

(No Model.)

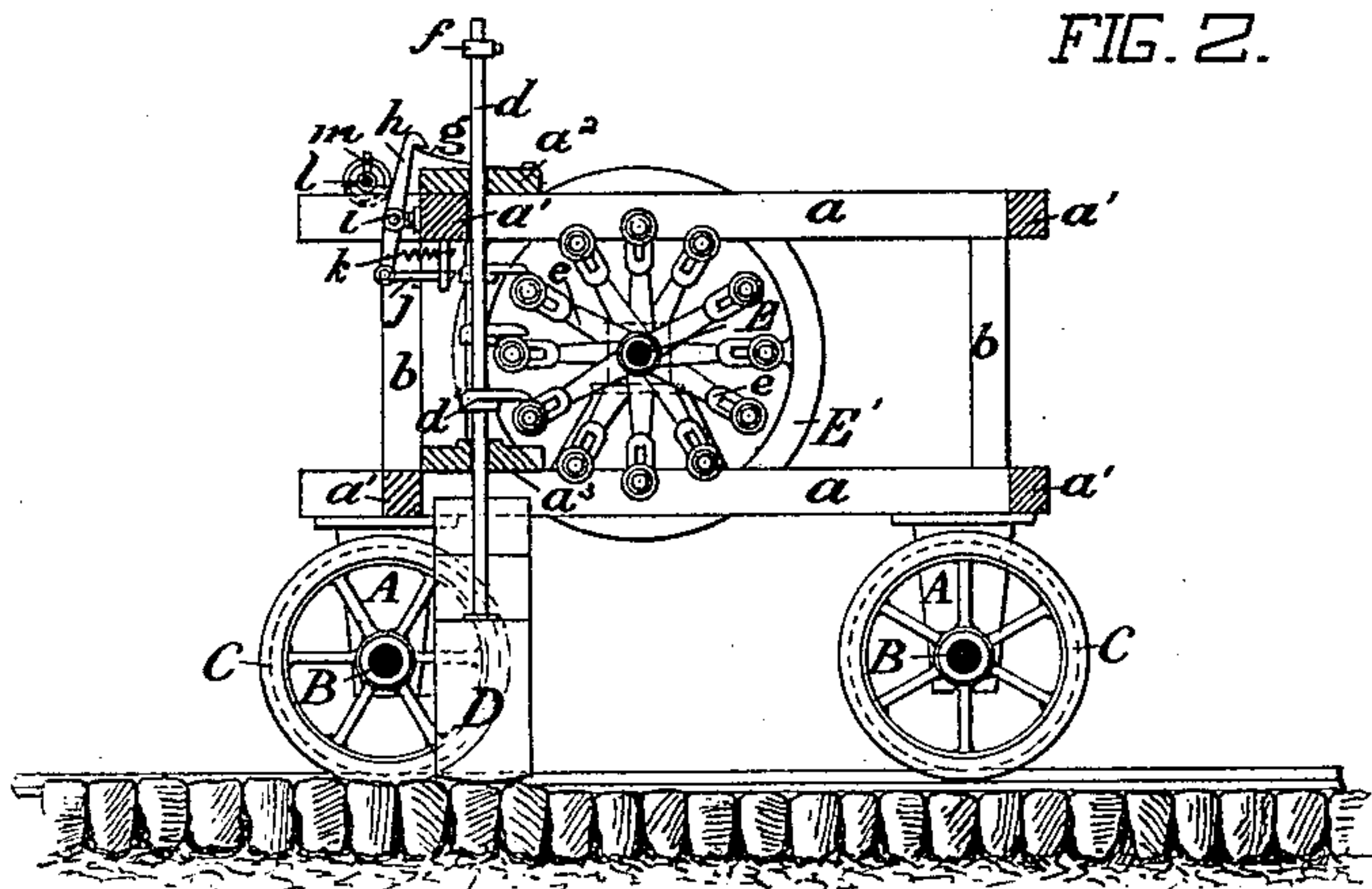
J. G. SCHMIDT.

## RAMMER FOR STREET PAVING.

No. 350,700.

Patented Oct. 12, 1886.

FIG. 2.



*FIG. 1.*

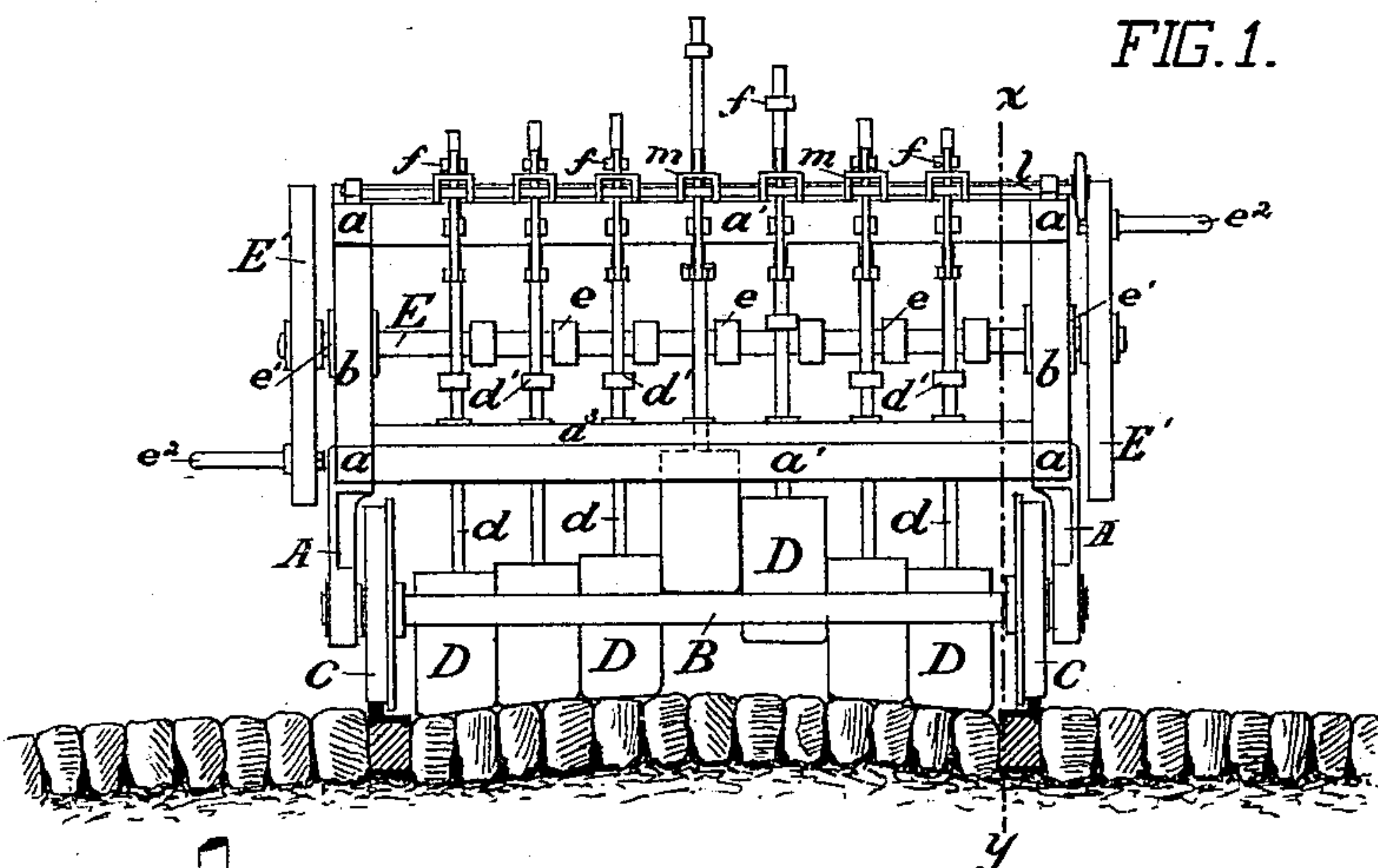
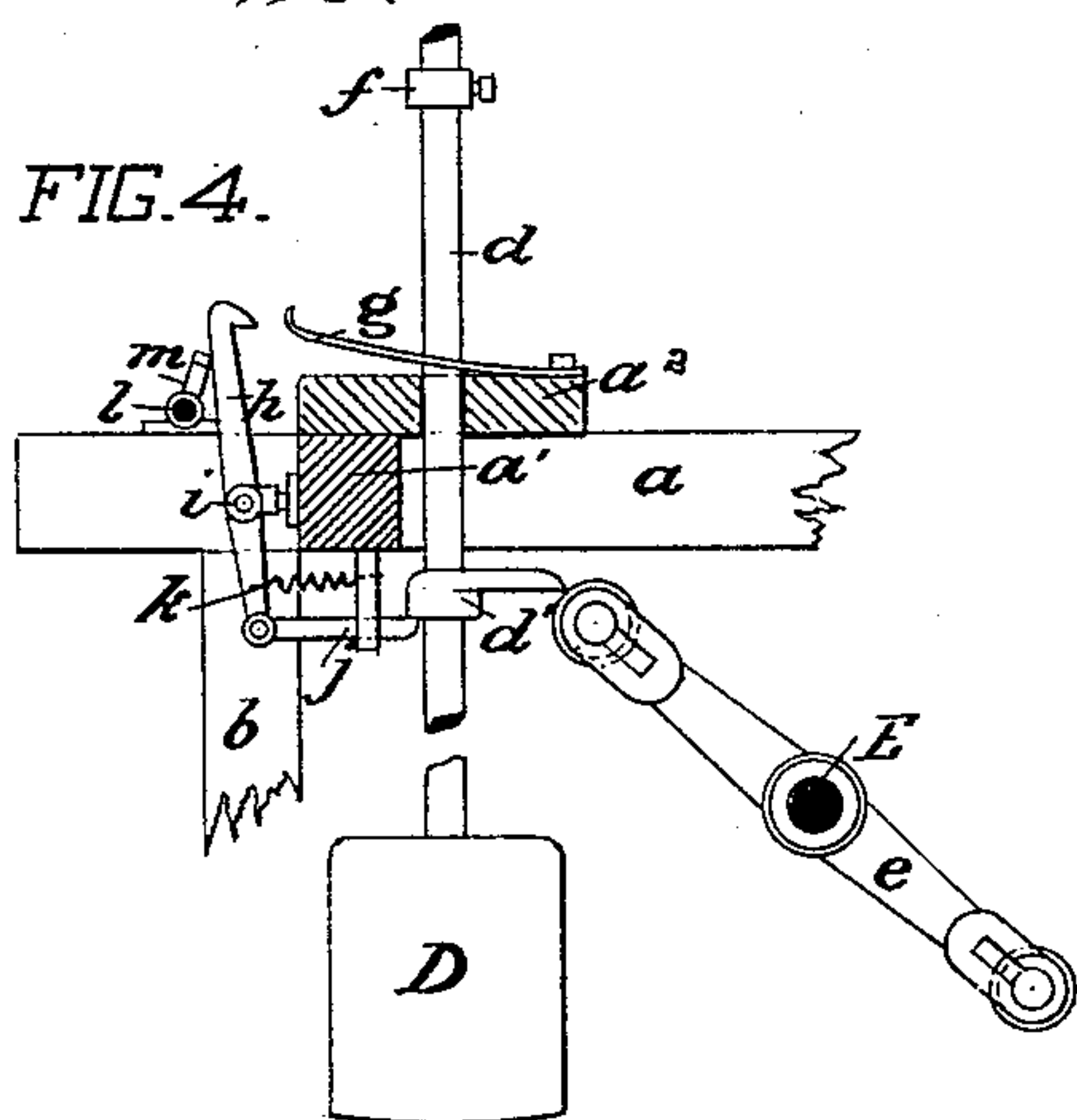
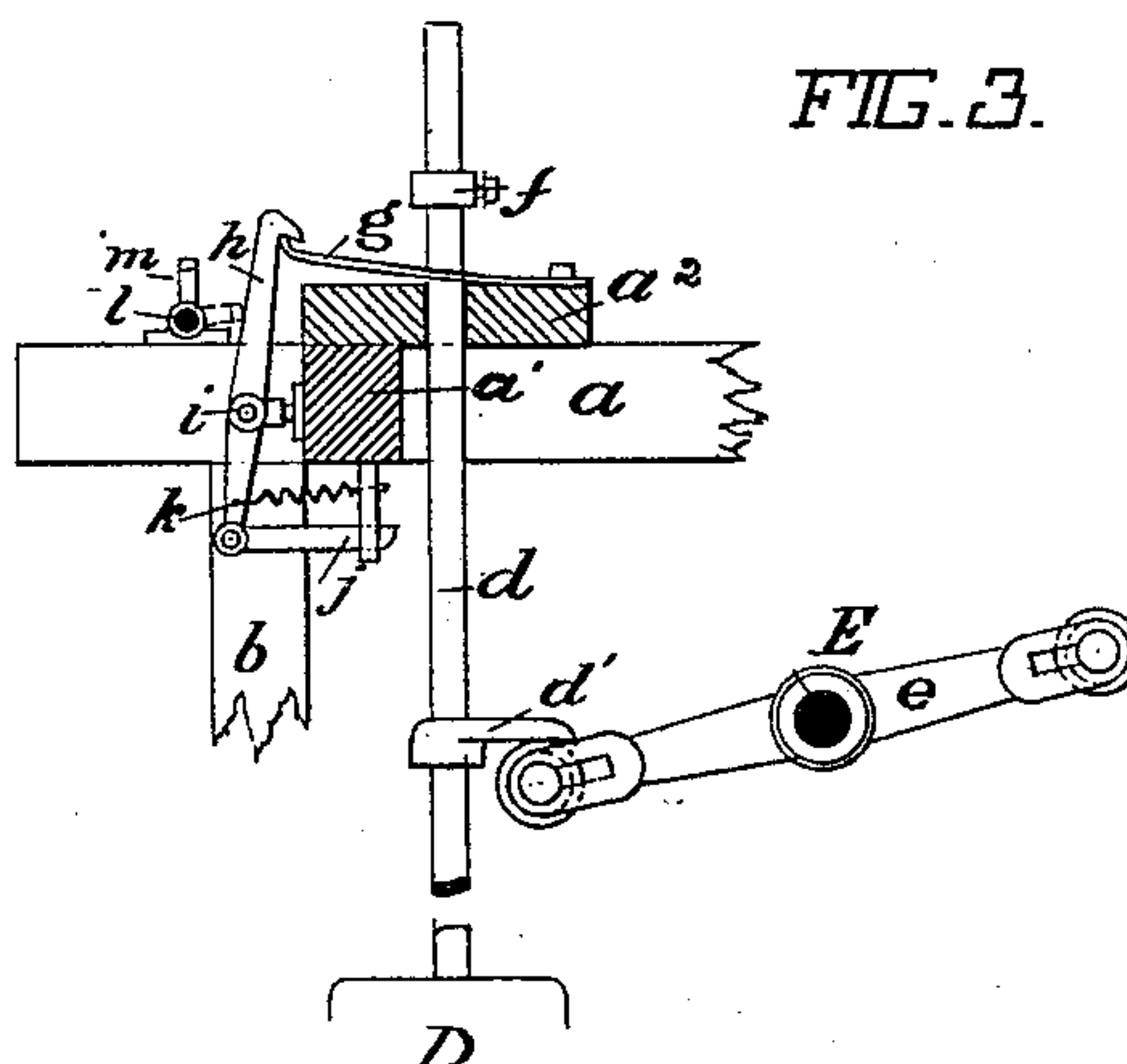


FIG. 4.



*FIG. 3.*



WITNESSES:

Chs Egan.  
Louis Kubler.

INVENTOR:

John G. Schmidt  
per Theodore Berger  
Attorney



# UNITED STATES PATENT OFFICE.

JOHN G. SCHMIDT, OF PHILADELPHIA, PENNSYLVANIA.

## RAMMER FOR STREET-PAVING.

SPECIFICATION forming part of Letters Patent No. 350,700, dated October 12, 1886.

Application filed October 15, 1884. Serial No. 145,618. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN G. SCHMIDT, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain  
5 new and useful Improvements in Rammers for Street-Paving, of which improvements the following is a specification.

My invention relates to that class of rammers for street-paving in which a series of  
10 weights or stamps are actuated by certain novel mechanical means for the compact and uniform ramming of cobble-stones or blocks laid between car-tracks or other roadways.

The objects of my invention are, first, to provide for the more efficient and expeditious  
15 ramming of the cobble-stones or Belgian blocks laid between car-tracks or other roadways, whereby greater solidity and uniformity of surface of street-paving are obtained, and, second, to provide certain mechanical means  
20 whereby any desired amount of curvity may be given to the street or roadway; and it consists in the peculiar construction and arrangement of the parts, hereinafter more particularly described.

To more clearly understand my invention, reference will be had to the accompanying drawings, forming part hereof, in which—

Figure 1 is an end elevation of my improved  
30 ramming-machine. Fig. 2 is a vertical longitudinal section of the machine on the line  $xy$  of Fig. 1. Fig. 3 is an enlarged detached view of one of the rammers, showing the operative parts thereof. Fig. 4 is a similar view  
35 of the same rammer in the automatically-locked and inoperative position it assumes when the portion of the surface acted upon by it has been rammed down to the required line or depth.

40 Similar letters of reference indicate like parts throughout the several views.

The frame-work of the machine is represented as a wooden structure, which consists of four longitudinal pieces,  $a a$ , four cross-pieces,  
45  $a' a'$ , and four uprights,  $b b$ . To the under side of the frame-work suitable journals,  $A A$ , are secured for the reception of the axles  $B B$ , to which are attached the flanged wheels  $C C$ , fitting the gage of the rails, the whole forming a car or truck which may be easily moved

along the car-tracks or lifted therefrom in any convenient manner.

$D D D$  are the rammers, fitted with working-rods  $d d d$ . There are seven of these rammers shown in Fig. 1 of the drawings arranged transversely in a row, with their faces  
55 covering the surface from rail to rail; but of course it will be understood that the number of rammers may be varied at will.

Two additional cross-pieces,  $a^2$  and  $a^3$ , are  
60 provided upon the main frame for guiding the rods  $d d d$ . The lifting of these rods and rammers is effected by means of a series of revolving double-armed lifters,  $c c c$ , so arranged upon the shaft  $E$  as to cause the actuation of  
65 the rammers, by means of the tappets  $d' d' d'$ , in rotation, each rammer striking two blows for every entire revolution of the driving-shaft  $E$ , which has its bearing in the main frame at  $e' e'$ , as shown in Fig. 1, and carries  
70 a fly-wheel,  $E'$ , at each end. Both of these wheels are fitted with suitable crank-handles,  $e^2 e^2$ , for revolving the shaft by steam or other suitable motor-power when convenient.

The mechanism by which the desired amount  
75 of curvity, uniformity, and solidity in the pavement between the car-tracks is accomplished, which, however, constitutes the most important feature of my present invention, is constructed, by preference, in the following  
80 manner: Each rammer-rod  $d$ , above the guide-piece  $a^2$ , Figs. 3 and 4, is provided with an adjustable collar,  $f$ . This collar  $f$  strikes and depresses a spring,  $g$ , when (after a series of blows upon the surface under operation) the  
85 face of the rammer has descended to the limit of adjustment, or, in other words, when the respective portions of the pavement have been rammed down to the exact line or depth desired. The depression of the spring  $g$  liberates, as is clearly shown in Figs. 3 and 4, a  
90 double-armed lever,  $h$ , vibrating in a fulcrum,  $i$ , secured to the frame-piece  $d'$ . This lever  $h$  actuates at its lower extremity a sliding stop,  $j$ , above which a spiral spring,  $k$ , is so applied  
95 as to move the lever  $h$  into the position shown in Fig. 4 whenever its hooked upper end is liberated from the spring  $g$ , as above described.

The operation of the mechanism is as follows: 100



lows: When the parts *g*, *h*, and *j* are in the  
 position shown in Fig. 3—that is, until the  
 surface undergoing the ramming operation  
 reaches the desired line of curvity or amount  
 5 of depression—the rammer-rod *d* meets with  
 no obstruction to its vertical movement, the  
 tappet *d'* passes clear of the stop *j* near the  
 upper extent of its stroke, and as soon, how-  
 ever, as the limit of depression of the surface  
 10 under action is reached, and the collar *f* strikes  
 the spring *g*, the latter is slightly depressed,  
 thereby liberating the lever *h*. This lever *h*,  
 through the action of the spiral spring *k*, re-  
 leases it from the spring *g*, as shown in Fig.  
 15 4, and thereby causing the inner end of the  
 sliding stop *j* to move in the direction of the  
 rod *d*, and its tappet *d'* at the next movement  
 of the rammer to be locked in its highest po-  
 sition, thereby suspending this rammer and  
 20 keeping it inactive until the respective ram-  
 mers in the series have performed their work,  
 when the truck or car is moved along over a  
 new space or field, on which its ramming ma-  
 chinery commences anew in a similar manner  
 25 as above described. By a partial revolution  
 of a light rock-shaft, *l*, extending across the  
 frame in front of levers *h h*, the entire series  
 of levers is pressed inward by a correspond-  
 ing number of cams, *m m*, which cause the  
 30 series of levers *h h* to be brought simultane-  
 ously into the position shown in Fig. 3, in  
 which position they are held during the next  
 operation by the springs *g g* until again suc-  
 cessively liberated by the respective collars *f f*.  
 35 It will be readily understood that the posi-

tion of each collar *f* in the series relative to  
 its hammer-face determines the limit of the  
 downward movement of each rammer, and  
 hence becomes the easy and reliable means for  
 adjusting the series of rammers in the ma- 40  
 chine for any amount of curvature to be given  
 to the surface of the pavement, which may be  
 more or less rounded between the rails or  
 straight or even concave, if so desired.

I am aware that ramming-machines have 45  
 been constructed with a series of vertically-  
 moving rammers actuated by lifters and tap-  
 pets, and hence I do not wish to be understood  
 as claiming, broadly, such a combination; but

What I do claim as new, and desire to secure 50  
 by Letters Patent, is—

1. In a ramming-machine for street-paving,  
 the combination, with the rammer D, provid-  
 ed with rod *d*, having adjustable collar *f* and  
 tappet *d'* thereon, of the shaft E and double- 55  
 arm lifters *e*, so arranged that each rammer  
 delivers two blows each revolution of the shaft  
 E, substantially as described.

2. In a ramming-machine for street-paving,  
 the combination, with the rammer D, provid- 60  
 ed with working-rod *d*, having adjustable col-  
 lar *f* and tappet *d'* thereon, of the lever *h*, ful-  
 crum *i*, rock-shaft *l*, cam *m*, springs *g k*, and  
 sliding stop *j*, all arranged substantially as  
 and for the purposes described.

JOHN G. SCHMIDT.

Witnesses:

OTIS EGAN,  
 LOUIS KUEBLER.