

No. 822,752.

PATENTED JUNE 5, 1906.

F. B. MOORE.  
GROUND ROLLER.  
APPLICATION FILED JAN. 23, 1904.

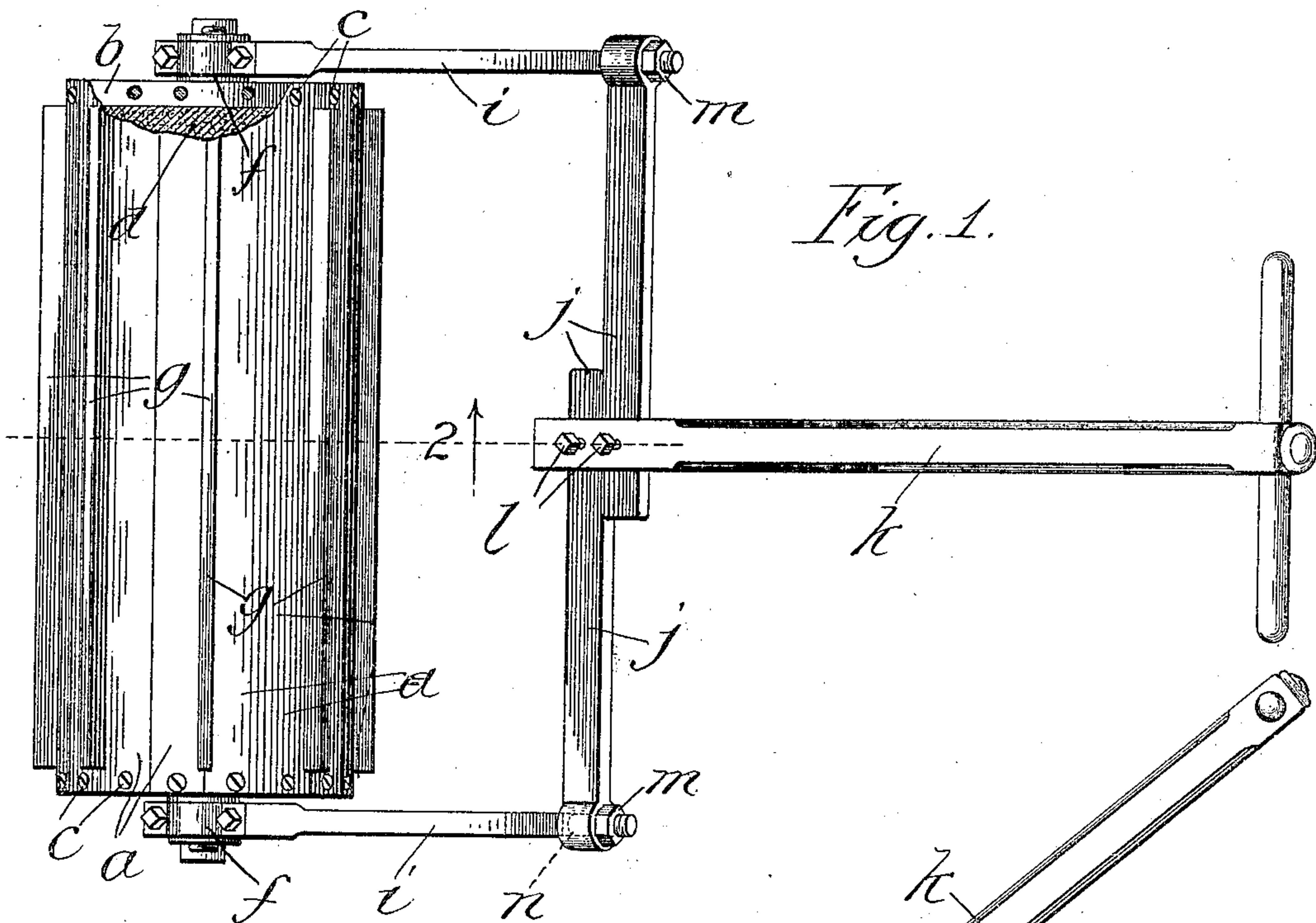
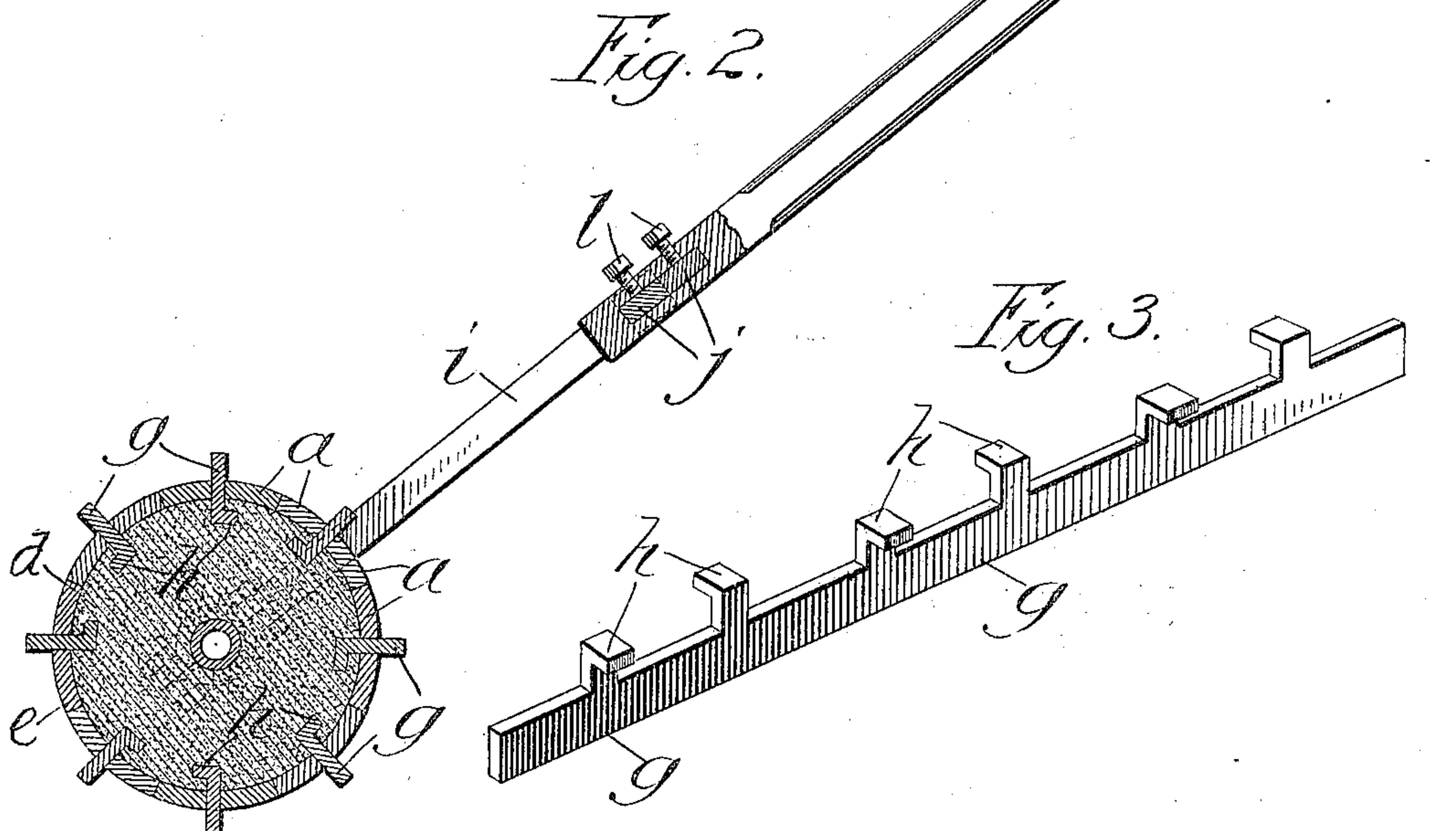


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## GROUND-ROLLER.

No. 822,752.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed January 23, 1904. Serial No. 190,296.

*To all whom it may concern:*

Be it known that I, FRANCIS B. MOORE, a citizen of the United States, residing at Metamora, in the county of Woodford and State of Illinois, have invented certain new and useful Improvements in Ground-Rollers, of which the following is a specification.

My invention relates to ground-rollers having a composite cylindrical portion formed partly of cement or light material.

The principal object of the invention is to provide a simple, economical, and efficient ground-roller.

Other and further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a roller constructed in accordance with my improvements; Fig. 2, a sectional elevation taken on line 2 of Fig. 1, and Fig. 3 a perspective view of one of the flanges.

In constructing a ground-roller in accordance with my improvements I provide an outer shell portion *a*, which may be formed of wood. For the sake of economy I prefer to make the shell portion of wooden cleats attached to the circular end portions *b* by means of screws *c* or in any ordinary and well-known manner.

In order to provide the desired weight to render the roller efficient in operation, as when it is used for the purpose of rolling the grass upon a lawn or for rolling plowed or spaded ground, and in order to enable such weight to be provided without adding materially to the expense of the roller, a central ballast portion *d* is provided, which is formed, preferably, of concrete, although I may employ burnt clay, clay in its natural state, sand, pitch, asphalt, or other earthy or mineral substance sufficiently heavy to provide the necessary weight and relatively cheaper than the outer shell portion of the roller. I prefer to make this central cylindrical portion of the roll of concrete, and when it is to be thus made one of the end portions of the outer shell is closed and the other end portion removed, so that the shell forms a mold in which the cement or concrete is poured while in a plastic condition and allowed to harden in such mold, a central shaft *e*, of metal, being first mounted at the axial center of the shell, so as to form the journals *f* at

each end of such shaft, adapted to be mounted in a suitable frame for operating the roller, as hereinafter more specifically described. The open end of the shell may then be closed. When the cement has been allowed to harden in the outer shell, the shaft is held firmly in position, and a concrete roller is thus formed which may be removed from the outer shell and used independently thereof, if desired. I prefer, however, to employ the outer shell for the purpose of strengthening the roller in combination with the inner core portion, which, being of a heavy and relatively cheaper material, forms a suitable ballast. Although I prefer to make the ballast portion of concrete, it will be understood that such ballast portion or any desired portion of the roller may be made of clay or of any composition having as its principal ingredient an earthy or mineral substance of the necessary weight or which is less expensive than the material of which the shell or other strengthening portion of the roll is formed.

A plurality of flanges *g*, provided with lugs *h* upon one side thereof and at an angle thereto, may be mounted so as to project outward beyond the outer cylindrical surface of the roller. As shown in Fig. 3, the lugs *h* are turned alternately in opposite directions, the inner portions of such flanges being embedded, preferably, in the concrete, the lugs assisting to firmly hold them in position. These flanges may extend out through suitable perforations in the outer shell and project the desired distance beyond the surface thereof. I have found in practice that these flanges when used with a roller of the desired weight make it practical to use the roller in lieu of a lawn-mower for the purpose of keeping the grass of uniform length upon a lawn and preventing it from reaching an undesirable length. The flanges also assist in breaking clods when used upon plowed ground and reducing the unevenness of any ground upon which the roller may be employed.

The roller above described is journaled in a suitable frame comprising end frame portions *i*, which are movable with relation to each other for the purpose of permitting the roller to be readily mounted in such frame and also for the further purpose of permitting the frame to be employed in connection with either one of a number of rollers of different lengths.

In order to provide for the adjustment of



the end frame portions, so as to permit the journal portions of the roller to be mounted in operative position, such end frames are mounted in a side frame comprising longitudinally-movable portions *j*, each of which is  
5 slidably mounted in a suitable opening in a tongue or handle *k*, suitable set-screws *l* being mounted in threaded engagement with such tongue or handle and extending into the  
10 opening in which the relatively movable portions of the side frame are slidably mounted. The end frame portions are connected to the side frame portions by being extended through suitable openings in the latter, being  
15 held in place by means of threaded nuts *m* in threaded engagement with the end frames and by suitable shoulders *n*, which engage the side frames and assist in holding such parts in rigid relation to each other. By  
20 this arrangement it will be readily appreciated by those skilled in the art that a roller is provided which will perform all of the functions of a more expensive roller—such as one, for instance, formed of iron—and that the  
25 desired weight may be obtained for a roller of any desired size without materially adding to the cost of the same. It will also be seen that while the roller may be constructed very economically and without requiring expensive skilled labor in its construction and  
30 while it is formed of very inexpensive material it is well adapted to perform the functions of such roller efficiently, and the material of which it is constructed is also well

adapted to efficiently hold the projecting 35 flanges firmly in position.

I claim—

1. In a machine of the class described, the combination of a roller having a substantially cylindrical portion formed of concrete, 40 and a plurality of strips embedded in such concrete portion and projecting outward beyond the surface thereof forming flanges, substantially as described.

2. A composite roller comprising a cylindrical concrete body portion, and a series of 45 flanges having angular lugs embedded therein said flanges projecting beyond the body portion.

3. A composite roller comprising a cylindrical concrete portion, and a series of flanges 50 having lugs embedded therein the lugs being bent alternately in opposite directions and the flanges projecting beyond the body portion. 55

4. In a machine of the class described, the combination of a roller having a substantially cylindrical portion formed of concrete, a plurality of metallic strips embedded in and extending longitudinally of such concrete 60 portion projecting outward beyond the peripheral surface thereof forming flanges, and a frame in which such roller is rotatably mounted.

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