

(No Model.)

2 Sheets—Sheet 1.

H. W. LASTER.
STEAM ROAD ROLLER.

No. 486,481.

Patented Nov. 22, 1892.

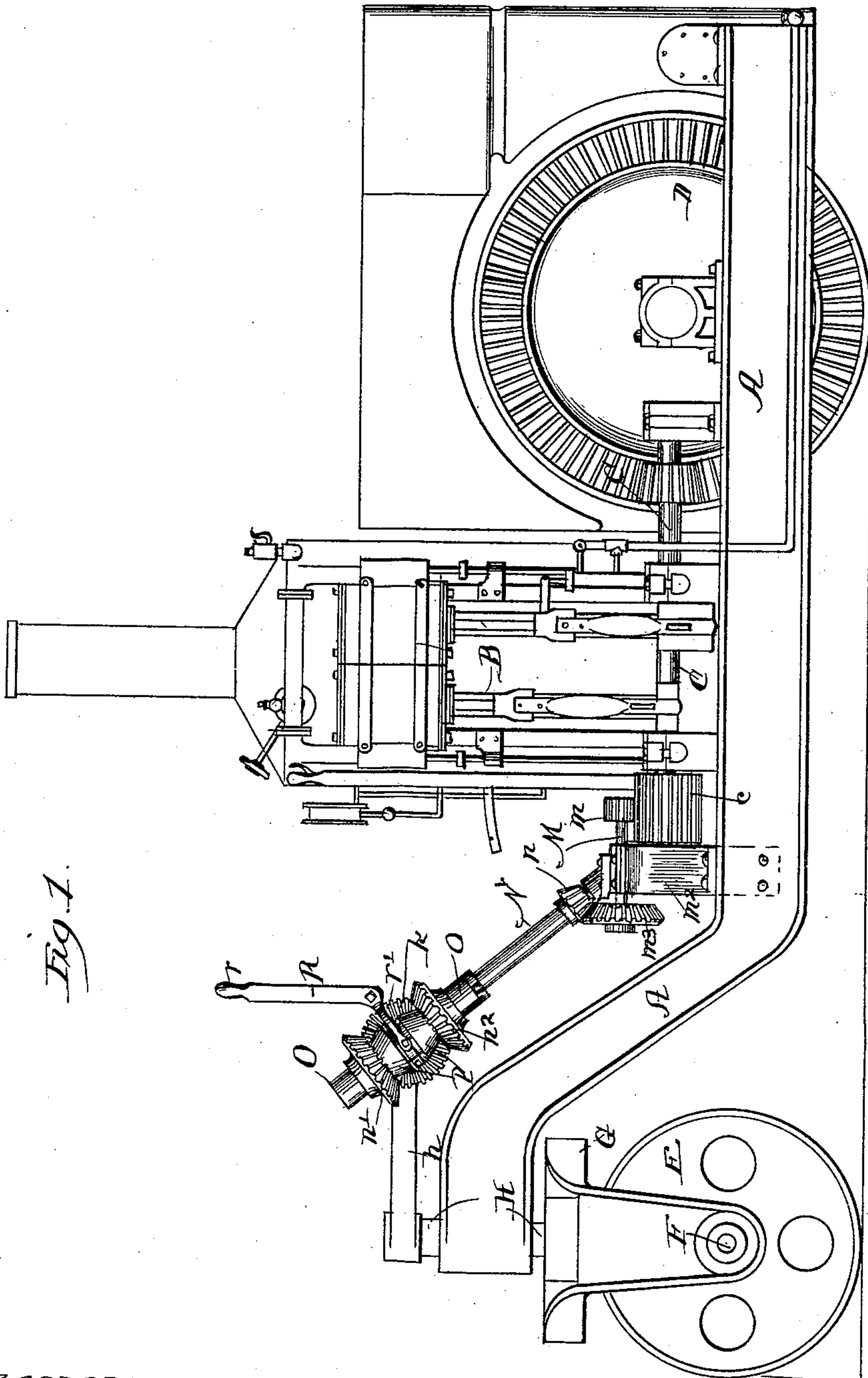


Fig. 1.

Witnesses:

Chas. O. Harvey
A. J. Ebbesen

Inventor:

Harry W. Laster
by Miles, Green & Bitter
attys

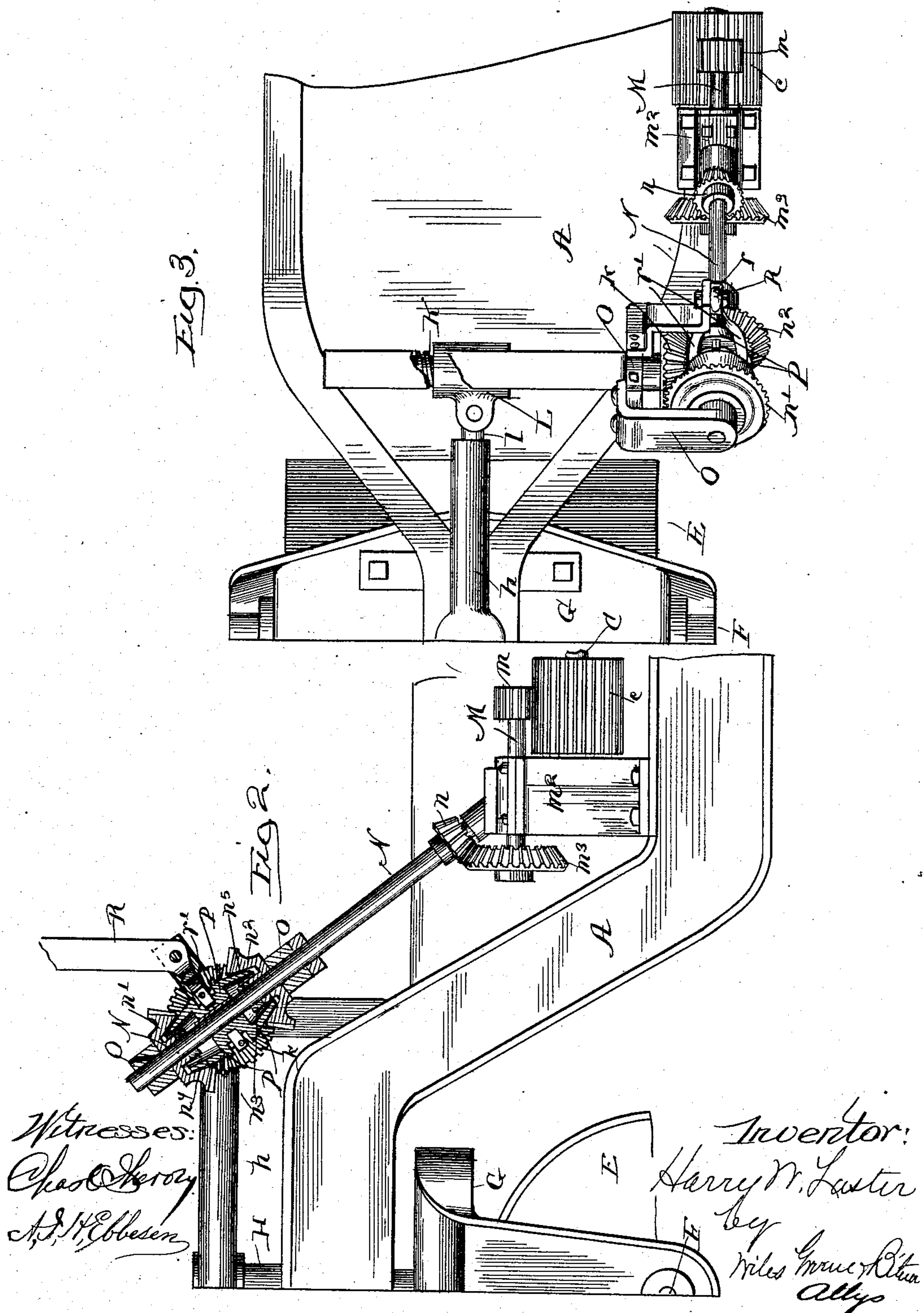
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

HARRY W. LASTER, OF CHICAGO, ILLINOIS.

STEAM ROAD-ROLLER.

SPECIFICATION forming part of Letters Patent No. 486,481, dated November 22, 1892.

Application filed August 20, 1892. Serial No. 443,563. (No model.)

To all whom it may concern:

Be it known that I, HARRY W. LASTER, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Steam Road-Rollers, of which the following is a specification.

My invention relates to certain improvements in steam-rollers, relating more particularly to a steering apparatus by means of which said rollers can be governed with but little effort on the part of the operator, the device being such that the work of turning the steering-wheels of the roller is done by the driving mechanism or power of the machine, the work of the operator being merely to throw such driving mechanism into engagement with the steering apparatus.

The present invention is in the nature of an improvement upon a prior invention for which I have heretofore made application for Letters Patent, said application having been filed on May 18, 1892, and designated by the Serial No. 433,458.

In the drawings presented herewith, Figure 1 is a side view of a steam-roller showing my improvements; Fig. 2, a portion of said side view, enlarged and partly in section; and Fig. 3, a plan of the portion of the roller shown in Fig. 2.

In these figures the frame of the roller is marked A, the driving mechanism B, (here shown as an ordinary steam-engine,) the main driving-shaft C, and traction-wheels D and the steering-wheels E. The latter are journaled by means of an axle F in an overhanging yoke or bolster G, said bolster being provided with an upright pin or king-bolt H, provided with a horizontal arm *h*. This arm *h* has a rod *l* telescoped into it, and said rod is pivoted to a nut L, running upon a screw K. The roller is steered by turning the screw K and thereby swinging the rollers E into whatever position may be desired. Returning to the main driving-shaft C, said shaft is provided at *c* with a spur-gear in mesh with a pinion *m* upon a shaft M, journaled in brackets *m*², secured to the frame of the machine. At the opposite end of this shaft a bevel-gear *m*³ is secured thereto in mesh

with a second gear *n* upon an oblique shaft N, suitably supported from the frame and having at its upper end two loose miter-gears *n'* *n*², held between the bearings O and collars *n*³ upon the shaft. Between these collars is mounted a double male friction-cone P, feathered to the shaft N and arranged to engage with internal-coned surfaces *n*⁴ *n*⁵, cut in the miter-gears *n'* *n*², respectively. This friction-cone is adapted to slide back and forth upon the shaft and is controlled by means of a pivoted lever R, provided with a handle *r* at one end and a fork *r'* at the other, partially encircling the friction-cone and allowing the latter to turn within it. The miters *n'* *n*² are both in gear with a miter *k* upon the end of the screw K.

The operation of the device is as follows: The friction-cone P is normally at some point midway between the miter-gears *n'* *n*², but not in engagement with either. When it is desired to turn the wheels E to change the course of the machine, the friction-cone is thrown into engagement with one of the miter-gears *n'* *n*². It will be seen that these two miter-gears *n'* *n*² tend when in engagement with the shaft N to turn the screw K in opposite directions. When one of them is so engaged, the other runs loose upon the shaft, interfering in no degree with the operation of the one in engagement.

I claim as new and desire to secure by Letters Patent—

1. The combination, with a steam-roller having the driving-shaft C and the steering-screw K, of a shaft N, geared to the driving-shaft and bearing two loose gears *n'* *n*², a gear *k*, connected with the screw K and engaging with both of the gears *n'* *n*², and a friction device adapted to engage either of the gears *n'* *n*² with the shaft N, substantially as described.

2. The combination, with a steam-roller having the shaft C and steering-screw K, of the shaft N, connected with the shaft C and driven thereby, two loose gears *n'* *n*² upon the shaft N, and having internal-coned surfaces upon their adjacent faces, a double male friction-cone P, feathered to the shaft N between said gears and provided with means for engaging it alternately with their internal-coned sur-

faces, and a gear k , engaging with both of the
gears n' n^2 and connected with the screw K,
substantially as described.

3. The combination, with a steam-roller hav-
5 ing the driving-shaft C and the screw K, of
the gear c , the pinion m , the shaft M, the gear
 m^3 , the gear n , the shaft N, the gears n' n^2 ,

the cone P, and the gear k , substantially as
described.

HARRY W. LASTER.

Witnesses:

CHAS. O. SHERVEY,

A. I. H. EBBESEN.