

No. 762,329.

PATENTED JUNE 14, 1904.

P. MACADAM.

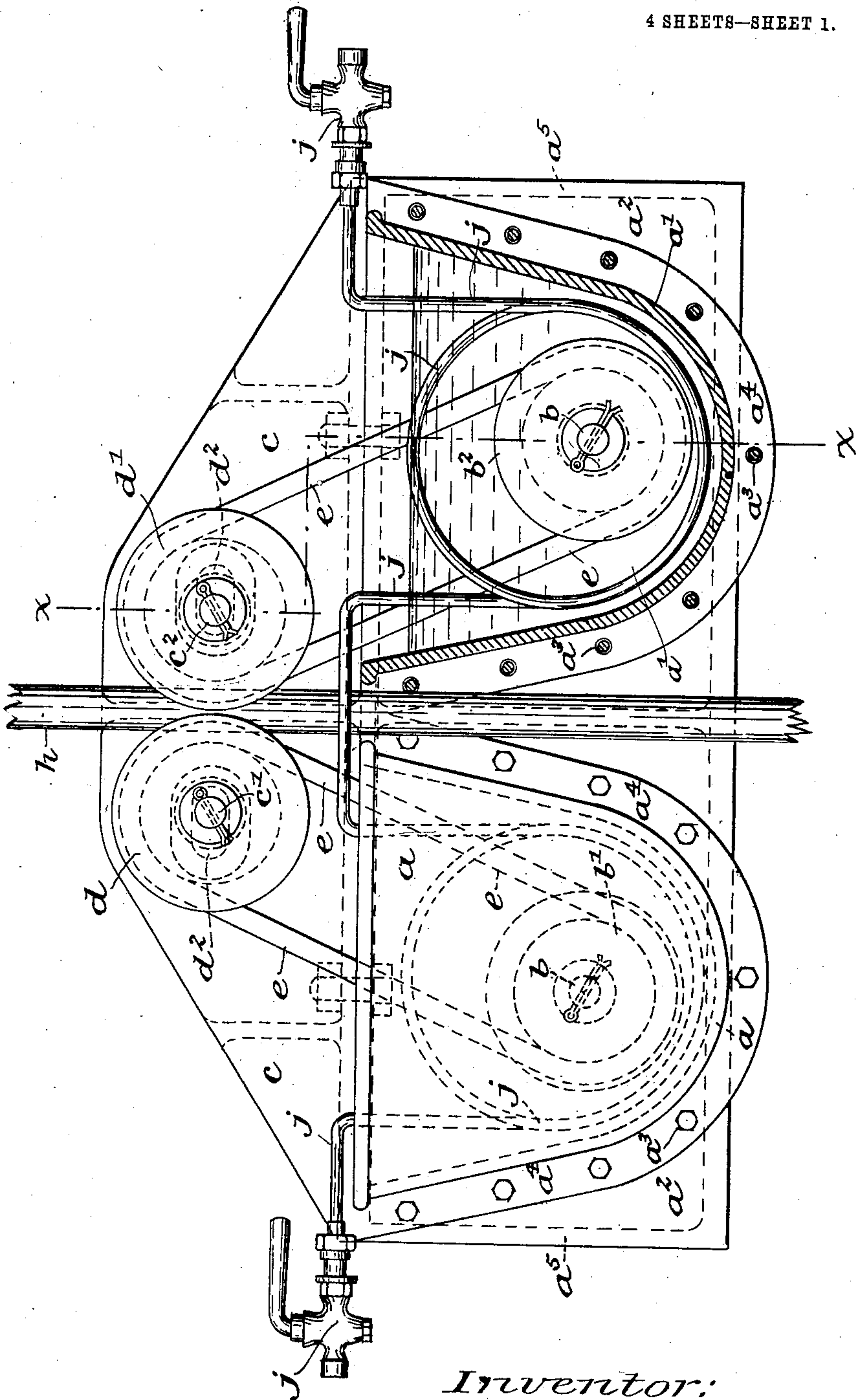
APPARATUS FOR AUTOMATICALLY GREASING HOISTING OR HAULING ROPES.

APPLICATION FILED OCT. 6, 1902.

NO MODEL.

4 SHEETS—SHEET 1.

Fig-1-



Witnesses:

E. B. Bolton

H. M. Kuehn

Inventor:

Peter Macadam

By *Richard R.*

his Attorneys.

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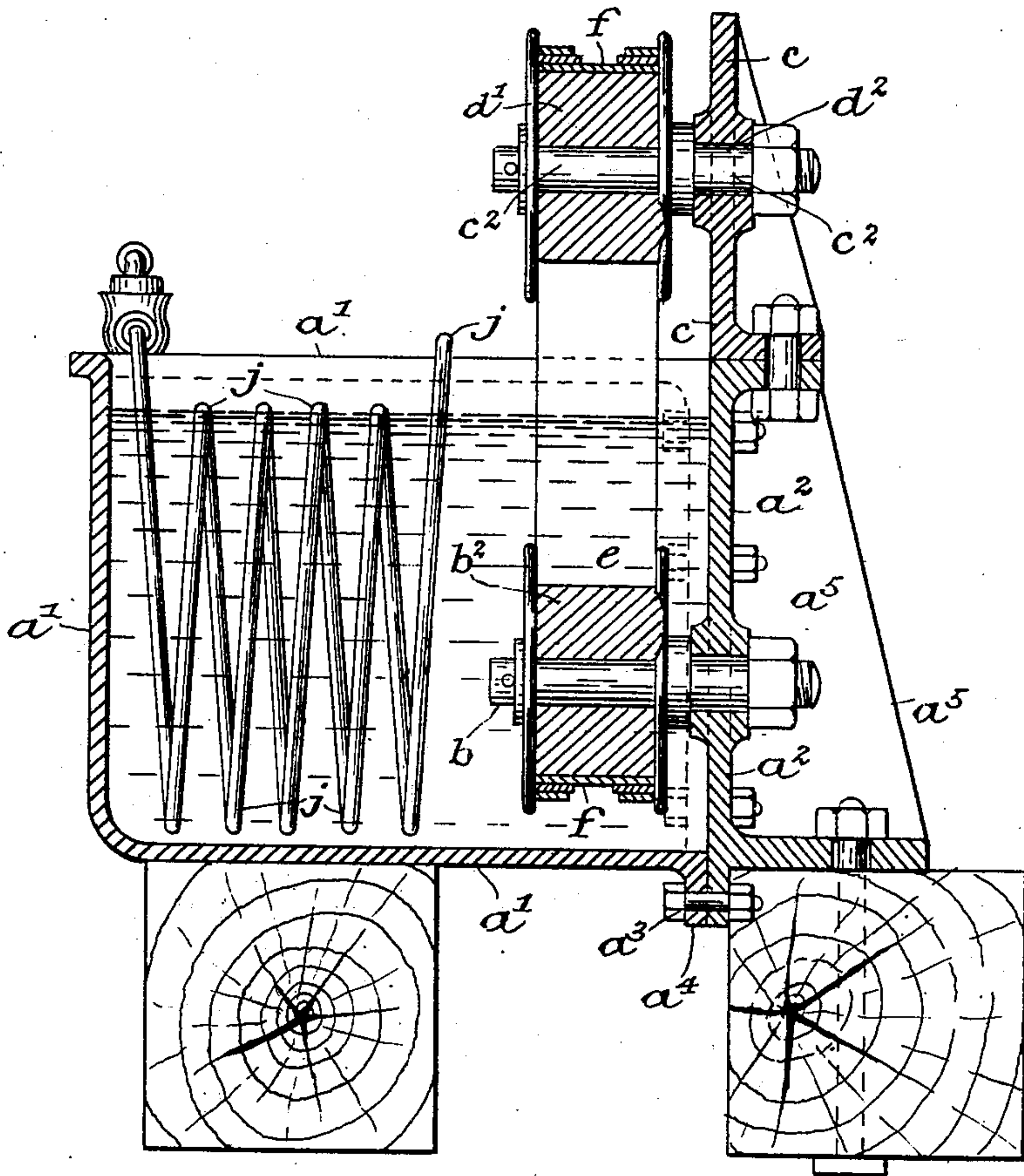
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4 SHEETS—SHEET 2.

Fig. 2.



Witnesses.

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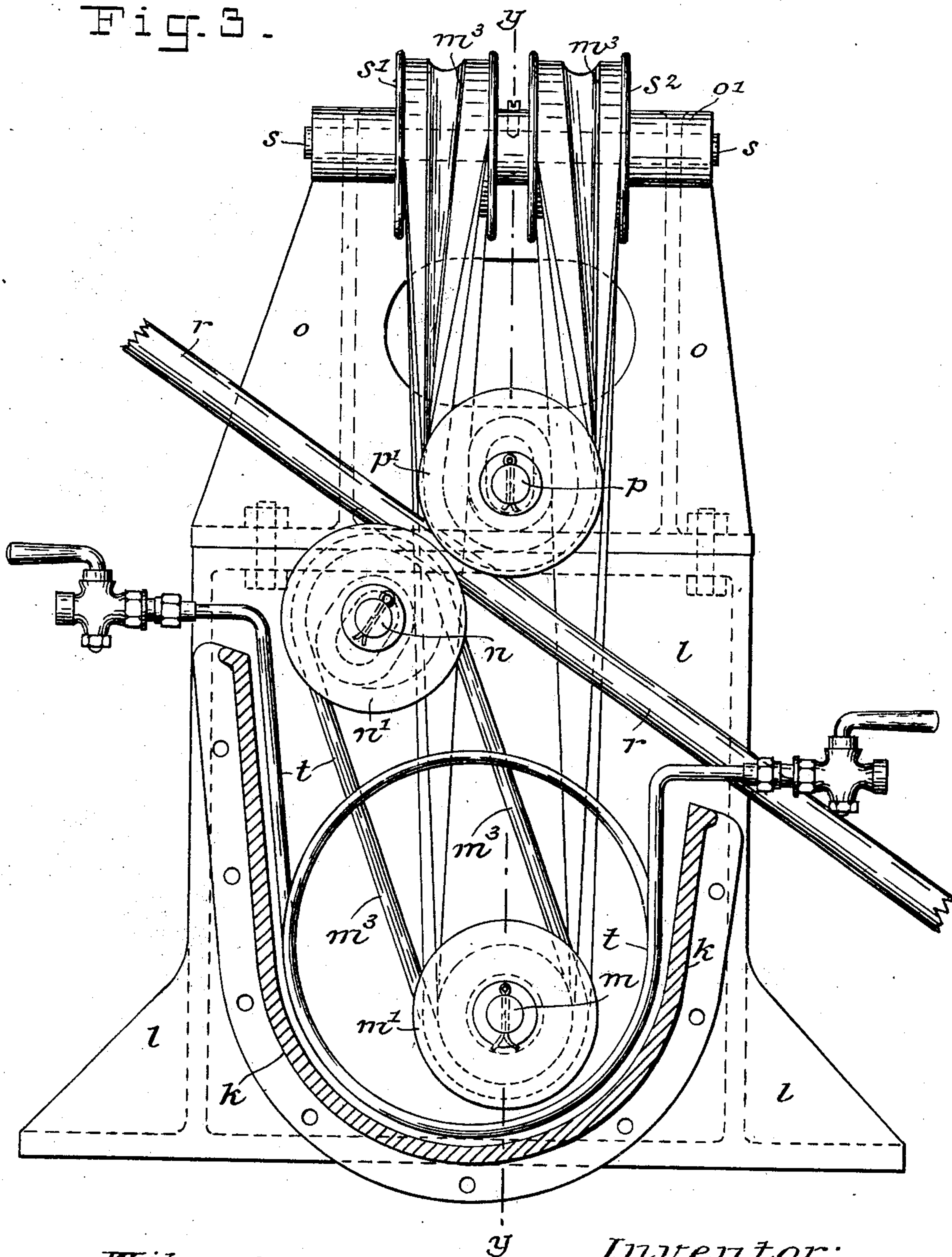
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4 SHEETS—SHEET 3.

Fig. 3.



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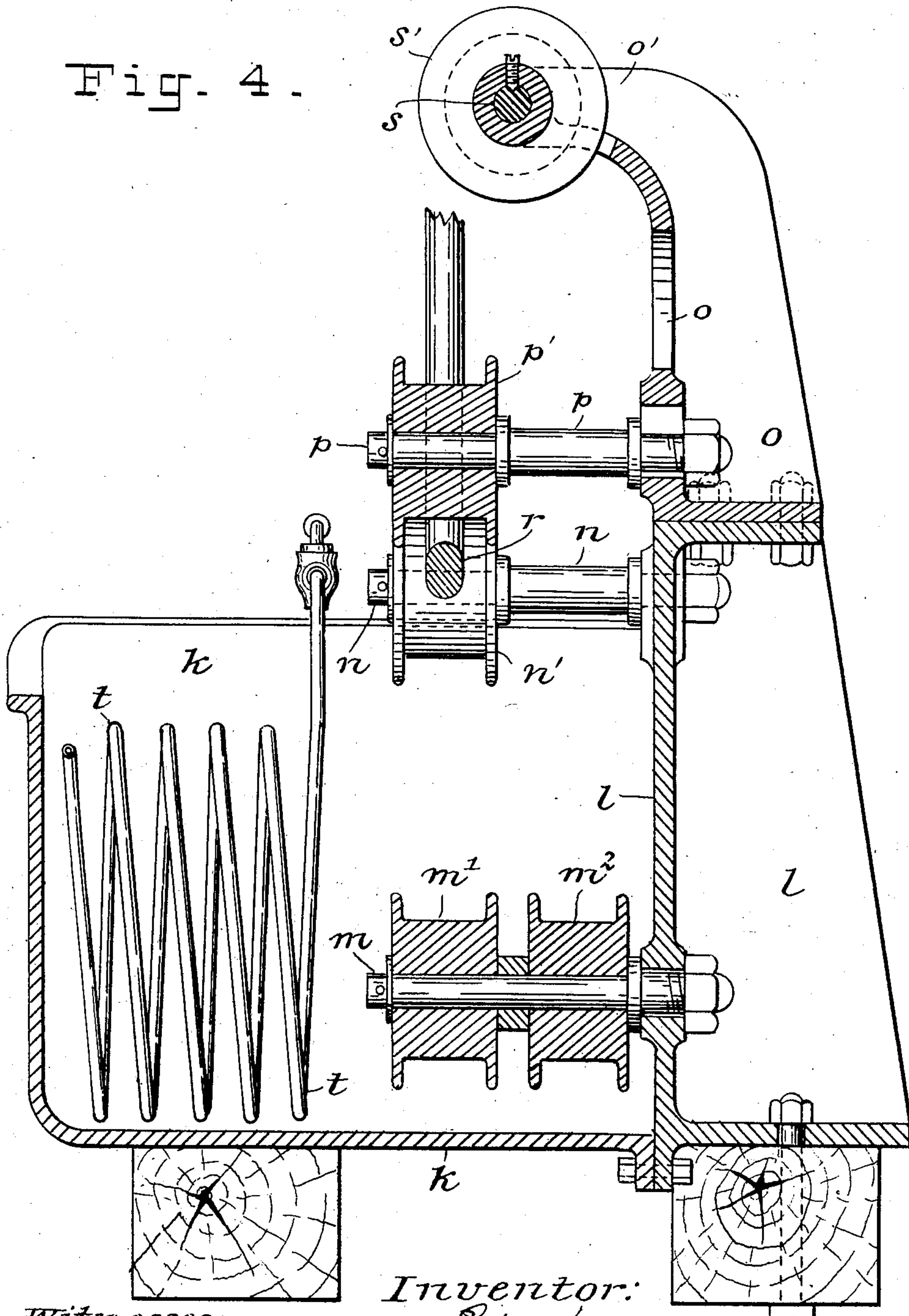
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APPLICATION FILED OCT. 6, 1902.

NO MODEL.

4 SHEETS—SHEET 4.

Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

PETER MACADAM, OF NEAR JOHANNESBURG, TRANSVAAL.

APPARATUS FOR AUTOMATICALLY GREASING HOISTING OR HAULING ROPES.

SPECIFICATION forming part of Letters Patent No. 762,329, dated June 14, 1904.

Application filed October 6, 1902. Serial No. 126,159. (No model.)

To all whom it may concern:

Be it known that I, PETER MACADAM, a subject of the King of Great Britain, residing on the property of the Crown Deep Gold Mining Company, Limited, near Johannesburg, Transvaal, have invented a certain new and useful Improved Apparatus for Automatically Greasing Hoisting or Hauling Ropes, (for which I have applied for Letters Patent in the Transvaal, No. 461, filed July 31, 1902,) of which the following is a specification.

This invention relates to an apparatus or machine primarily designed for automatically greasing the wire hoisting-ropes employed in the shafts of mines. It may be utilized, however, for greasing wire hoisting or hauling ropes employed for mechanical haulage in mines or for other analogous purposes. As now carried out the greasing of these ropes is mostly done by hand, and as a consequence it is a lengthy and laborious operation.

In my improved apparatus the greasing of the rope is effected in an efficient and expeditious manner by the friction of the wire rope passing through two belts or bands which work in a grease tank or tanks at their lower ends. By this means the apparatus is automatically driven or operated by the rope in its passage through the machine.

The apparatus may be used to grease either vertical or inclined ropes of round or flat section.

In addition to effecting a very great saving of time over hand-greasing I also effect a great saving in the quantity of grease used, as I maintain it in a hot and liquid state during the operation.

As the greasing can be accomplished so expeditiously, it will permit the operation to be performed more frequently and as a result considerably prolong the life of the rope, and, further, accidents through the ropes breaking owing to inside corrosion and want of outside dressing or greasing will be largely obviated, as sufficient time can at all times be allowed to use the machine.

The invention will now be described in detail by the aid of the accompanying drawings, wherein—

Figure 1 illustrates in part-sectional eleva-

tion the apparatus designed for greasing a vertical rope; Fig. 2, a transverse section of Fig. 1 on line $x x$. Fig. 3 represents in part-sectional elevation the apparatus designed for greasing an inclined rope, and Fig. 4 is a section of Fig. 3 on line $y y$.

Referring to the apparatus illustrated in Figs. 1 and 2, which embodies the invention as adapted for greasing a vertical rope or a rope traveling in a vertical direction, $a a'$ designate two tanks which form holders or receptacles for the grease. These tanks, which may be of any desired and convenient shape, are shown bolted to a plate a^2 by means of bolts or the like passing through holes a^3 , formed in the flanges a^4 . By this construction the plate a^2 forms one side of both of the tanks. The plate a^2 is strengthened by the webs a^5 . The tanks $a a'$ are so arranged and fixed to the plate a^2 as to leave a space or passage between them at the center of the plate. To the plate a^2 inside each of the tanks $a a'$ is fixed a spindle b . On each of the spindles b is mounted a flanged pulley $b' b^2$, capable of revolving freely thereon. On the side plate a^2 above the level of the tanks $a a'$ is bolted or otherwise conveniently fixed an upper plate c . In the upper plate c two adjustable spindles $c' c^2$ are fixed, on each of which is loosely mounted a flanged pulley $d d'$, respectively. To permit of any required adjustment of the pulleys $d d'$ in relation to each other according to the thickness of the rope to be greased, the holes d^2 in the plate c , in which the spindles $c' c^2$ are fixed, are elongated, as seen in Fig. 1. An endless belt or band e is arranged round the two pairs of pulleys $b' d$ and $b^2 d'$. The two belts e pass through the grease in the tanks in passing round the pulleys $b' b^2$. The belts or bands e may be made of leather, cotton, hemp, manila, flax, rubber, jute, wire-brush, or other suitable material. The belts e may be hollowed, as shown at f in Fig. 2, so as to fit round ropes of circular section, or be made flat for flat ropes. The rope h in passing through the apparatus passes between the adjustable pulleys $d d'$ and between the belts e . (See Fig. 1.) The rope h on being set slowly in motion revolves the pulleys $d d'$, and so drives the belts

e, which take up the requisite quantity of grease and press the same into the rope. By varying the speed of the rope *h* the quantity of grease lifted by the belts *e* may be regulated. A removable steam-heating coil *j* may be arranged in the tanks *a a'* to raise the grease to and maintain it at the desired temperature. The heating-coil *j* may be dispensed with when the consistency of the grease is such that it can be used without heating, or the grease may be heated in any other convenient manner.

Referring to the arrangement illustrated in Figs. 3 and 4, adapting the invention for the greasing of an inclined rope, *k* represents a tank bolted or otherwise fixed to the side plate and standard *l*. To the plate or standard *l* inside the tank is fixed a spindle *m*, on which spindle two flanged pulleys *m' m''* are loosely mounted, one for each of the two belts *m³*. In the plate *l* at the top of the tank an adjustable spindle *n* is fixed, on which is loosely mounted a pulley *n'*. The pulleys *m'* and *n'* form one pair for one of the belts *m³*, as is shown in Fig. 3. To the top of the plate or standard *l* above the tank *k* is secured an upper plate or bracket *o*. An adjustable spindle *p* is fixed to the plate *o*, on which spindle a flanged pulley *p'* is loosely mounted. The pulley *p'* is arranged above the pulley *n'*, as shown, and the rope *r* in passing through the apparatus passes between them. The top of the bracket *o* forms an overhanging arm *o'*, in which is arranged a spindle *s*. On the spindle *s* two flanged pulleys *s' s''* are arranged, over which the belt *m³*, which runs over the pulleys *m''* and *p'*, passes. The belt passes over the pulley *s'*, then round the pulley *p'*, and back over the pulley *s''* to the pulley *m''*. A steam-heating coil *t* is shown arranged in the tank *k* for the purpose explained with reference to the other arrangement.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In an apparatus of the class described two

pulleys between which the rope to be greased passes, flexible means passing around the pulleys and means for supplying the flexible means with grease, substantially as described.

2. In an apparatus for greasing, hoisting or hauling ropes which travel in a vertical direction, the combination of two grease-tanks arranged so as to form a passage between them, a pulley mounted inside each of said tanks, two pulleys mounted on adjustable spindles above the tanks, and two endless belts arranged round the two pairs of pulleys, between which the rope passes, substantially as described.

3. In an apparatus of the kind described, in combination, two grease-tanks arranged side by side and with a passage between them, a pulley mounted in the interior of each tank, two adjustable pulleys mounted on spindles above the tanks, and two endless bands, between which the rope passes, arranged round the two pairs of pulleys, and means for raising the grease to the required temperature, substantially as described.

4. In an apparatus such as described, in combination, the two grease-tanks *a a'* arranged so as to form a passage between them, the plate *a''* constituting one side of both of the tanks *a a'*, the spindles *b* fitted to the plate *a''* and located one inside each of the two tanks *a a'*, the pulleys *b' b''* mounted on the spindles *b* inside the tanks *a a'*, the upper plate *c* fixed to the plate *a''* above the level of the tanks, the adjustable spindles *c' c''* fitted in the upper plate *c*, adjustable to and from the passage formed between the tanks *a a'*, the endless belts *e* passing round the pulleys *b' d* and *b'' d'* respectively and the steam-heating means arranged in the tanks *a a'*, substantially as described and shown.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PETER MACADAM.

Witnesses:

CHAS. OVENDALE,
HERMINE V. D. SCHUYT.