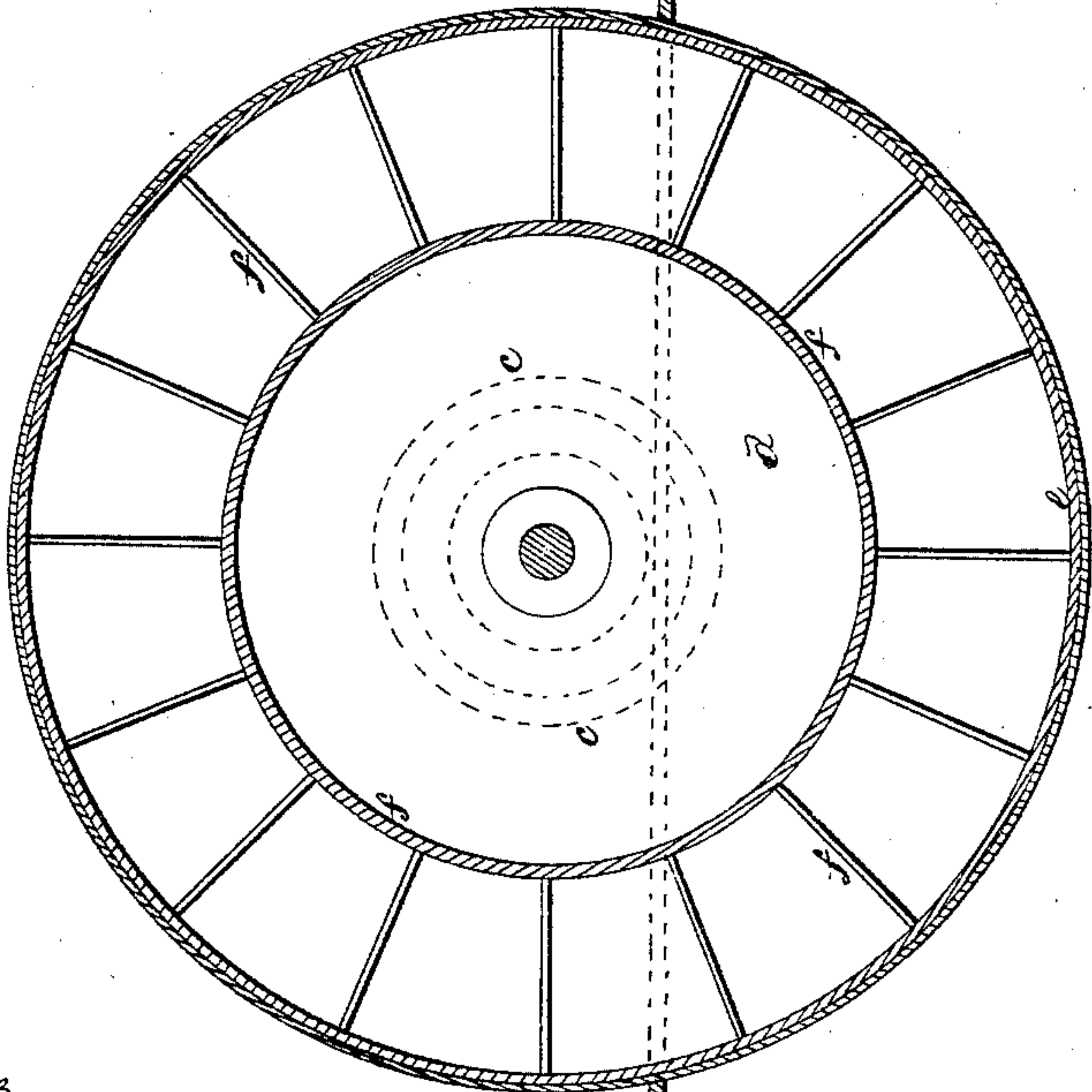


Fig 1.



Witnesses.
Alexander Hays
John Hagley

Inventor.
Jacob Geysen

UNITED STATES PATENT OFFICE.

JACOB GEYSER, OF ALLEGHENY, PENNSYLVANIA.

FLY-WHEEL FOR ROLLING-MILL MACHINERY.

Specification of Letters Patent No. 23,299, dated March 22, 1859.

To all whom it may concern:

Be it known that I, JACOB GEYSER, of Allegheny city, State of Pennsylvania, have invented a new and Improved Mode of Constructing Heavy Fly-Wheels for Rolling-Mills or other Heavy Machinery.

I do hereby declare the following to be a description sufficient to understand the general bearing of the invention, reference being had to the accompanying drawings and to the letters of reference marked thereon.

As yet there is no fly wheel in any of our rolling mills heavy enough to revolve uniformly against all the resistance of the working machinery. Some of them were made of very large diameter, but would in consequence catch a vast amount of wind, which is a waste of power, and in running them at a high speed there is great danger of their bursting. They are also very expensive in first cost.

I have invented a construction of heavy fly wheels which can be built in a great variety of ways or as convenient, they can be constructed of cast or wrought iron, or partially of timber, they can be built of any weight desired, so as not to be checked by the working machinery, and yet be of moderate size, they are less expensive in first cost by two thirds, do not catch much wind, are more economical in running, there is no danger of their bursting, and driven by a short stroke engine there is attained a quick speed at once, no gearing is needed on the fly wheel shaft no back lash or breaking of cogs and stoppage of works does occur.

I will here describe what I consider the best method of constructing a fly wheel at a low cost, effective and durable.

On the shaft are fastened two cast iron flanges, on which is fastened thick planking radiating from the center. The ends are sawed off to a circle of the size desired, both sides are then united by cross planking, the wheel is then turned off true and smooth, the engine driving it. Afterward the face must be hooped, which can be done in a variety of ways and manner, like a barrel, like a wagon wheel, or bur millstone, or best by wrapping it all over with strong iron wire, tight. The wood must be greased first to cause it to slide, and each circumference being stretched with a lever, and fastened with a separate wire to all the others, as much wire and hoops can be put on as may be considered necessary for safety against bursting. On one of the sides is then

opened a manhole, and the inside of the rim is divided into a number of equal sized partitions. Into these any hard and heavy material, such as pig iron, iron ore, brick, &c., is to be laid in plaster of Paris or other concrete, course by course all around the wheel, until sufficiently and solidly filled up, as shown in the drawings.

Description.

Figures 1 and 2 show the inside construction.

a is the shaft.

The diameter or circumference of flange *b* are marked by dots at *c*. These flanges are made of cast iron, with a great number of bolts or screw holes through which to bolt on timber extending to the outer circumference of the fly wheel. These timber or planking radiate from the shaft and the outer ends are made true circular and both sides of the wheel are then united by cross planking. The outside is then turned or planed off true. The engine may drive it. Afterward it must be hooped with good wrought iron, like a barrel, like a wagon wheel, like a bur millstone, or with strong iron wire, each circumference being hitched to all the others by a cross wire. Next a manhole in the side of the wheel is opened, the inside of the intended rim is laid off into a good number of partitions, intended to receive and hold stiff and fast the load of heavy material laid in plaster of Paris or other concrete. Hard burned brick may be the best material, but iron or iron ore can be used instead. All materials must be laid in course by course and well secured against its getting loose, and the wheel must be balanced properly.

I do not claim any particular shape or form or material for the construction of the rim of a fly wheel. Great variations can be made in this respect, but I claim—

1. Constructing the rim of a fly wheel hollow, with partitions in such a manner, that when the heavy materials are piled in laid in concrete, it may be held stiff and steady, as described.

2. I claim, using any heavy and hard materials along with suitable cement to fill up such a rim, when constructed and operating as and for the purpose described.

JACOB GEYSER.

Witnesses:

ALEXANDER HAYS,
JOHN WAGLEY.