

(No Model.)

2 Sheets—Sheet 1

C. S. CHAFFEE, A. S. HOFFMAN & F. A. GREEN.

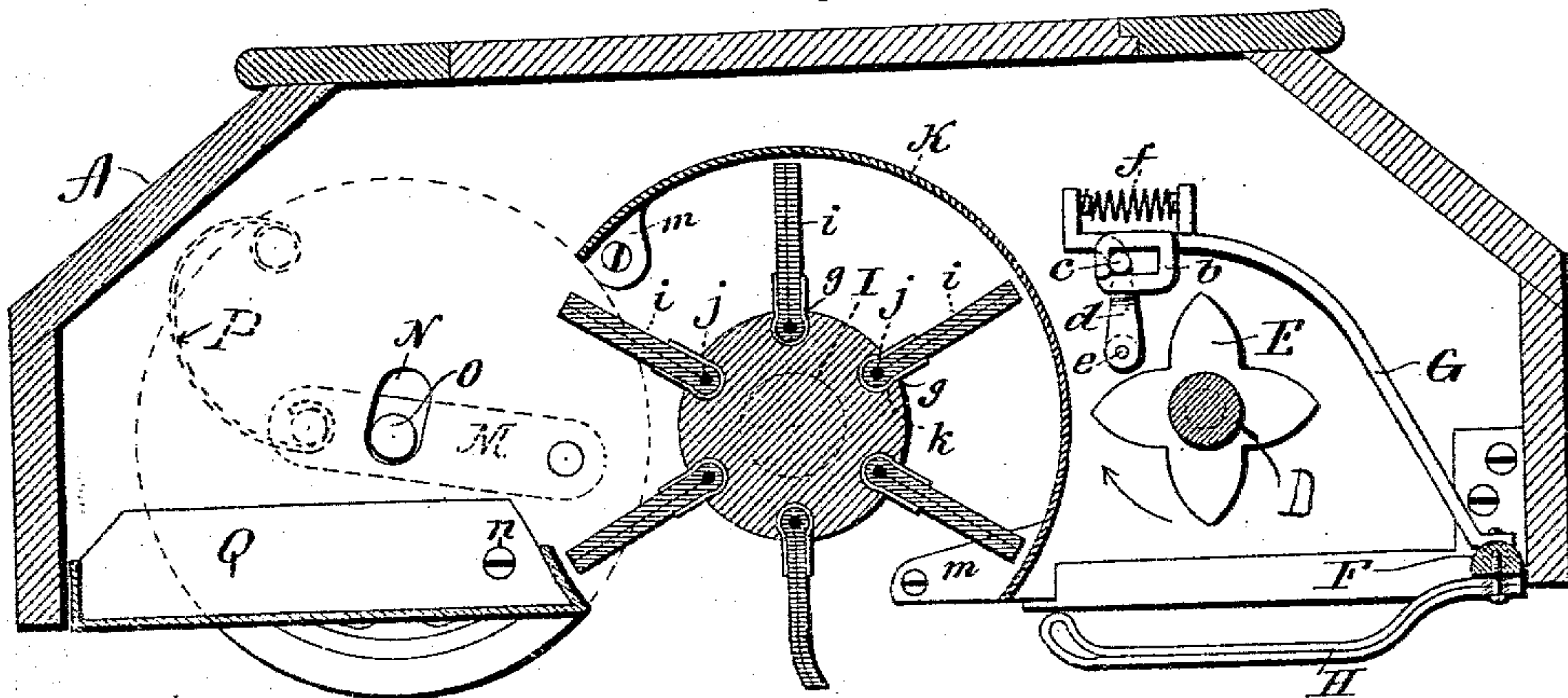
CARPET SWEEPER.

No. 553,101.

Patented Jan. 14, 1896.

This diagram, labeled Fig. 1, is a plan view of a mechanical device. It features a central horizontal frame labeled 'A'. At the top of the frame, there are two rectangular components labeled 'R' and 'W'. A vertical rod labeled 'B' passes through the center of the frame. Below the frame, there are two large wheels, 'D' on the left and 'D'' on the right, both with curved outer rims. Between these two wheels is a smaller wheel labeled 'C'. A horizontal bar labeled 'a' connects the centers of wheels 'D' and 'D''. A central pivot point 'I' is located between wheels 'D' and 'D'', with a small wheel 'J' mounted on it. A vertical rod labeled 'i' extends downwards from the center of wheel 'C'. Various other points and components are labeled with letters: 'P', 'N', 'M', 'O' are near wheel 'D'; 'X', 'q' are near component 'W'; and 'H' is at the bottom right corner. Arrows indicate the direction of rotation for wheels 'D' and 'D''.

*Fig. 2*



*Fig. 4*

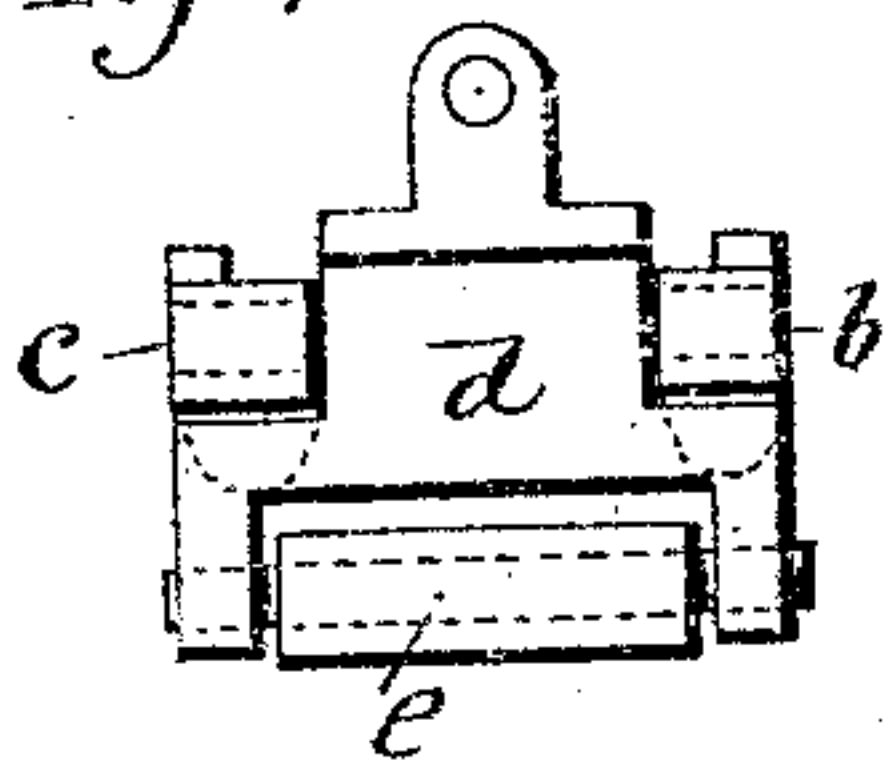
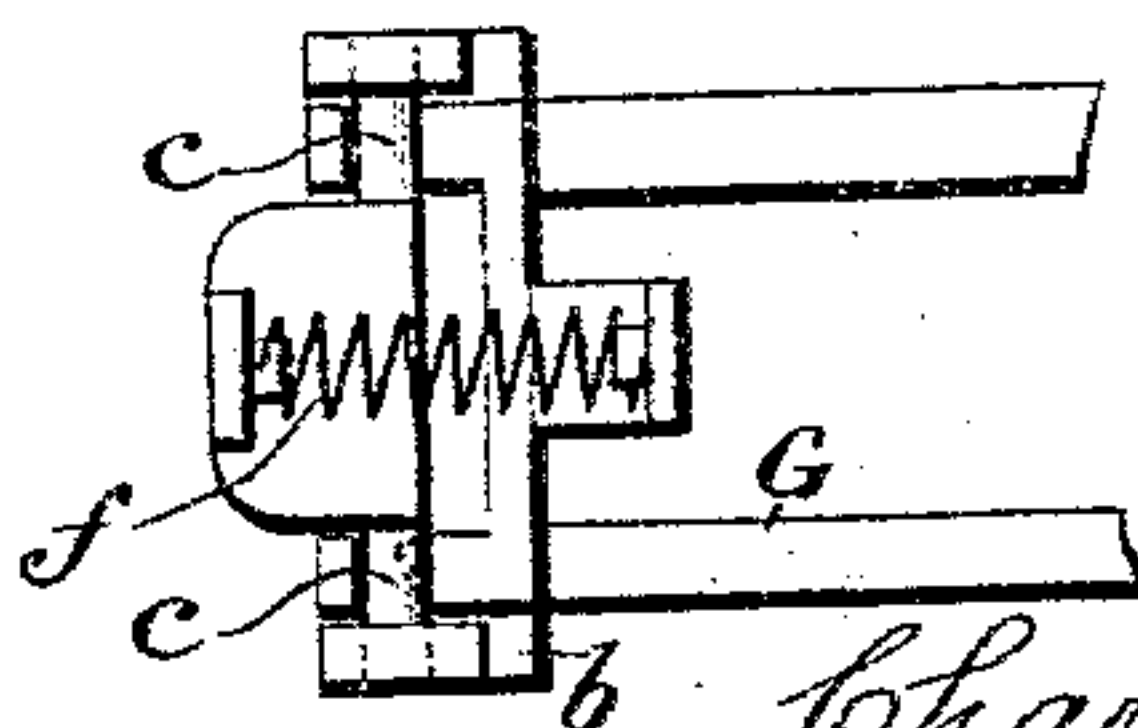


Fig. 3



Witnesses.  
J. H. Shumway.  
Lillian D. Keebey.

6 Charles S. Chaffee  
Alvan S. Hoffman  
and Frank A. Green,  
Inventors  
By Atty's Earle & Seymour

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Fig. 5

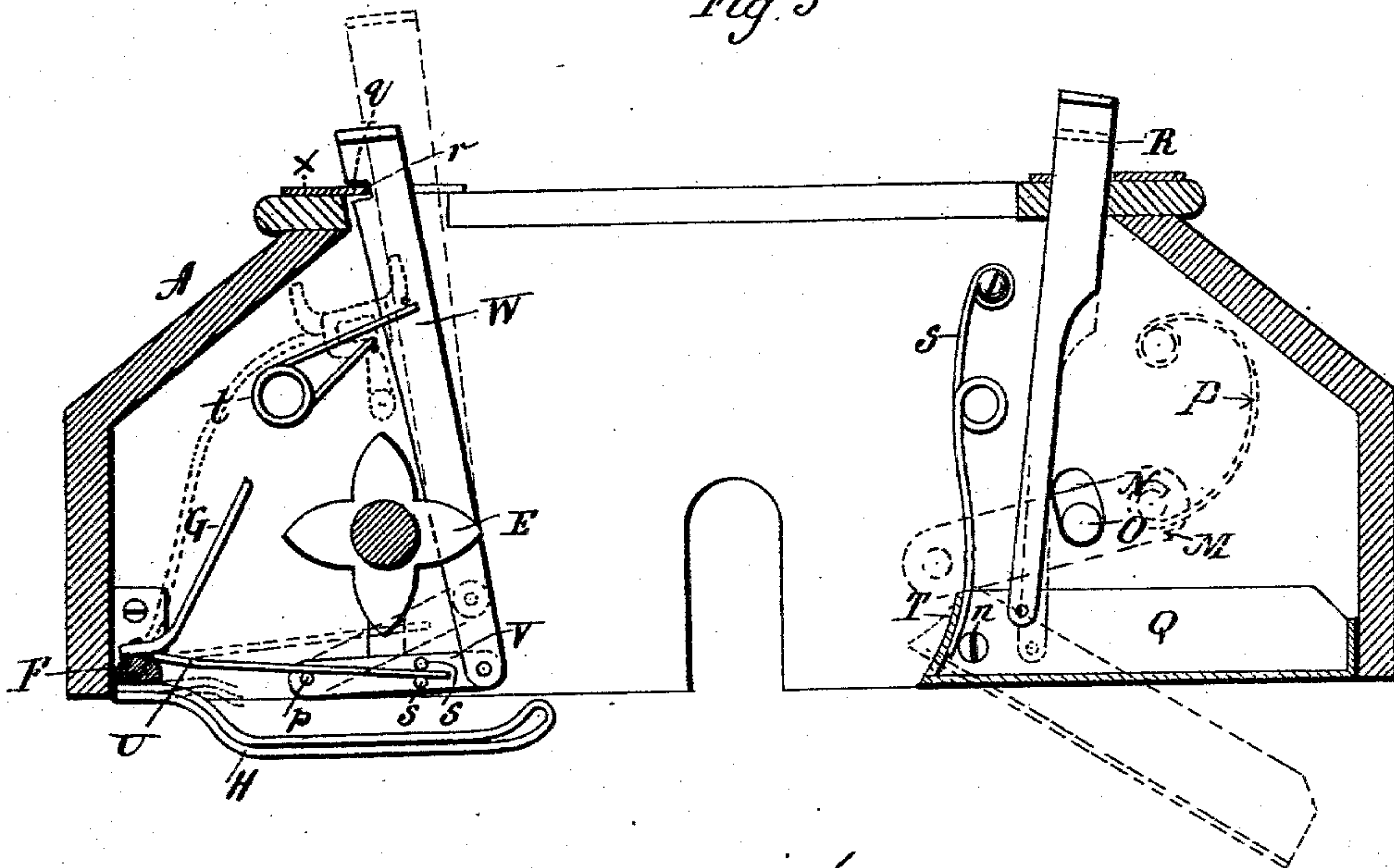


Fig. 6

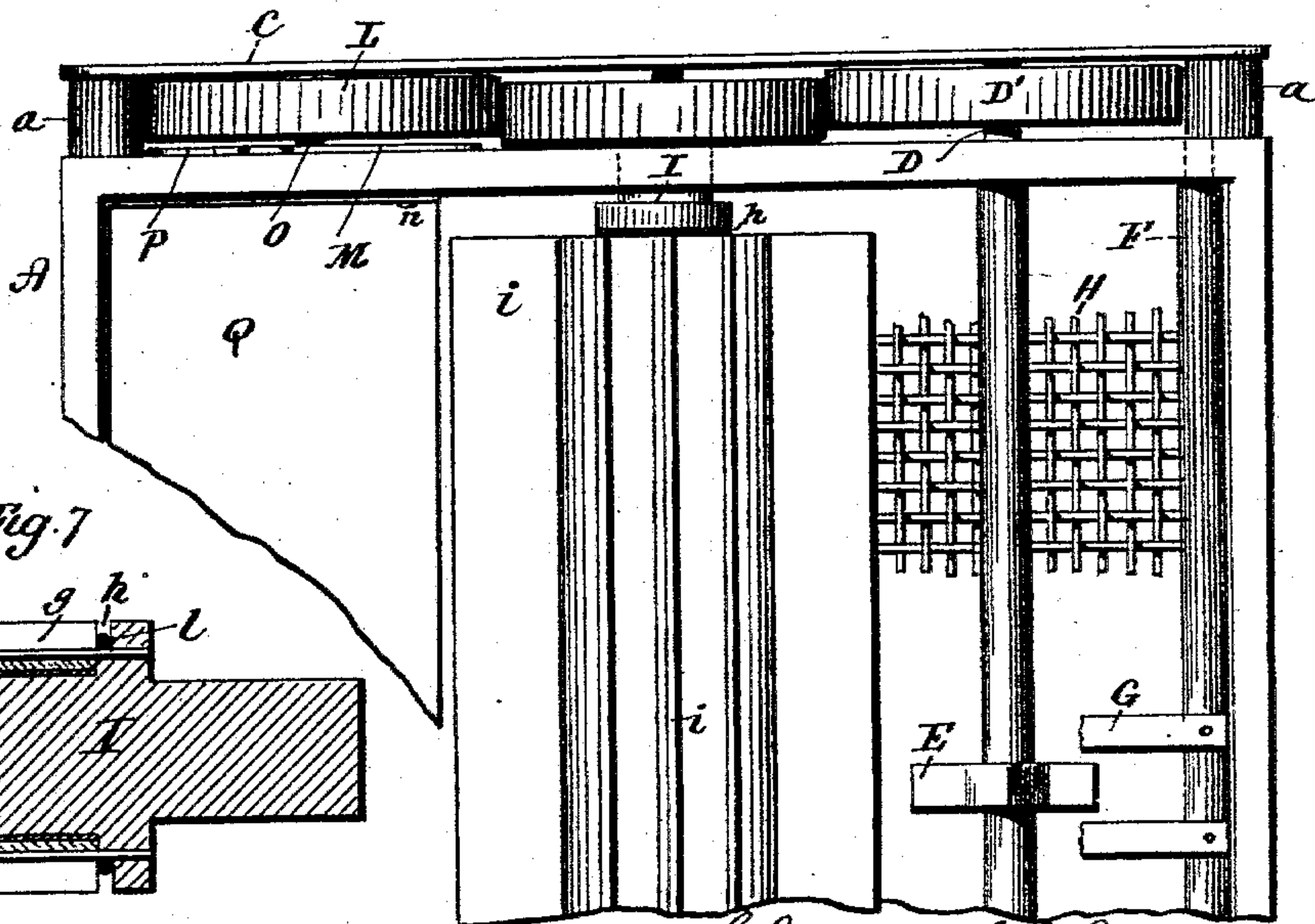
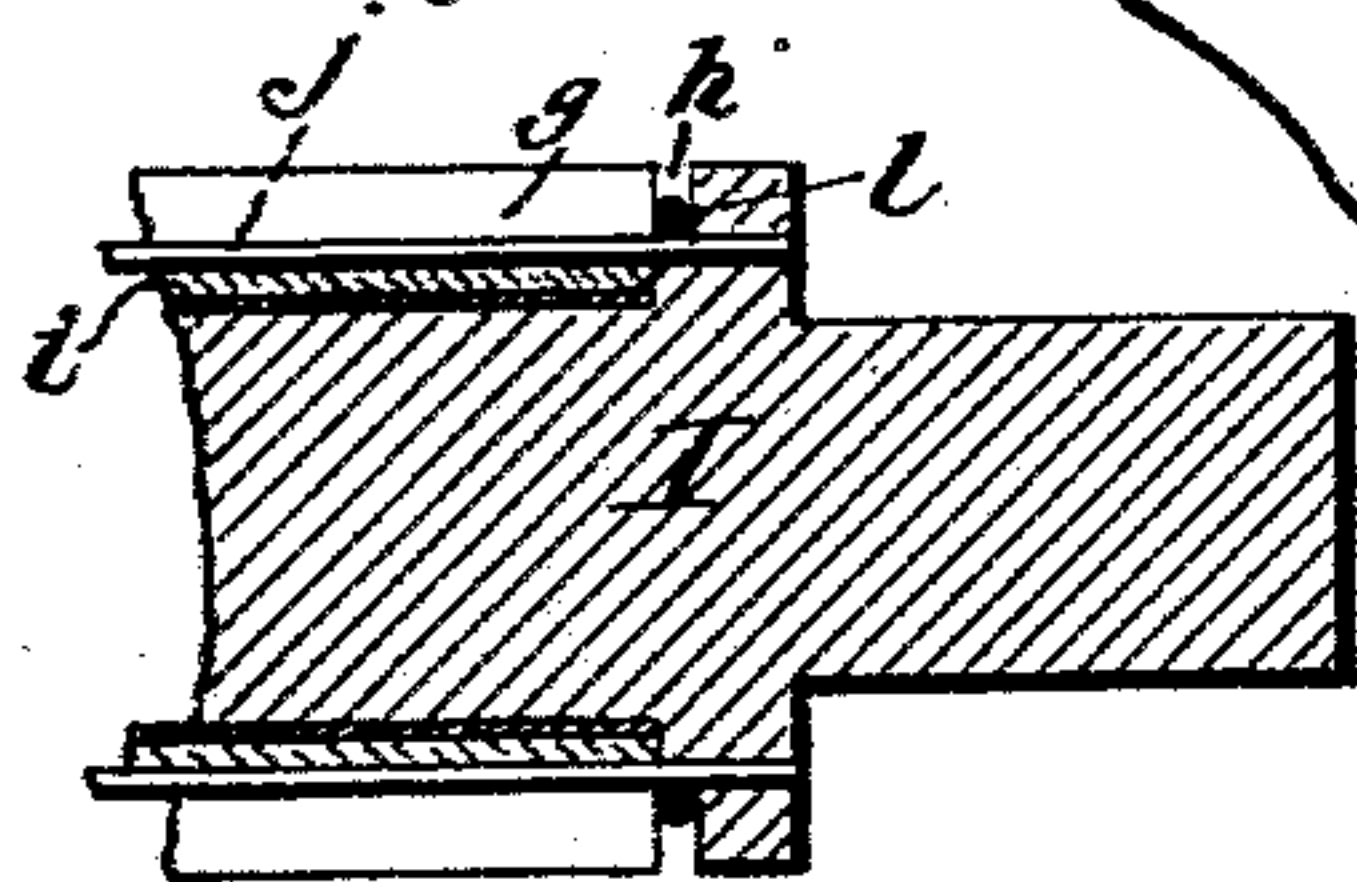


Fig. 7



Witnesses.

J. H. Shumway.  
Lillian D. Kelcey.

Charles S. Chaffee,  
Alvan S. Hoffman  
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By Atty. Earle Seymour



# UNITED STATES PATENT OFFICE.

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DERBY, CONNECTICUT, ASSIGNORS OF ONE-FOURTH TO HENRY D.  
SAWYER, OF SAME PLACE.

## CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 553,101, dated January 14, 1896.

Application filed December 22, 1894. Serial No. 532,699. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES S. CHAFFEE, ALVAN S. HOFFMAN, and FRANK A. GREEN, of Derby, in the county of New Haven and State of Connecticut, have invented a new Improvement in Carpet-Sweepers; and we do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an end view of a combined carpet sweeper and beater embodying our invention; Fig. 2, a vertical section of the same; Fig. 3, a top view of the upper end of the beater-operating arm; Fig. 4, an end view of the said arm and depending operating-finger; Fig. 5, a vertical section showing the end of the machine opposite that illustrated in Fig. 2, with the dust-guard removed; Fig. 6, a top view of a portion of the apparatus with the top of the case removed; Fig. 7, a sectional view of one end of the brush-shaft.

This invention relates to an improvement in carpet-sweepers, and particularly to sweepers which have combined with them a beater, arranged to be operated in advance of the brush of the sweeper.

The object of this invention is to provide a cheap and efficient beater, a strong and durable construction of brush, and to improve various mechanisms adapted to operate the apparatus, and it consists in the construction as hereinafter described, and particularly recited in the claim.

A represents the case, which is of the usual shape and open on its under side; B, the bail attached to the side of the case and extending upward to receive the handle. (Not shown.) On each side of the case a bearing-plate C is secured and offset from the frame by studs *a a*. Extending through the case and into the bearing-plate C is a driving-shaft D, upon the outer ends of which and between the case and the bearing-plate C are driving-wheels D'. Upon the driving-shaft D is fixed a cam E. Forward of the shaft D and at the bottom of the case a rock-shaft F is supported in suitable bearings, and at its center is provided

with an upwardly and rearwardly curved arm G, the forward end of which stands over the cam E. The arm G is provided at its upper end with transverse arms *b*, which form sockets to receive the trunnion *c* of an operating-finger *d*, which is preferably provided at its lower end with an antifriction-roller *e*. The outer ends of the arms *b* are in the form of fingers, which are turned down over the trunnions *c*, as shown in Fig. 2, and so that the operating-finger is securely connected to the end of the arm G, but permitted a swinging movement thereon.

Between an upward extension from the arm *b* and the finger *d* is a spring *f*, the tendency of which is to hold the finger *d* downward into the path of the cam E when the sweeper is moved forward and the cam moved in the direction of the arrow in Fig. 2, but to permit it to be swung rearwardly when the cam E is turned in the opposite direction. To the under side of the rock-shaft F and extending rearwardly therefrom is the beater H, which preferably consists of a strip of wire-netting doubled and curved to give a long bearing-surface on the floor.

Centrally through the case and in rear of the driving-shaft D is a brush-shaft I, the ends of which are reduced and supported in the bearing-plate C, and provided at its ends, between the bearing-plate C and the case, with rollers J, the peripheries of which meet the peripheries of the driving-wheels D'. This shaft I is provided with a series of transverse grooves *g*, more or less in number, and with a circumferential groove *h* near each end within the case. Into the grooves *g* the brushes are placed, which consist of strips of felt *i*, doubled over rods *j*, and placed in pockets *k*, which are formed from strips of sheet metal bent into U shape, said pockets, rods, and brushes being inserted into the transverse grooves *g*, the length of the pockets and brushes corresponding to the distance between the circumferential grooves *h*, and the length of the rods *j* corresponding to the length of the brush-shaft I between the insides of the case, and so that the said rods *j* extend across the circumferential grooves *h*. The ends of the rods *j* are secured to the



shaft I by wires *l*, which extend around said shaft in the groove *h* and over the ends of the said rods.

From the lower edge of the case, between the brush-shaft and the driving-shaft, a dust-guard K is arranged, the ends of which are secured to the inside of the case by wings *m m*.

To the sides of the case in rear of the brush-shaft I supporting-wheels L are hung, and so that their peripheries will meet the peripheries of the wheels J on the end of the brush-shaft I.

To permit the rear end of the case to be depressed the supporting-wheels L are hung in the rear ends of links M, which are secured to the ends of the case forward of the axes of the wheels L, said case being formed with slots N to permit the movement of the axes O of the supporting-wheels L, which extend through the sides of the case.

To hold the supporting-wheels L in the down position, as shown in Fig. 1, springs P are arranged, one end secured to the case and the other to the link M, the tendency of which is to hold the ends of the links M which support the wheels L down, yet permit them to rise as pressure is brought upon the rear end of the case. Near the rear end of the case a dust-pan Q is hung upon a pivot *n*, and at one side a lever R is secured to the pan in rear of its pivot and extends upward through the case, which is provided for that purpose with a slot.

To hold the pan in the up position a spring S is secured to the inside of the case at one side and extends down into connection with the rear flange T of the pan, said spring yielding to permit the pan to be thrown downward, as indicated in broken lines, Fig. 5, and acting to raise the pan when the lever R is released.

Many times in the use of the apparatus it is undesirable to have the beater operate. The rock-shaft is therefore provided with a spring-arm U, said spring tending, when the device is in the operating position, to hold the arm G downward, as shown in Fig. 5, but permit the shaft to be rocked so as to throw the beater downward when the arm G is released by the cam E. The spring-arm U extends rearwardly into connection with a link V, which is pivoted at one end to the case, as at *p*, and at the other end to the lower end of a link W, which extends upward through the case, which is slotted for that purpose. The slot in the case is partially covered by a slotted plate X, the slot of which is shorter than the slot in the case, and so as to form a projection *q* over the forward end of the slot in the case, and the link W is notched, as at *r*, to engage with the projection *q* of the plate X. The end of the arm U is preferably connected to the link V by two pins *s s*, between which the end of the arm extends, and so that it may readily slide between them as the link V is moved up or down. Between the link W and the end of the case a spring *t* is arranged, the

tendency of which is to throw the lever upward, as indicated in broken lines, Fig. 5. When the link is up, the link V raises the outer end of the arm U, and hence turns the rock-shaft F and throws the arm G forward and the operating-finger *d* out of the path of the cam E, and so that the beater will not be operated.

To throw the beater into operation the link W is depressed and its notch *r* engaged with the projection *q* of the slotted plate X, which holds the said lever in the down position. Depressing the link W throws the link V downward, which carries with it the end of the spring-arm U and turns the rock-shaft F, thereby throwing the upper end of the arm G forward and the operating-finger *d* into the path of the cam E on the driving-shaft. The link W being depressed to throw the beater into operation, and the case moved forward, the wheels L and D' will be revolved through friction with the floor, and in turn revolve the brush-shaft I. As the driving-shaft is revolved the cam E will engage with the depending finger *d* on the arm G and raise said arm, which in turn raises the beater H through its connection with the rock-shaft F and against the pressure of the spring arm U, which, when the finger *d* is released by the cam E, will throw the beater downward. If the link W is released from engagement with the plate X, it will rise under the action of the spring *t*, and the operating-finger *d* will thus be held out of engagement with the cam E, so that as the apparatus is moved the beater will not be operated and the brush alone may be used. The dust raised by the beater or by the brush itself is caught by the revolving brushes *i* and the dust carried into the guard K and over into the dust-pan Q, from which it may readily be removed by forcing the lever R downward, which forces the rear end of the pan to drop downward, as indicated in broken lines, Fig. 5.

By forming the brush from strips of felt secured to the shaft in the manner described a very cheap and effective brush is secured, and one which may be readily repaired should the felts become worn.

In case it is desired to give greater pressure of the brush upon the floor, the rear end of the case may be depressed, which depression is permitted by reason of the link connection of the wheels L to the case.

We are aware that beaters have been arranged in connection with carpet-sweepers, which beaters may be retired when not required for use. We are also aware that felt brushes have been employed. We do not, therefore, wish to be understood as claiming such as our invention; but

What we claim as new, and desire to secure by Letters Patent, is—

1. In a combined carpet-sweeper and beater, a rock-shaft mounted in the forward end of the case, a beater secured to said rock-shaft, an arm also secured to said rock-shaft,



and provided at its upper end with a depending finger, a driving-shaft parallel with said rock-shaft, a cam on said driving-shaft with which said depending finger may engage, a  
5 spring secured to said rock-shaft and extending rearward therefrom, and links mounted in the case, and engaged with said spring, and whereby the beaters may be placed under downward pressure, and the depending finger  
10 held in the path of the cam, substantially as described.

2. In a combined carpet-sweeper and beater, a rock-shaft mounted in the forward end of the case, a beater secured to said rock-shaft, an  
15 arm also secured to said rock-shaft and provided at its upper end with a depending finger, a driving-shaft parallel with said rock-shaft, a cam on said rock-shaft with which a depending finger may engage, a spring secured to  
20 said rock-shaft and extending rearward therefrom, a link mounted in the case, and with which the rear end of the spring is engaged, and a second link pivoted to said first link, and whereby the outer end of the said spring  
25 may be raised or lowered to turn said rock-shaft and throw the finger into or out of the path of the cam on the driving-shaft, substantially as described.

3. In a combined carpet sweeper and beater, the combination with a centrally arranged  
30 brush thereof, of a semi-cylindrical dust-

guard secured to the ends of the case so as to stand between the beaters and the brush and partially surround said brush and tending to  
35 direct the dust to the rear of the case, of a dust-pan pivoted at its forward end to the sides of the case in rear of the brush, a link connected to said pan and connected upward therefrom through the top of the case, and springs to  
40 hold said pan in the up position, substantially as described.

4. In a carpet-sweeper, a brush consisting of a shaft supported within the frame, said shaft formed with longitudinal grooves, and  
45 with circumferential grooves near the ends, and extending through said longitudinal grooves, brushes consisting of strips of felt doubled over rods which are inserted in U-shaped cups, said cups inserted into said longitudinal grooves, the ends of said rods being  
50 secured to the shafts by bands within said circumferential grooves, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscrib-  
55 ing witnesses.

CHARLES S. CHAFFEE.  
ALVAN S. HOFFMAN.  
FRANK A. GREEN.

Witnesses:

WM. S. BROWNE,  
S. H. LESSER.