

(No Model.)

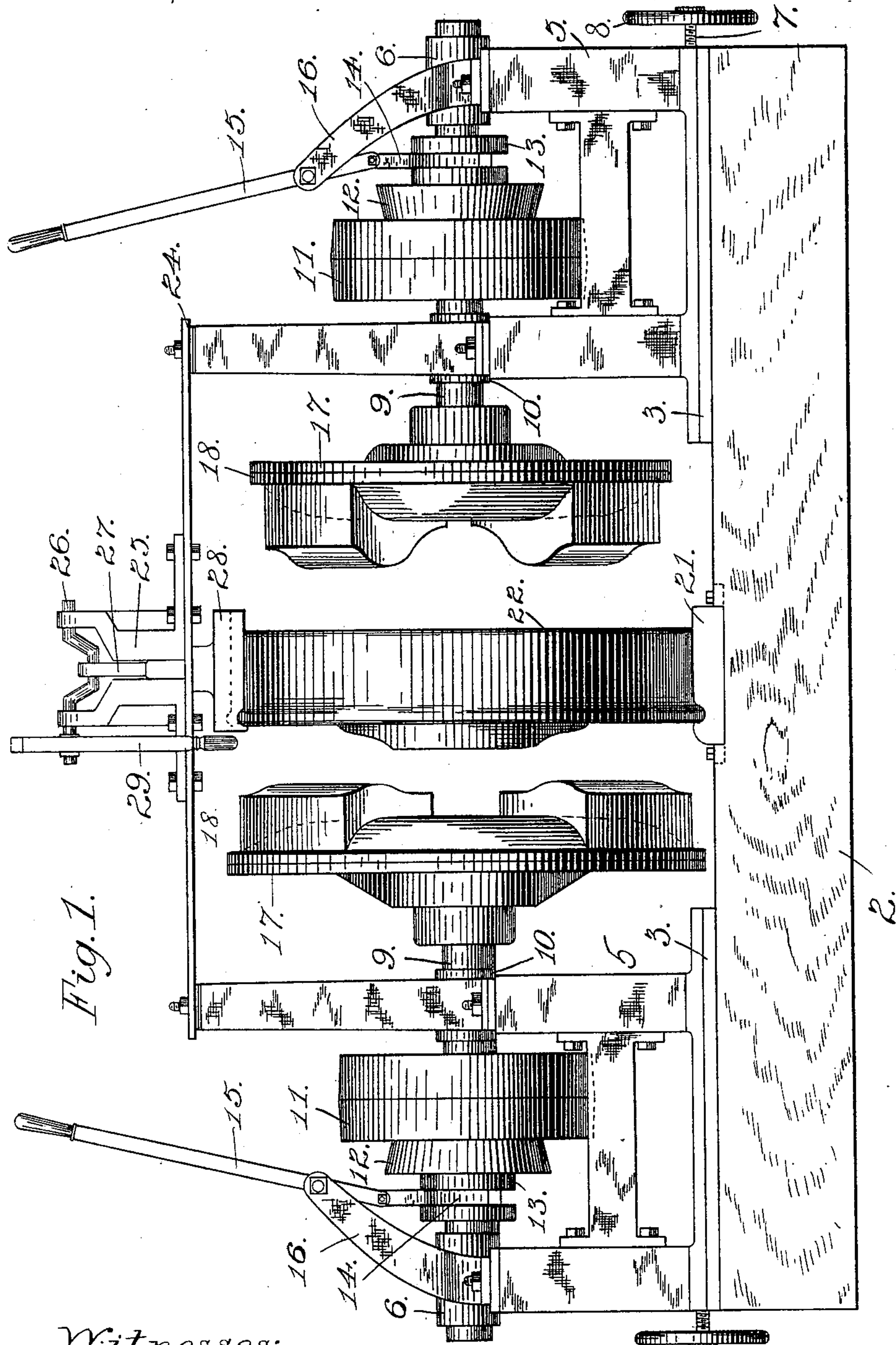
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D. C. GREEN.

APPARATUS FOR CLEANING CAST METAL SURFACES.

No. 592,730.

Patented Oct. 26, 1897.



Witnesses:

F. J. Bradbury.

W. C. Swift.

Inventor:—

David C. Green.

per:

D. M. Munn
Attorney

(No Model.)

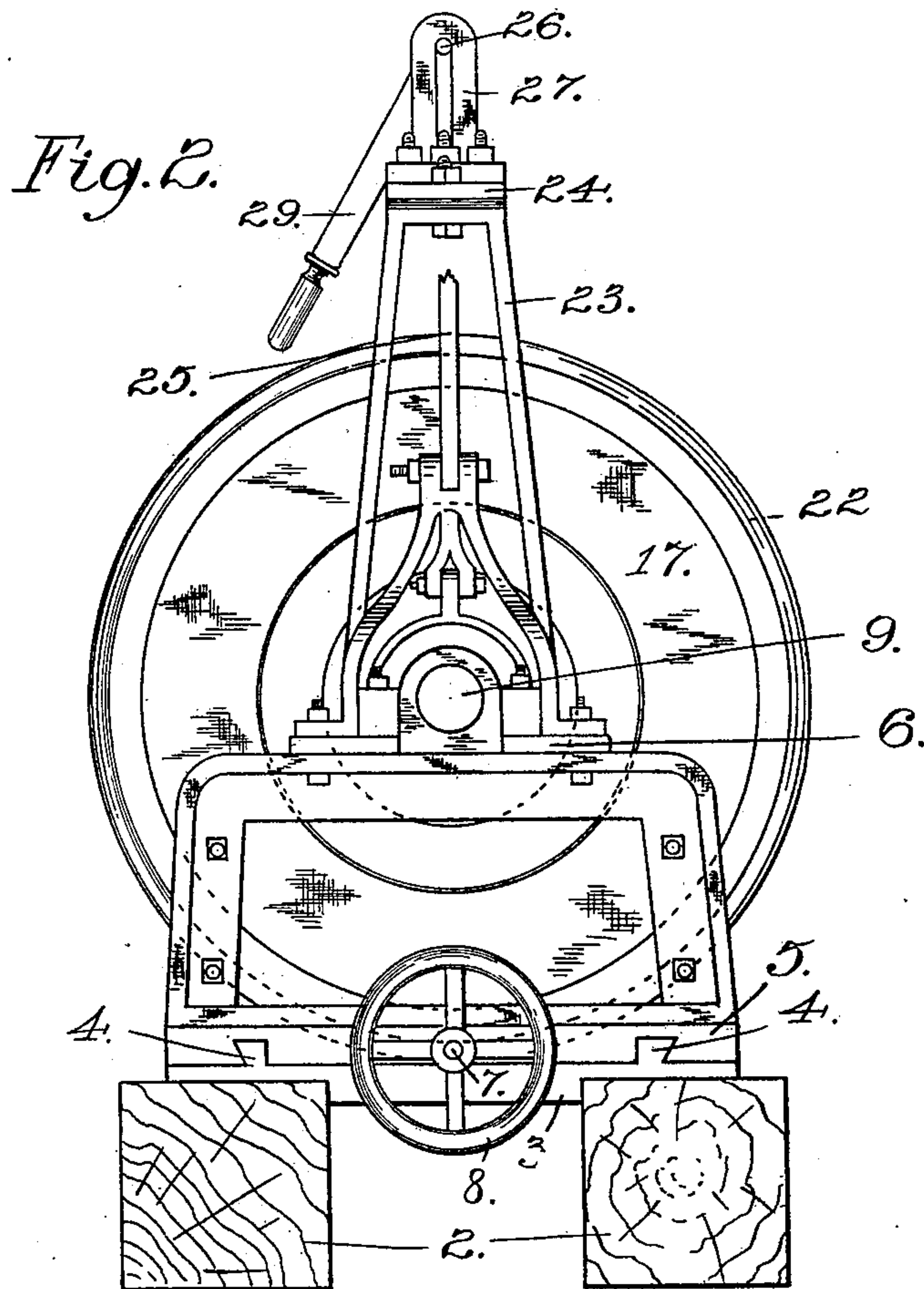
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Fig. 3.

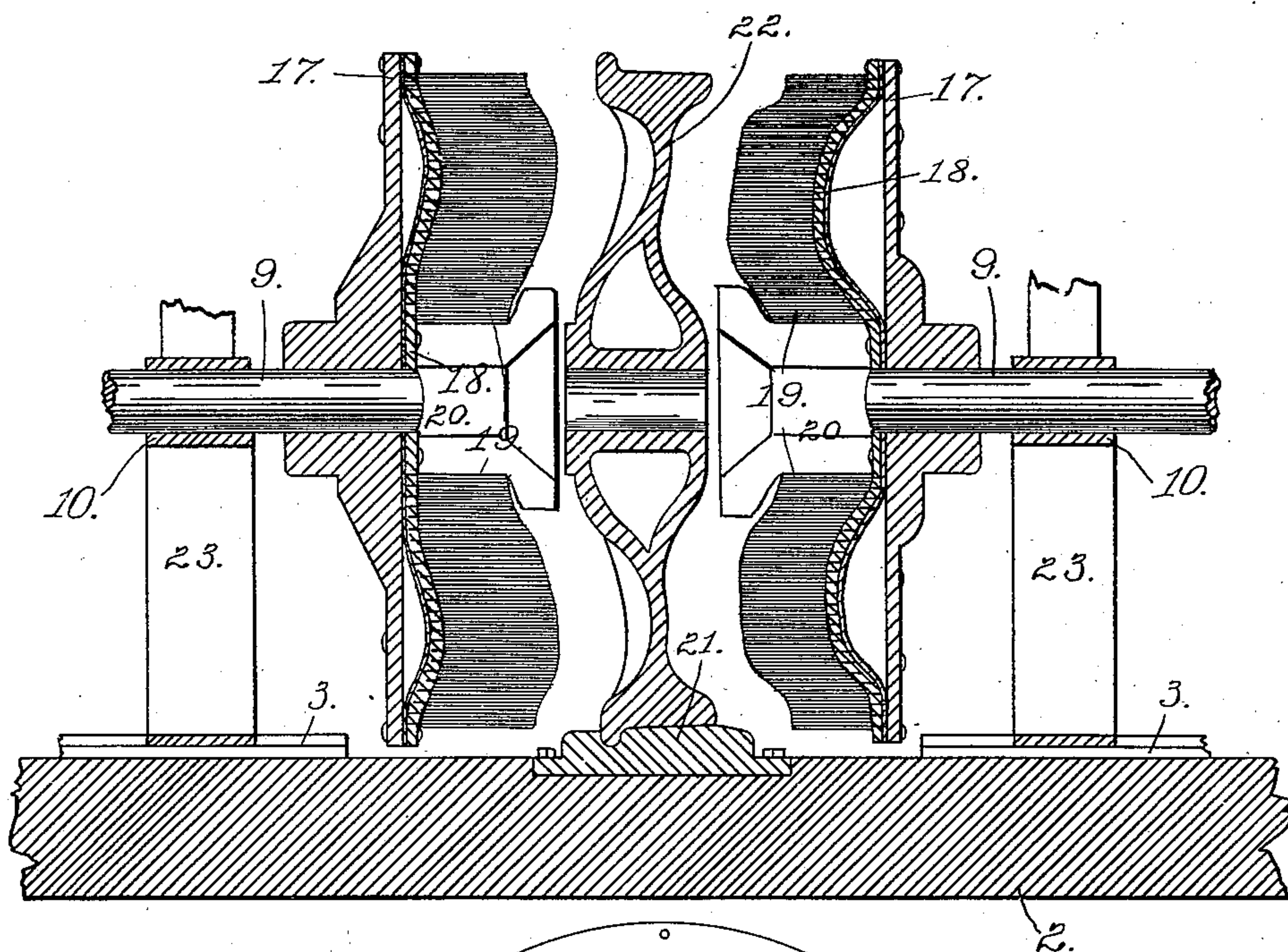
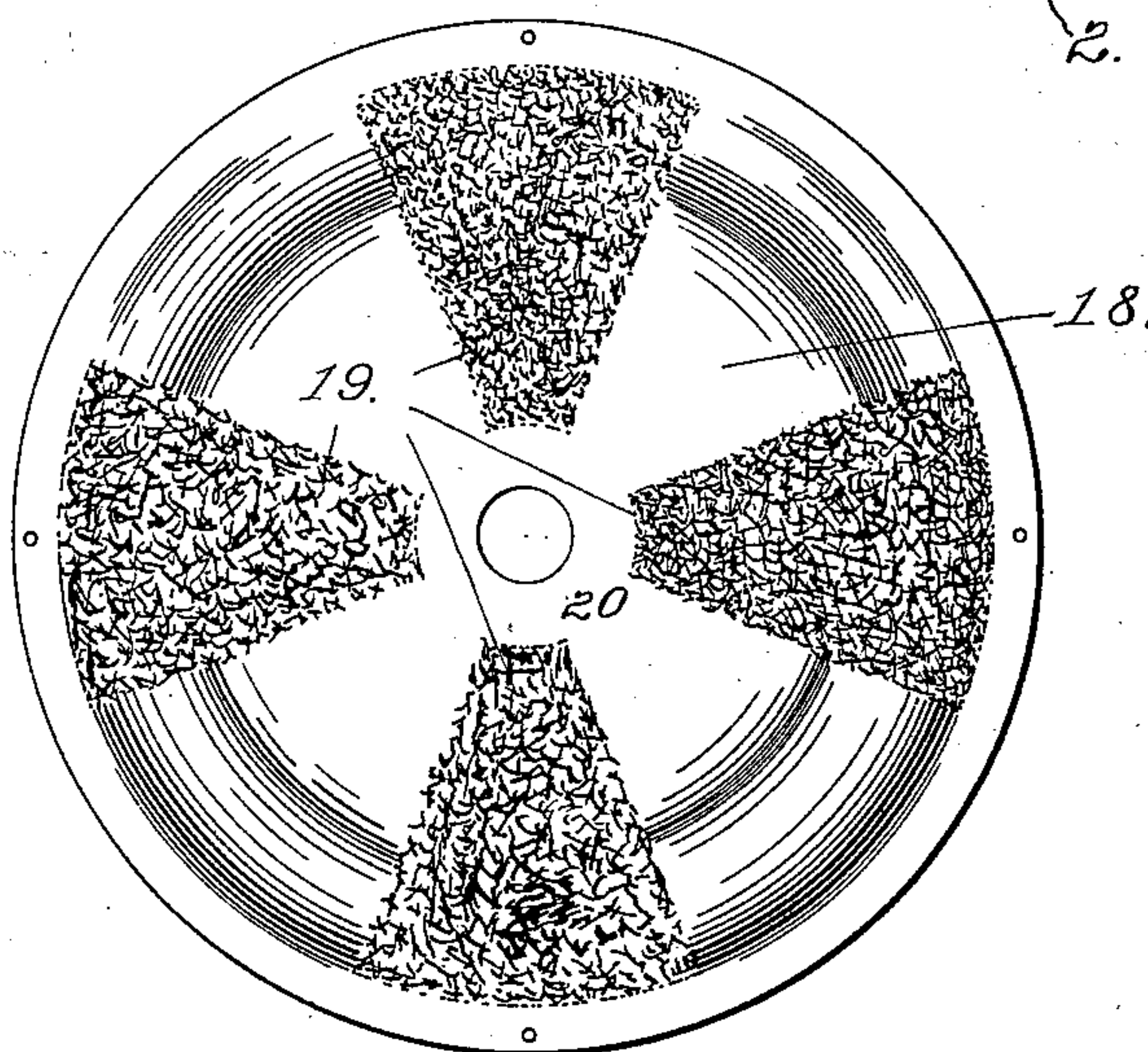


Fig. 4.



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UNITED STATES PATENT OFFICE.

DAVID C. GREEN, OF MILWAUKEE, WISCONSIN.

APPARATUS FOR CLEANING CAST-METAL SURFACES.

SPECIFICATION forming part of Letters Patent No. 592,730, dated October 26, 1897.

Application filed May 12, 1894. Serial No. 511,027. (No model.)

To all whom it may concern:

Be it known that I, DAVID C. GREEN, of Milwaukee, Milwaukee county, Wisconsin, have invented certain Improvements in Apparatus for Cleaning Cast-Metal Surfaces, of which the following is a specification.

My invention relates to improvements in devices for cleaning the sand from cast-metal surfaces, specially circular and circumferentially undulating surfaces, such as car-wheels, its object being to provide improved means therefor whereby the opposite surfaces of a wheel may be quickly and simultaneously cleaned.

To this end my invention consists in providing a frame or other suitable support upon which rests a saddle to receive the tread and flange of the wheel and conforming in shape thereto and adapted to hold the wheel in upright position, the wheel being further secured in place, if necessary, by a similar shoe clamped upon the top of the wheel. Mounted also upon the frame on each side of the wheel are shaft-carrying frames which are adjustable thereon longitudinally to compensate for the wear of the brushes hereinafter described. Upon these shafts are mounted disks, preferably of metal, conforming in shape to the contour of the adjacent wheel-surface and carrying brushes made up, preferably, of flat wire, the flat surfaces of which are arranged radially upon said disks. The faces of these brushes also conform to the surface to be cleaned and are preferably arranged in groups of triangular form or substantially sectors of a circle with intermediate open spaces to assist in the cleaning process. The brush-carrying shafts are adapted to slide in their bearings, so as to carry the brushes to and from the surface to be cleaned and to regulate the pressure thereof.

My invention further consists in the construction hereinafter more particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of my improved machine, shown with a car-wheel held in place between the brushes with the brushes withdrawn therefrom. Fig. 2 is an end elevation of the same. Fig. 3 is a detail central vertical section of the

brushes and a car-wheel in position between the same, and Fig. 4 is a front elevation of one of the brushes.

The machine is mounted upon a suitable frame or support 2, which carries also a suitable base-plate 3, upon which are arranged guides or tracks 4 to support and guide the frames 5, which are adjustable longitudinally of the tracks by means of screws 7, having the hand-wheels 8. Arranged to slide and turn in bearings 6 and 10 upon these frames are shafts 9. These are fitted with the loose belt-pulleys 11 and the conical friction-pulleys 12, slidable thereon, and secured in place by a suitable feather or spline and entering corresponding conical sockets in the pulleys 11, so as to frictionally clutch them upon the shaft. The conical pulleys 12 are thrown into or out of engagement with the pulleys 11 by means of levers 15 upon the brackets 16 and carrying segmental collars 14, which run in circumferential grooves in the hubs 13. By throwing the levers the pulleys 11 may be thrown into or out of connection with the shaft, so as to turn or release the same, and the pulleys 11 being held from sliding upon the shafts by suitable means the shafts themselves, with their attachments, are carried to and from the wheel or other object being cleaned.

Upon the inwardly-projecting ends of the shafts 9 are keyed or otherwise secured the circular plates 17, upon which are secured other plates 18, conforming to the contour of the wheel or other surface to be cleaned and perforated to receive the flat wire brushes 19. These brushes project uniform distances therefrom, so that their outer ends form surfaces of similar conformation to that of the plate holding them. The wires of the brushes stand with their flat surface in radial lines and also are preferably arranged in groups of the form of sectors of a circle, as illustrated in Fig. 4, with open intermediate spaces, which permit the material loosened from the surface by one group of brushes to be freed therefrom before the surface is reached by the other group instead of carrying the same along in the mass of the brush. It further serves to render the brush more elastic, giving greater sweep. It also enables the

corners of the brush to enter the hollow spaces in the faces of the wheel.

The above-described construction is in duplicate, one set being carried upon each of the frames 5, except that the forms of the brushes vary to conform to the different shapes of different sides of the wheel to be cleaned.

Intermediate of the brushes upon the frame 2 is placed the shoe 21, shaped to conform to the tread and flange of the car-wheel 22. This is generally sufficient to hold the wheel in place, but additional securing means may be provided. Such means I illustrate in Figs. 1 and 2, where the standards or supports 23, extending upwardly from the bearings 10 on the frame, have a connecting horizontal bar 24, on which is placed a bearing 25, having journaled therein a crank-shaft 26. The crank-rod 27 carries a shoe 28, similarly conformed to the tread and flange of the wheel and adapted to be pressed downward upon the same by throwing the lever 29.

In order to take up the wear of the brushes and to adapt the machine for cleaning wheels of varying thicknesses, the frames 5 are adjusted to and from a medial cross-line by means of screws 7 and their hand-wheels 8.

While I have described and shown my improved machine as adapted for cleaning car-wheels, it is evident that it may be employed for cleaning other surfaces by providing it

with brushes similarly conformed to the surface to be cleaned.

In operation the wheel to be cleaned is taken from the annealing-pit, with the sand and other loosely-attached particles upon it, and placed upon the shoe 21 of the machine, and, if necessary, also secured by means of the supplementary shoe 28, the brushes being withdrawn from contact. The levers 15 are then operated, first to throw the clutches into engagement with the belt-pulleys, and then by further movement the brushes are carried against the surface of the wheel with sufficient pressure and there held until the wheel is cleaned, as desired, when it can be removed and another substituted therefor.

I claim—

As an improved article of manufacture, a metal scouring or cleaning brush, consisting of a plane-surfaced back, a disk secured thereto conformed to the shape of the surface to be cleaned, and the series or groups of wires secured to and projecting a substantially uniform distance from said disk, so as to form a brushing-surface of similar contour.

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

DAVID C. GREEN.

Witnesses:

W. C. SWIFT,

H. S. JOHNSON.