

(No Model.)

W. M. DAVIS.

TOOL FOR RUBBING DOWN VEHICLE BODIES, &c.

No. 470,991.

Patented Mar. 15, 1892.

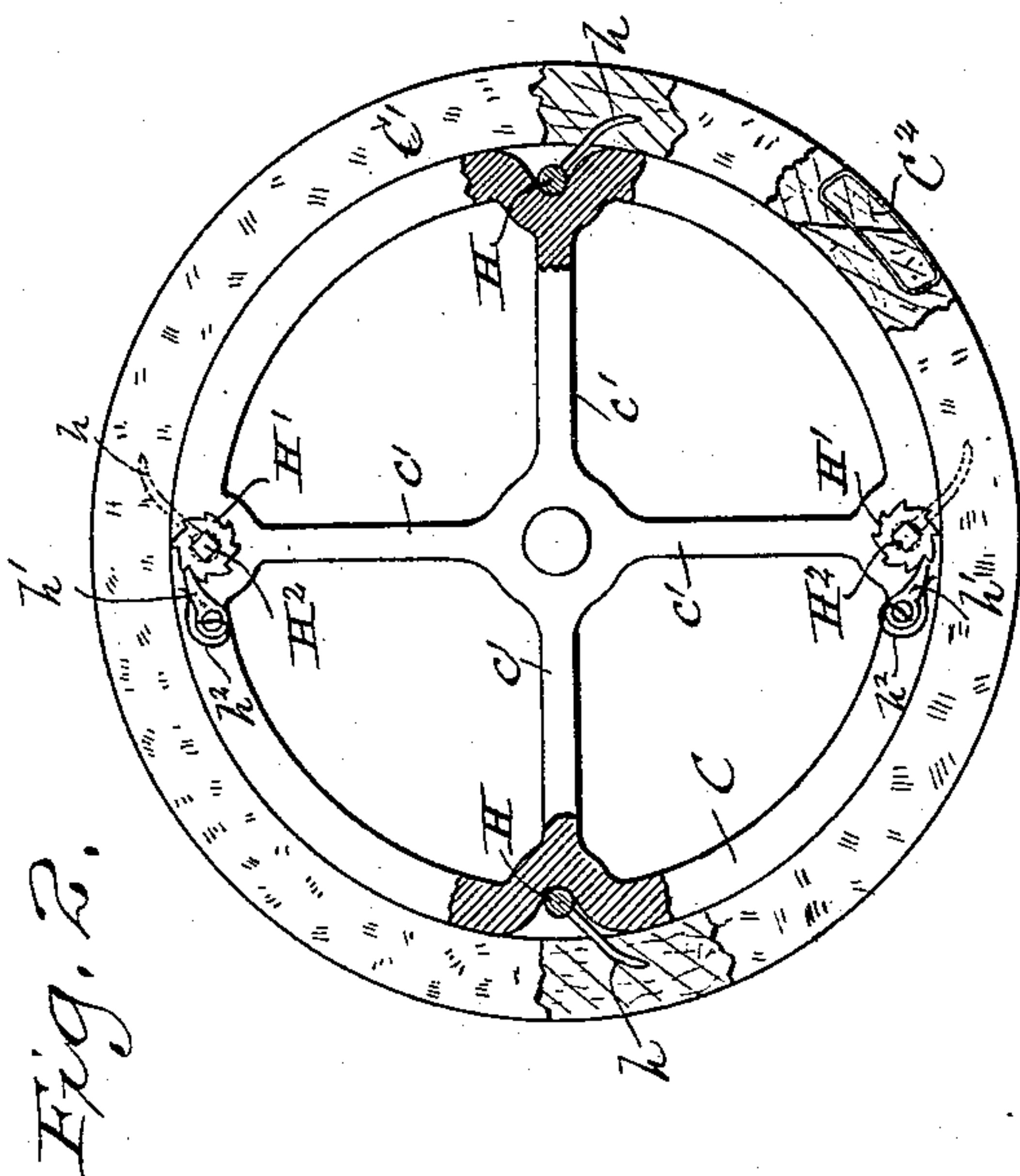


Fig. 4.

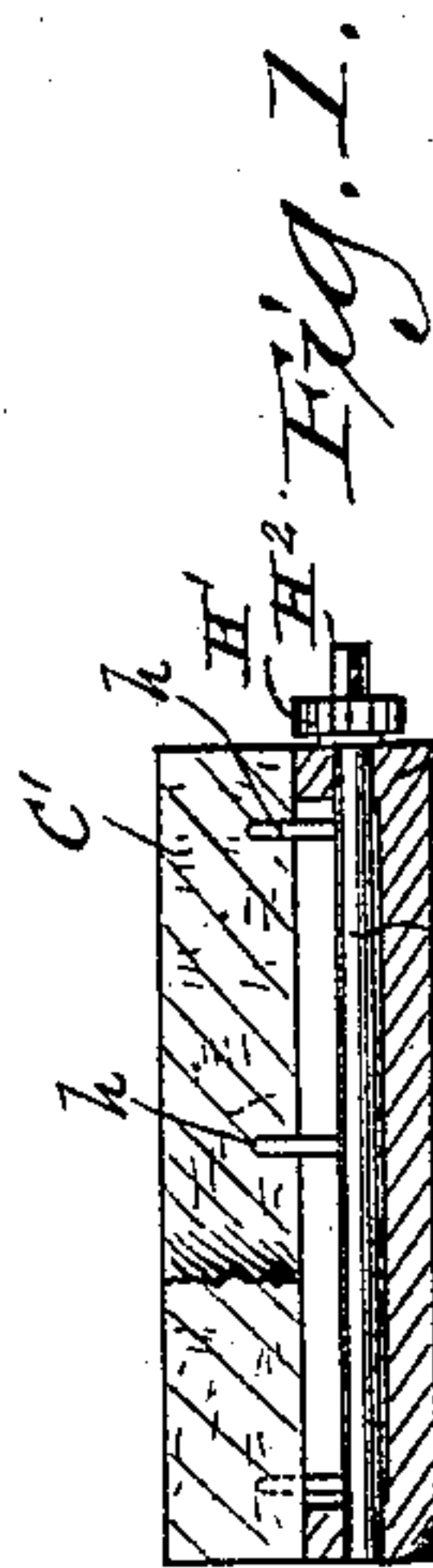
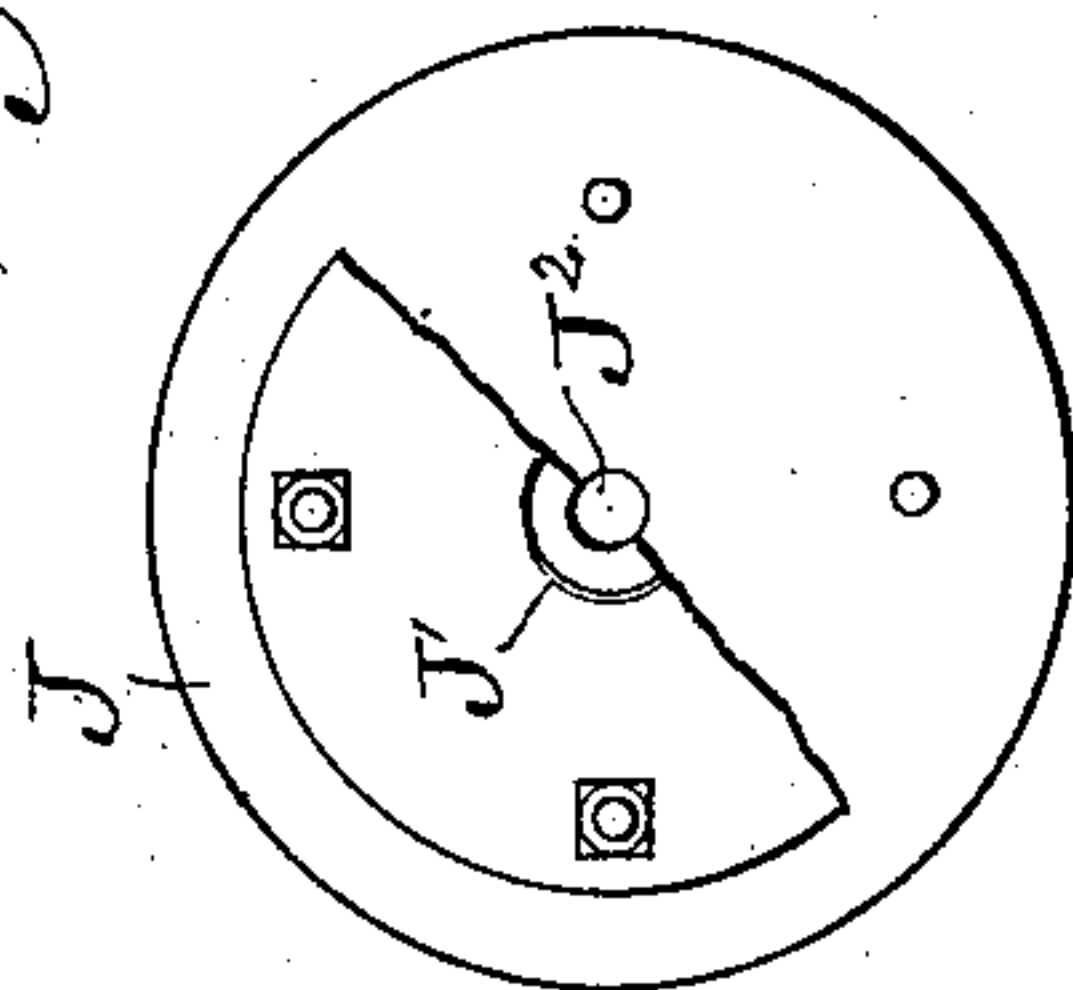
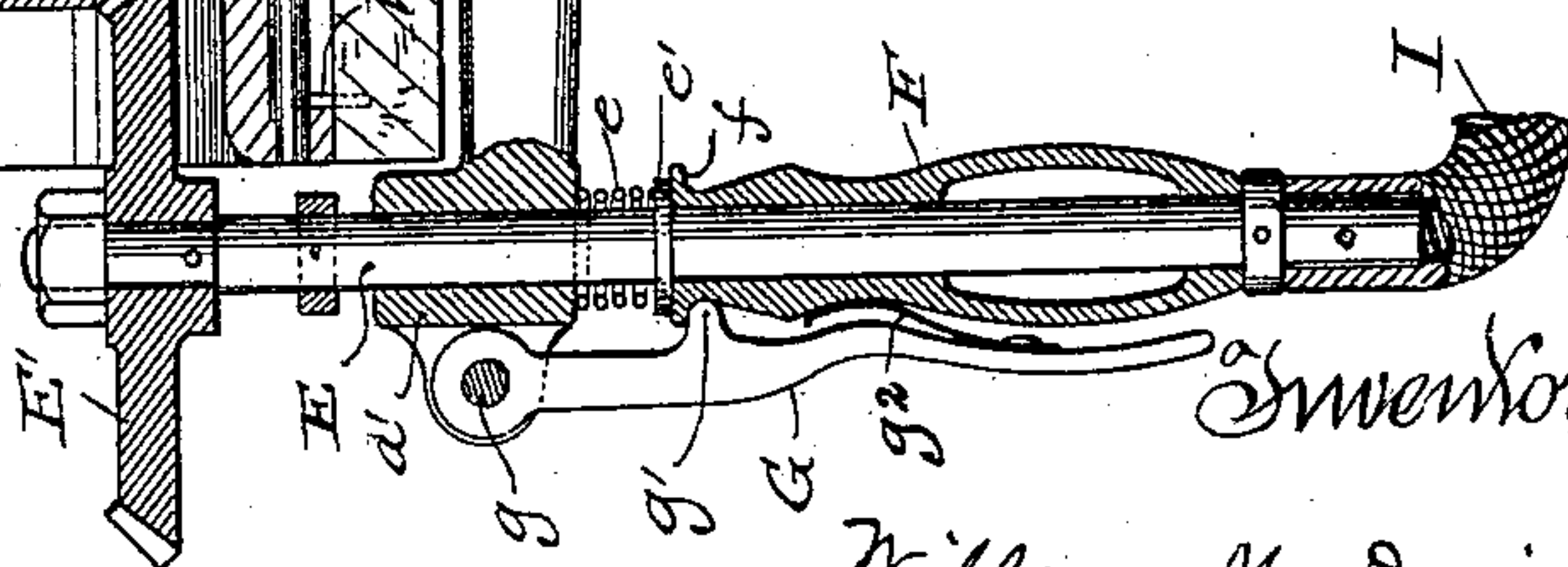
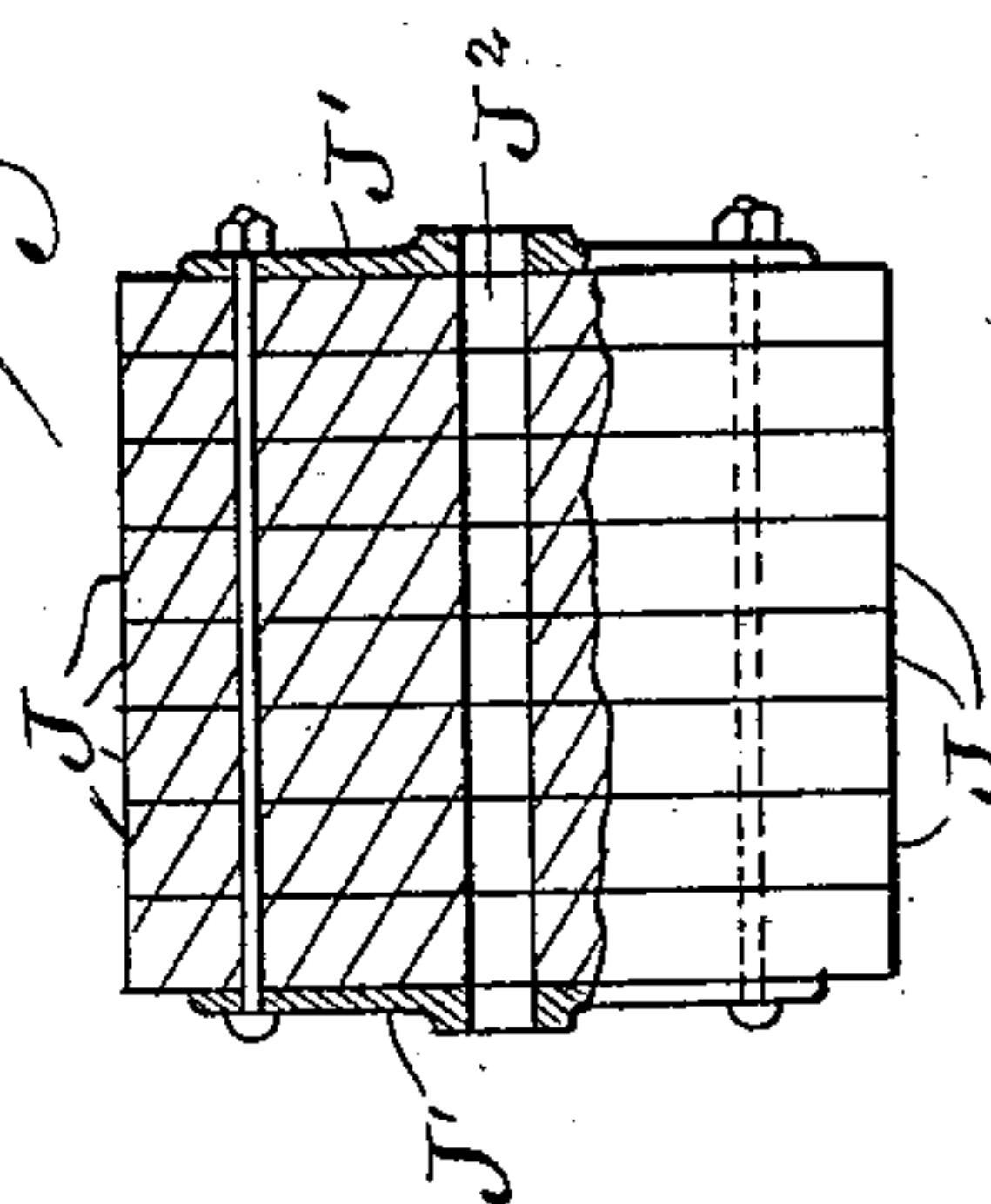


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## TOOL FOR RUBBING DOWN VEHICLE-BODIES, &c.

SPECIFICATION forming part of Letters Patent No. 470,991, dated March 15, 1892.

Application filed August 4, 1891. Serial No. 401,690. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM M. DAVIS, a citizen of the United States, and a resident of Racine, in the county of Racine, and in the State of Wisconsin, have invented certain new and useful Improvements in Tools for Rubbing Down Vehicle-Bodies and Analogous Surfaces; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to an improved device for use in rubbing down or polishing varnished surfaces, such as the bodies or panels of carriages and wagons; and it consists in the matters hereinafter described, and more particularly pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a sectional view of a device embodying my invention. Fig. 2 is a side elevation of the polishing-drum with parts broken away. Figs. 3 and 4 are views of a different form of my improved polishing-drum.

In said drawings, A indicates a frame of any suitable or desired construction provided with a bearing *a*, through which a shaft B is passed. Upon this shaft B is mounted a drum C, preferably provided with a central hub *c* and spider-arms *c' c'*, said hub being revolubly supported upon the said shaft B. A bevel-gear D is provided upon the outer end of the hub *c*, said gear being either formed integral therewith or secured thereto in any suitable manner, as by screws or bolts, as in Fig. 1 of the drawings. A covering of felt or analogous material is provided upon the outside of the drum C, as shown at *C'* in Figs. 1 and 2, said covering being secured to the outer surface of the drum in any desired manner—as, for instance, by means of the devices illustrated in Figs. 1 and 2, the details of which will presently be described.

The frame A is provided with a bearing *a'*, located at right angles to the bearing *a*, within which a shaft E is journaled, said shaft being arranged to have a slight amount of longitudinal movement within said bearing. A bevel-gear E' is located upon the inner end of the shaft E and is arranged to be moved into and out of engagement with the gear D

by the longitudinal movement of the shaft E. A spring *e* is located upon the outer portion of the shaft E, and is arranged to bear against the outer surface of the frame A adjacent to the bearing *a'* and against a collar or flange *e'* on the shaft E to normally hold said shaft outwardly, so as to hold the gear E' out of engagement with the gear D. A handle F is provided upon the outer end of the shaft E, and a lever G is pivoted to the frame A adjacent to the bearing *a'*, as at *g*, and arranged to lie alongside of the handle F, so as to be readily grasped by the hand of the operator together with the handle F. A projection or shoulder *g'* is provided on the inner surface of the lever G adjacent to the handle F, and is arranged to engage with an annular flange or collar *f* on the said handle, so as to force the shaft E inwardly and move the gear E' into engagement with the gear D when said lever is pressed inwardly toward the handle. A spring *g<sup>2</sup>* serves to throw said lever outwardly, so as to move the shoulder *g'* out of engagement with said flange *f* when the lever is released.

Rotary motion is communicated to the shaft E in any suitable manner, as by means of a flexible shaft I, and the gear E' is rapidly revolved thereby. It is obvious that when the gears E' and D are in mesh this rotary motion will be communicated to said gear D, so as to revolve the drum C very rapidly, and that when said gears are not in engagement with each other said gear D will remain motionless, while the gear E' revolves freely.

As shown in Figs. 1 and 2 of the drawings, the felt covering *C'* is secured to the outside of the drum D by means of hooks or fingers *h h*, which project from rods H H, rotatively secured in the periphery of the drum C, which hooks or fingers are arranged to penetrate the felt covering, as shown in said figures, so that a rotative movement of said rods will draw the covering tightly about the drum C. As shown more particularly in Fig. 2 of the drawings, these hooks or fingers are arranged so as to strain the covering in opposite directions, two or more of said hooks being arranged to draw said covering in each direction, so as to uniformly stretch said cover around the drum. In order to facilitate the stretching of the felt



covering C' in the manner just described, I provide ratchet-wheels H' H' upon the ends of the rods H H and pawls or detents h' h' upon the ends of the drum C adjacent to said  
 5 ratchets and adapted to engage therewith, so as to prevent a backward rotation of said rods and a consequent loosening of the felt covering.

Springs h<sup>2</sup> h<sup>2</sup> are provided to hold the pawls  
 10 h h in operative position, and after said covering has been tightened the edges thereof are secured together, as at G<sup>2</sup>.

In the form of polishing-drum illustrated in Figs. 3 and 4 the drum is composed of a series  
 15 of disks of felt J J, suitably secured together by means of bolts passed through said disks and arranged to compress said disks between suitable metallic disks J' J'. A central aperture J<sup>2</sup> is provided in said series of disks,  
 20 through which the shaft B is passed.

In practice my improved device is employed in polishing the varnished surfaces as follows: After a coat of varnish has been applied and permitted to dry the operator grasps the pol-  
 25 ishing device by the handle a' at the side thereof, and the handle F at the same time compresses the lever G against the said handle F, as before described, so as to force the wheel E' into engagement with the wheel D.  
 30 This causes the wheel D and the drum C to revolve rapidly, as before described. The operator now presses the rapidly-revolving drum against the surface to be polished, and by moving said drum over said surface and at  
 35 the same time applying a slight amount of pressure thereto is enabled to very quickly and easily impart a uniform polish to the surface to be finished. As many coats of varnish as may be desired may be successively  
 40 applied and polished in the manner before described.

It will be seen that by the employment of my improved polishing device the work of finishing or polishing the surfaces is very  
 45 much simplified and that the amount of labor necessary for the production of a very high polish is very much lessened, while a very uniform finish is given to the surface.

I would have it understood that I do not  
 50 desire to limit myself to the exact form of construction illustrated in the drawings, as various modifications may obviously be made in the details of construction without departing from my original invention.

55 The drum may be made of any desired size in accordance with the character of the work

to be done with the device, and for large surfaces the drum may be made as long in proportion to its diameter as desired to enable a large amount of surface to be operated upon  
 at one time.

It will of course be understood that this device may be used with any suitable abrading substance—such as water and powdered pumice-stone or other similar substance—in the  
 65 manner well known in the art.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An improved device for rubbing down  
 or polishing varnished surfaces, comprising a  
 suitable frame, a revoluble drum supported  
 therein, a flexible shaft, an operative connection between said shaft and said revoluble  
 drum, and means for throwing said drum out  
 of operation, substantially as described. 75

2. An improved device for rubbing down  
 or polishing varnished surfaces, comprising a  
 suitable frame, two shafts journaled in said  
 frame at substantially right angles to each  
 other, a drum revolubly supported upon one  
 of said shafts and provided with a polishing-  
 surface of yielding material, a bevel-gear on  
 said drum, a flexible shaft operatively connected with the other of said shafts, a bevel-  
 gear upon said latter shaft, and suitable  
 means for moving said latter gear into or out  
 of engagement with the gear upon the said  
 drum, substantially as described. 85

3. An improved device for rubbing down  
 or polishing varnished surfaces, comprising a  
 suitable frame, two shafts supported within  
 bearings in said frame at substantially right  
 angles to each other, a drum revolubly supported upon one of said shafts and provided  
 with a polishing-surface of yielding material,  
 a bevel-gear upon said drum, a flexible shaft  
 operatively connected with the other one of  
 said shafts, a second bevel-gear upon said latter shaft, a spring for normally holding said  
 latter gear away from the gear upon the drum,  
 and a lever for forcing said gear into mesh  
 with said gear upon said drum, substantially  
 as described. 95

In testimony that I claim the foregoing I  
 have hereunto set my hand, at Racine, in the  
 county of Racine and State of Wisconsin, in  
 the presence of two witnesses.

WILLIAM M. DAVIS.

Witnesses:

JNO. W. KNIGHT,  
 ERASTUS C. PECK.