

No. 771,787.

PATENTED OCT. 4, 1904.

A. F. MEYER.
STREET SCAVENGING MACHINE.

APPLICATION FILED JULY 25, 1904.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.

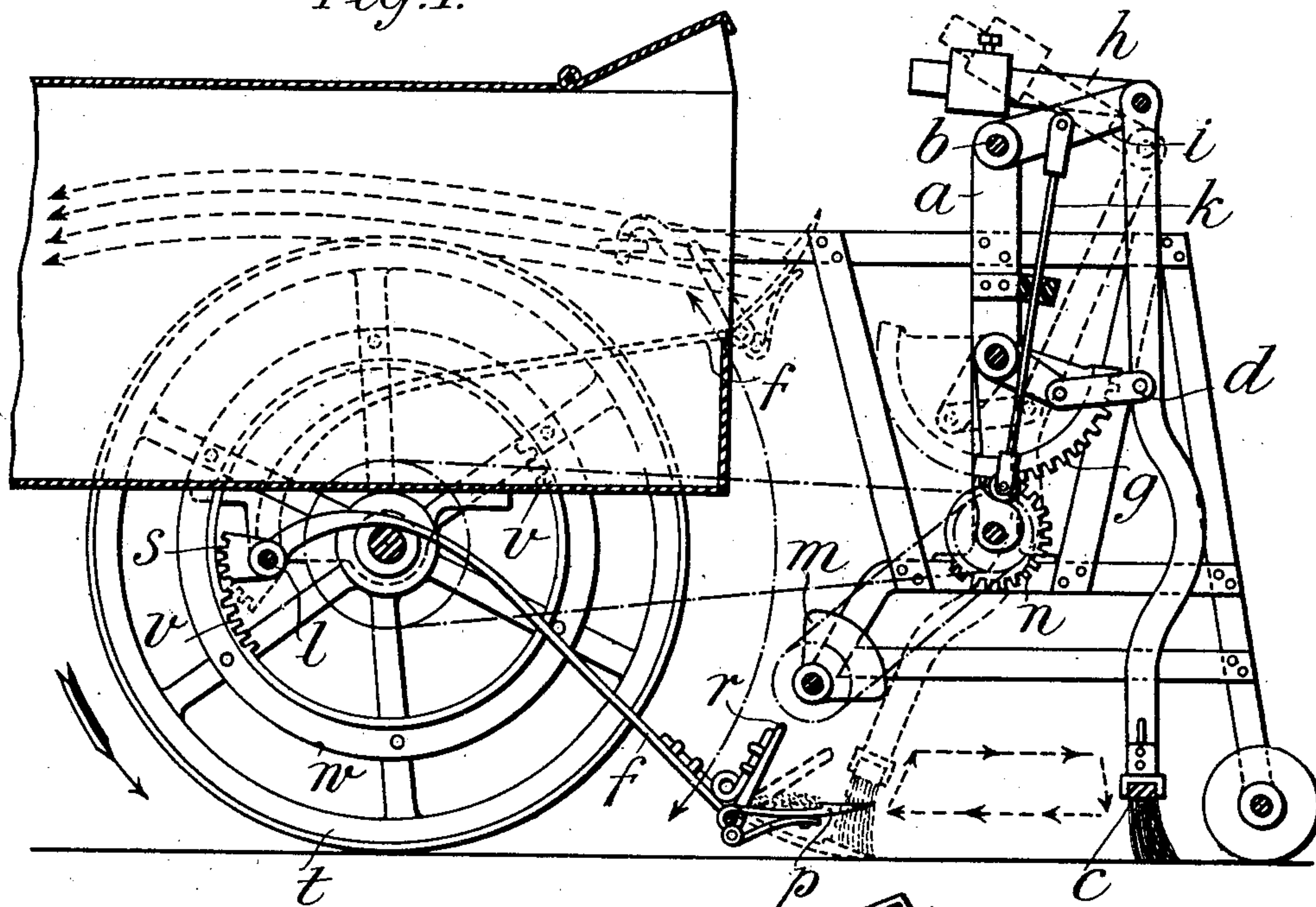
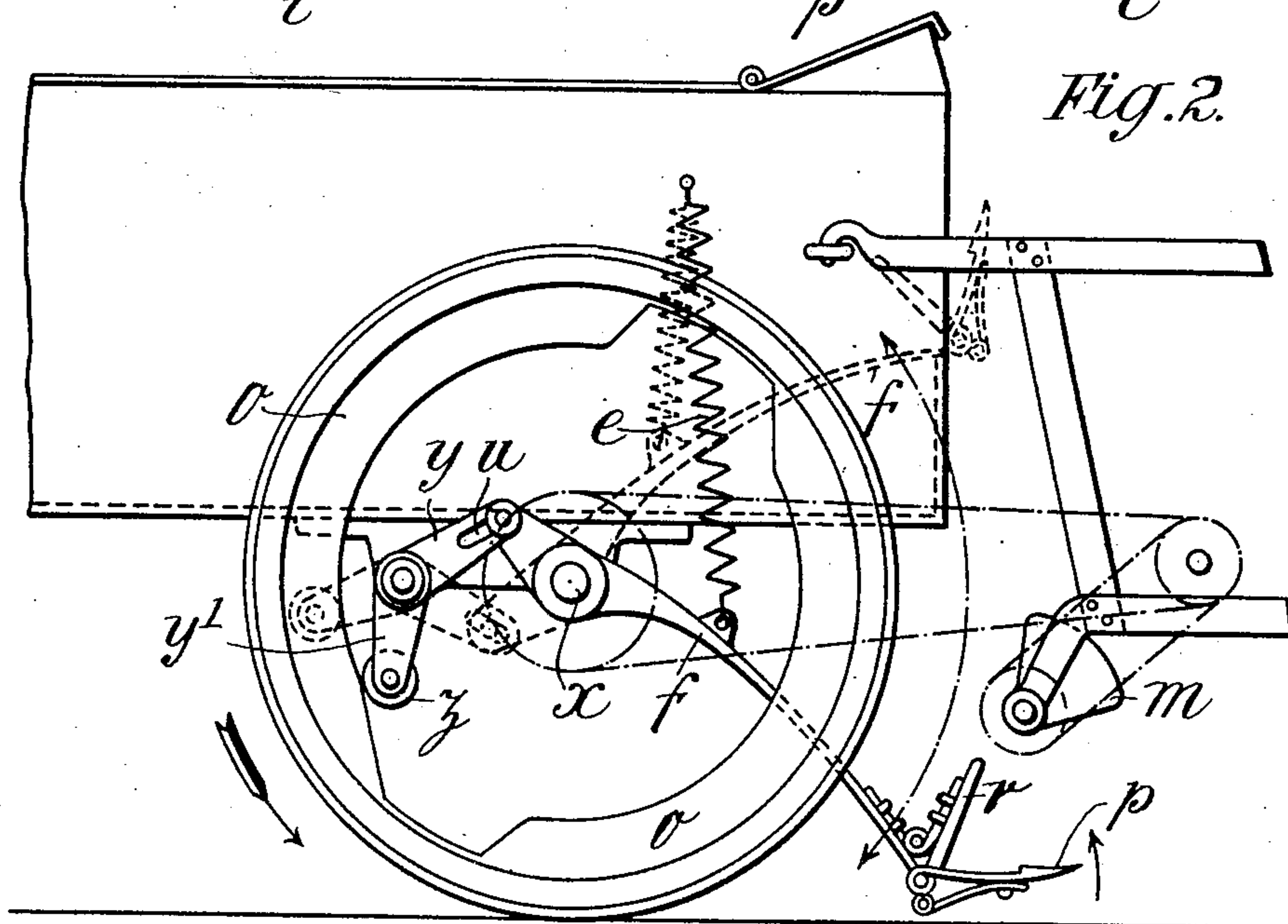


Fig. 2.



WITNESSES

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3 SHEETS—SHEET 2.

Fig.3.

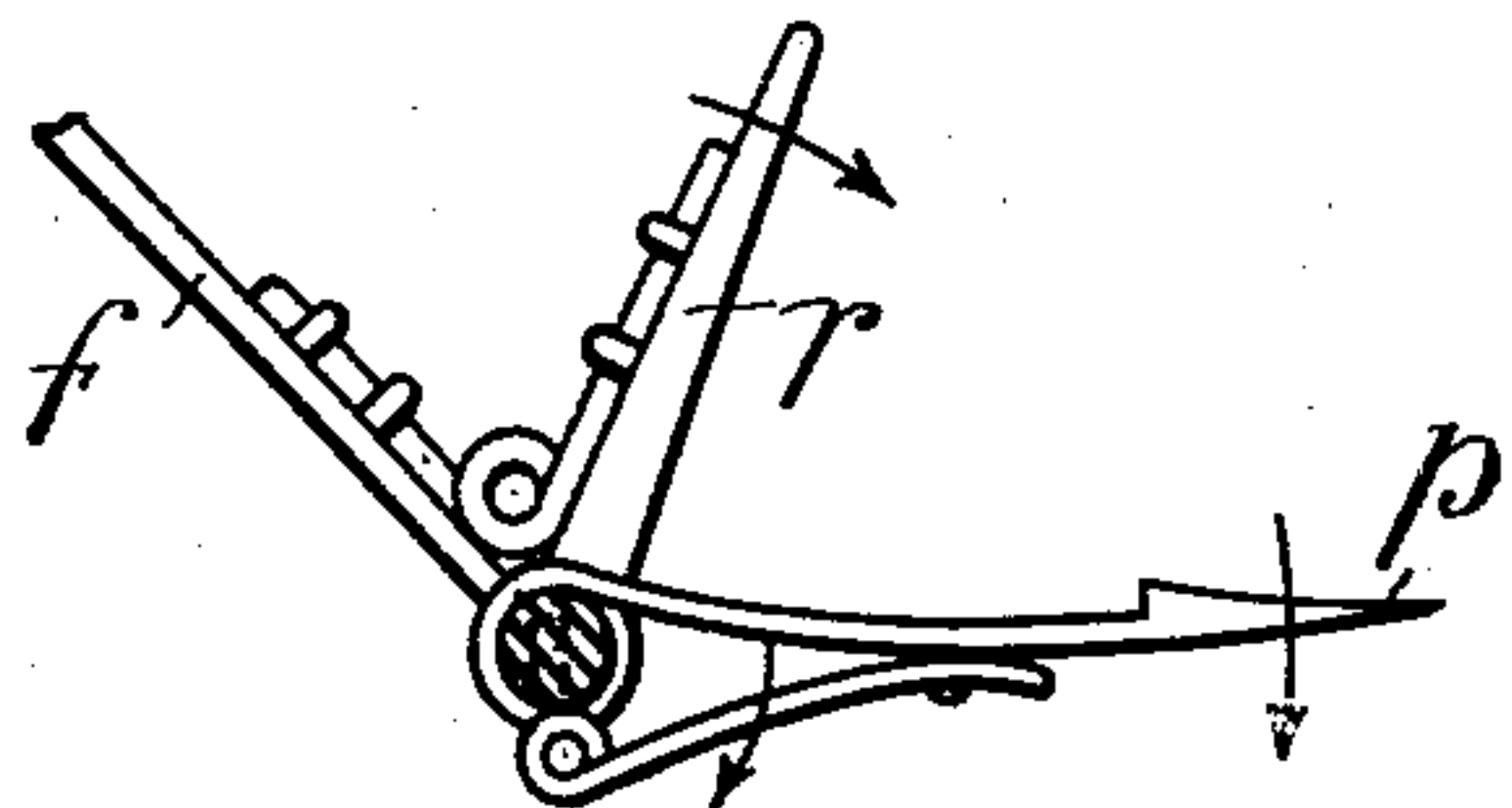


Fig.4.

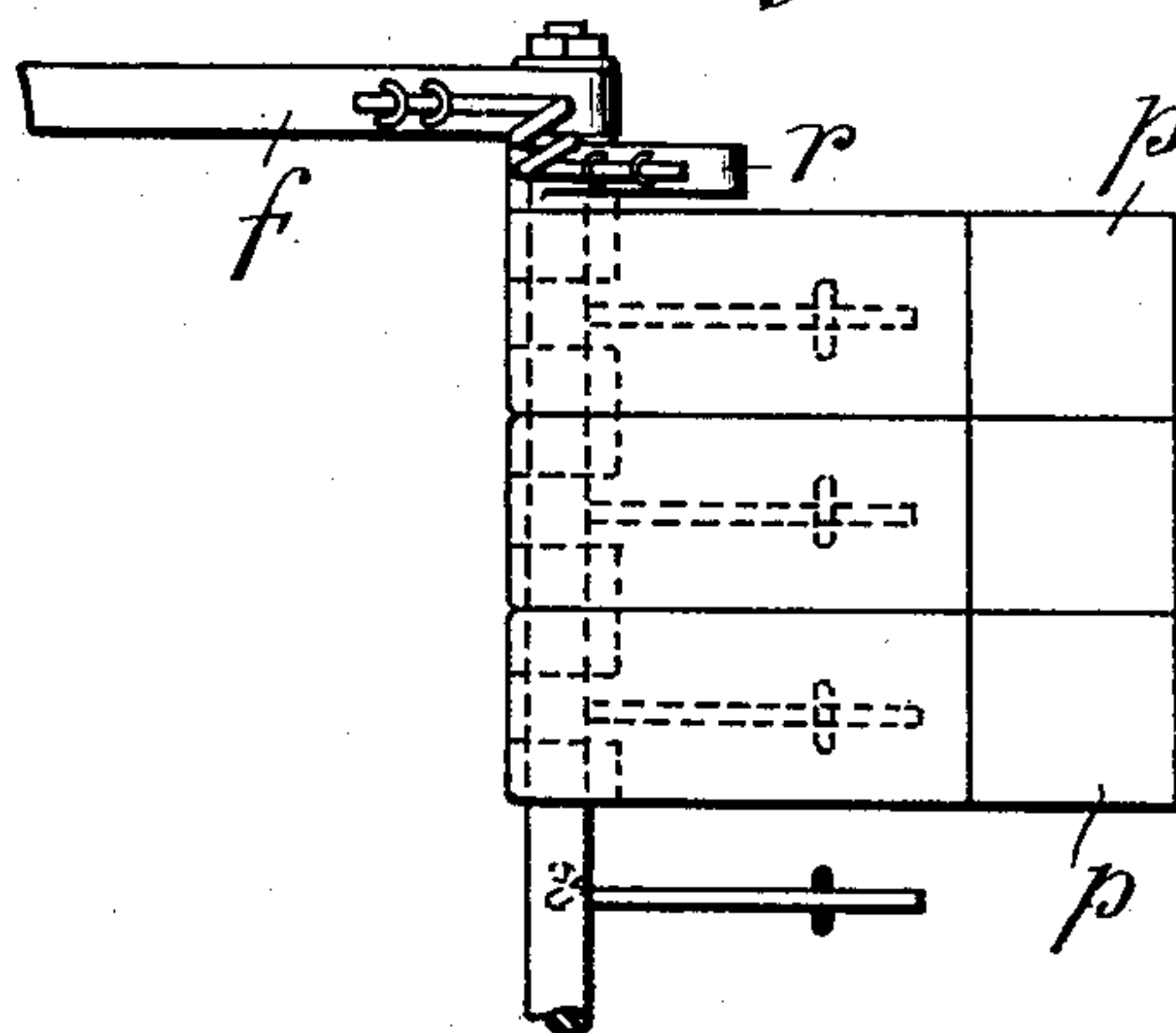
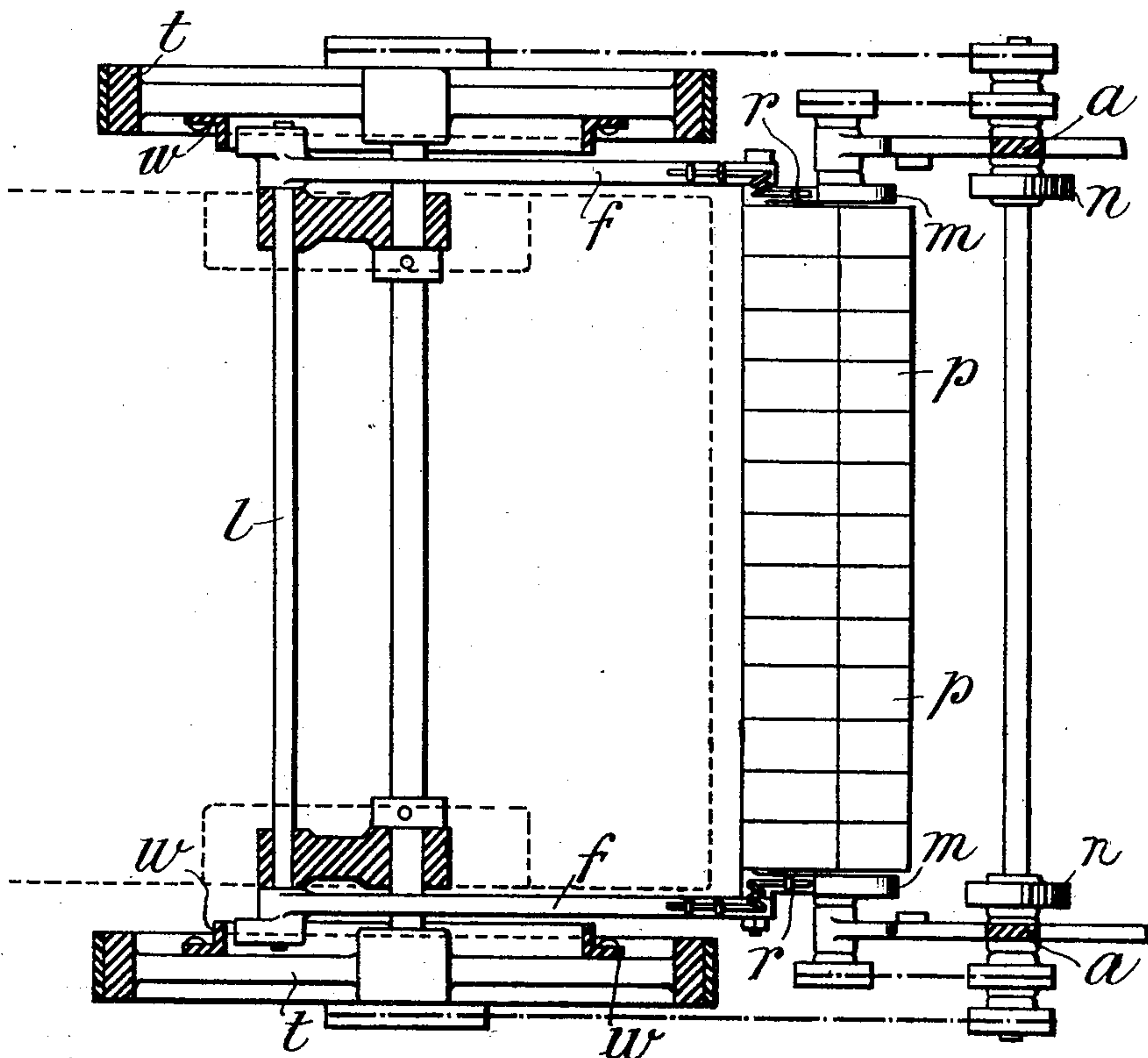


Fig.5.



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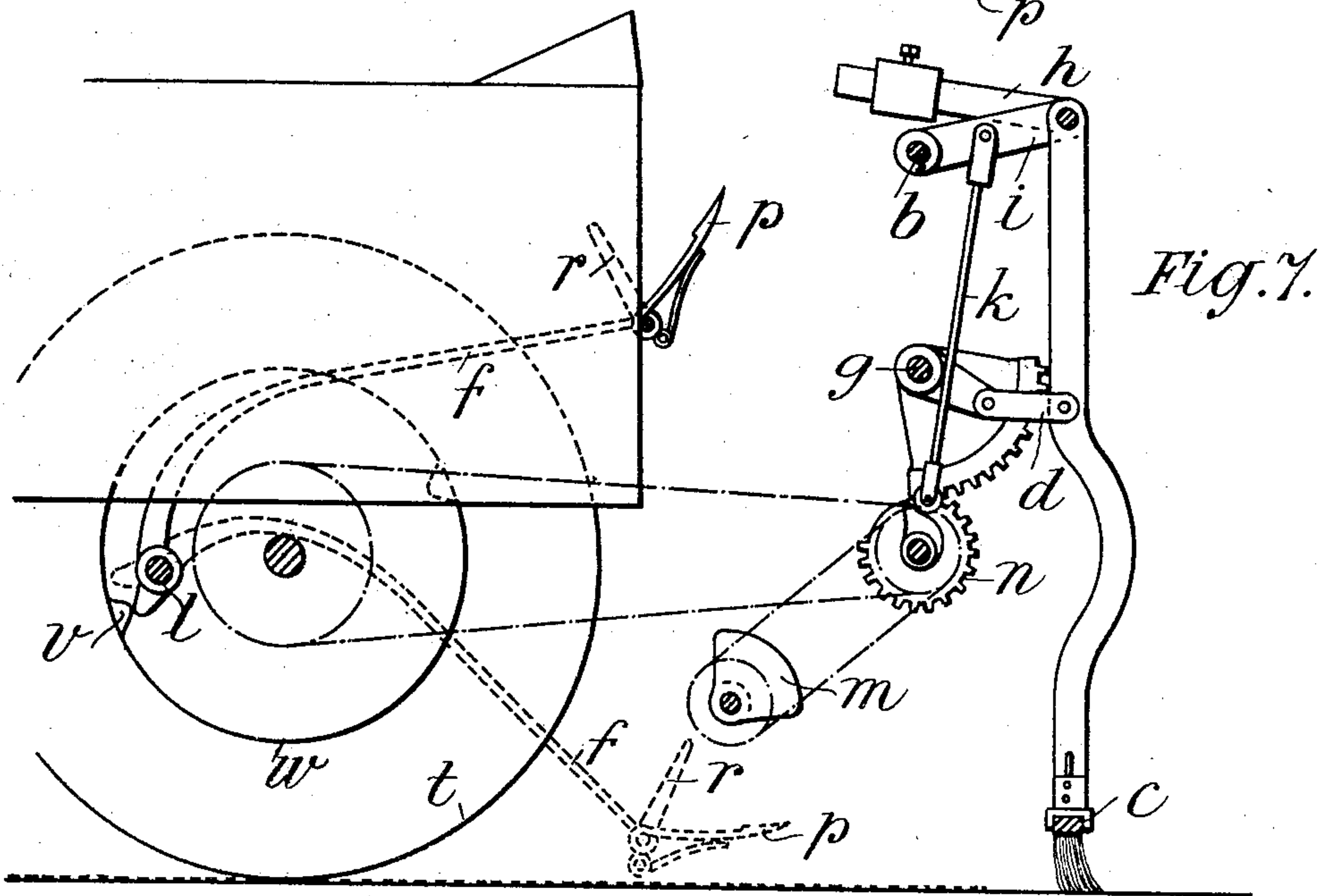
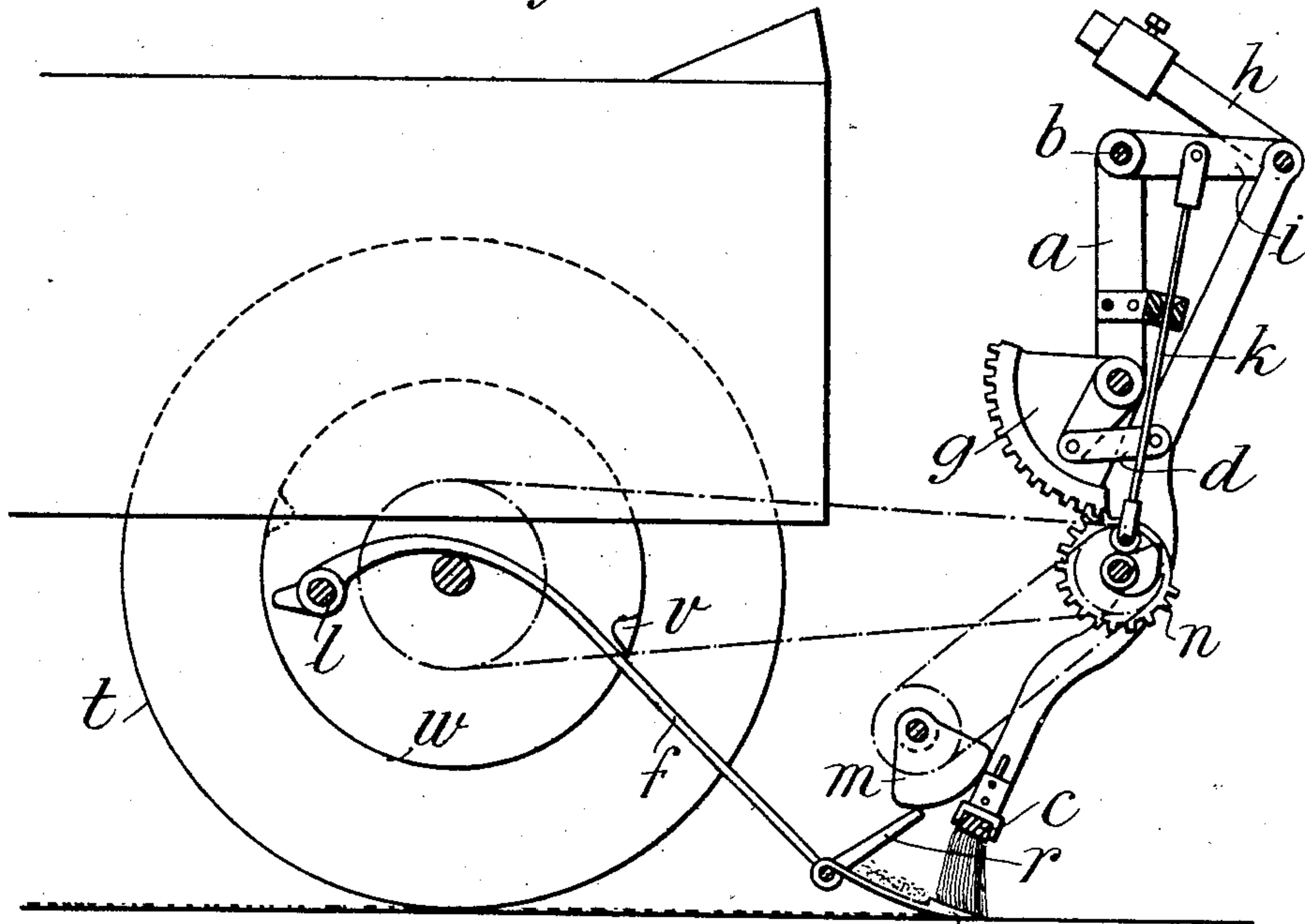
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3 SHEETS—SHEET 3.

Fig. 6.



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UNITED STATES PATENT OFFICE.

AUGUST FRIEDRICH MEYER, OF BREMEN, GERMANY.

STREET-SCAVENGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 771,787, dated October 4, 1904.

Application filed July 25, 1904. Serial No. 218,155. (No model.)

To all whom it may concern:

Be it known that I, AUGUST FRIEDRICH MEYER, a subject of the German Emperor, residing at 3 Hornerstrasse, Bremen, Germany, have invented certain new and useful Improvements in Street-Scavenging Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a street-savenging machine with automatic loading device in which the scavenging and loading implements are so arranged in relation to each other that the scavenging operation is effected by movements similar to those when hand appliances are employed. For this purpose the rotary brushes hitherto in general use in scavenging-machines with an automatic loading device are replaced by an ordinary scavenging device with an oscillating brush, combined with an ordinary oscillating loading-scoop in such a manner that while the contents of the scoop are being emptied into the collecting-receptacle the brush swings back and comes into position ready for the next movement. Before the brush has completed its next sweeping operation the loading-scoop returns to its starting position—that is to say, is swung downward and slides directly above the road, so that the dirt swept together by the brush is spread on the scoop.

As large quantities of dirt do not collect in front of the brush, there is no danger of thick streaks of dirt forming on the surface that is being cleaned at both sides of the brush and, what is most important, dirt cannot be thrown back by the brush onto the surface which has been swept, as the brushes or the like are not pushed into the collected dirt, as is the case when rotary brushes are employed, but merely push the dirt together and, moreover, are raised vertically from the dirt at the end of the sweeping movement. As, again, the loading-scoop when raised has to move over the rotary brushes, it must be placed at a considerable distance therefrom, so that large quantities of dirt must always collect in front

of the roller, as the loading-scoop can only take a certain excess quantity. Thus when the loading-scoop is raised some of this dirt will unavoidably fall onto the roller-brush and be thrown onto the surface which has been swept. Moreover, the large quantities of dirt which collect in front of the roller-brush are the cause of dirt being thrown back by the brush in the direction of the swept part of the road and forming thick streaks on both sides of the brush.

In order that the arrangement and action of the scavenging-machine may be better understood, the devices at present in use are also explained in what follows.

In the accompanying drawings, Figure 1 is a sectional elevation of the scavenging-machine dand of the vehicle employed for carrying the dirt. Fig. 2 is a side elevation representing another method of actuating the scoop. Fig. 3 is a section, on a larger scale, through the scoop; Fig. 4, a plan of Fig. 3; Fig. 5, a sectional plan of the machine. Figs. 6 and 7 are elevations of the sweeping and loading devices in different working positions.

On the sides of the machine-frame are fixed the brush-carriers *a*, in which the shaft *b*, carrying the brush, is mounted.

The brush *c* is of the same width as the machine and is fixed in a frame connected with a rocking shaft by a link *d* and an arm on the shaft. Toothed segments *g*, fixed on the rocking shaft, gear with segments *n* on a rotary counter-shaft mounted below the rocking shaft. The frame is swung forward by the toothed segment *g* through the medium of the connecting-link *d* and moved quickly back again by means of a special device. The upper part of the brush-frame is provided with the weighted arm *h* and in addition to this is flexibly jointed to the arm *i*, connected with the lifting-rod *k*, which is actuated by a cam. The brush *c* during the sweeping operation is moved by the action of the toothed segments *n g* in the direction of the scoop *p*, which upon meeting the brush is pressed against the ground by means of a cam or wiper *m*, which bears on a spring *r* for a portion of its revolution, but releases it again

after the brush swings forward, whereupon the scoop *p* is tipped up and conveys the dirt to the vehicle.

The movement of the scoop *p* toward the vehicle is effected by means of a spring-lever *f*, pivoted at *l*, by the lower end of which lever the scoop is pivoted. At the other end of the lever *f* is a toothed segment *s*, which when the vehicle-wheel *t* rotates is actuated intermittently by the rim *w*, furnished with a toothed segment *v*, and raises the lever *f* with the scoop *p*. When the raised lever strikes against the body of the vehicle, the scoop in consequence of the force imparted to it tends to move still farther, and consequently executes a short oscillating movement around its pivot, so that the dirt is thrown in a wide curve toward the front of the vehicle, whereupon the oscillating arms or levers *f* return to their starting position. As a matter of course the toothed segment *v* may be replaced by a simple cam, in which case the lever-arm *s* likewise is constructed without indentations.

In the form according to Fig. 2 the levers *f* are actuated through the medium of a two-armed lever *y*, on the arm *y'* of which a roller *z* is arranged, while the lever *f*, which is mounted on the wheel-axle *x*, is guided by the lever-arm *y* in the slot *u*. The roller *z* runs on a rim or flange *o*, furnished with suitable recesses, and holds down the lever *f*, with the scoop *p*. When the roller *z* drops into one of the recesses, the lever *f* is raised by the spring *e* and the scoop caused to throw the dirt into the vehicle. The scoop *p* is divided in the usual manner, Fig. 4, in order that it may adapt itself as far as possible to the unevenness of the road. Before, however, the throwing operation of the lever *f* and scoop *p* can occur the brush must first be removed from the scoop, and is, in fact, removed by the lifting-rod *k*—that is to say, the carrying-arm *i* is raised and at the same time the toothed segment *g* released from the toothed segment *n*, so that the brush can be

swung back by the action of the counterweight-lever *h*. The lever *h* is so weighted that it can swing the brush back very quickly, and the brush can thus again be brought onto the road before it has been carried by the moving vehicle beyond the surface which has already been swept. Likewise the cam which raises the rod *k* should be constructed so as to allow the brush to come directly onto the ground after swinging back. After the brush has swung back the toothed segments *g n* come into gear again and the scavenging operation proceeds once more.

The whole device is actuated by the wheels *t* on both sides of the vehicle by chain-and-sprocket gearing.

What I claim, and desire to secure by Letters Patent, is—

1. In a street-scavenging machine, the combination with an oscillating loading-scoop, of a swinging scavenging-brush, means for swinging the brush forward to brush the dirt onto the scoop, and means for raising the brush momentarily at the end of the forward movement and swinging it rapidly back out of the path of the scoop.

2. In a street-scavenging machine, the combination with an oscillating loading-scoop, of a swinging scavenging-brush, a counterweighted brush-frame arranged to carry the brush, a rocking shaft connected to the brush-frame, a counter-shaft mounted below the rocking shaft, toothed segments adapted to gear the shafts together to effect the forward movement of the brush, but to release the rocking shaft at the end of the forward movement enabling the brush to swing back under the influence of its counterweight, and means for raising the brush momentarily at the end of the forward movement.

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

AUGUST FRIEDRICH MEYER.

Witnesses:

W. HOYERMANN,
C. DIEDERICH.