

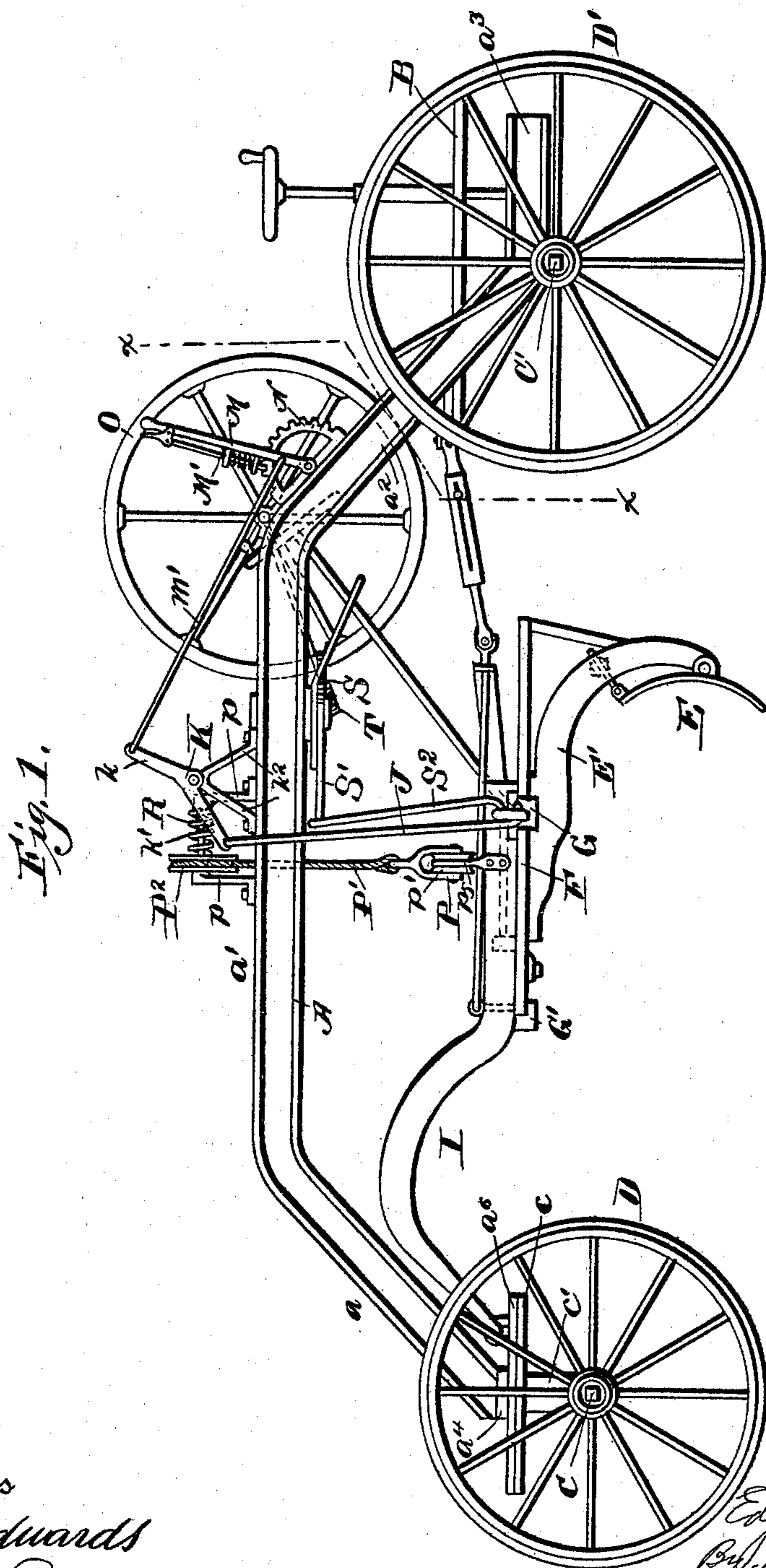
(No Model.)

2 Sheets—Sheet 1.

E. A. WRIGHT.  
ROAD SCRAPER.

No. 584,719.

Patented June 15, 1897.



Witnesses  
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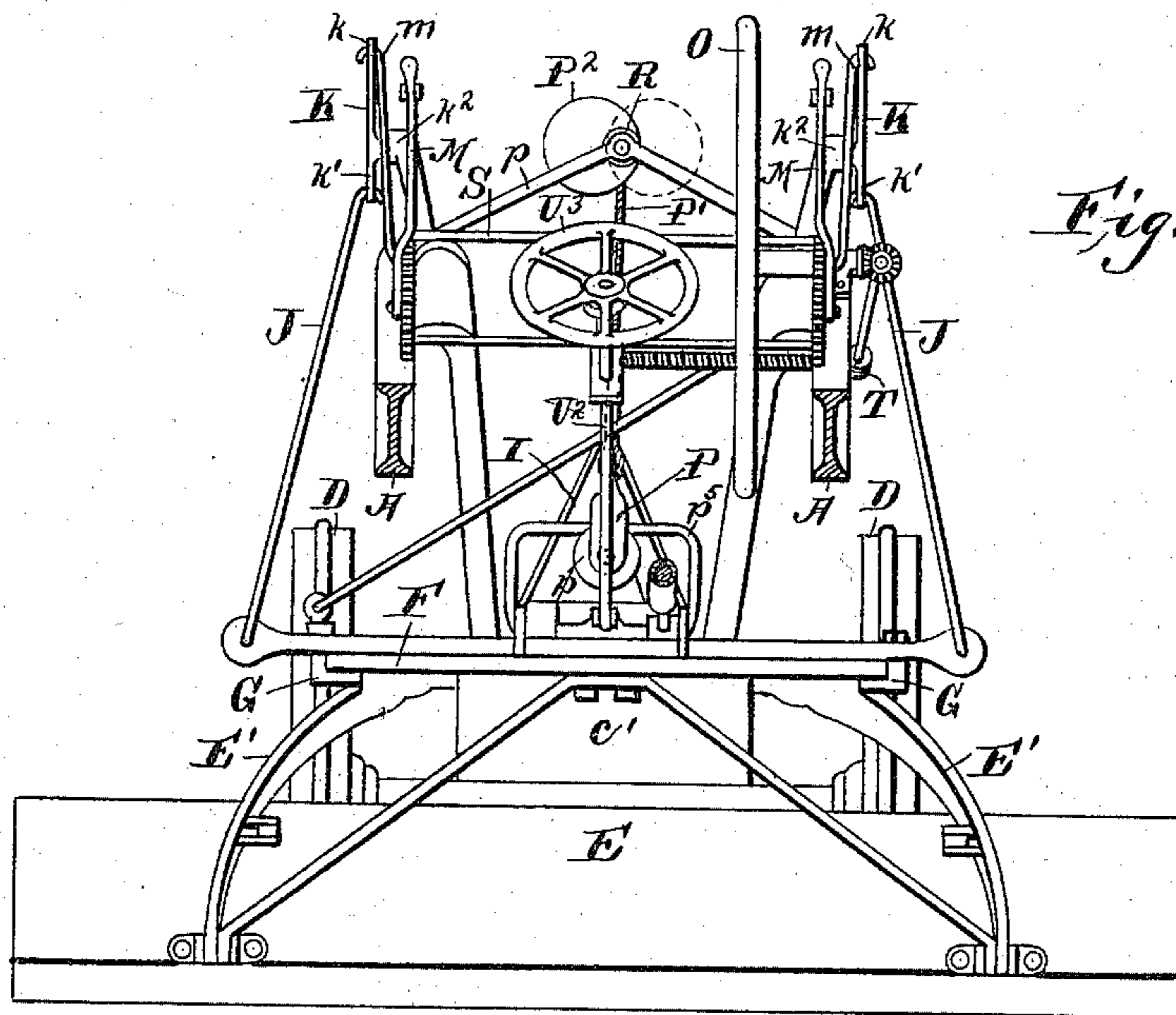
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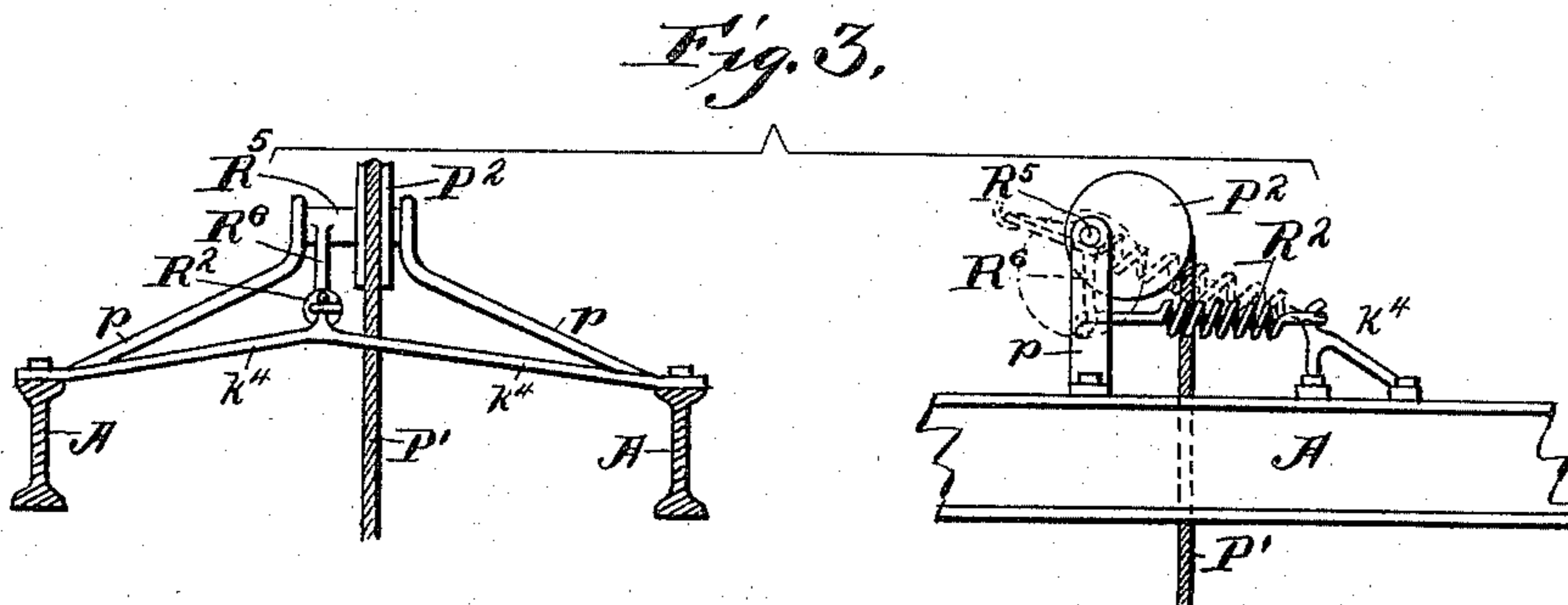
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*Fig. 2.*



*Fig. 3.*

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# UNITED STATES PATENT OFFICE.

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## ROAD-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 584,719, dated June 15, 1897.

Application filed February 2, 1897. Serial No. 621,646. (No model.)

*To all whom it may concern:*

Be it known that I, EDGAR A. WRIGHT, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Road-Scrapers; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of a road-scraping machine embodying my improvements. Fig. 2 is a view on the line  $x x$  of Fig. 1. Fig. 3 illustrates in side elevation and in end elevation a modified form of adjusting devices for the flexible draft connection of the scraper-blade.

In general construction and arrangement of parts the mechanism herein illustrated is substantially similar to that illustrated and described in my earlier application, Serial No. 608,620, filed October 12, 1896, and it is not necessary, therefore, to describe all of the details in this application.

The scraper-blade E is supported by a wheeled supporting-frame consisting of the two longitudinally-extending bars A, each in the embodiment of my invention herein illustrated being shaped so as to have a front upwardly-extending inclined part  $a$ , an approximately-horizontal central portion  $a'$ , and a rear inclined part  $a^2$ , which is provided with a backward-projecting arm  $a^3$ . Said longitudinal bars are connected by a suitable number of cross-bars, one being shown at  $a^4$  at the front end. The running-gear of this wheeled supporting-frame comprises the front axle C, with wheels D, and the rear axle C', with wheels D'. The front axle is pivotally connected with the main frame, the latter having an expanded ring  $a^6$ , which rests upon a similar opposing ring  $c$ , carried by the axle and supported by means of a standard  $c'$ , there being a king-bolt of the ordinary sort for joining the parts together.

The platform upon which the operator stands is indicated by B, it being supported

by the rear part of the above-described wheeled frame.

The scraper-blade E may be of any of the common forms or of any preferred sort. In the embodiment of my invention herein illustrated said blade is pivotally connected to draft-bars E', which are carried by an expanded ring-like plate F. This scraper-supporting part is suspended and guided by means of clips or flanged bolts G G', which are secured to the draft-frame I of the scraper.

J are links which are connected at their lower ends to the scraper draft-frame and at their upper ends are connected to adjusting devices, by which the scraper-blade and its supporting devices above described can be adjusted vertically. I have herein shown two centrally-fulcrumed levers K for effecting this vertical movement of the scraper-blade. These levers are fulcrumed on suitable uprights  $k^2$ , mounted on the main frame-bars A, and one arm,  $k'$ , of each lever is connected with the upper end of one of the aforesaid links J. The other arm,  $k$ , of each of said levers is connected by means of a link or rod  $m$  with a hand-lever M, which is fulcrumed on the rearwardly-inclined portion  $a^2$  of the main frame and within reach of the operator standing on the platform B. To hold said adjusting parts and the scraper-blade in any desired adjusted position, the hand-levers M are provided with locking-dogs M', adapted to engage with the teeth of segmental racks N.

To assist the above-described parts in raising the scraper-blade and its draft-frame, I employ a coiled spring R. This spring in Figs. 1 and 2 is shown as coiled about an axis extending longitudinally of the machine and is supported by suitable uprights  $p$ , extending inwardly from the bars A of the wheeled frame. One end of said spring is held rigid, while the other end is connected with a winding drum or reel P<sup>2</sup>, said reel being preferably arranged eccentrically of the axis of the spring. To the drum or reel P<sup>2</sup> is connected one end of a cable or flexible draft device, the other end of which is adjustably connected with the scraper-blade in the following manner:

$p^5$  is a stirrup or loop having its ends secured

to the draft-frame of the scraper-blade and extending somewhat upward therefrom to provide a horizontal guide-bar at its upper end. P is a link loosely connected with the cross-bar of this loop or stirrup, it preferably having a roller or wheel  $p'$  interposed between it and the aforesaid guide-bar of the loop or stirrup. The link P, which may, as shown, be relatively short, is connected to the lower end of the cable or flexible draft device P'.

From the above description and the drawings it will be seen that the spring R and devices connecting it with the scraper-blade are so arranged as to exert an upward draft or tension upon the scraper-blade, which tension will be increased or decreased to correspond with the different positions vertically of the scraper.

The parts are so related that while the tension of the spring will be gradually increased as the blade E moves downward said blade and its carrier will be practically entirely relieved from the tension of the spring when said blade is in working position—that is, the parts are so arranged that when the blade E is in working position the eccentrically-mounted reel or drum will be so related to the draft device connected therewith as to reduce the pull exerted by the spring on the scraper to its minimum; but as soon as the operator moves the hand-levers M and starts either end of the scraper upward the full pull or tension of the spring will act on the flexible connection P' and assist in raising the scraper.

By having the spring connected to the scraper by devices like the loop  $p^5$  and the parts coacting therewith the spring will be equally effective in exerting its upward pull or lift whether both ends of the blade be started in their rising movement or only one of them; and, again, the loop  $p^5$  and link P permit the swinging or adjusting of the scraper endwise bodily transversely of the machine without requiring that the position of the spring should be varied.

As the devices herein illustrated for shifting the scraper-blade laterally and also for adjusting said blade about a vertical axis are the same as those illustrated and specifically described in my aforesaid earlier application, and as I make no claim herein to such features, it is not deemed necessary to specifically describe the same.

It will be readily seen that my invention is not limited to the use of the particular form and arrangement of spring and coacting parts for relieving the blade E of the spring tension when in working position illustrated in Figs. 1 and 2; and various modifications in this respect will suggest themselves to those skilled in the art as coming within the spirit of my invention; and in Fig. 3 I have illustrated in end and side elevation a slightly-modified arrangement of parts. In this embodiment of my invention the spring  $R^2$  is arranged entirely below the winding-drum  $P^2$ , which is eccentrically mounted on a shaft

$R^5$ . One end of the spring is connected with a stationary support  $k^4$  on the main frame and its other end is connected with an arm  $R^6$  on the shaft  $R^5$ , which shaft is mounted in bearings in brackets  $p$ .

When the blade E is in its lowermost position or in working position, the parts occupy the positions indicated in dotted lines; and it will be seen that the strain or pull of the spring is exerted along such lines that the blade and its support are practically relieved entirely from the said strain or tension.

I do not herein claim, broadly, the combination, with a vertically-adjustable scraper-blade and means for positively adjusting said blade and holding it in any adjusted position, of a lifting-spring interposed between the blade and the supporting-frame and adapted to have its tension increased as the blade descends and means for relieving the blade of the spring tension when said blade is in working position, nor any of the other features herein disclosed which are claimed in my earlier application hereinbefore referred to.

What I claim is—

1. In a road-scraping machine, the combination of a wheeled supporting-frame, a scraper-blade supported by said frame, a vibrating eccentric pivotally connected to the supporting-frame, a longitudinally-extensible lifting device between the eccentric and the scraper-blade, a spring connected with said eccentric and arranged to have its tension increase as the scraper-blade descends, and means for positively moving the scraper-blade vertically, substantially as set forth.

2. In a road-scraping machine, the combination of a wheeled supporting-frame, a scraper-blade supported by said frame, a vertically stationary lifting-spring mounted on the supporting-frame and connected with the scraper-blade to have its tension increased as the blade descends, means for relieving the said blade of spring tension when in working position, and means for positively moving the said blade vertically, substantially as set forth.

3. In a road-scraping machine, the combination of a wheeled supporting-frame, a scraper-blade supported by said frame, means for positively adjusting said blade vertically, a lifting-spring mounted entirely above the supporting-frame, connections between the scraper-blade and the spring, whereby the tension of the spring is increased as the blade descends, means for relieving the scraper-blade of spring tension when in working position, and means for holding said blade in any adjusted position, substantially as set forth.

4. In a wheeled road-scraping machine, the combination of a wheeled supporting-frame, a vertically-adjustable scraper-blade, a vertically stationary lifting-spring supported by the wheeled frame and connected with the scraper-blade, means interposed between the said spring and the blade for relieving the

