

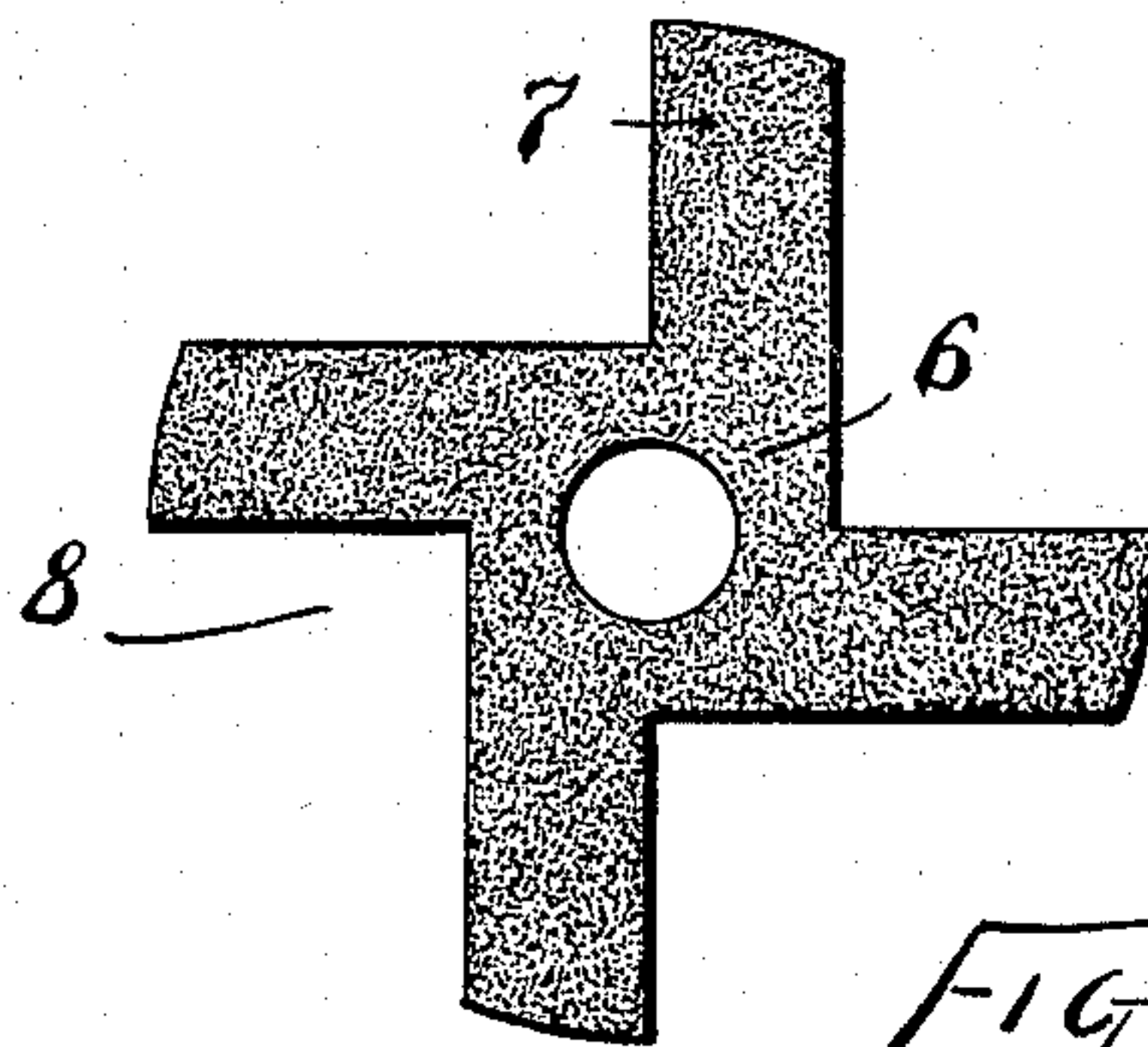
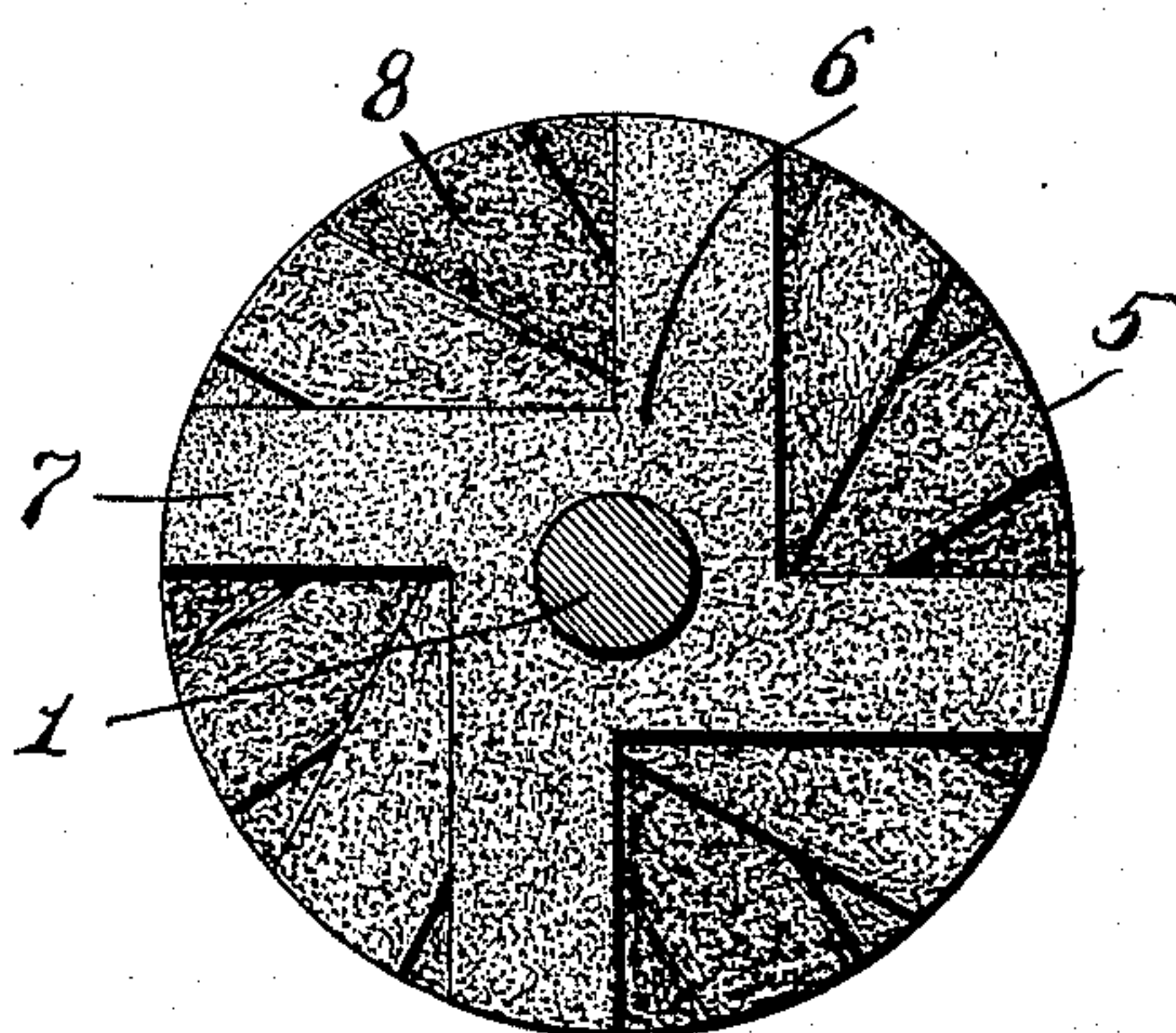
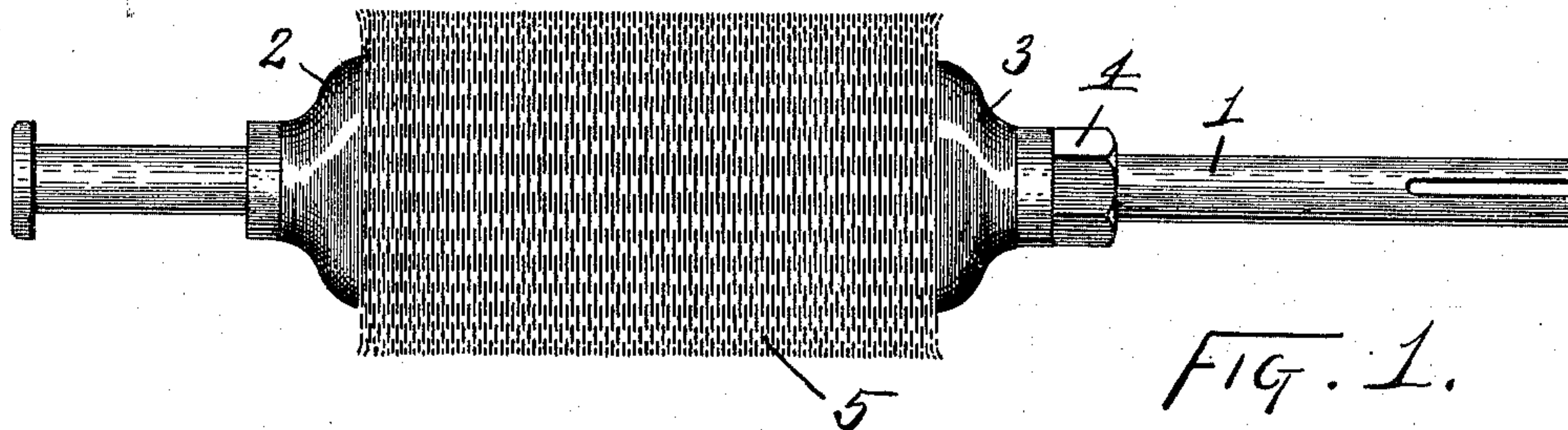
No. 608,171.

Patented Aug. 2, 1898.

C. BIRELY.  
WOOD FINISHING DEVICE.

(Application filed Apr. 11, 1898.)

(No Model.)



Charles Birely

Witnesses:  
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# UNITED STATES PATENT OFFICE.

CHARLES BIRELY, OF SHELBYVILLE, INDIANA.

## WOOD-FINISHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 608,171, dated August 2, 1898.

Application filed April 11, 1898. Serial No. 677,135. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES BIRELY, of Shelbyville, Shelby county, Indiana, have invented certain new and useful Improvements in Wood-Finishing Devices, of which the following is a specification.

It has heretofore been found impracticable to smoothly finish wooden surfaces of certain forms by machinery. For instance, straight or curved moldings or beadings in the strip or on the edges of wooden pieces and also straight, spiral, and circumferentially-fluted turned work has required to be smoothly finished by means of hand sandpapering performed with patience and skill, the conclusion having been reached, after many experiments with a variety of polishing systems, that such work would not lend itself to machine operations.

My invention pertains to means for smoothly finishing such work by machinery in a superior manner and with great rapidity and by the use of unskilled labor.

My improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a wood-finishing device, illustrating my invention; Fig. 2, a vertical transverse section of the same, and Fig. 3 a face view of one of the finishing laminae.

In the drawings, 1 indicates an arbor; 2, a collar thereon; 3, a loose collar thereon; 4, a nut screwed upon the arbor and serving to force collar 3 toward collar 2; 5, a cylinder formed of sandpaper laminae strung upon the arbor and clamped between the two collars; 6, one of the laminae, each of which has a central hole to go upon the arbor; 7, the wings of the laminae, their peripheral extremities being pointed by arcs concentric with the arbor, and 8 inwardly-extending cuts between the wings.

The laminae 6 are cut from sandpaper of an appropriate grade, preferably No. 0 or No. 1, the cutting being done, preferably, by means of a punch and die. A diameter of from four to six inches will be found quite satisfactory in practice. The laminae are strung upon the arbor at random, and the clamping-collars

should have less diameter than that of the laminae, good practice being to have the collars a couple of inches less in diameter than the cylinder. The independent wings of the laminae give to the periphery of the cylinder a yielding brush-like character, the peripheral edges of the wings being capable of entering the finer flutings and grooves of wooden moldings, so that the abrasive faces of the wings can act sidewise upon the side of the grooves to be finished, the wings being capable, under pressure, of yielding sidewise and bending down, so as to present their abrasive surfaces outermost and into contact with the surfaces of wood pressed against them. The arbor is to be mounted in suitable bearings, and it, with its cylinder, is to be given rapid rotation by means of power suitably applied. The work to be finished is then to be applied to the surface of the rapidly-revolving cylinder, sufficient pressure being exerted to cause the wings of the laminae to yield to conform their abrasive side faces to the sinuosities of the work, the work being advanced over the rotating cylinder, so as to present all its parts progressively to the action of the cylinder, the direction of advance corresponding substantially with that of the members of the molding or fluting being finished. In the action of the laminae upon the wood the pressure with which the abrasive material acts upon the wood is substantially that due to the side stiffness of a sheet of sandpaper, and under the effect of the high rotation of the cylinder this pressure is sufficient to quickly produce a high character of smooth finishing without danger of materially damaging the sharp corners of moldings or flutings.

I claim as my invention—

In a wood-finishing device, the combination, substantially as set forth, of an arbor, clamping-collars thereon, and a cylinder formed of sandpaper laminae clamped between said collars, said sandpaper laminae having independent wings with peripheries concentric with the arbor.

CHARLES BIRELY.

Witnesses:

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