

M. F. VOM HOFF.
TRANSPORTING MECHANISM.
APPLICATION FILED NOV. 11, 1909.

993,684.

Patented May 30, 1911.

Fig. 1.

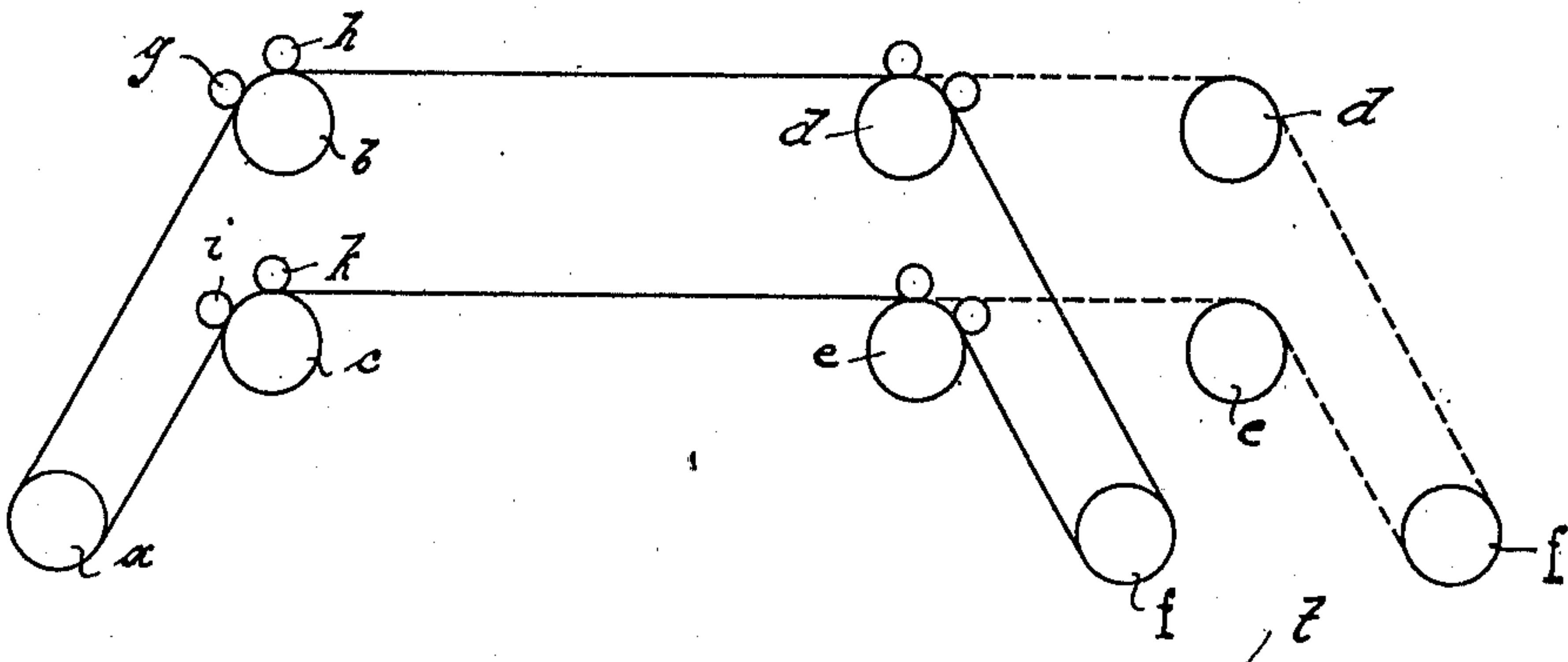


Fig. 2.

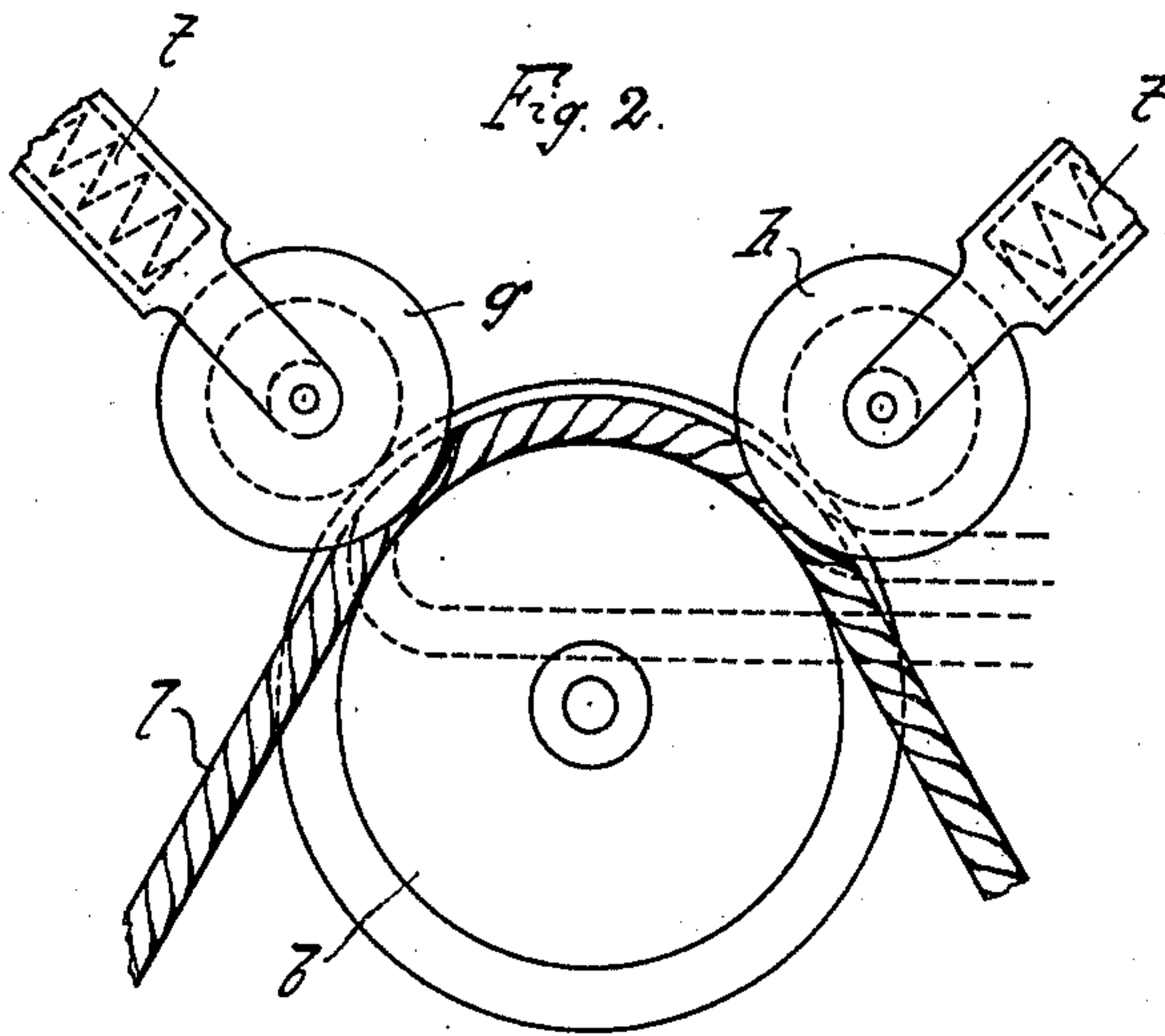


Fig. 3.

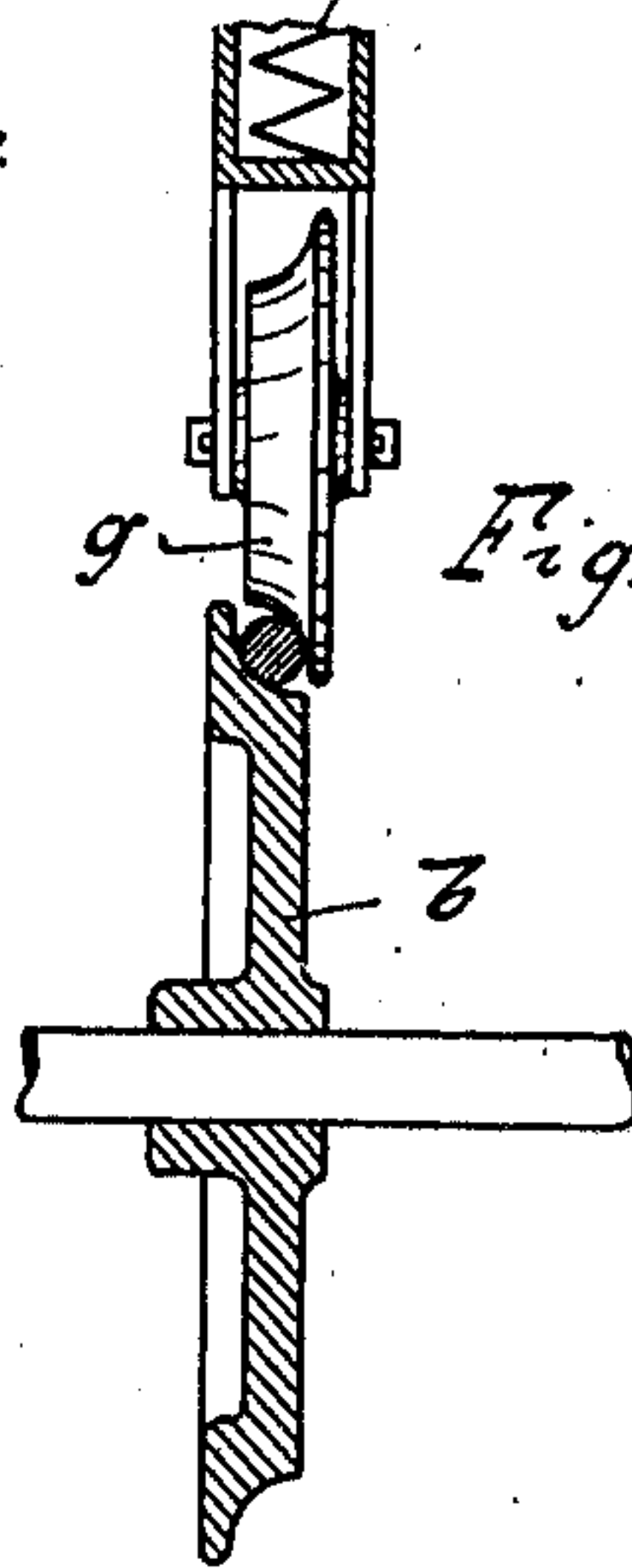
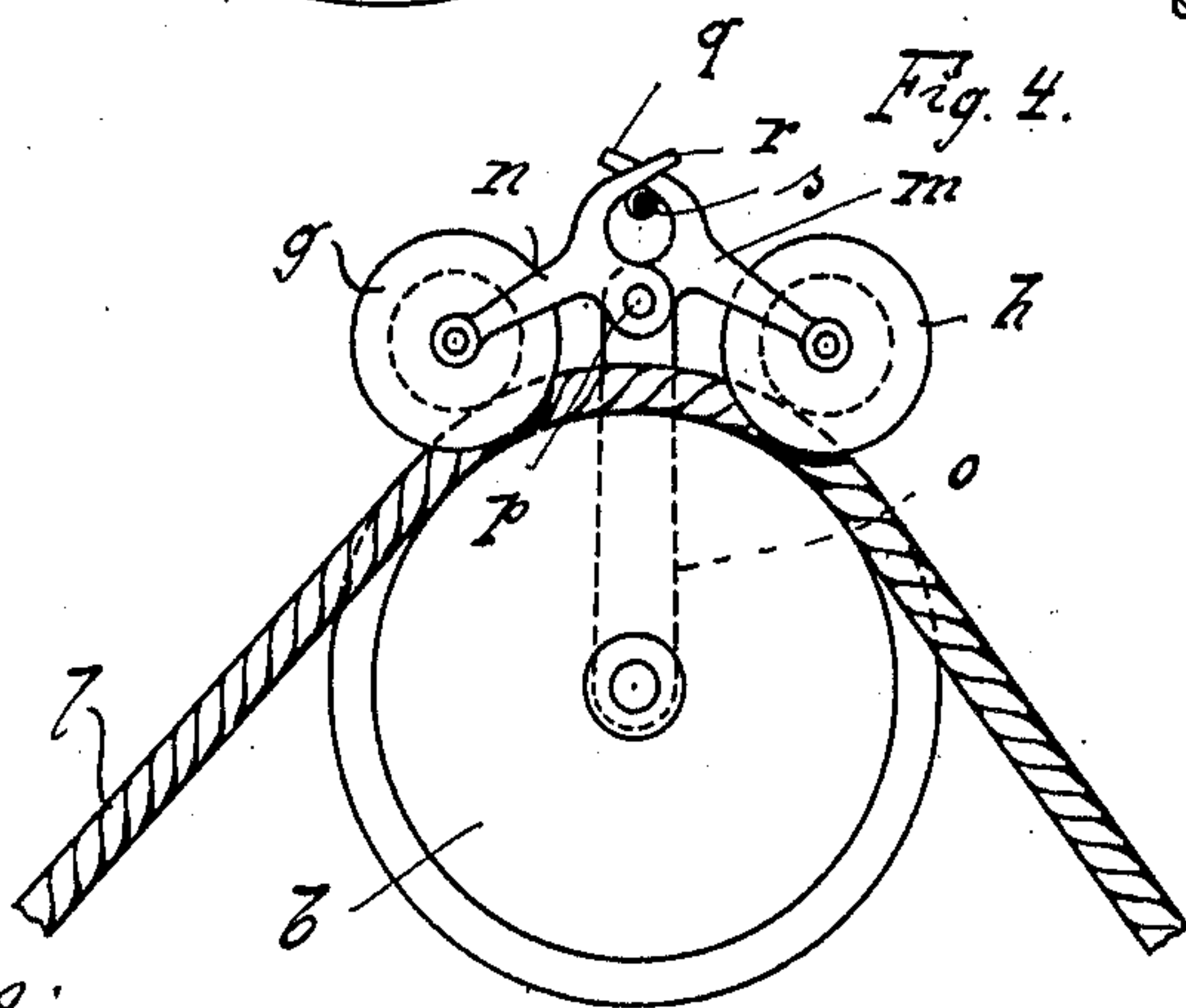


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TRANSPORTING MECHANISM.

993,684.

Specification of Letters Patent. Patented May 30, 1911.

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To all whom it may concern:

Be it known that I, MAX FRIEDRICH VOM HOFF, a subject of the German Emperor, and a resident of Frankfort-on-the-Main, Germany, have invented certain new and useful Improvements in or Relating to Transporting Mechanism, of which the following is a specification.

The present invention relates to improvements in endless cable transporting apparatus such as is commonly employed for loading vessels with coal and particularly to the manner of supporting and guiding such cables. In apparatus of this character it is customary to provide the supporting rolls for the cable with guards, generally in the form of rollers, for retaining the cable in proper engagement with the supporting wheels or rollers over which it travels and such apparatus especially when used for coal-

ing vessels at sea is commonly provided with means whereby the cable can be disconnected or thrown off from a driving roll when necessary, as for instance if the tow cable connecting the two vessels should break. As commonly constructed, however, the guard rollers have prevented a ready disengagement of the cable from the supporting wheels with which they cooperate.

In the accompanying drawing, Figure 1 is a diagrammatic view of an endless cable transporting mechanism of the character to which the present invention relates; Fig. 2 is an end elevation of a single supporting wheel of such a mechanism and two cooperating guard rollers constructed in accordance with the present invention; Fig. 3 is a sectional view through the construction illustrated in Fig. 2; Fig. 4 illustrates in elevation another embodiment of the invention.

Referring to Fig. 1, it will be seen that the endless cable is guided and supported by two sets of wheels or drums *a*, *b*, *c* and *d*, *e*, *f*, which are commonly supported by the masts or other suitable uprights on two vessels connected by a tow cable designed to prevent undesirable separation of the vessels. Cooperating with the wheels or drums *b*, *c*, *d* and *e*, are guard wheels or rollers and as above noted, such a mechanism is commonly provided with means whereby in event of breakage of the tow cable the drum or wheel *a*, for example, may be rocked to

disengage the cable therefrom. However, if the guard wheels cooperating with the supporting wheels or drums *d*, *e*, for example, are such that the cable is not permitted to readily slip from said supporting wheels, it will be seen that the distance between the two sets of rolls *b*, *c*, and *d*, *e*, will be increased, the rolls *d*, *e*, and *f*, moving into the position indicated in dotted lines as the two vessels move apart.

The particular object of the present invention is to provide guard wheels of such character that when the wheel or drum *a*, for example, is disconnected from the cable, the latter will be permitted to easily slip from the other supporting rolls so that there will be no danger of either the cable being broken or damage done to the masts or other parts of the supporting means of the cable mechanism in event of breakage of a tow cable.

As shown in the drawing, each supporting wheel or drum in accordance with the present invention, is provided with a beveled or concaved periphery in which the cable *l* fits and the guard rollers *g*, *h*, or *i*, *k*, for example, have correspondingly shaped peripheries and normally cooperate with the cable to retain it in proper position upon the supporting wheel. Each of said guard wheels is mounted in such manner that when the cable is disconnected from a driving wheel and tends to slip from the supporting wheel, as indicated in dotted lines in Fig. 2, such guard wheel will be automatically moved by the cable out of operative position. In the form of the invention shown in Figs. 2 and 3, said guard wheels are carried by supports which are radially movable to and from the supporting wheel, being normally held in position to contact with the cable by springs *t*. It will be seen that when slipping the cable the strain or pull exerted thereby upon the inclined surfaces of the guard wheels will cause the latter to move outwardly and thus permit the cable to become disengaged from the supporting wheel without being broken or cut.

In the form of the invention illustrated in Fig 4, the guard wheels are carried by pivotally supported arms *n*, *m*, which, as shown, are fulcrumed upon a common axis *p* on a support *o* carried by the shaft of the supporting wheel *b*. Said pivotal supports *m*,

n , are provided respectively with fingers q , r , which extend over a relatively stationary support or stud s . The surfaces of said fingers in engagement with the said stud s ,
 5 are curved so that each support m , n , may be rocked about the axis p under the strain or force exerted by the cable l when slipping from the supporting wheel. In this form
 10 of the invention, the guard wheels are maintained in operative engagement with the cable and supporting wheel by the pull or weight of the cable acting on the supporting wheel.

From the foregoing description it will be
 15 seen that the present invention provides means by which an endless cable may be automatically slipped from a supporting wheel without danger of injuring or breaking any of the parts.

20 Having thus described my invention what I claim and desire to secure by Letters-Patent, is,

1. The combination with an endless cable and a supporting wheel therefor, of a guard
 25 coöperating with said wheel to retain the cable in engagement therewith, said guard being adapted to be automatically moved from operative relation with the wheel when the cable is shifted to disengage it from the
 30 supporting wheel.

2. The combination with an endless cable and a supporting wheel therefor, of a guard

wheel coöperating with the periphery of said wheel to retain the cable in engagement therewith and adapted to automatically move bodily to and from said supporting wheel, for the purpose described.

3. The combination with an endless cable and a supporting wheel therefor, of a plurality of guard wheels coöperating with the
 40 cable and supporting wheel to retain the cable in engagement with said wheel, said guard wheels being independently movable away from the supporting wheel by the action of the cable when the latter is to be dis-
 45 engaged from the supporting wheel.

4. The combination with an endless cable, of a supporting wheel having a beveled periphery adapted to receive and support the
 50 cable, and a guard wheel having a beveled periphery adapted to coöperate with the cable to retain it in engagement with said supporting wheel, said guard wheel being automatically moved into inoperative position by action of the cable under an excessive strain.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MAX FRIEDRICH VOM HOFF.

Witnesses:

FRANZ HASSLACHER,
 ERWIN DEPPEL.