

No. 612,723.

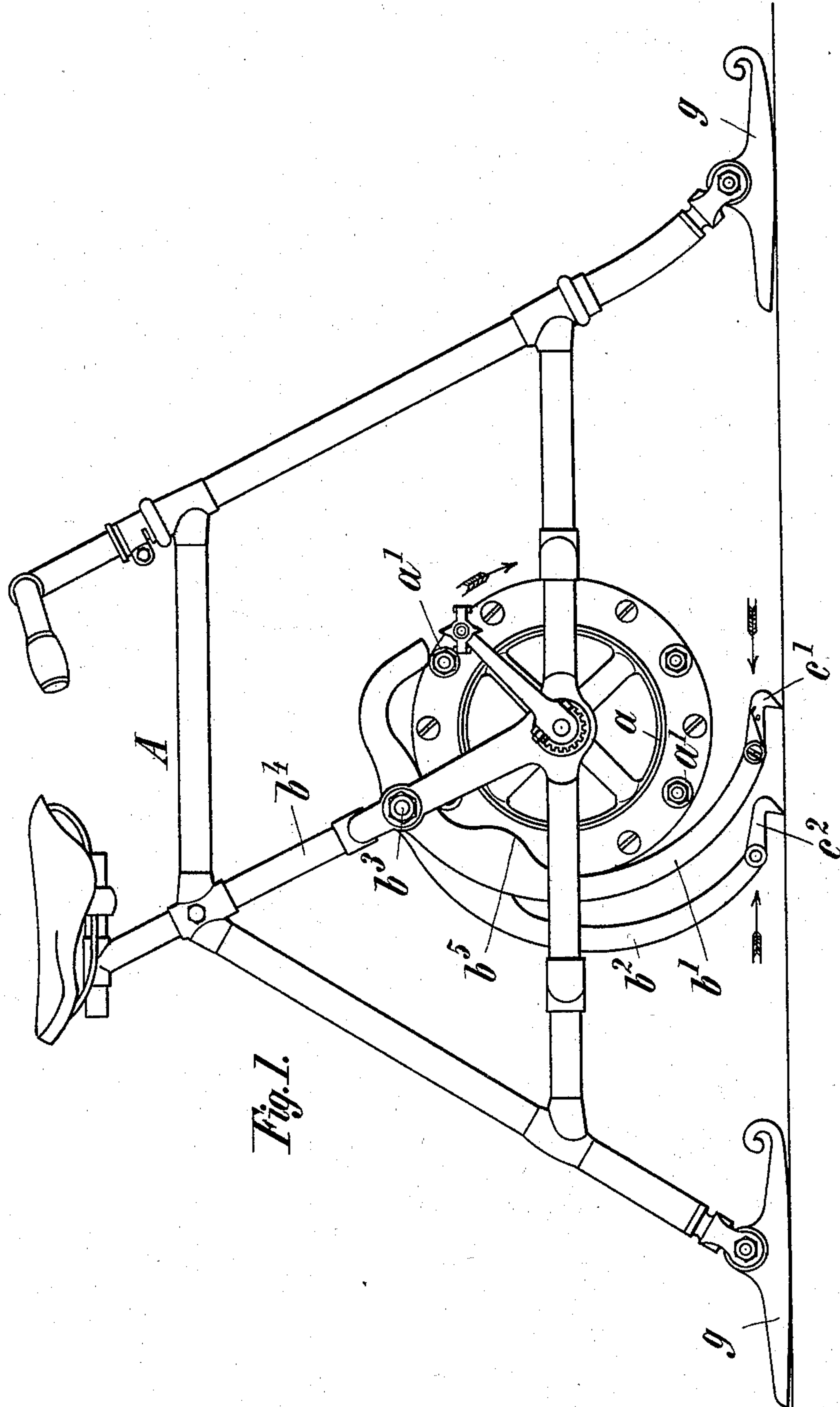
Patented Oct. 18, 1898.

C. H. O. HAMANN.  
SLED PROPELLER.

(Application filed May 2, 1898.)

(No Model.)

3 Sheets—Sheet 1.



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Fig. 2.

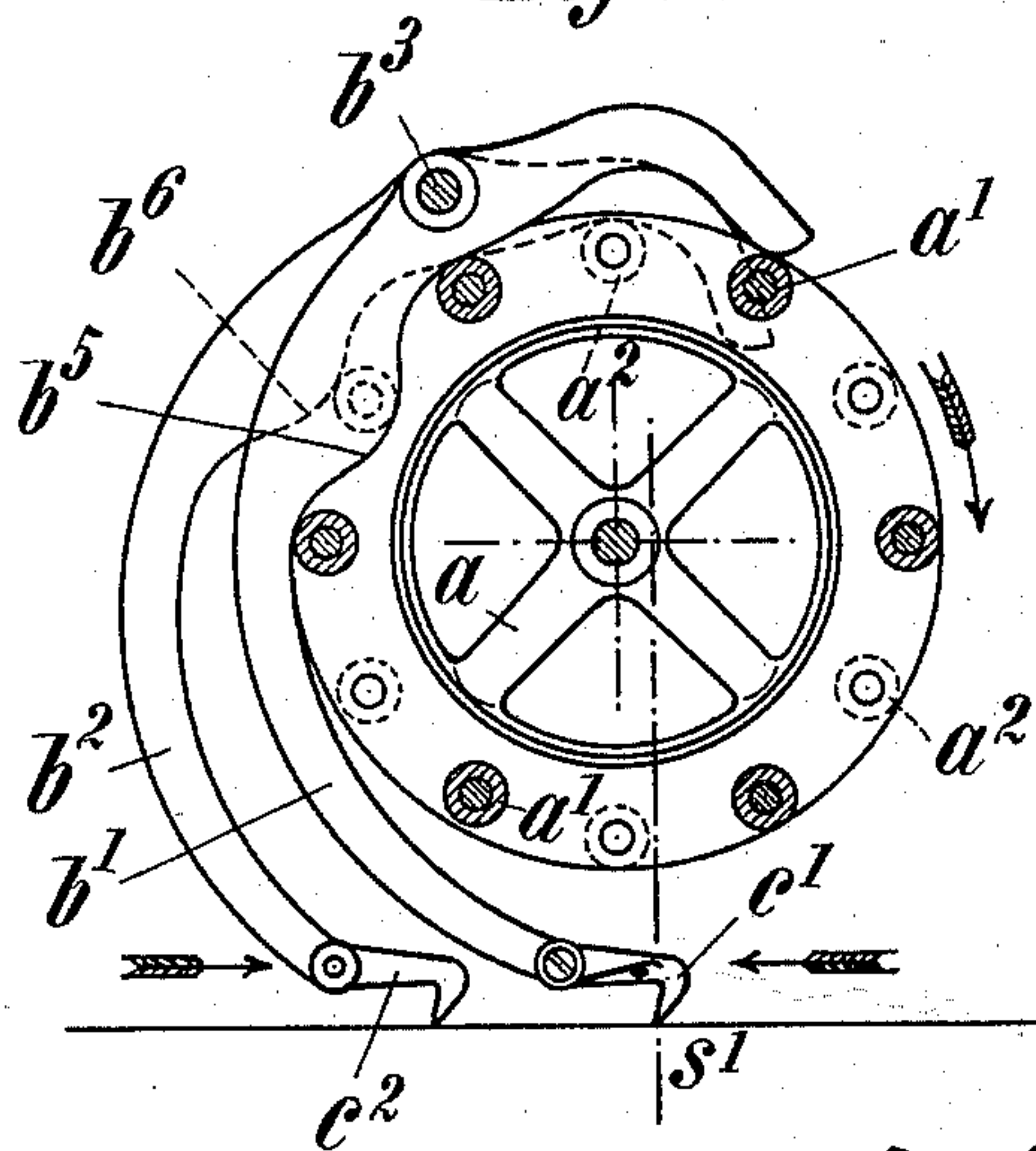


Fig. 3.

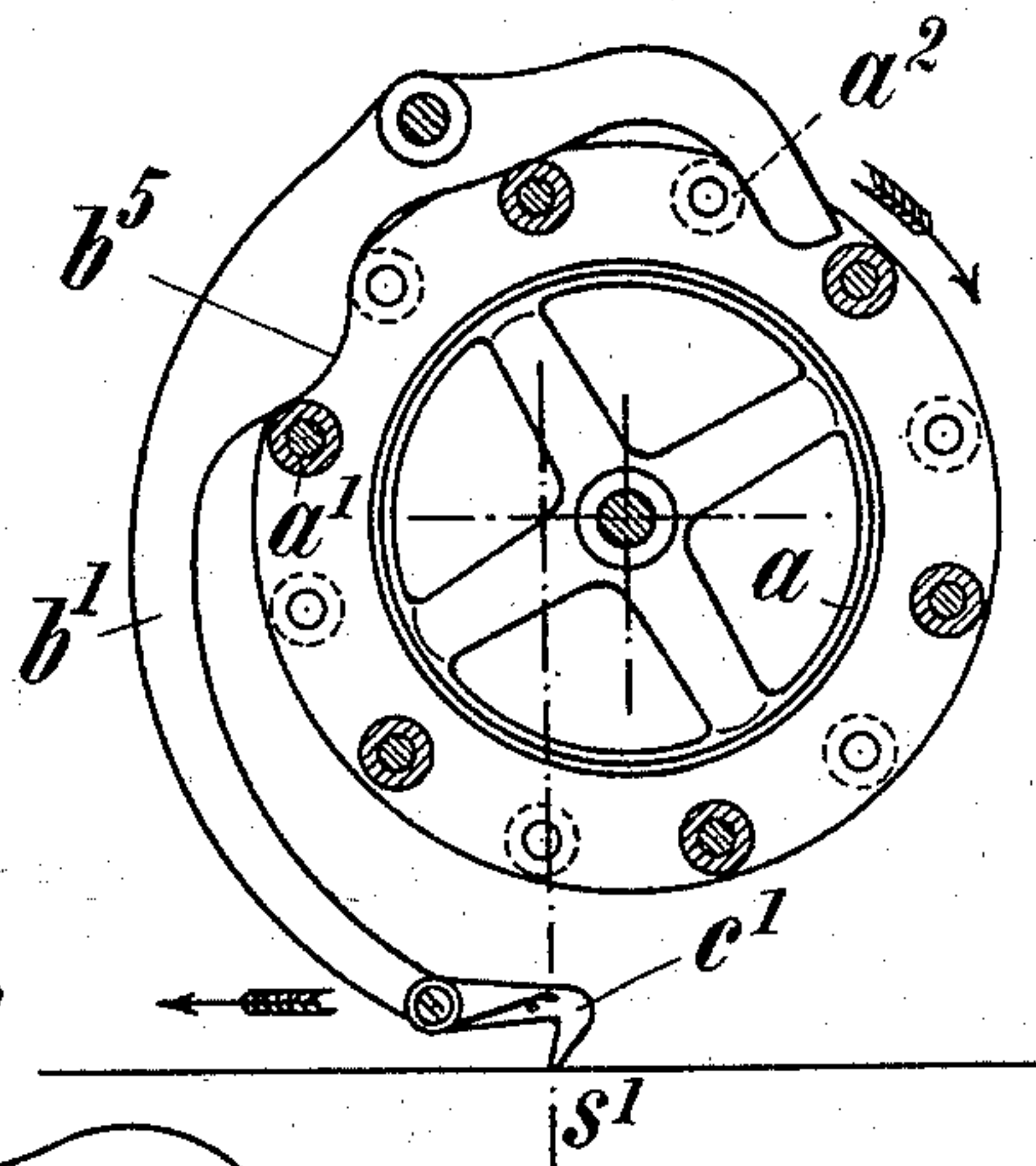


Fig. 4.

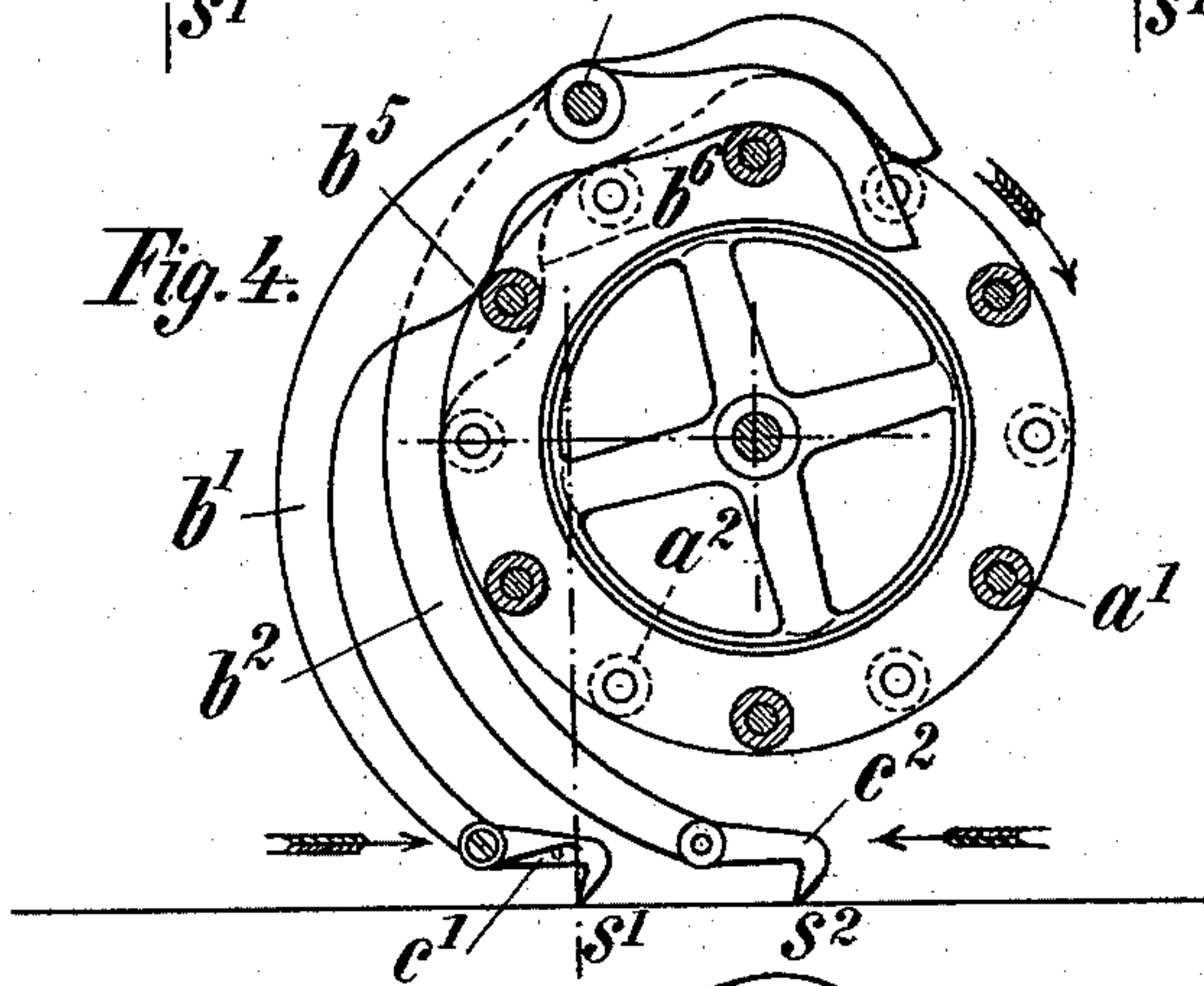
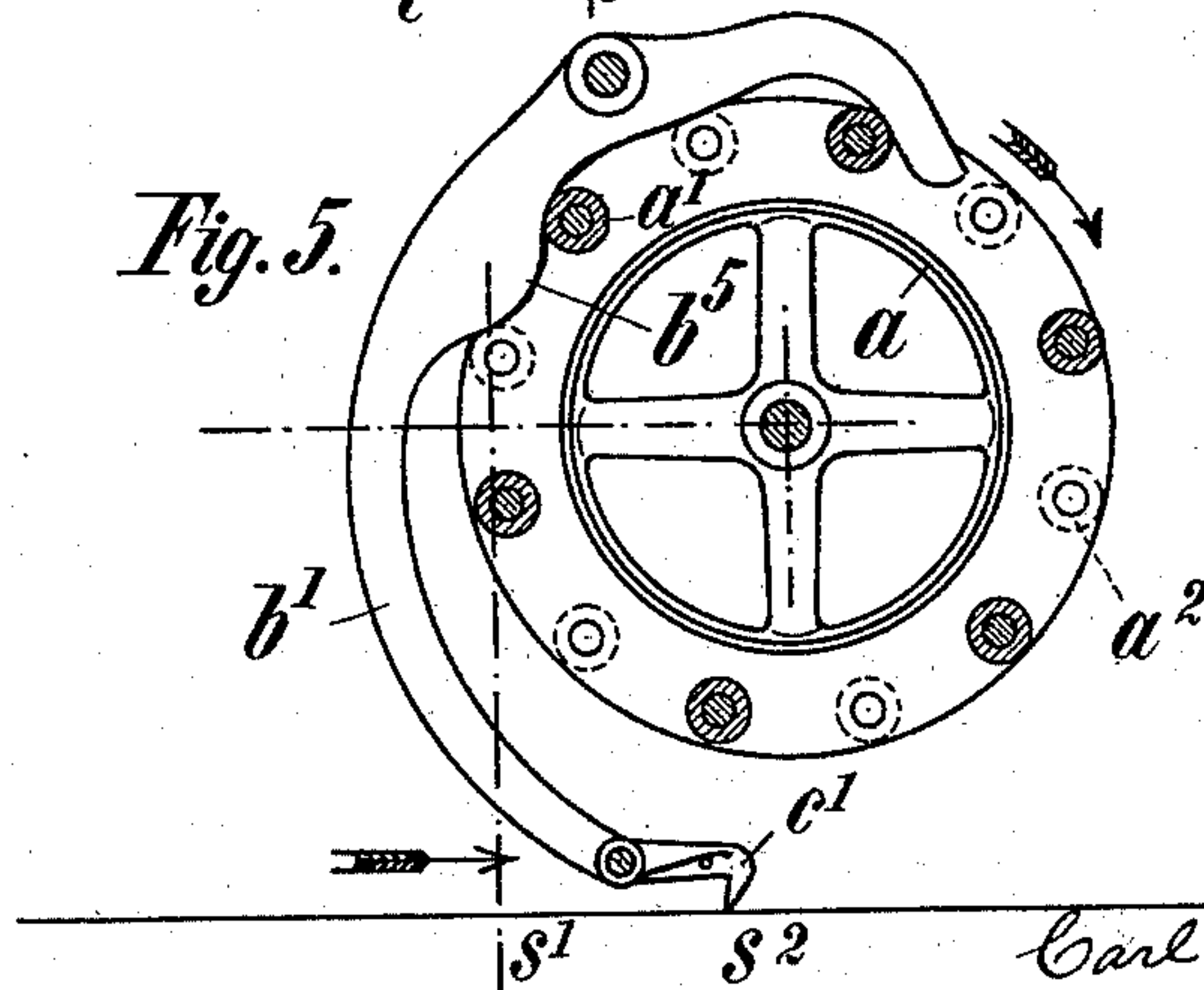


Fig. 5.



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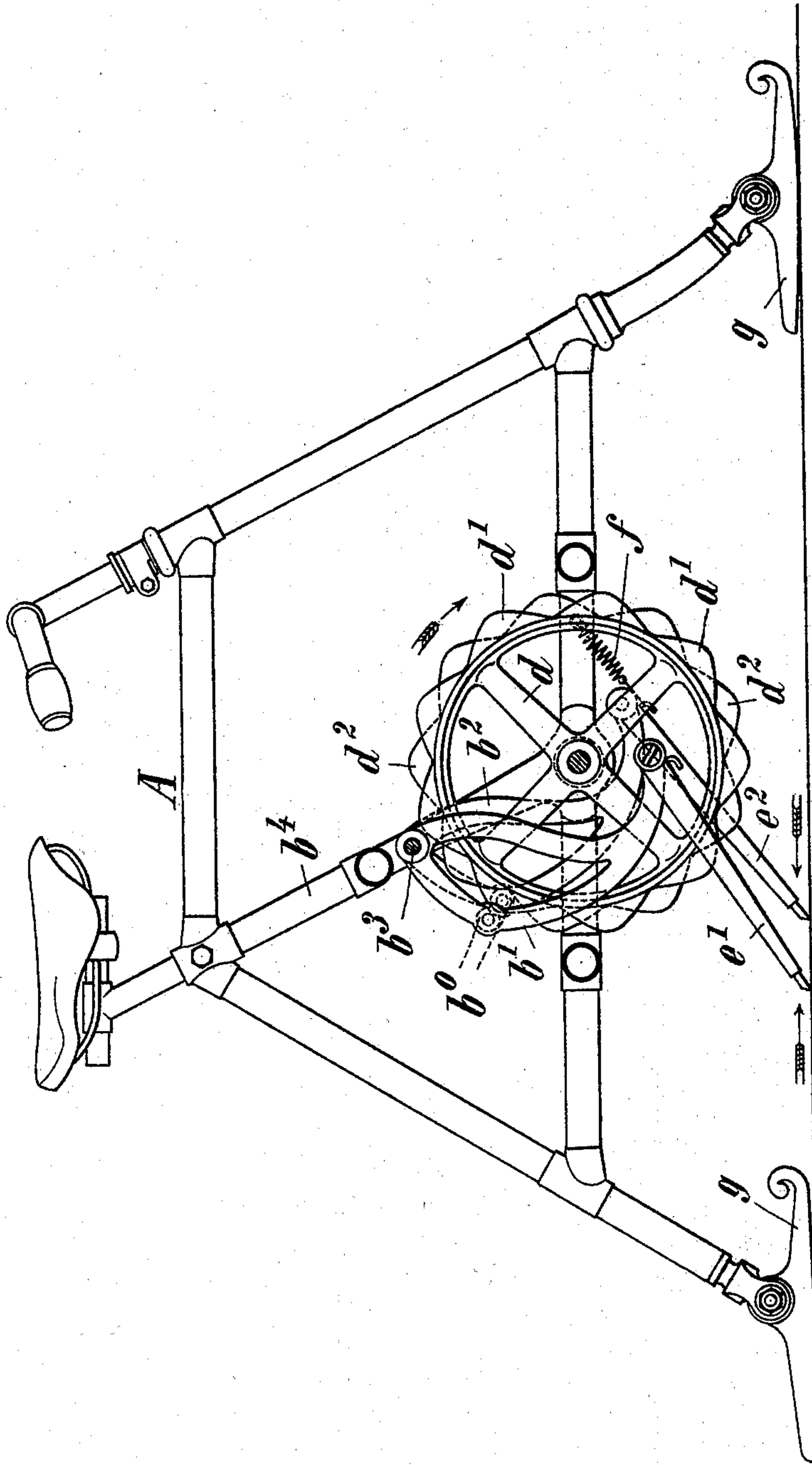
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3 Sheets—Sheet 3.

Fig. 6.



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# UNITED STATES PATENT OFFICE.

CARL HEINRICH OTTO HAMANN, OF BERGEDORF, GERMANY.

## SLED-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 612,723, dated October 18, 1898.

Application filed May 2, 1898. Serial No. 679,528. (No model.)

*To all whom it may concern:*

Be it known that I, CARL HEINRICH OTTO HAMANN, a subject of the German Emperor, residing at Bergedorf, near Hamburg, in the German Empire, have invented a new and useful Improvement in the Propulsion of Sleds, Carts, and other Conveyances, of which the following is a specification.

My invention relates to improvements in the propulsion of sleds, carts, and other conveyances on smooth or even roadways and dromoi. The mechanism employed consists of two propelling-levers which are arranged in the path of a revolving gearing on the driving-shaft of the vehicle in such a manner that the lower pointed extremities of these levers are alternately moved toward the roadway and passed above the same, whereby the vehicle, which is at times laterally supported by the said levers, is propelled forward on actuating the revolving gearing.

In order to make my invention more clearly understood, reference may be taken to the accompanying drawings, in which—

Figure 1 is a side elevation of a sled provided with my improved driving mechanism, Figs. 2 to 5 being separate side views of the driving mechanism, illustrating different positions of the propelling members during the rotation of the main driving-gear; and Fig. 6 is a side elevation of a somewhat-modified construction of the revolving driving-gear and the propelling members, also in connection with a sled.

In Figs. 1 to 5 a lantern-wheel or wallower  $a$ , provided on either side with a series of rungs or rollers  $a'$  and  $a^2$ , respectively, serves as revolving gear keyed upon an ordinary pedal-shaft. The rungs or rollers on the one side of the revolving gear are displaced about one-half of the pitch to those of the other side, and they coöperate with the corresponding propelling-levers  $b'$  and  $b^2$ , respectively, which are pivoted at  $b^3$  to the arm  $b^4$  of the frame  $A$  of the sled. At the lower extremity of the levers are hinged sharp-pointed hooks or grasping-feet  $c'$  and  $c^2$ , respectively. That part of the said propelling-levers  $b'$   $b^2$  coöperating with the rollers  $a'$   $a^2$  of the revolving gear  $a$  is shaped in such a manner that the levers are caused to perform a walking motion,

which is diagrammatically illustrated by Figs. 2 to 5 of the drawings.

According to Fig. 2 the point of the hook  $c'$  is pressed by spring-action into the roadway, and one of the rollers  $a^2$  commences to turn the lever  $b^2$ , with its hook  $c^2$ , ahead while the vehicle advances, so that in an intermediate position, Fig. 3, both levers  $b'$  and  $b^2$  are occupying the same position. The lever  $b^2$  continues to move forward without interruption until the one roller  $a^2$ , hitherto in contact with the upper arm of the lever, releases the latter and simultaneously another roller  $a^2$  commences to travel upon the swelling  $b^6$  of the lever  $b^2$ . At this moment the corresponding roller  $a'$  commences to leave the swelling  $b^5$  of the other lever  $b'$  and another roller  $a'$  begins to lift the upper arm of the lever, Fig. 4.

Now the above-described working operation is repeated—however, with the difference that the propelling-lever  $b^2$  becomes active and is caused to propel the vehicle ahead, while the other lever  $b'$  is advanced into the active position. The first propping-points  $s'$  of the roadway will then be released and a second point  $s^2$  for the lever  $b^2$  comes to effect. With regard to this second propping-point Fig. 5 illustrates the intermediate position of both the propelling-levers.

Instead of a wallower with two series of rollers a disk  $d$  with two corrugated rims may be employed, in which the projecting faces  $d'$  and  $d^2$ , respectively, of the one rim are arranged beside the contracted faces of the other rim, Fig. 6. With these corrugated rims coöperate the levers  $b'$   $b^2$  in a similar manner as above described, since springs  $f$  tend to constantly draw the antifriction-rollers  $b^0$  of the levers against the corrugated rims of the disk  $d$  on the main driving-shaft of the vehicle. The projecting faces of the rims serve to actuate the levers  $b'$  and  $b^2$  in such a manner that the somewhat-outwardly-directed pickets  $e'$   $e^2$ , attached thereto, are alternately caused to propel the vehicle ahead, while the springs  $f$  are adapted to withdraw the picket and advance the same into the active position.

The conveyance  $A$  may be provided with sled-runners  $g$  or with rolls or wheels for traveling on a smooth or even roadway.



Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A propelling mechanism, comprising a  
5 vehicle-frame, a pedal-shaft carried thereby,  
a driving-wheel secured to said shaft and pro-  
vided with cylindrical cogs  $a'$   $a^2$  projecting  
from its opposite faces and displaced rela-  
tively to one another as described, in combi-  
10 nation with the propelling-levers  $b'$   $b^2$  con-  
structed as set forth and adapted to receive  
a motion akin to walking from the said driv-  
ing-wheel, substantially as and for the pur-  
pose set forth.

15 2. The combination with a framing pro-  
vided with short fore and aft runners  $g$ , a

driver's seat on said frame and a steering-bar  
proximate to said seat and connected with the  
fore runner; of a pedal-shaft mounted in the  
frame, the driving-wheel  $a$  constructed as de- 20  
scribed, secured to said shaft, the propelling-  
levers  $b$  and  $b'$  adapted to engage the surface  
on which the vehicle is to run, said levers ful-  
crumed to the frame intermediate of the afore-  
said runners and receiving from the wheel a 25  
motion akin to walking, substantially as and  
for the purpose set forth.

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Witnesses:

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