

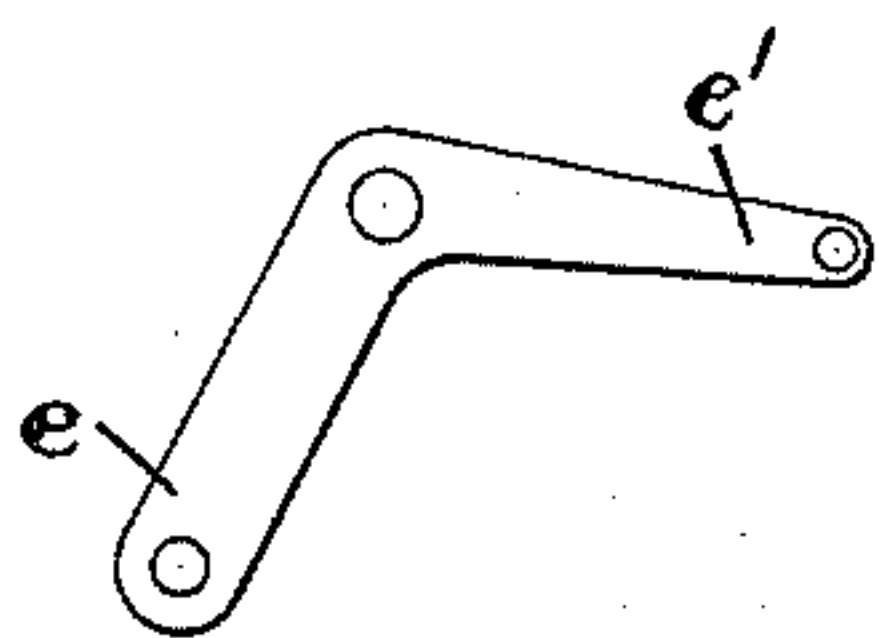
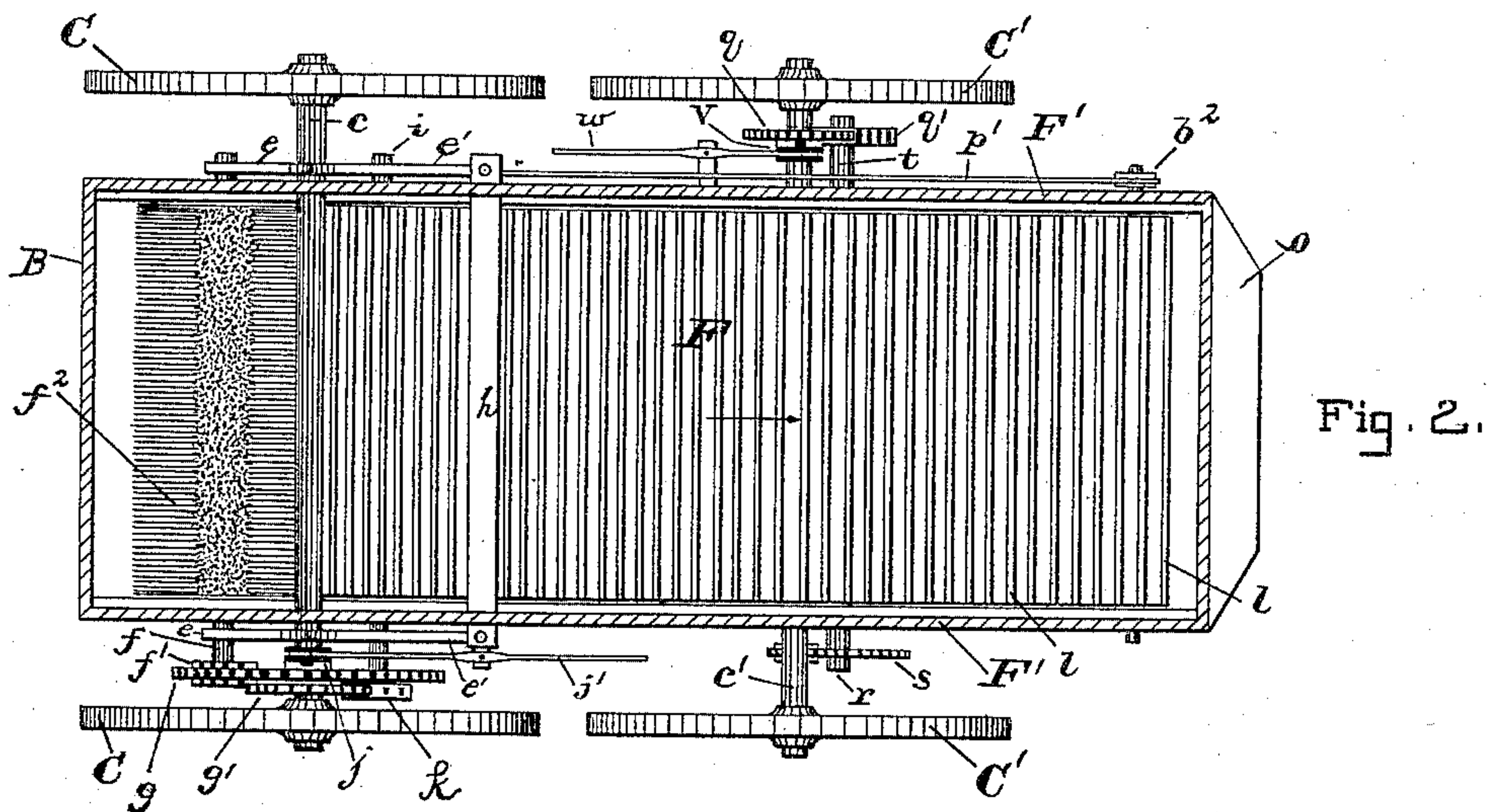
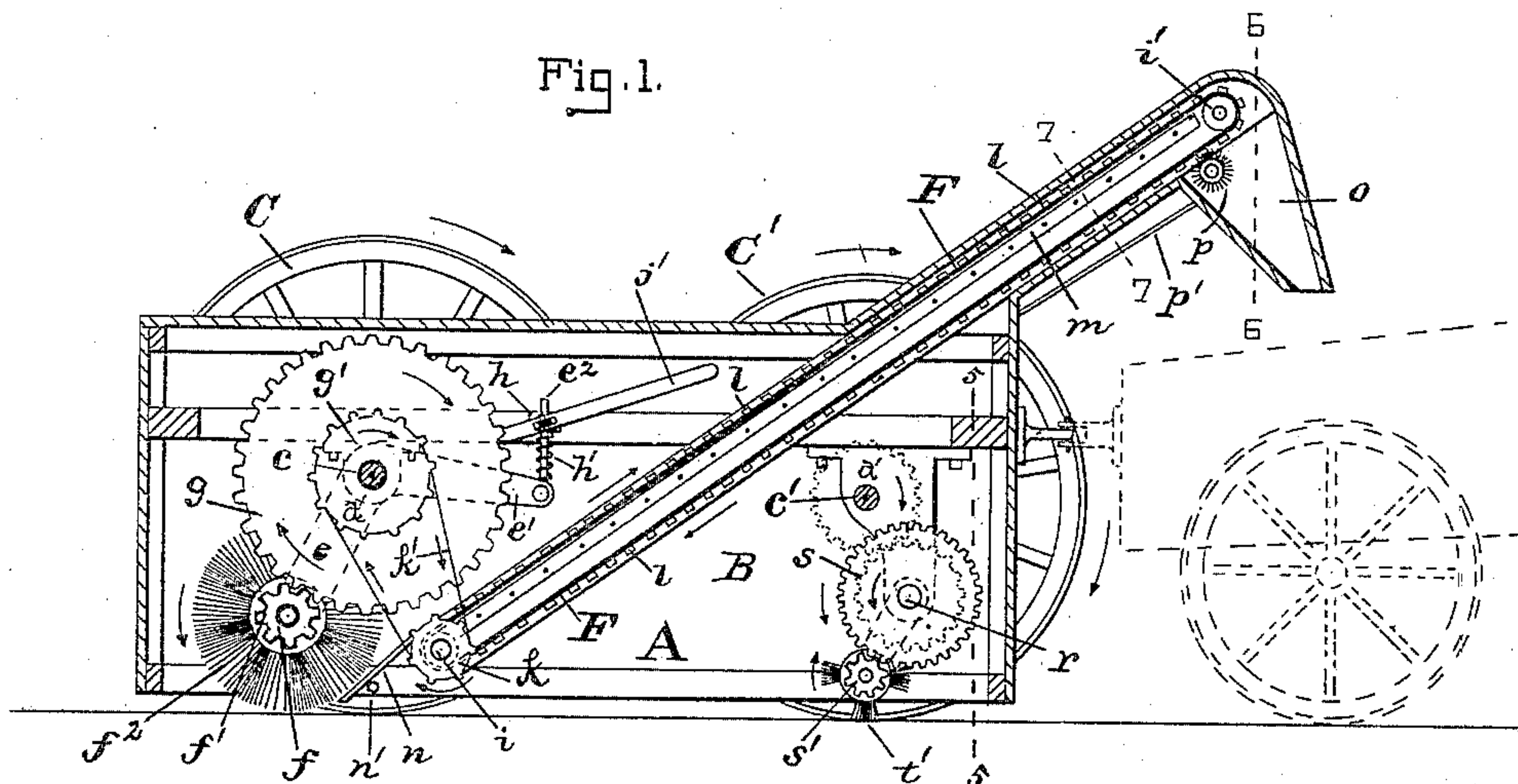
(No Model.)

2 Sheets—Sheet 1.

T. J. SMITH.
STREET SWEEPING MACHINE.

No. 436,746.

Patented Sept. 16, 1890.



WITNESSES:

Otto H. Ehlers.
John E. Morris.

INVENTOR:

T. J. Smith

BY *Chas B. Mann*
ATTORNEY.

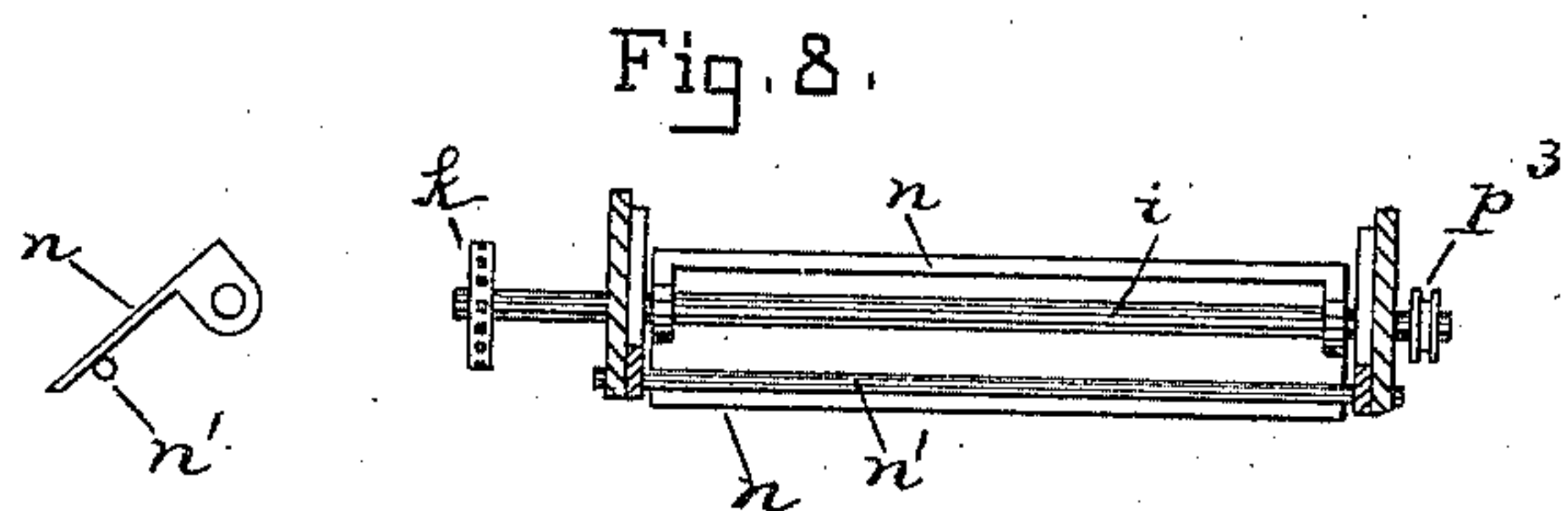
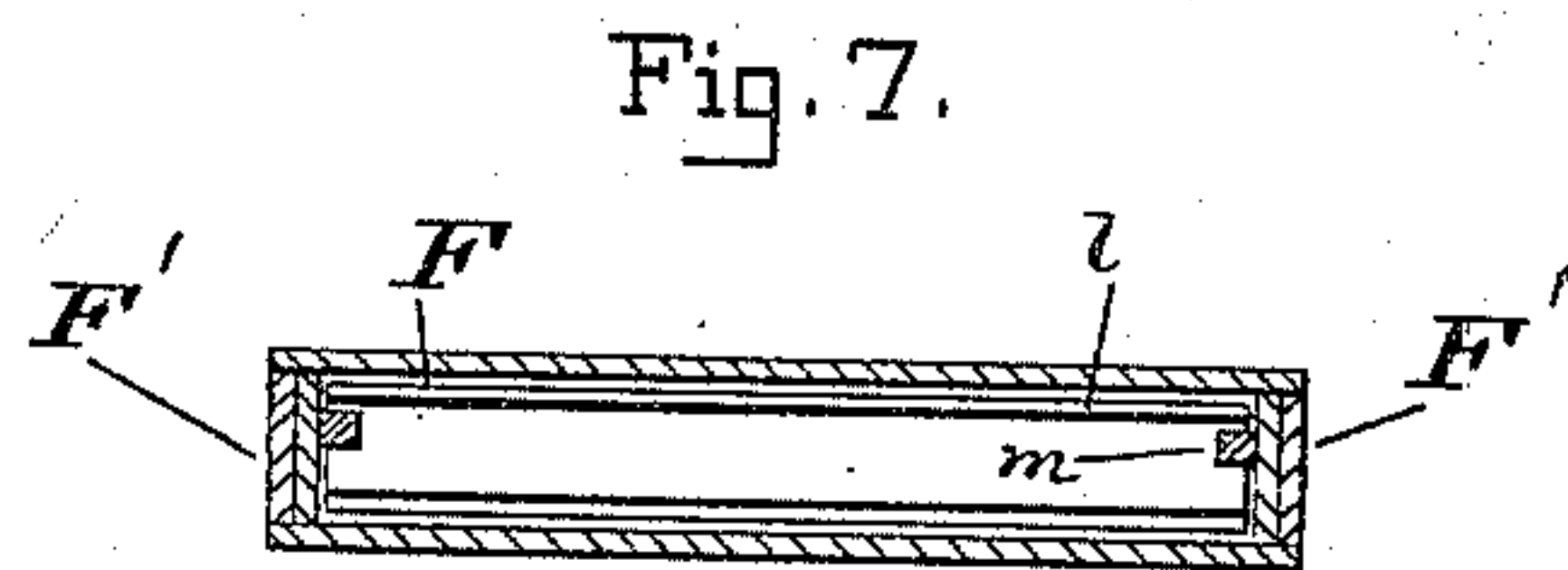
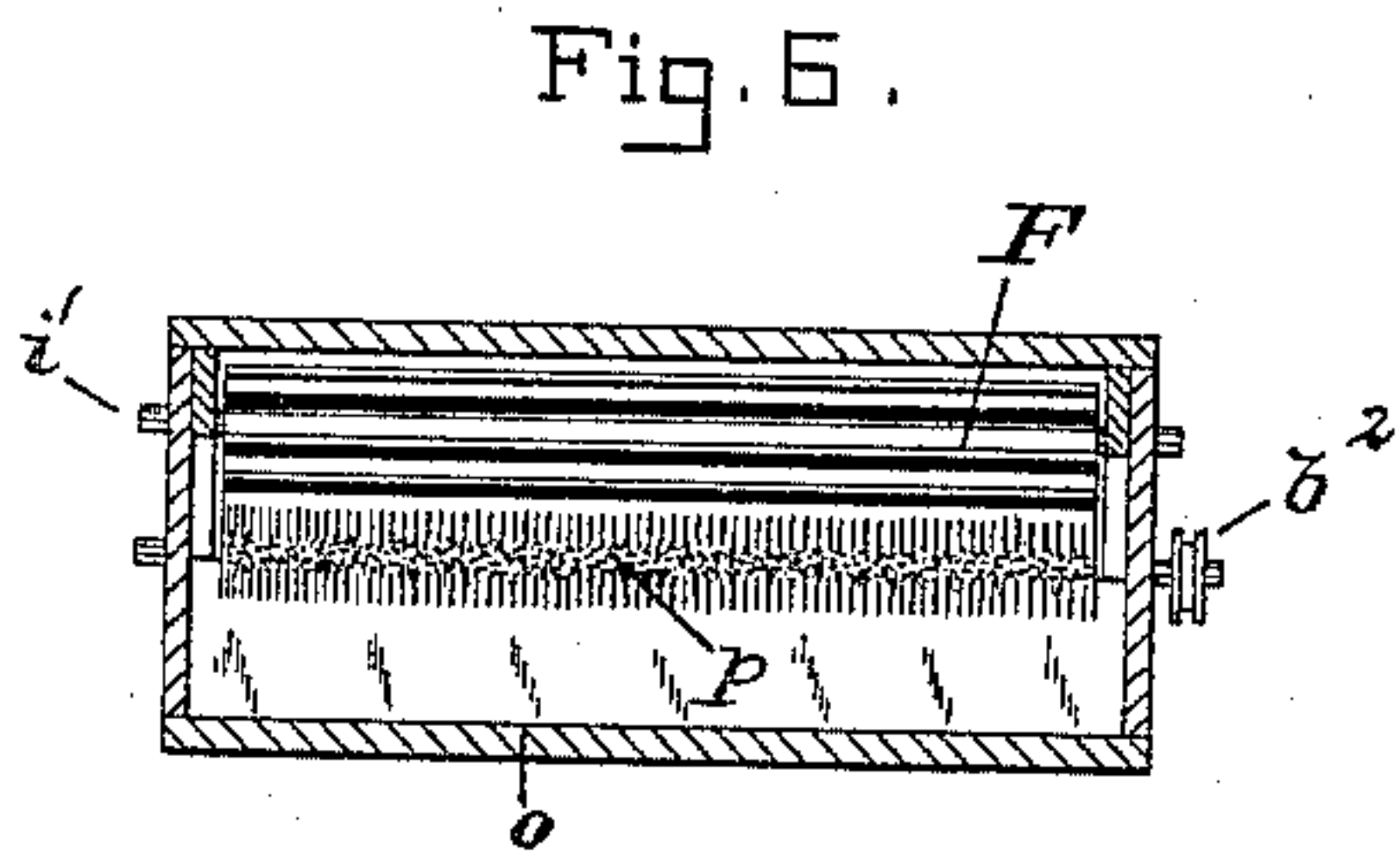
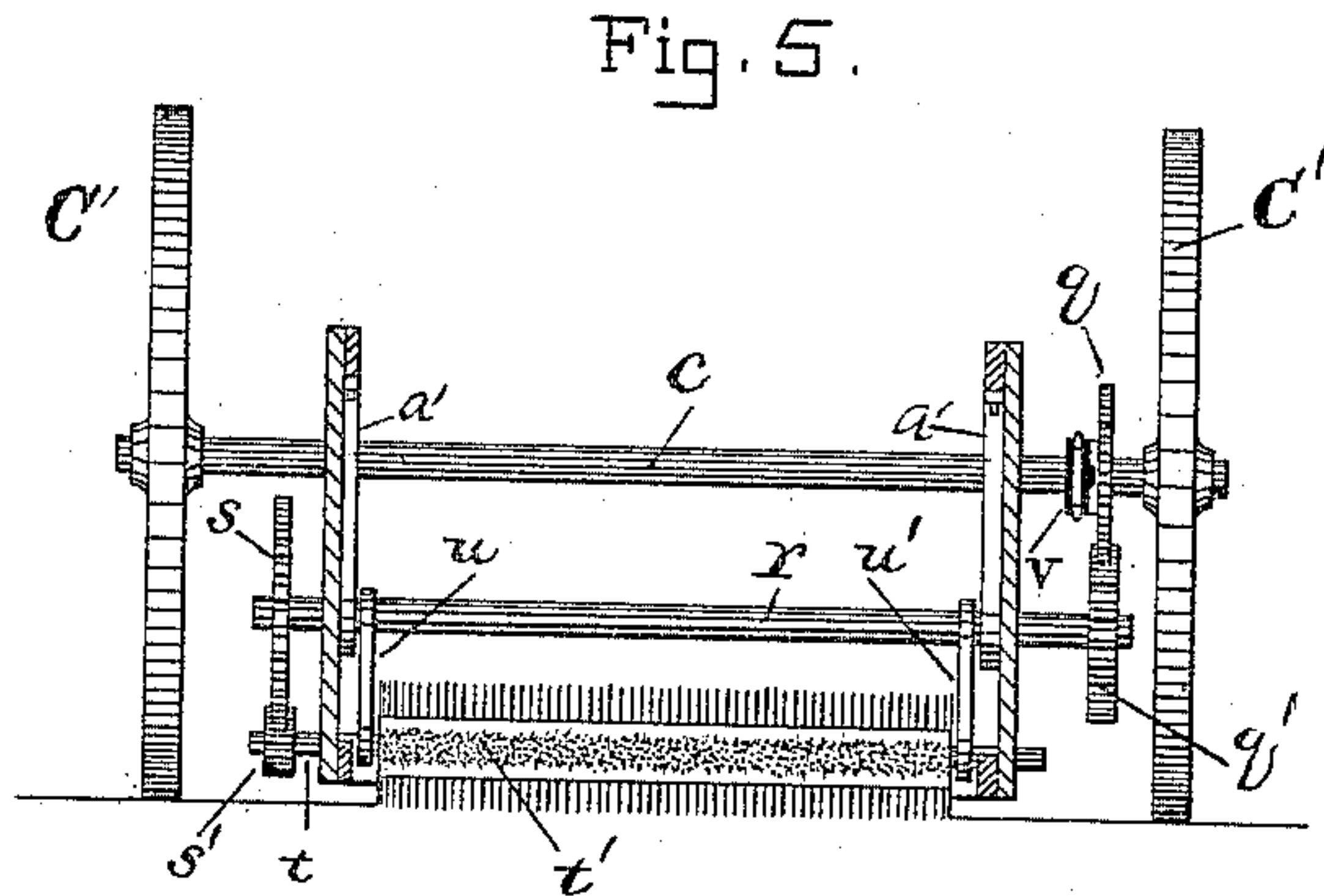
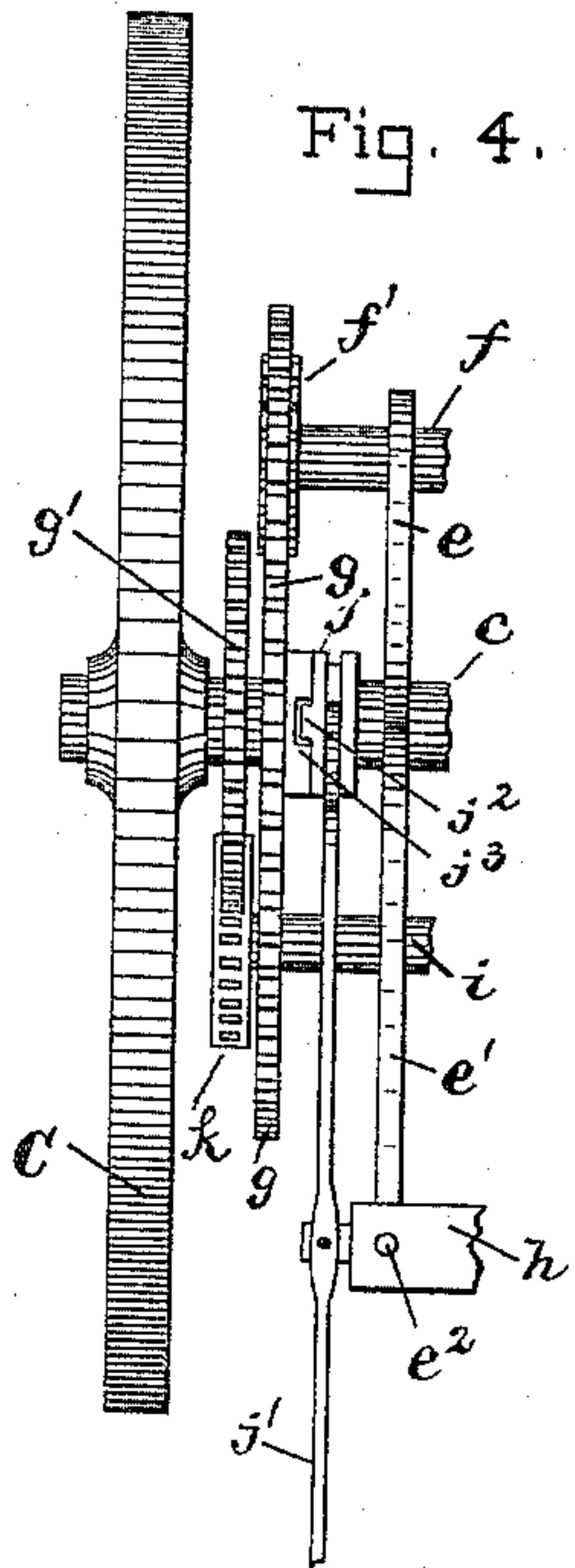
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UNITED STATES PATENT OFFICE.

THOMAS J. SMITH, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO
JOHN W. HINES, OF SAME PLACE.

STREET-SWEEPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 436,746, dated September 16, 1890.

Application filed April 26, 1890. Serial No. 349,648. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. SMITH, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Street-Sweeping Machines, of which the following is a specification.

This invention relates to an improved machine for sweeping streets or road-beds, and has for its object to provide mechanism that will sweep the street-surface and place the dirt-sweepings into an elevator, from which it will be deposited into a cart or wagon attached to the machine.

In the accompanying drawings illustrating my invention, Figure 1 is a longitudinal view of the machine having the two wheels and side wall of the dust-inclosing case removed. Fig. 2 is a plan view of the machine with the case-top removed. Fig. 3 is a side view of the support for the revolving broom. Fig. 4 is an enlarged plan view of the back revoluble axle and the means for imparting motion to the revolving broom and endless elevator. Fig. 5 is a vertical cross-section of the machine on line 5 5 of Fig. 1, showing the front revoluble axle and the gearing for imparting motion to the dirt-loosening brush and means for supporting the same. Fig. 6 is a cross-section of the discharging-chute of the elevator taken on line 6 6 of Fig. 1. Fig. 7 is a cross-section of the dirt-elevator taken on line 7 7 of Fig. 1. Fig. 8 shows two views of the dirt-shoe and its mounting.

The letter A designates the frame of the machine, B the walls of the casing, and C C' the back and front wheels, which are rigidly mounted on revoluble axles c c', respectively, which have their journals in supports a a' projecting downward of the frame A. In order, however, to enable the machine to be turned the front axle should be pivotally secured to the frame in the ordinary manner—that is, the frame should be provided with a cross-piece to which another cross-piece or bolster is pivotally secured by means of a pin or “king-bolt.” The supports a' a' are then secured to the outer ends of this bolster, instead of to the frame. This construction necessitates the use of an ordinary tongue which

is detachably secured at its front end to the axle of the cart which travels in front of the machine and receives the sweepings from the front end of the delivery-chute.

On the back axle c, and near each end, is loosely suspended a support which has two arms e e', forming an oblique angle, and is suspended from its apex on the axle. The arms e of these two supports—one on each side of the machine—form journals for the broom-shaft f, and mounted on the end of the said shaft f is a pinion-wheel f', which meshes with a pinion-wheel g mounted loosely on the revoluble back axle c. Integral with this said pinion-wheel g is a sprocket-wheel g'. 55 60 65

An endless carrier or elevator F is supported by two rollers mounted on shafts i i', respectively, which extend crosswise of the machine. This endless carrier has an upward inclined position, and extends from the rear lower end close to the ground to the elevated delivery-chute end o, projecting beyond the front of the machine. The carrier or elevator is made of canvas, and has cross-slats l attached on its exterior surface. On the end of the shaft i of the lower roller is mounted a sprocket-wheel k, which is connected by an endless chain k' with the sprocket-wheel g' on the revoluble back axle c. 70 75 80

The two side walls F' of the elevator-frame have on the inside a slideway m, upon which the end of the slats l travel in their upward movement. This slideway keeps the carrier-belt from sagging. The dirt-sweepings fall from the carrier F at the top roller and pass down the delivery-chute o. A circular brush p is mounted near the top of the elevator and in contact with its lower surface, and is driven by a belt p' passing over a pulley b² on its own shaft and a pulley p³ on the shaft i of the lower carrier-roller. Thus it will be seen that the brush will sweep any remaining dirt from the carrier into the chute o. 85 90

A clutch j, operated by a lever j', is mounted on the revoluble back axle c and turns with it, but may slide along the same. This clutch has a tongue j², which fits a groove j³ in the hub of the pinion-wheel on the revoluble axle c. Thus it will be seen that the broom f² and the endless carrier can be thrown out of gear at 95 100

will. A shoe n is pivoted to the shaft i of the lower carrier roller, and extends across the machine, and the sweepings thrown up by the revolving broom f^2 pass over the shoe and
 5 onto the elevator or endless carrier. The free end of this shoe is supported by a rod n' , which extends crosswise of the machine and under the said shoe n , thus permitting the shoe to be made light and thin without any
 10 danger of its bending or curving under the pressure of the dirt as it is being forced up the plate by the broom.

A rod e^2 has one end jointed to the upper arm e' of the broom-support and passing
 15 through a hole in a bar h , which extends across the machine. Encircling this rod e^2 , between the arm e' and said cross-bar h , is a spiral spring h' , by the tension of which the greater part of the weight of the revolving
 20 broom f^2 is sustained and taken off the reeds of the same.

Loosely mounted near one end of the front revoluble axle c' is a pinion-wheel q , which intermeshes with a pinion-wheel q' below the
 25 same mounted on one end of a cross-shaft r . On the other end of this shaft is a pinion-wheel s , which meshes with a pinion-wheel s' below it on a shaft t , carrying a revolving broom t' , having steel points. This steel-point
 30 broom goes in advance and serves to cut or loosen the dry mud or dirt on the street, and thus prepare it for the action of the broom f^2 . The said shaft t of this steel-point broom has its journals near one end hung or suspended
 35 in two metal bars $u u'$, which are pivoted to the cross-shaft r , previously referred to. By journaling the broom at the rear ends of the bars u and u' the broom will drag along without the necessity of elevating it when not in
 40 operation, and by revolving it in the direction in which the machine is going or in the direction opposite the first broom, it will have a tendency to roll forward and thus swing the ends of the arms u and u' downward toward
 45 the front of the machine, which will thus au-

tomatically force the ends of the revolving steel points into the dirt and loosen it more effectively than would be the case if it rotated in the opposite direction or if a rake were used instead of the revolving broom. On the
 50 front revoluble axle c' is also placed a clutch v , similar to the one on the back revoluble axle, which is operated by a lever w . It will be seen that the broom may be stopped by disengaging the clutch and only be operated
 55 when required, as in places where the dirt has become too hard to be removed by the ordinary sweeping.

Having described my invention, I claim—

1. In a street-sweeping machine, the combination of a revoluble axle, a pinion-wheel
 60 g on said axle, two supports suspended on the axle and each having two arms $e e'$, a revoluble broom whose shaft f is mounted on the lower arms of said supports, a pinion f' on the
 65 broom-shaft and in gear with the said pinion on the axle, a bar h , extending across the machine, and a spring h' , bearing on each of the upper arms of said two supports and said bar.

2. In a street-sweeping machine, the combination, with a frame having supports and a revoluble axle at each end, a shaft in the lower end of the front supports having a gear-wheel at each end, rearwardly-extending arms pivotally secured upon the shaft, a revolving
 75 broom having steel points journaled in the rear ends of the arms, one end of the shaft of which is provided with a pinion meshing with the gear-wheel on one end of the shaft in the supports, a gear-wheel on the front axle mesh-
 80 ing with the gear-wheel on the opposite end of the shaft in the supports, and a clutch for throwing said gear-wheels into or out of operation.

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

THOMAS J. SMITH.

Witnesses:

JOHN E. MORRIS,
 JNO. T. MADDOX.