

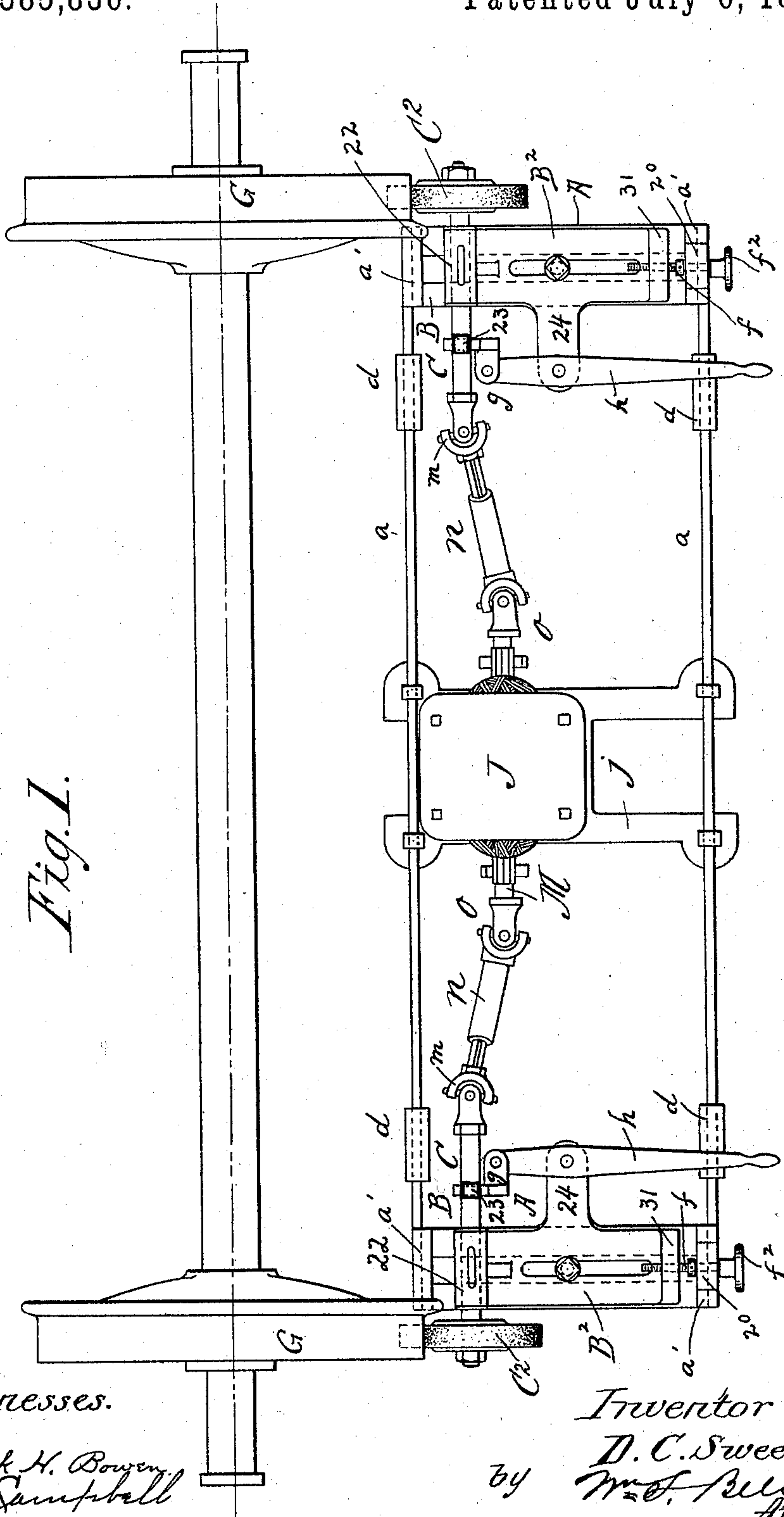
(No Model.)

4 Sheets—Sheet 1.

D. C. SWEET.
CAR WHEEL GRINDING MACHINE.

No. 585,836.

Patented July 6, 1897.



Witnesses.
Frank H. Bowen,
M. A. Sampbell

Inventor
D. C. Sweet,
by W. F. Bellows,
Attorney.

(No Model.)

4 Sheets—Sheet 2.

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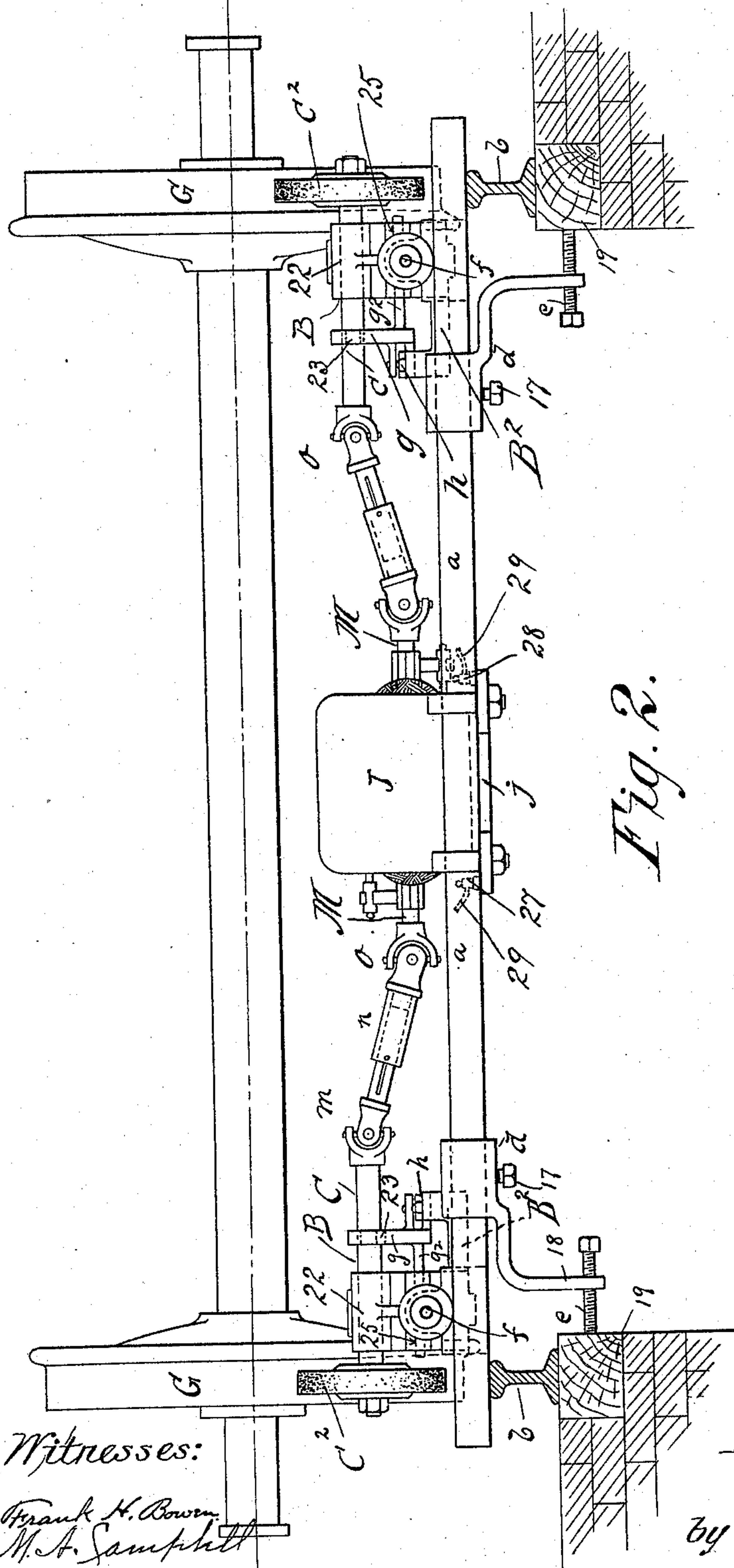


Fig. 2.

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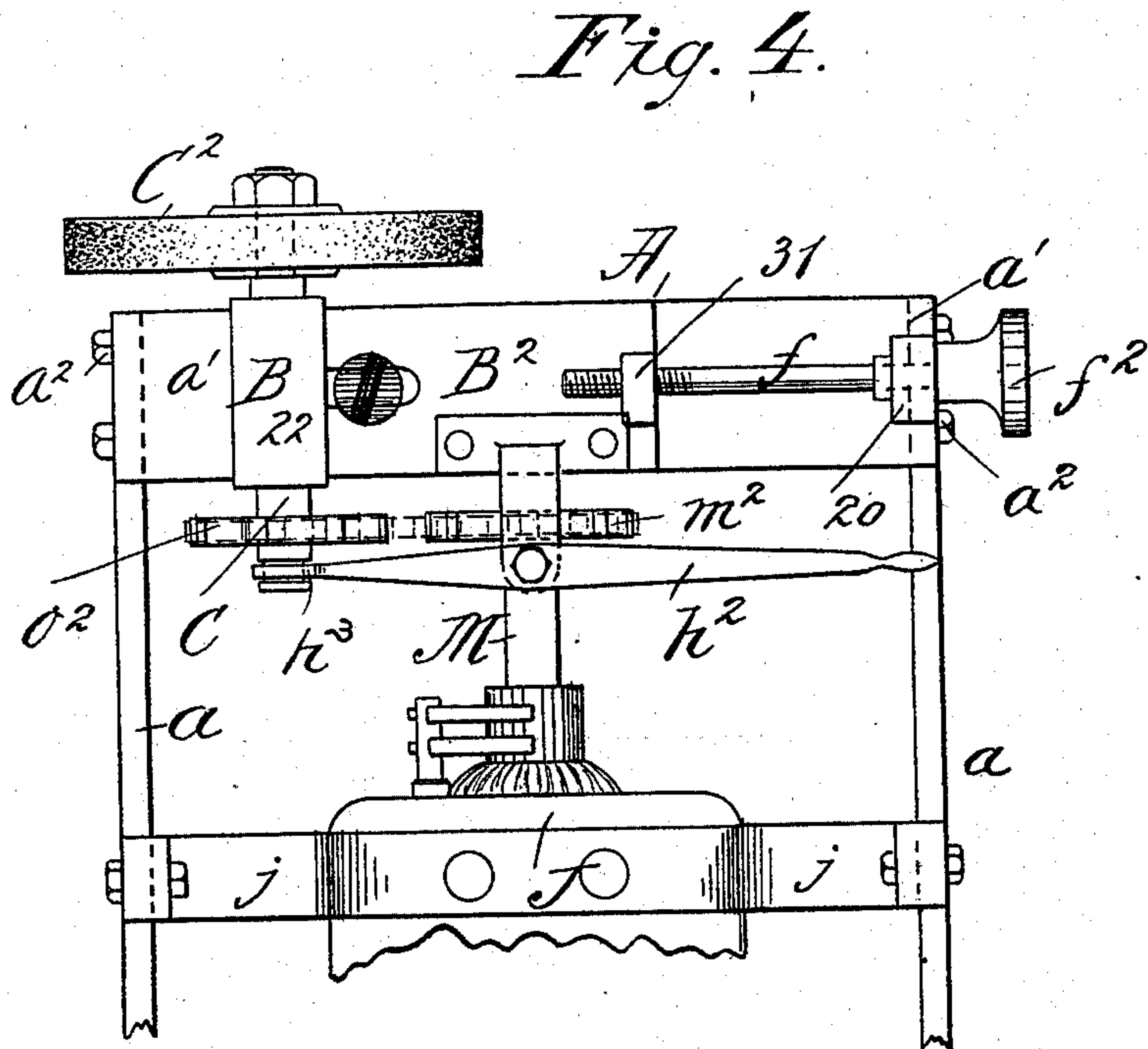
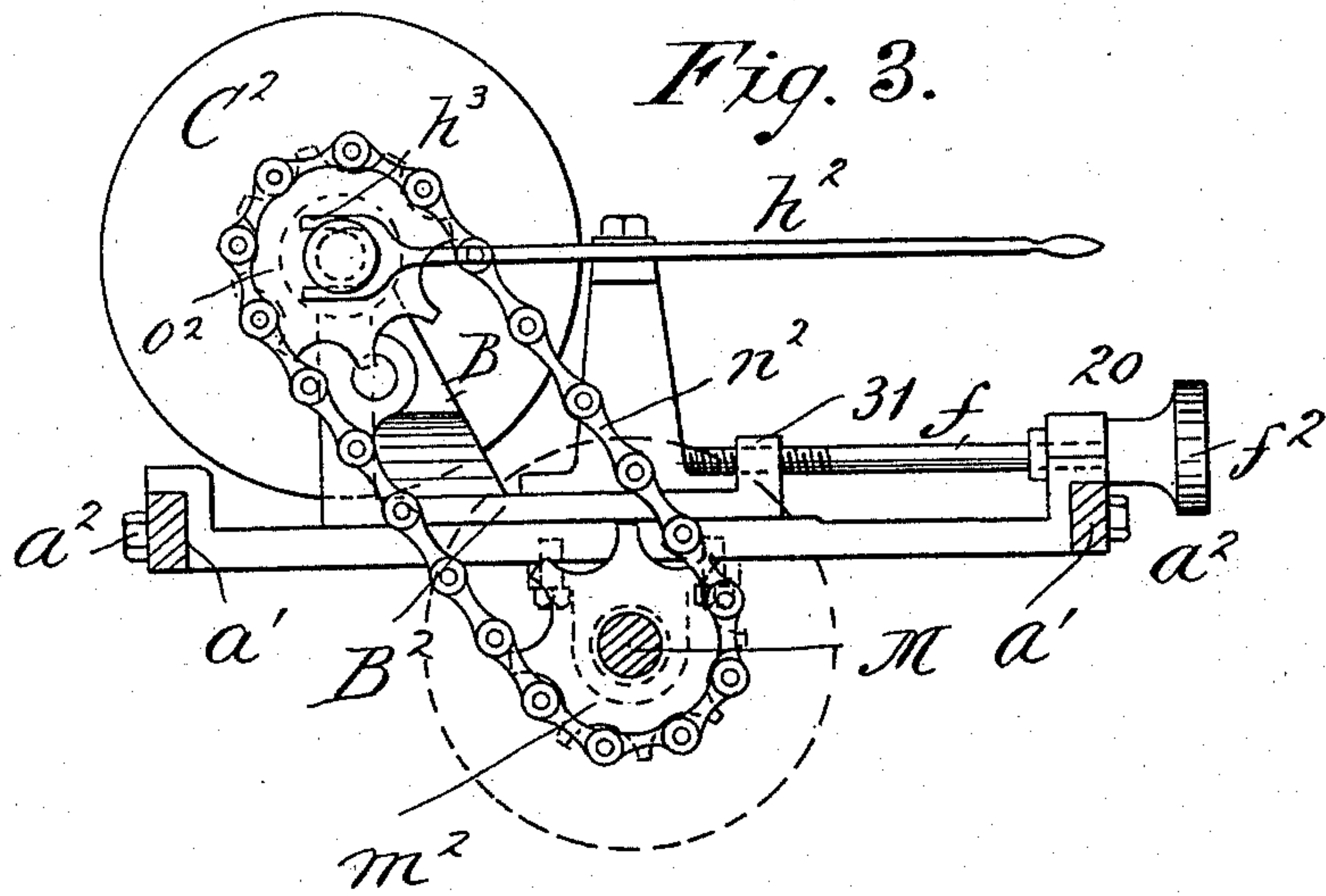
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4 Sheets—Sheet 3.

D. C. SWEET.
CAR WHEEL GRINDING MACHINE.

No. 585,836.

Patented July 6, 1897.



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Fig. 5.

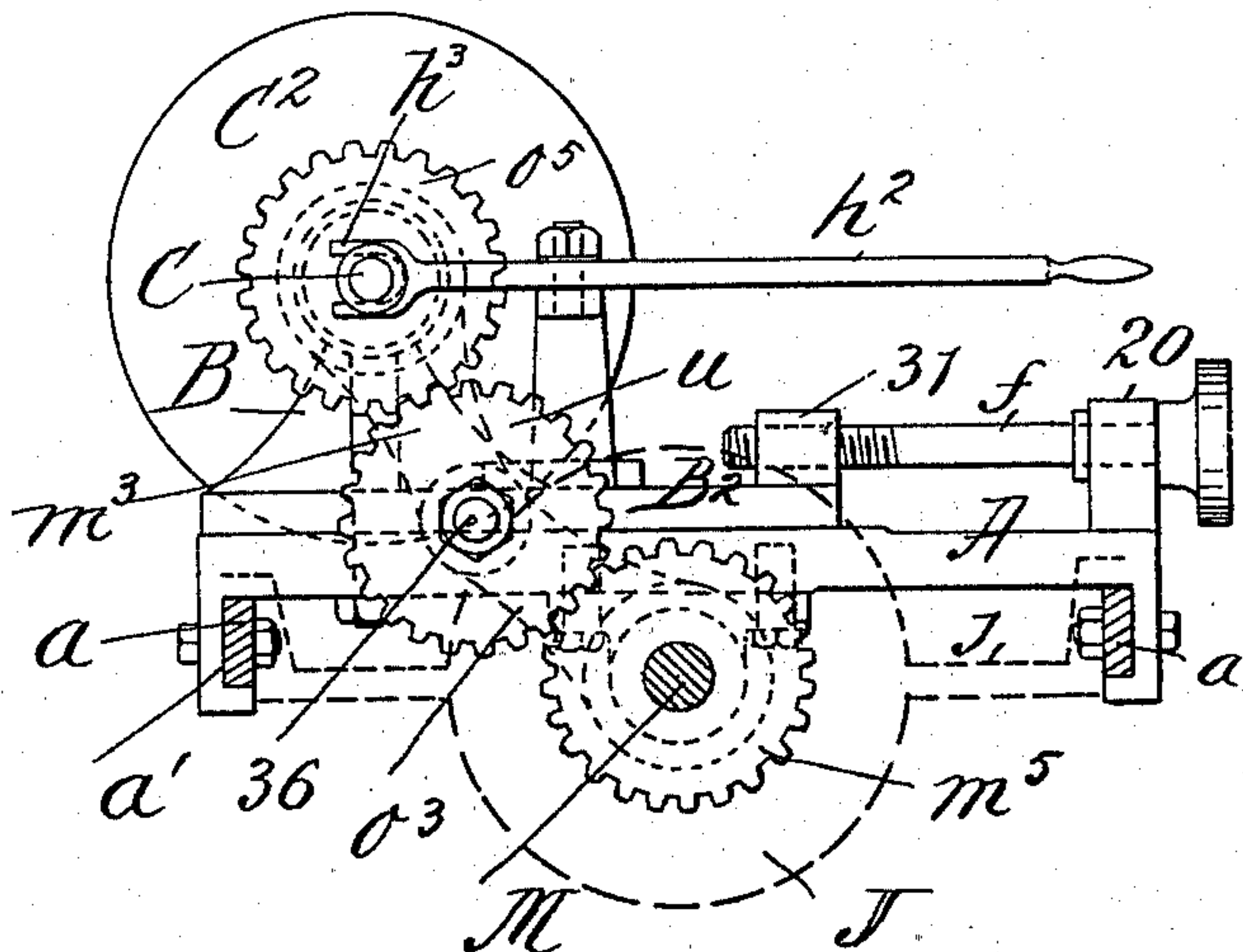
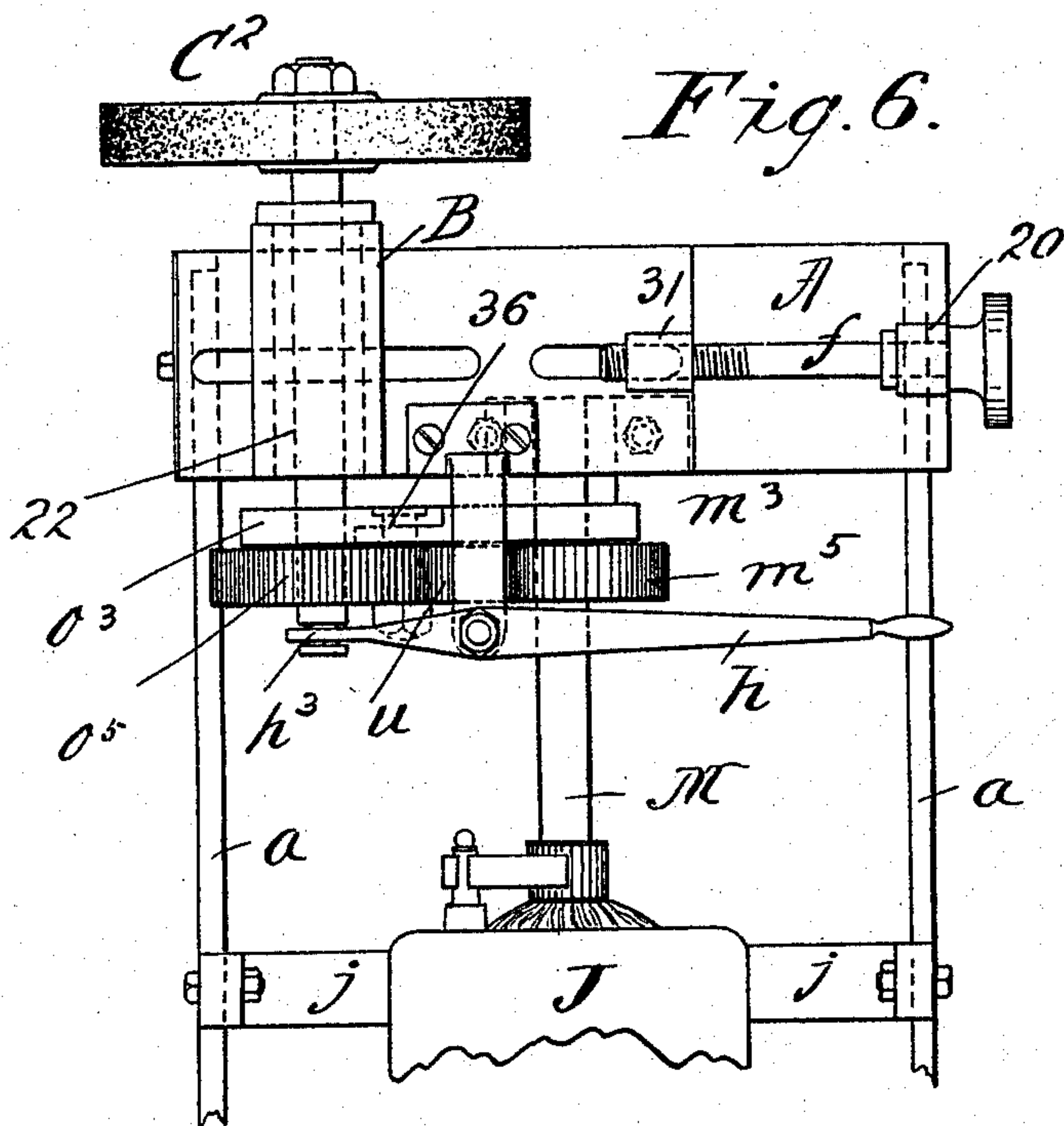


Fig. 6.



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UNITED STATES PATENT OFFICE.

DAVID C. SWEET, OF SPRINGFIELD, MASSACHUSETTS.

CAR-WHEEL-GRINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 585,836, dated July 6, 1897.

Application filed January 23, 1897. Serial No. 620,431. (No model.)

To all whom it may concern:

Be it known that I, DAVID C. SWEET, a citizen of the United States, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Car-Wheel-Grinding Machines, of which the following is a specification.

This invention relates to improvements in machines for grinding and truing up the wheels of street-railway and other cars and vehicles after they have become flat or uneven on their rims.

The object of the invention is particularly to improve and simplify the construction of the machine of the character described and to enable it to be easily mounted and immovably sustained, so as to present its grinding-wheels to work upon one or both of the two car-wheels on a single axle, said wheels to have traversing movements and also bodily feeding movements forward as the grinding progresses.

The invention is fully and clearly illustrated in the accompanying drawings, rendered manifest in the following description, and briefly set forth in the claims.

In said drawings, Figure 1 is a plan view of a car-wheel-grinding machine embodying my present improvements. Fig. 2 is a front elevation of the machine as supported at about the level of the track over the car-house pit and as in operative proximity to the two car-wheels on one axle, which latter is understood as jacked up above the track. Fig. 3 is substantially an end elevation of the car-wheel-grinding machine, the machine embodying in some respects modifications which will be hereinafter referred to. Fig. 4 is a plan view of one end portion or half of the grinding-machine shown in Fig. 3. Fig. 5 is a view showing the duplex car-wheel-grinding machine having its grinding-wheel shafts driven from the motor by toggle-supported gear-wheels, a modified arrangement of means comprised under the present invention. Fig. 6 is a plan view of one-half of the machine shown in Fig. 6.

Similar characters of reference indicate corresponding parts in all of the views.

This machine is understood as being duplex or having two grinding-wheels with dupli-

cated movable supports therefor and means for driving them.

The machine comprises the two bases A A, 55 having their ends formed with seats or rabbets a' for the reception of the paired transverse tie-bars a , which are firmly secured adjustably to the bases A A by the bolts a^2 . The said bases and ties constitute a horizontal rectangular frame which may be secured 60 rigidly at the level of the track b (usually over the pit in the car-house) by the clips d and clamp-bolts e . The said clips are fitted about and slide along the tie-bars, being adjustably 65 confined by the set-screws or bolts 17, and they have depending angular extensions 18, through the vertical members of which the bolts e are screwed, so as to abut by their protruding ends against the sills 19 at the opposite borders of the pit. (See Fig. 2.) These 70 tie-bars and confining clips or clamps are illustrated and described and comprised as a portion of the subject-matter in certain of the claims in my former application for patent for a car-wheel-grinding machine filed by me No- 75 vember 21, 1896, Serial No. 612,965. Each base A supports a standard B for the horizontal grinding-wheel shaft C, on which is fixed the grinding-wheel C^2 , and the standard 80 has its base B^2 movable along the fixed base A toward and away from the rim of the jacked-up car-wheel G. The fixed base A has the upstanding ear-lug 20, through which turns without moving axially a screw-shaft f , hav- 85 ing a hand-wheel f^2 , by which to turn it. This screw-shaft threads into the upstanding ear-lug 31 on the standard-base B^2 , and the turning of said hand-wheel moves the grinding-wheel bodily toward and from the car-wheel 90 to be ground thereby.

The grinding-wheel shaft C is somewhat longer than its journal 22 in the standard B and may play therethrough endwise. With an inner end portion of each grinding-wheel 95 shaft, which is necked down, as seen at 23, a connection member g engages by the forked or encircling end portion thereof, and said connection member g is articulated to a traversing lever h , which is pivoted to swing in a horizontal plane on an ear-piece 24 or suitable 100 projection on the base B^2 . This connection member g , as shown in Figs. 1 and 2, consists of an upright arm, having a rod or shaft g^2

affixed thereto, which projects horizontally therefrom, playing in a guide-socket 25 in the standard B, parallel with and under the grinding-shaft journal. Said traversing lever h engages this upright arm, and by the provision of the said rod or shaft g^2 , and the horizontal socket in which it plays, an easy endwise motion is imparted to the grinding-wheel shaft, obviating binding or cramping as the grinding-wheel is given its motion across the tread-face of the car-wheel.

The portion of the horizontal machine-frame, constituted by the tie-bars a , serves as the support for an electric motor J, which is supported by or suspended from the said tie-bars, as seen in Figs. 1, 4, and 6. In Figs. 1 and 2 the motor is shown supported slightly above the level of the said tie-bars, while in Figs. 3, 4, 5, and 6 the corresponding motor-support j is indicated as being in the form of a three-sided and pendent frame whereby the motor is hung farther below the level of the grinding mechanism.

The motor is provided with the usual or suitable contacts 27 and 28, Fig. 2, for the connection therewith of the electric wires 29, whereby the current may be taken from any available source.

M represents the driving-shaft of the motor, preferably comprised directly in the motor, as the armature-shaft, and this has such connection with each grinding-wheel shaft C that the running of the motor will cause the speeding of the grinding-wheels and yet not interfere with the traverse of the said grinding-wheels or the bodily feed thereof. In Figs. 1 and 2 this driving connection for each grinding-wheel shaft C is as follows: The grinding-wheel shaft is suitably inwardly extended, with which end by the universal joint m connection is made with one end of the splined and telescoping shaft n , having at its other end by the universal joint o connection with the adjacent end of the motor-shaft M.

In Figs. 3 and 4 the motor-shaft is shown as having thereon a sprocket-wheel m^2 , the grinding-wheel shaft likewise having thereon a sprocket-wheel o^2 , and around these wheels a sprocket-chain or drive-chain n^2 has a running engagement.

In order to show that I may practice a variety of ways of imparting from the motor-shaft the rotary motion to the grinding-wheel shaft or duplicated grinding-wheel shafts, which shaft or shafts are capable of the bodily feed motions across their axes, aforementioned, I have illustrated in Figs. 5 and 6 another medium of driving connection between the motor-shaft M and the grinding-shaft, which consists in the links or toggle members $m^3 o^3$, pivotally united one to the other at 36 by a suitable bolt or pintle and each respectively hung upon the motor and grinding-wheel shafts M C by being suitably recessed or perforated.

The motor-shaft has a gear-wheel m^5 thereon, and each grinding-wheel shaft has a cor-

responding gear-wheel o^5 thereon, while an intermediate gear-wheel u is mounted to rotate on the pintle 30 or other suitable support therefor which is coincident with the axis of the joint-pivot uniting the toggle members. Whether in the action of the machine and as the grinding-wheels are fed up to or retreated from the car-wheel to be ground and whether the toggles are straightened out or more or less relatively bent the gear-wheels $o^5 u m^5$ always remain in mesh.

Substantially the same mechanism as just described in conjunction with Figs. 5 and 6 of the drawings is particularly described and specifically claimed in an application for patent for car-wheel-grinding machines filed by me June 10, 1897, Serial No. 640,294.

In Figs. 3 to 6, inclusive, the traversing lever h^2 for each grinding-wheel shaft is pivotally supported at about the level of the shaft and, having the forked end h^3 directly engaging the necked-down shaft, provides a somewhat simpler means for traversing the grinding-wheels than the traversing devices shown in Figs. 1 and 2, which, however, are especially available in certain designs of the grinding-machine of the present type.

From the foregoing descriptions and the illustrations presented it becomes apparent that the entire machine having the duplicated grinding mechanisms and the operating devices therefor, together with the electric motor, need not be very heavy or expensive and that the machine is easily set in place in relation to the car-wheel to be ground. Furthermore, the motor, having its position intermediate between and somewhat remote from the grinding-wheels, will not be disadvantageously affected by grit or dust occasioned in the grinding operation, and it is to be especially noted that in the use of this machine, while both grinding-wheel shafts are driven from the single shaft of a motor, it becomes possible, as permitted by the independent driving connections between the motor-shaft and each of the grinding-wheel shafts, to operate on either or both the car-wheels on the same axle much or little, as the occasion demands.

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

1. In a car-wheel-grinding machine, a frame constructed to be mounted on and extend between the car-tracks, comprising at its ends, base-supports, grinding-wheel standards movably mounted thereon, grinding-wheel shafts journaled in said standards, the motor supported on said frame, and driving connections between said motor and the grinding-wheel shafts, substantially as and for the purpose described.

2. In a car-wheel-grinding machine, a frame constructed to be mounted on and across a track, comprising at its ends, base-supports, grinding-wheel standards movably mounted thereon, grinding-wheel shafts, with grinding-

wheels, journaled in said standards, and movable endwise therethrough, levers engaging the said endwise-movable shafts, a motor supported on said frame, and driving connections between the motor and the grinding-wheel shafts, substantially as described.

3. In a car-wheel-grinding machine, a frame constructed to be mounted on and across a track, comprising at its ends, base-supports which are adjustably fixed to the cross members of said frame, grinding-wheel standards movably mounted on said base-supports, grinding-wheel shafts with grinding-wheels journaled and endwise movable in said standards, means for feeding the standards forward, means for imparting endwise movements to the grinding-wheel shafts, a motor mounted on the said frame intermediate between said base-supports, and driving connections between the motor and the inner ends of the grinding-wheel shafts, substantially as described.

4. In a car-wheel-grinding machine, in combination, a frame comprising the base-supports A A and the cross tie-bars *a*, the standards B having their bases guided along said base-supports, the shafts C C journaled in, and adapted to move endwise through, said standards, and having at their outer extremities the grinding-wheels, levers pivotally supported on the bases of said standards and having engagements with said shafts for moving them endwise, means for moving said standards forward, a motor supported by said cross members of the frame between the base-supports, and mediums of driving connection between the driving-shaft of said motor and the inner ends of the grinding-wheel shafts, substantially as and for the purposes set forth.

5. In a car-wheel-grinding machine in combination, a frame comprising the base-sup-

ports A A, each having the upturned ear-lug and the cross tie-bars *a* having the clamps *d d* adjustably confined thereon, the standards B having the bases B² which are movably guided along said base-supports, and each provided with the ear-lug, the screw-shafts having feed engagements with the ear-lugs of the parts A and B², and having the hand-wheels, the shafts C C journaled in and adapted to move endwise through said standards and having at their outer extremities the grinding-wheels, levers pivotally supported on the bases of said standards and in engagement with said shafts for moving them endwise, a cross plate or bar extending between said tie-bars and located between the aforesaid base-supports, a motor suspended from said cross-plate and mediums of driving connection between the driving-shaft of said motor and the inner ends of the grinding-wheel shafts, substantially as and for the purposes set forth.

6. In a car-wheel-grinding machine, a frame constructed to be mounted on and across a track, comprising at its ends base-supports, standards movably mounted on said base-supports, grinding-wheel shafts, journaled and movable endwise in said standards, and having grinding-wheels, levers having connections with the said endwise-movable shafts, a motor supported on said frame, and two sets of driving connections between the motor and the grinding-wheel shafts, which are independent of each other, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 28th day of November, 1896.

D. C. SWEET.

Witnesses:

WM. S. BELLOWES,
MABEL A. CAMPBELL.