

No. 724,890.

PATENTED APR. 7, 1903.

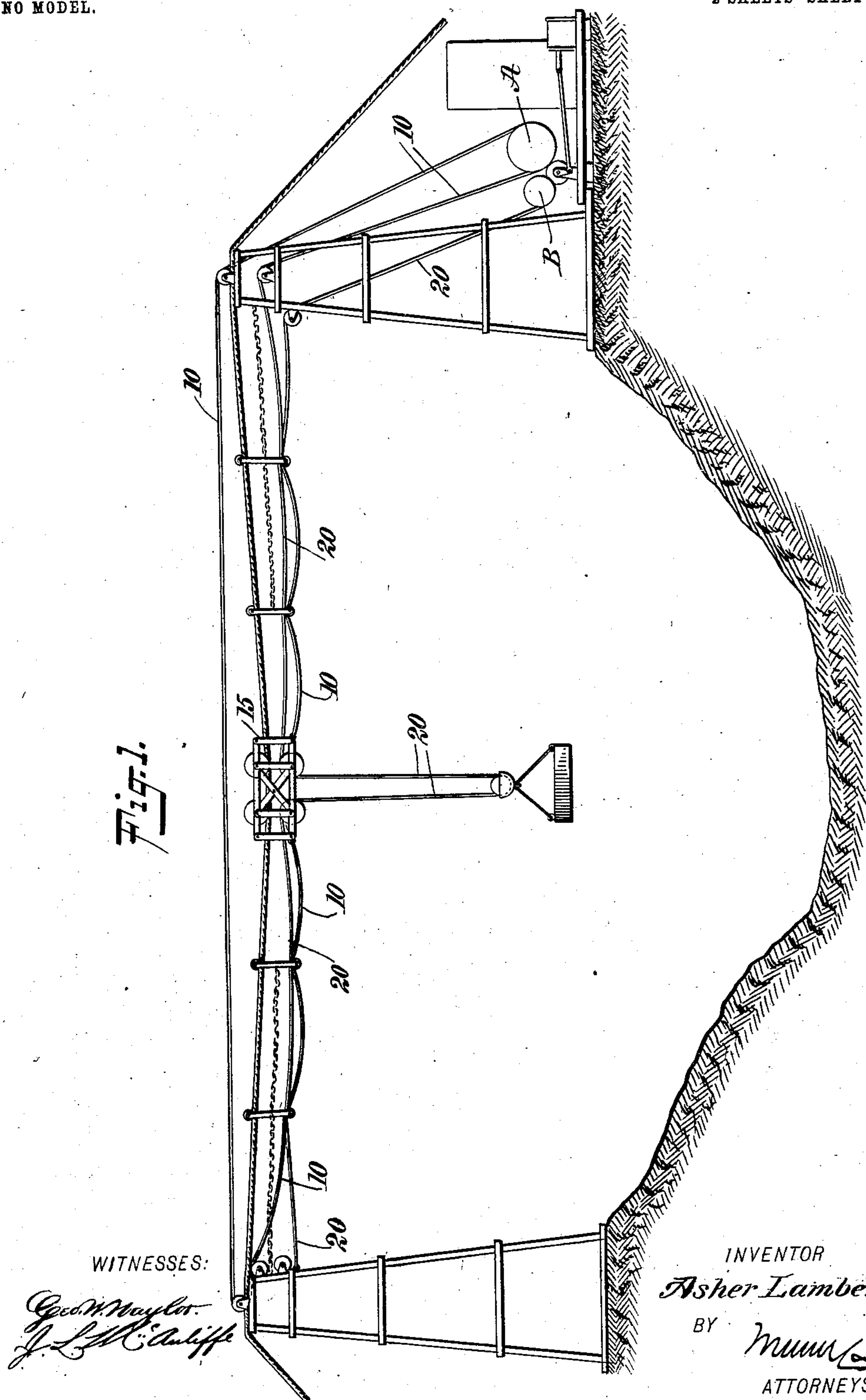
A. LAMBERT.  
CONVERTIBLE ENGINE FOR DERRICKS AND CABLEWAYS.

APPLICATION FILED NOV. 13, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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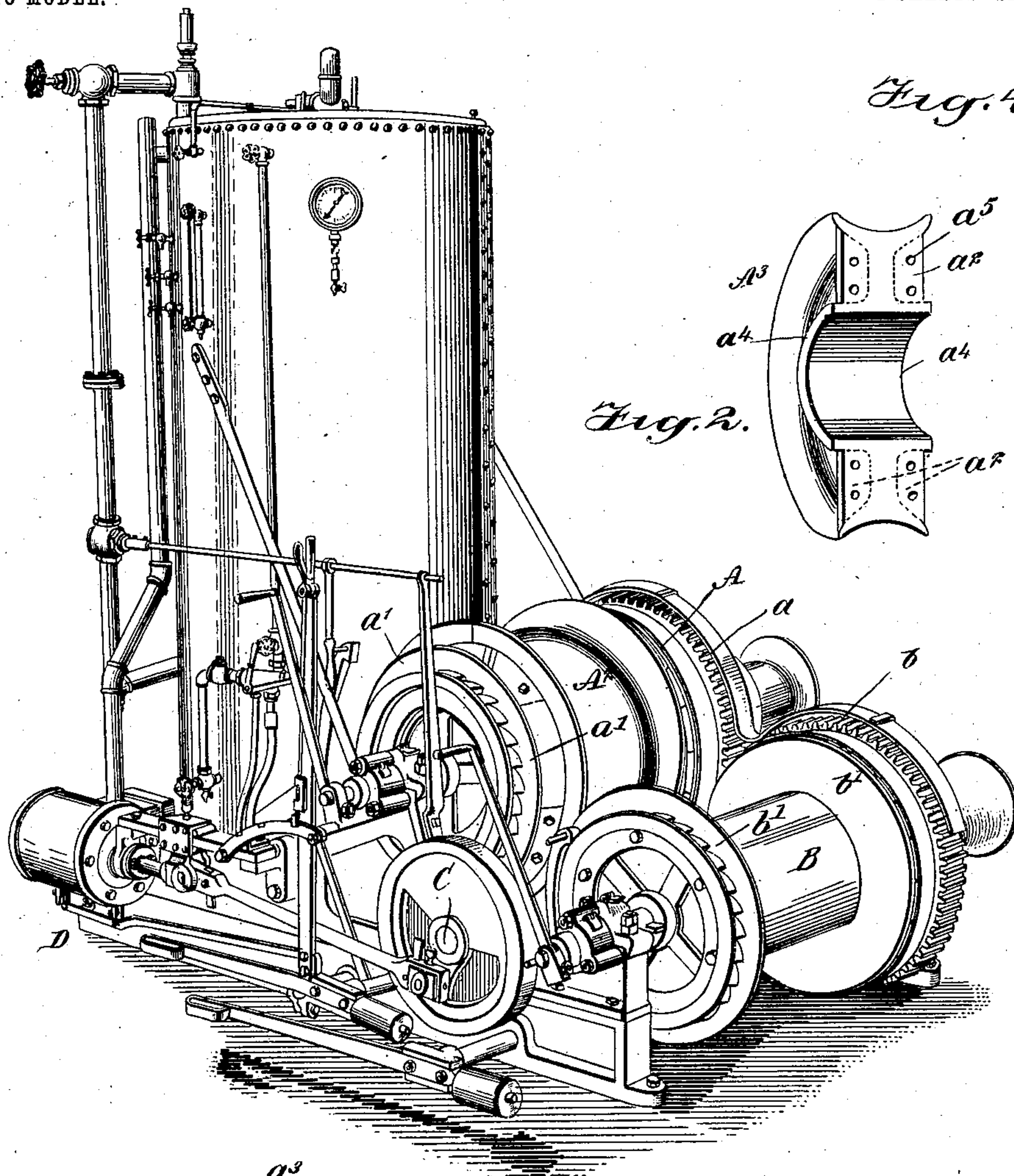


Fig. 1.

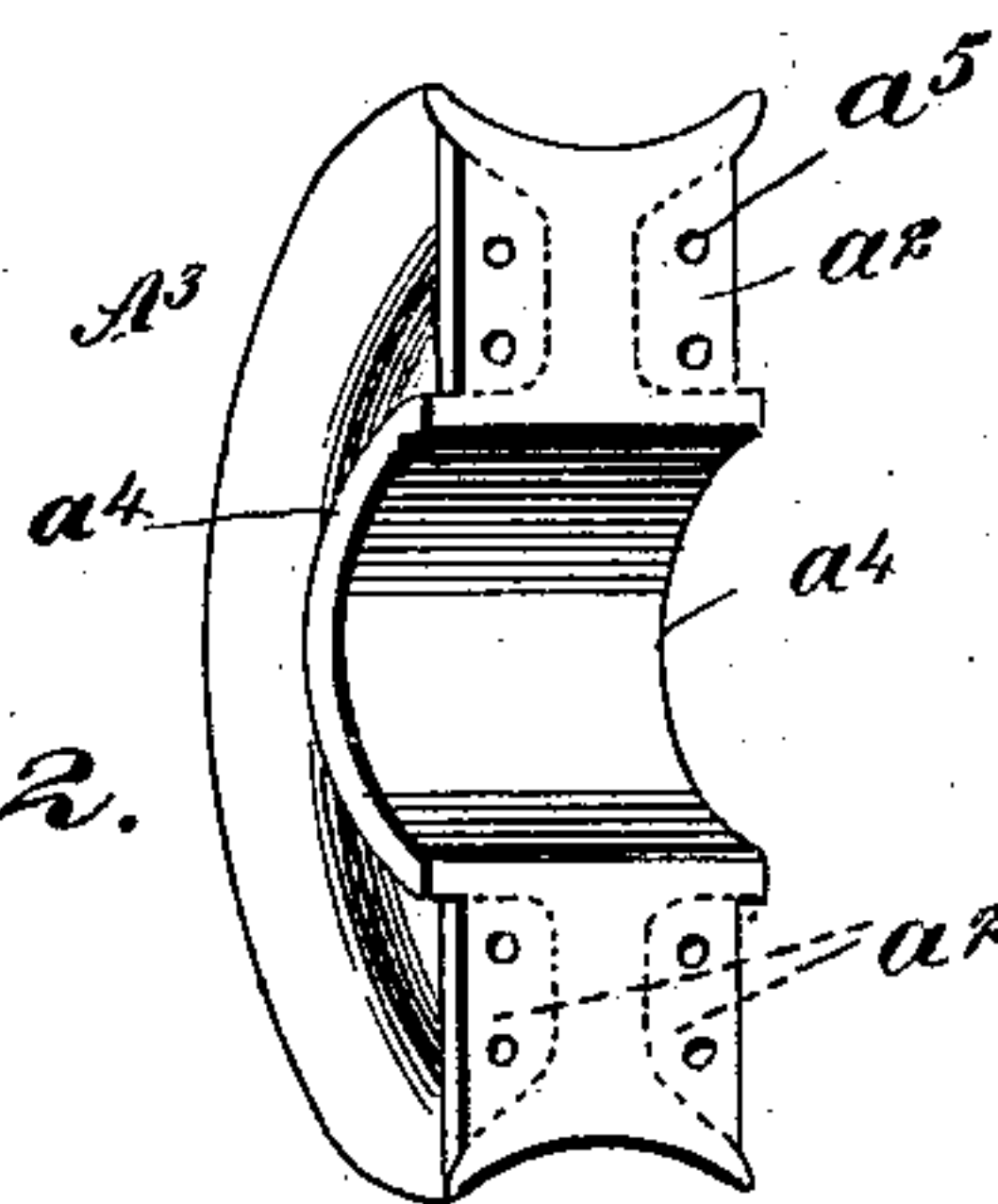


Fig. 2.

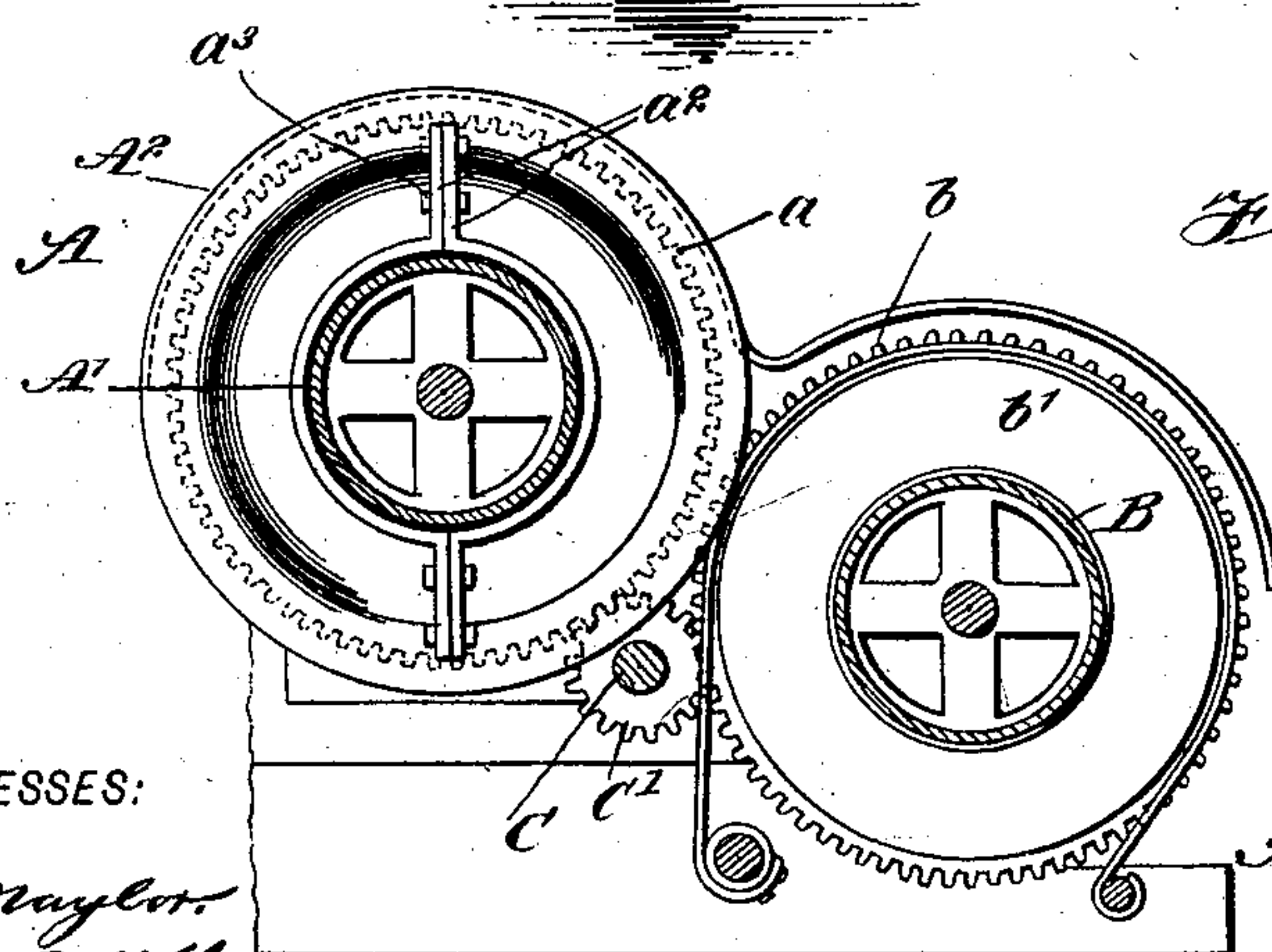


Fig. 3.

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# UNITED STATES PATENT OFFICE.

ASHER LAMBERT, OF NEWARK, NEW JERSEY.

## CONVERTIBLE ENGINE FOR DERRICKS AND CABLEWAYS.

SPECIFICATION forming part of Letters Patent No. 724,890, dated April 7, 1903.

Application filed November 13, 1902. Serial No. 131,190. (No model.)

*To all whom it may concern:*

Be it known that I, ASHER LAMBERT, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Convertible Engines for Derricks and Cableways, of which the following is a full, clear, and exact description.

That my invention may be fully understood it is explained that in practice the endless traversing rope or haul-rope of a cableway is given a few turns around its drum, and the drum is therefore concave. In derrick-engines, on the contrary, the drums are cylindrical, the ropes being wound up or allowed to unwind, as desired. Again, the Lambert cableway system enables a drum of large diameter to be employed for the traversing rope or haul-rope to obtain high speed of travel for the carriage, while a drum in a corresponding position in a derrick is required to be of small diameter to obtain power.

My invention provides means whereby a contractor can readily convert his cableway-engine into a derrick-engine, and vice versa.

My invention will be particularly described hereinafter and then defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a cableway, showing diagrammatically an engine having differential drums arranged to actuate the traversing rope or haul-rope and the hoisting-rope or fall-rope. Fig. 2 is a perspective view of the engine, showing a compound drum embodying my invention. Fig. 3 is a transverse sectional view of the pair of drums of the engine, the sectional exterior of the compound drum being shown in end elevation; and Fig. 4 is a perspective view of one of the exterior sections of my improved drum.

That the utility of my convertible engine may be the better understood I have illustrated in Fig. 1 a cableway having differential drums A B, the drum A being the larger and serving to actuate at a high speed the endless traversing rope or haul-rope 10, which moves the carriage 15, while the smaller drum B is shown as arranged to actuate the fall-rope or hoisting-rope 20. This cableway

system is particularly described in an application filed by me concurrently herewith, Serial No. 131,191. The drums A B (shown best in Figs. 2 and 3) are suitably driven and controlled by actuating and controlling devices of any well-known form. As shown, the drums have teeth  $a\ b$ , which mesh with a pinion  $C'$  on a shaft C, said shaft being driven from the engine D in the usual manner. The drum A is made up of a cylindrical body or core  $A'$  and a sectional cylindrical exterior shell or auxiliary drum  $A^2$ . The body  $A'$  preferably is equal or nearly equal in diameter to the drum B of the pair and otherwise corresponds with the latter, each having end flanges  $a' b'$ . The exterior  $A^2$  of the compound drum A is made of the sections  $A^3 A^3$ , two sections preferably going to make up said exterior. The said sections fit between the end flanges  $a'$  of the core or body  $A'$ . At the adjacent faces of each section  $A^3$  are lateral flanges  $a^2$ , having holes  $a^5$  for receiving the bolts  $a^3$ , that clamp the sections together, and at each end of each section in line with the bore are flanges  $a^4$ , which when the sections are together form annular flanges at each end. These annular flanges extend parallel with the cylindrical core or body  $A'$  and serve to increase the bearing-surface of the sections  $A^3$  on said core  $A'$ . The peripheral surface of the auxiliary drum  $A^2$  is concaved to accommodate the endless traveling rope and prevent it from running off the drum. With an engine thus equipped when employed on a cableway the larger compound drum A of the pair receives, as stated, the endless traversing rope 10, which is given several turns around said drum and otherwise arranged in a well-known manner, while the fall-rope 20 is connected with the smaller drum B. Thus the larger drum may be made to move the traversing rope at a high speed. When, however, the engine is to be used in connection with a derrick, the exterior drum  $A^2$  is removed and a rope leading from the core or body  $A'$  operates the boom of the derrick, while a rope from the companion drum B operates the fall-block. It will be obvious that an engine thus readily convertible for either the work of a cableway or a derrick will be very advantageous.

Having thus described my invention, I



claim as new and desire to secure by Letters Patent—

1. A convertible engine for derricks and cableways, the same having a pair of drums, one of which is a compound drum, composed of a core or body having a form and completeness to constitute a drum of itself, and being of a diameter approximately equal to that of the companion drum of the pair, and an auxiliary drum supported on and removably secured to the said core or body and forming a drum of a greater diameter than the companion drum.

2. A convertible engine for derricks and cableways, the same having a pair of drums, one of which is a compound drum composed of a core or body having a form and completeness to constitute a drum of itself, and being of a diameter approximately equal to that of the companion drum of the pair, and an auxiliary drum formed in sections supported on and removably secured to the said core or body and forming a drum of a greater diameter than the companion drum.

3. A convertible engine for derricks and cableways, the same having a pair of drums, one of which is a compound drum, composed of a core or body having a form and completeness to constitute a drum of itself, and being of a diameter approximately equal to that of the companion drum of the pair, and an auxiliary drum formed in sections supported on and removably secured to the said core or body and forming a drum of a greater diameter than the companion drum, the said core or body having flanges and the sectional auxiliary drum fitting between said flanges.

4. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum and larger than the other, the said compound drum having a removable exterior peripherally concaved, and a core.

5. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum and larger than the other, the said compound drum having a removable exterior peripherally concaved, and a core, said core being cylindrical.

6. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum and larger than the other, the said compound drum having a removable exterior peripherally concaved, and a core, said core being cylindrical and approximately equal in diameter to the smaller drum of the pair.

7. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum composed of a core and a sectional shell, peripherally concaved and larger in diameter than the companion drum.

8. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum composed of a core and a sectional shell, peripherally

concaved and larger in diameter than the companion drum, the said core being approximately equal in diameter to the said companion drum.

9. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum composed of a core and a sectional shell, peripherally concaved and larger in diameter than the companion drum, the said core and the bore of the sectional shell being cylindrical.

10. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum composed of a core and a removable exterior having a concaved periphery.

11. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum composed of a core and a removable exterior having a concaved periphery, the said core having end flanges.

12. A convertible engine for derricks and cableways, the same having a pair of drums of which one is a compound drum composed of a core and a removable exterior having a concaved periphery, the said core having end flanges and being cylindrical.

13. A convertible engine for derricks and cableways, having a pair of drums, one of which is a compound drum composed of a cylindrical core having end flanges, and equal in diameter to the companion drum, and an auxiliary drum greater in diameter than the companion drum and composed of sections formed with flanges at the bore and with side flanges, and means engaging said side flanges for securing the said sections together and to said core.

14. The combination with a core, of drum-sections thereon, the said sections having flanges at the bore, forming an annular flange projecting concentric to the center of the drum, and means for securing said sections on the core.

15. An attachment for increasing the diameter of a drum, said attachment consisting of sections having flanges on their opposed faces affording a means for connecting the sections and having semicircular flanges at the bore.

16. The combination with a core, of drum-sections thereon, the said sections being concaved peripherally.

17. An attachment for increasing the diameter of a drum, consisting of sections forming a hollow drum, the said sections having a concaved periphery.

18. An attachment for increasing the diameter of a drum, consisting of a drum having a bore to receive the drum to be enlarged, and having a concaved periphery, and means for removably securing said attachment on a drum.

19. A convertible drum, consisting of a core and a removable exterior having a concaved periphery.

20. A convertible drum, consisting of a core

and a removable exterior having a concaved periphery, the said core having end flanges between which the removable exterior is received.

5 21. The herein-described convertible drum, consisting of a core having end flanges and a sectional exterior removably secured to the core.

10 22. The herein-described convertible drum, consisting of a core and a sectional exterior

removably secured to the core, the periphery of the removable exterior being concaved.

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

ASHER LAMBERT.

Witnesses:

F. W. LAMBERT,  
T. M. WATSON, Jr.