

No. 640,072.

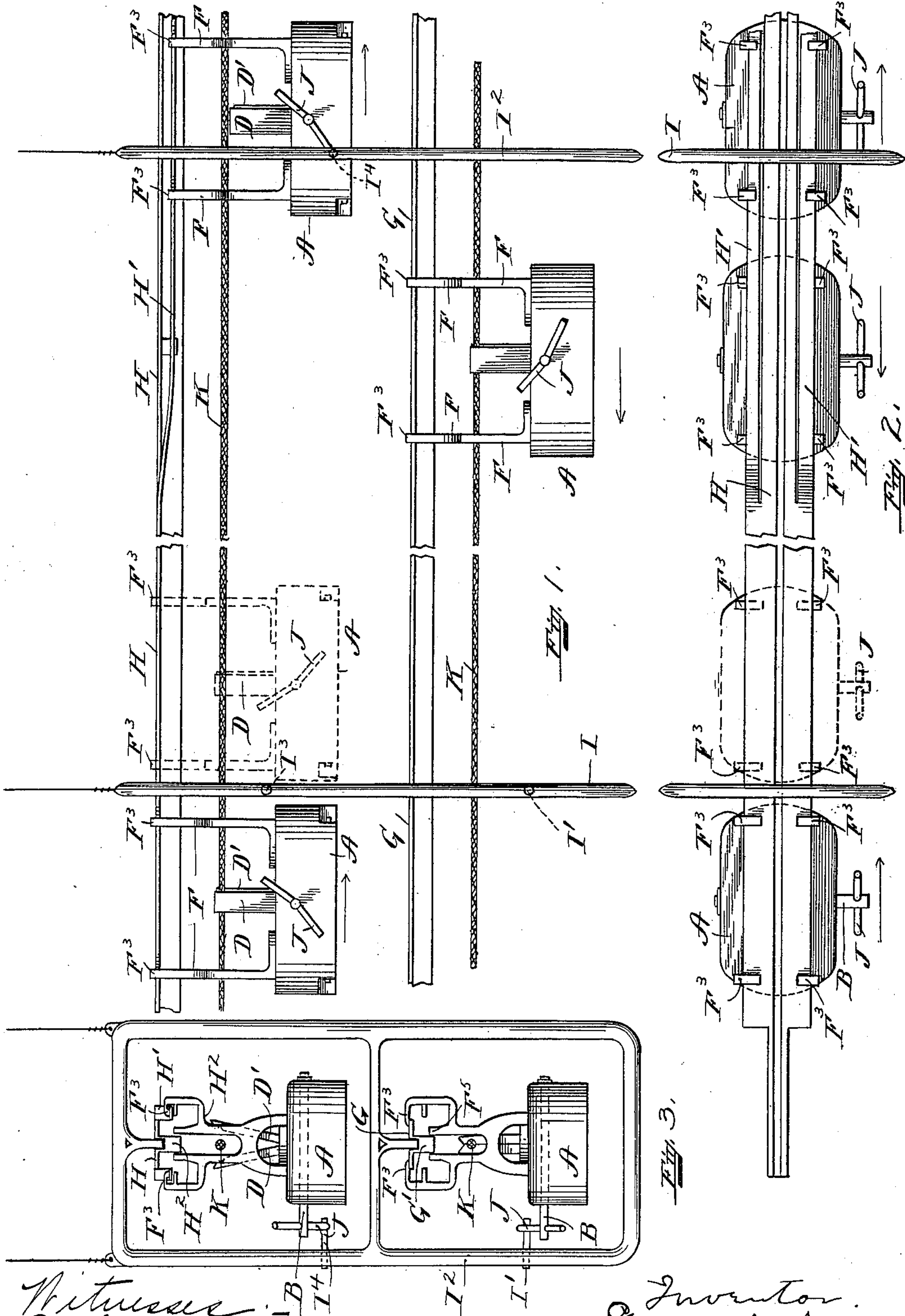
Patented Dec. 26, 1899.

G. A. AMSDEN.
CONVEYING APPARATUS.

(Application filed May 21, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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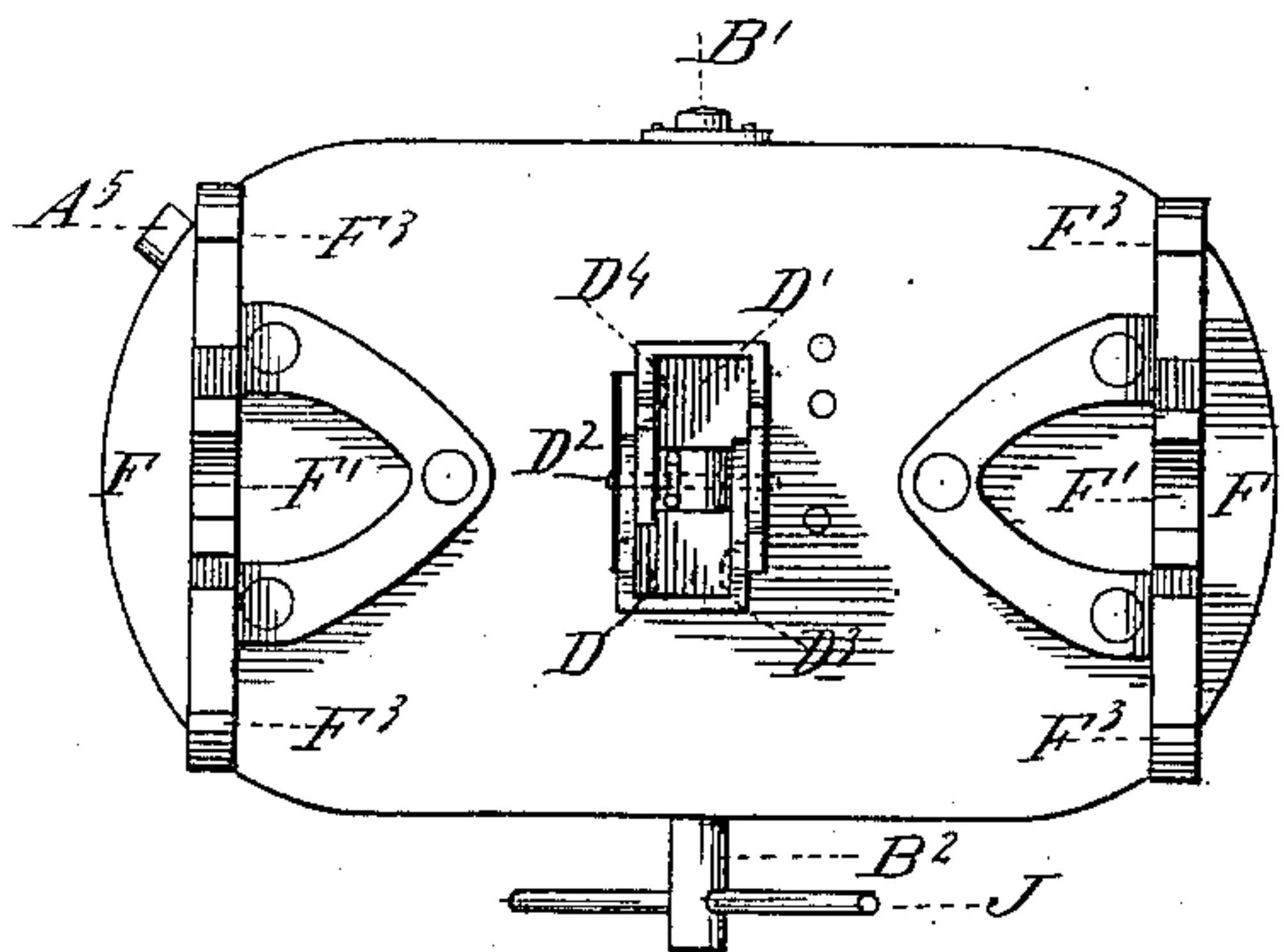


Fig. 4.

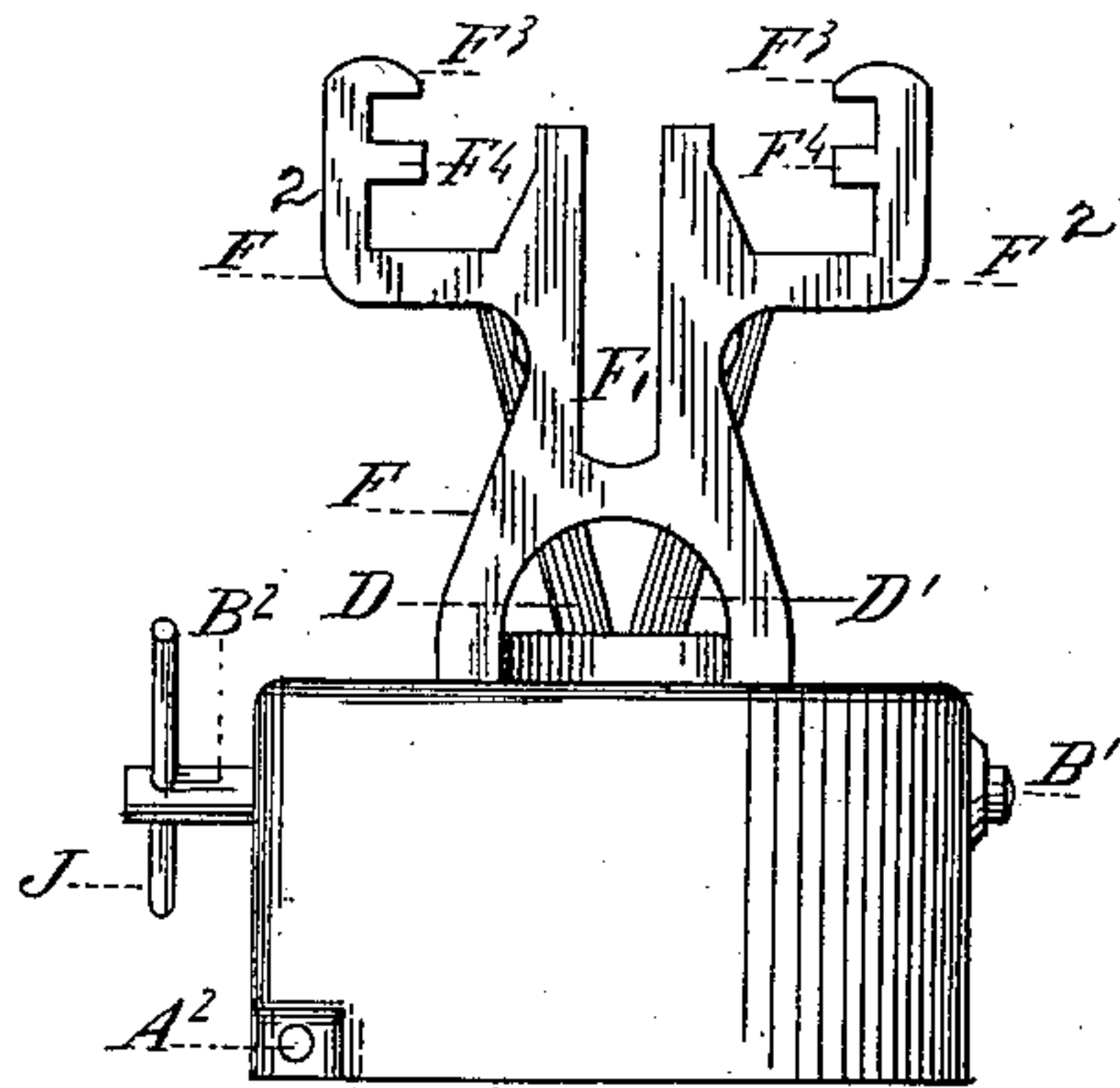


Fig. 5.

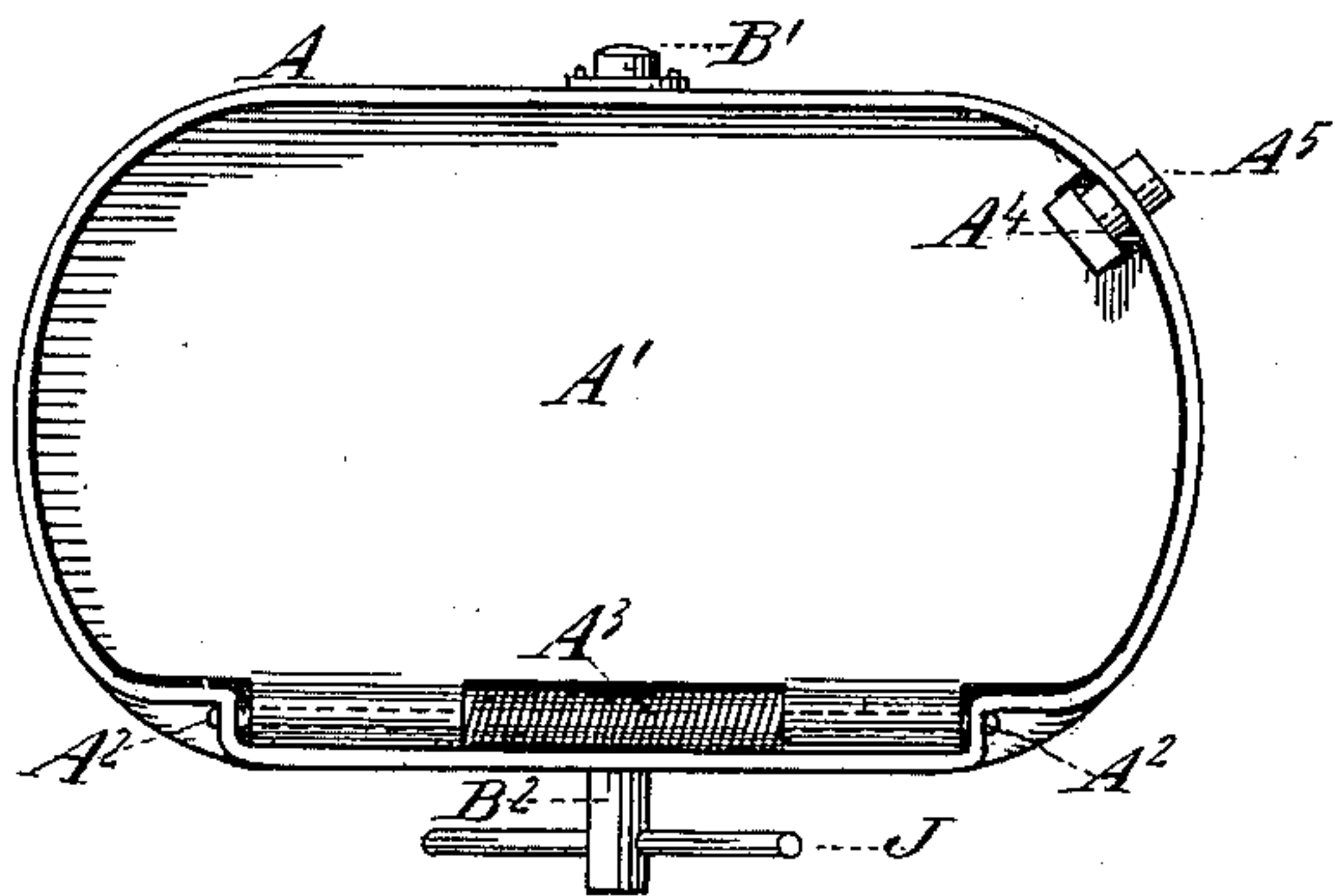


Fig. 6.

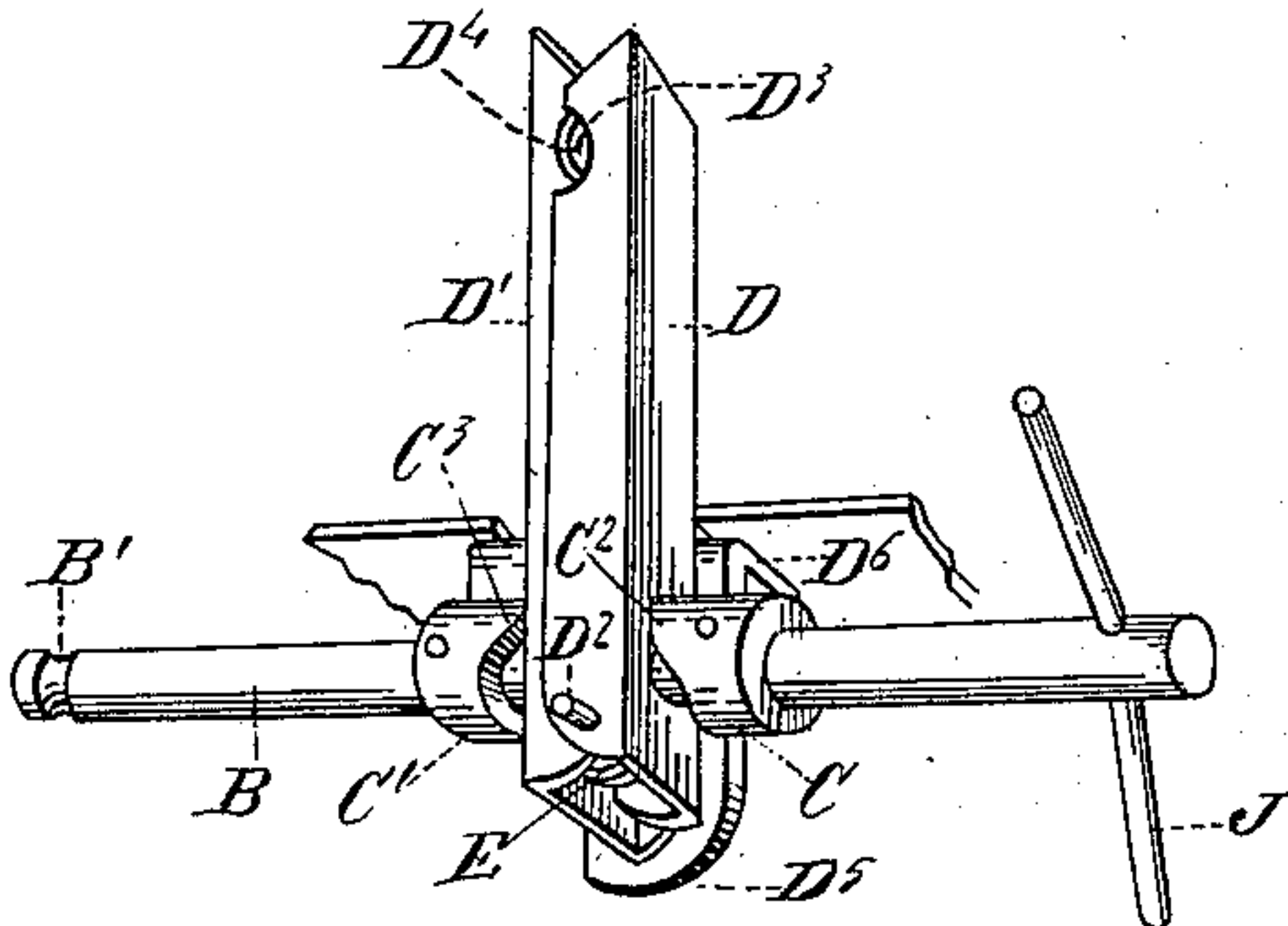


Fig. 7.

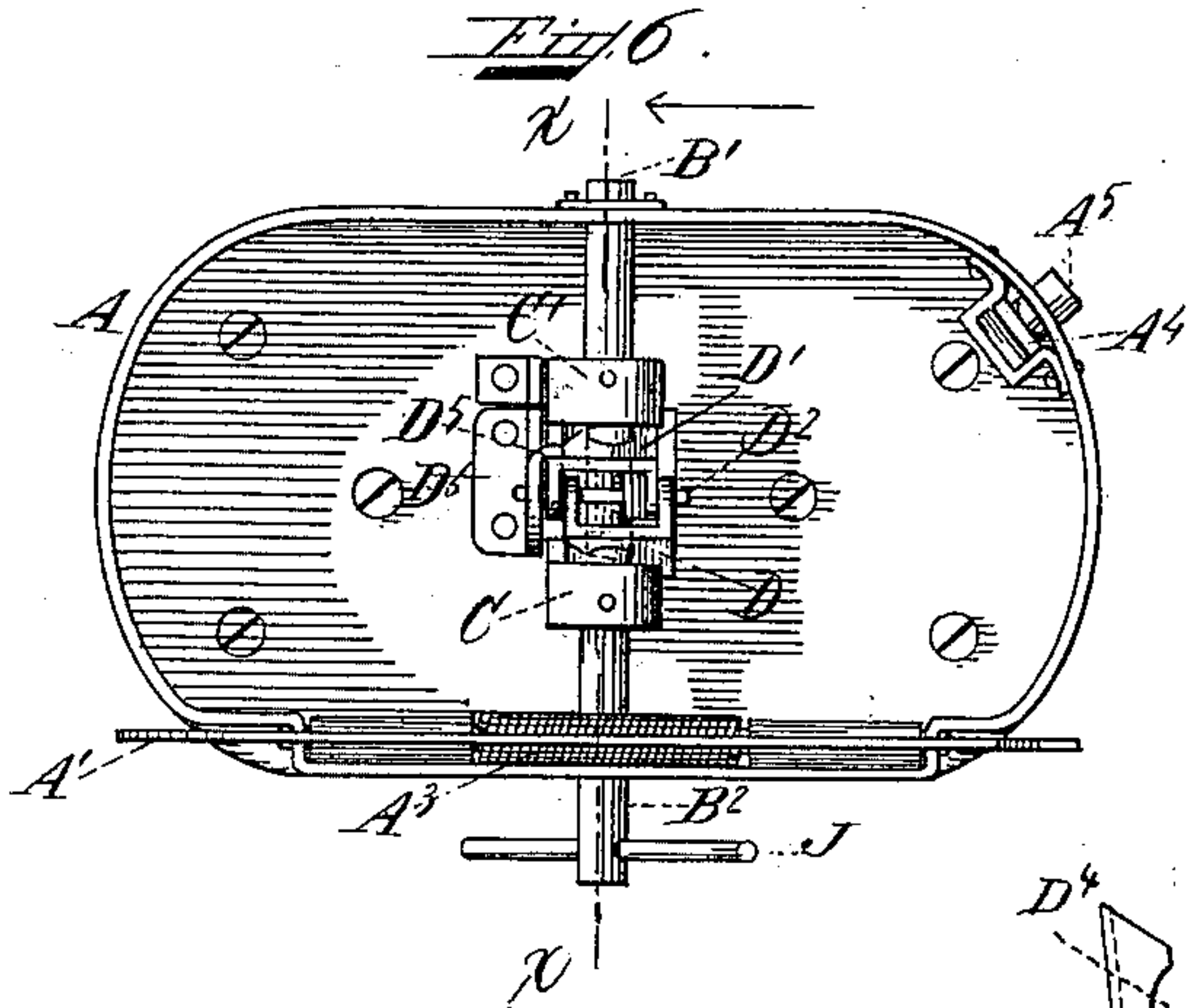


Fig. 8.

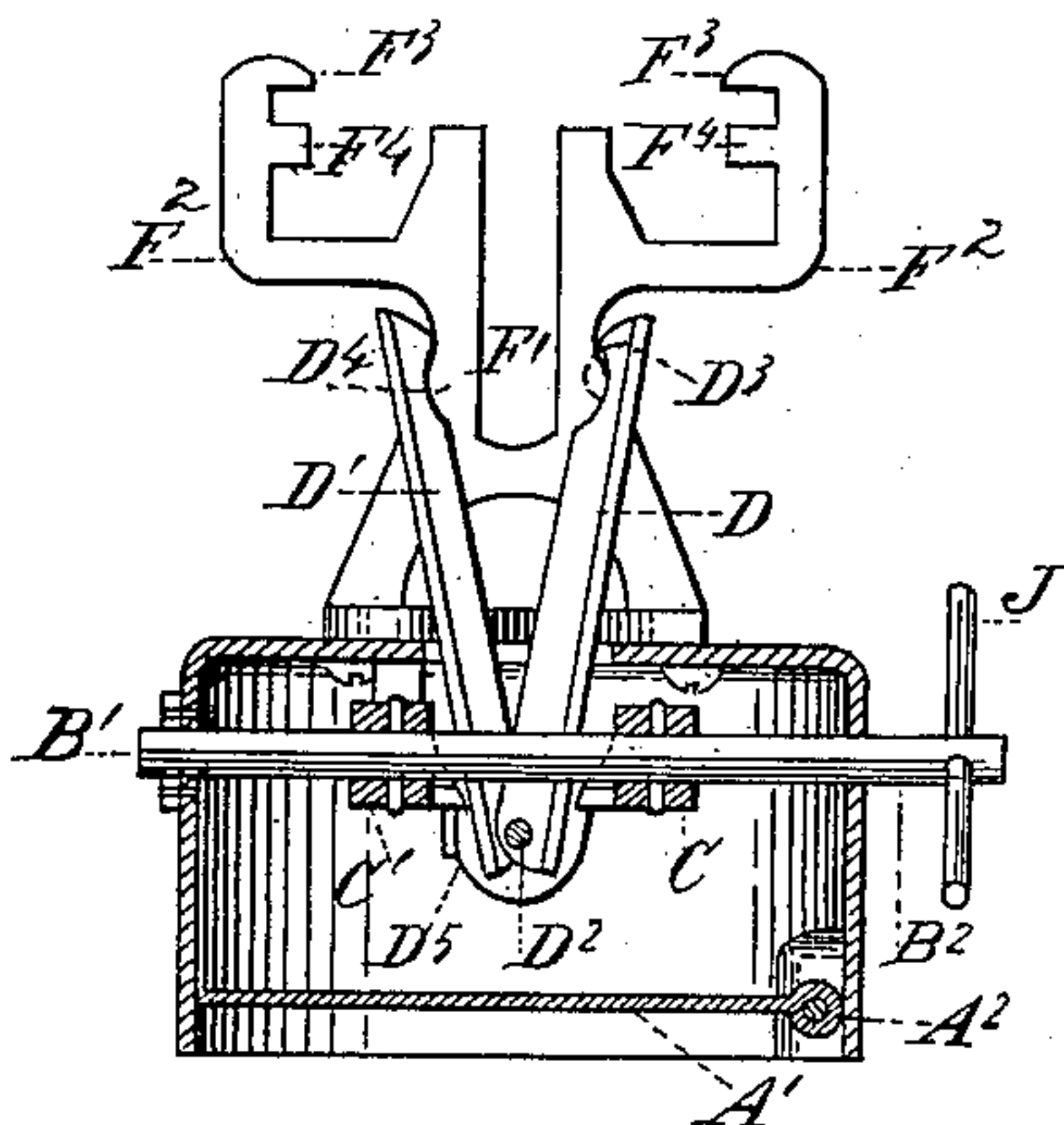


Fig. 9.

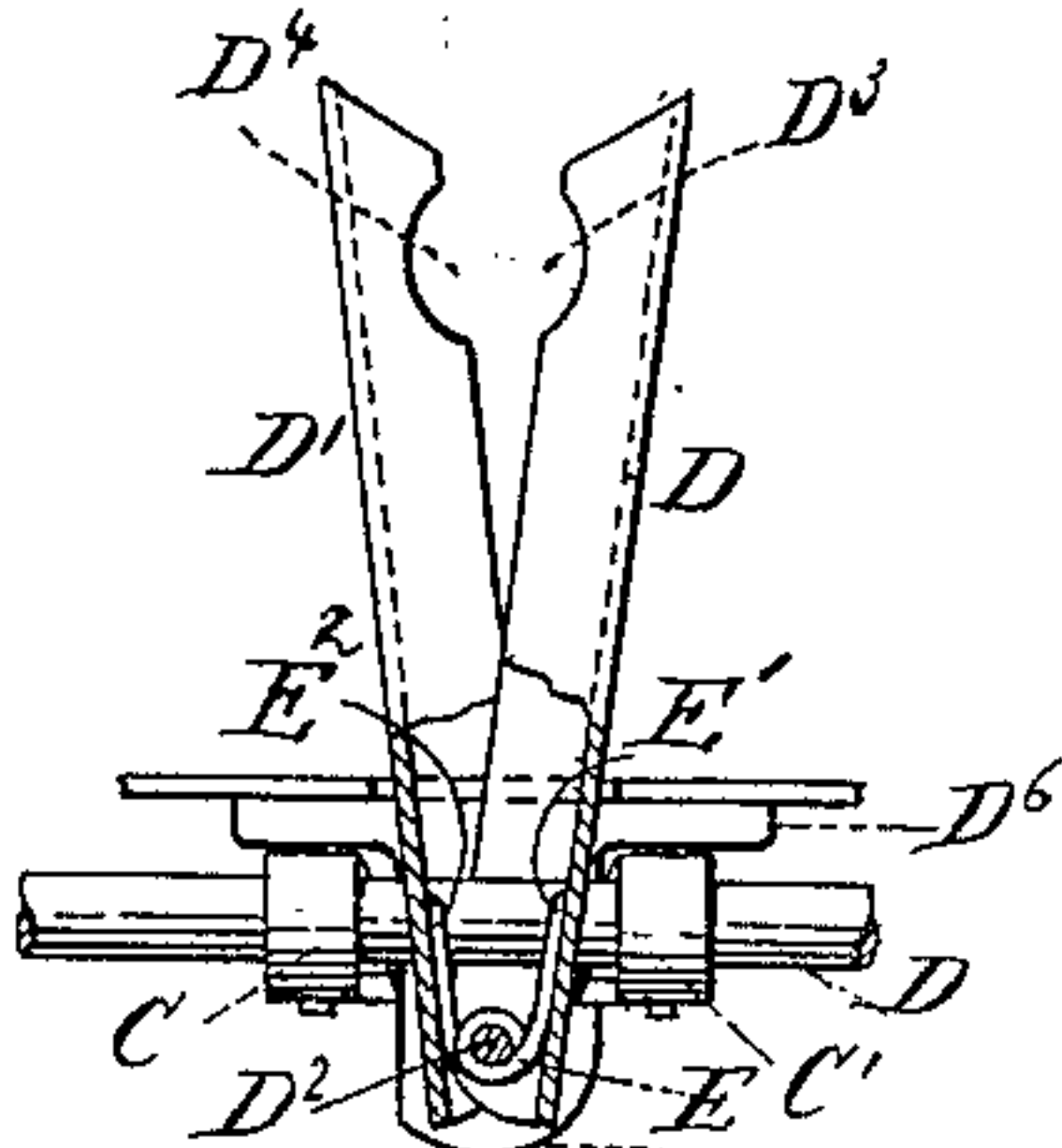


Fig. 10.

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UNITED STATES PATENT OFFICE.

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CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 640,072, dated December 26, 1899.

Application filed May 21, 1898. Serial No. 681,374. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. AMSDEN, of Springfield, in the county of Hampden and State of Massachusetts, have invented certain
5 new and useful Improvements in Conveying Apparatus, of which the following is a specification.

My invention relates to improvements in conveying apparatus of the class in which an
10 endless continuously-moving cable is employed for conveying carriers containing cash or memoranda from the several salesmen's stations to the main or cashier's station and a return-line by which the carriers are re-
15 turned from the cashier to the stations from which they came. The carriers are provided with gripping-jaws, by which they are gripped onto the cable and propelled thereby and are automatically released from the cable upon
20 reaching the cashier's desk and upon being returned by the cashier are automatically released from the propelling-cable upon their reaching their respective stations.

My invention consists of certain novel features hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which illustrate a construction embodying my invention, Figure 1 is a side view of one of the sta-
30 tions along the line and the cashier's station, the figure being broken away at the center and representing a salesman's station located at a distance from the cashier's station. Fig. 2 is a plan view of the same. Fig. 3 is an end
35 view looking from the right-hand end of Fig. 1. Fig. 4 is a plan view of one of the carriers. Fig. 5 is an end view of one of the carriers. Fig. 6 is a bottom plan view of one of the carriers. Fig. 7 is a detail perspective
40 view of the gripping-jaws and operating mechanism therefor. Fig. 8 is a bottom plan view of the carrier, showing the cover open. Fig. 9 is a cross-sectional view on the line
45 X X, Fig. 8, with the shaft in full lines. Fig. 10 is a detail side view, partly in section, of the gripping-jaws, partly broken away to show the spring which acts to hold the jaws open.

Like letters of reference refer to like parts throughout the several views.

50 A represents a carrier provided with a cover A', fast on a shaft A², which has its opposite

bearings in the rear side of the carrier. Around said shaft is the spring A³, one end of which bears against the inner side of the carrier, and the opposite end bears against
55 the under side of the cover, and the tendency of said spring is to keep said cover open. The cover is held closed by the spring-catch A⁴, which is adapted to engage with the cover and hold the said cover closed, and upon
60 pressing on the button A⁵ said catch releases said cover, and the spring A³ throws the cover open. The mechanism so far described forms no part of the present invention, as it
65 is a common construction of carriers used in all cable systems and is well known to those skilled in the art.

The shaft B extends crosswise through the carrier A and has bearings in the opposite sides of the carrier, as shown at B' and B²,
70 Fig. 9. On said shaft B at equal distances from the center are fixed fast two cams C C', and on said shaft B between said cams C C' are located the opposite gripping-jaws D D', provided at their lower ends with a common
75 supporting-pivot D², supported in the bracket D⁵, secured at D⁶ to the bottom of the carrier. (See Fig. 7.) Located around the pivot D² is a spring E, and the ends E' E² of said
80 spring bear against the opposite jaws D D'. The jaws D D' at their upper ends are provided with recesses D³ D⁴, which when the jaws are brought together fit around and grip the propelling-cable. (See Fig. 3.) When
85 the shaft B is rotated to bring the ends C² and C³ of the cams C and C' against the jaws D D', said jaws are closed, as shown in Fig. 7, and the spring E is compressed. When the
90 said shaft has again been rotated to remove the ends C² C³ from the position shown in Fig. 7 to that shown in Figs. 9 and 10, the spring E exerts its tension, and the ends E' E² throw
95 the jaws to their open position, (see Fig. 10,) in which case the carrier is released from engagement with the cable. On the top of the carrier at opposite ends are secured the sup-
100 porting-arms F, recessed at the center F' to allow the passage of the cable therethrough. Each supporting-arm is provided with branch arms F², which at their upper ends are pro-
vided with inwardly-turned fingers F³ and inwardly-turned lugs F⁴. Between the fin-

gers F^3 and the lugs F^4 the supporting-track is located in the travel of the carrier.

Referring now to Figs. 1 and 2, the left-hand end represents the cashier's station, into which the carriers from the various salesmen are received and from which the carriers are sent after making change to the salesmen along the line, and each carrier is switched to the station to which it belongs by mechanism which will be hereinafter described. G represents the forwarding-track by which the carriers are sent to the cashier's station, and H represents the track by which the carriers are returned to the salesmen. In Fig. 1 a carrier A is on the forwarding-track G and is approaching the cashier's station, the jaws gripping the cable which propels the carrier along. As the carrier approaches the supporting-bracket I the upper end of the arm J , which is secured at its center to the shaft B , strikes the pin I^1 , which extends inwardly from the supporting-bracket I in the path of the upper end of the arm J , and said arm striking said pin is thrown over, thereby removing the cams previously described from acting on the jaws $D D'$, whereupon the spring E exerts its tension and opens the jaws, and the carrier being released from the cable stops at the cashier's station. The forwarding-track G , which is supported by the brackets I and I^2 , is a flat track, as shown in Fig. 3, and is the same in construction from end to end and is equally adapted for the travel of all the carriers without reference to the station from which they came. The return-track H , however, differs from the forwarding-track G in that at each station means are provided for switching the carriers belonging to that station and no others, so that each salesman receives the carriers which he sent from his station to the cashier upon their return by the cashier along the return-track H . To effect this switching, the fingers F^3 vary in length, and the return-track H is constructed with depressed branch portions H' at each station of different widths from the first station to the last.

By referring to Fig. 2 it will be noticed that the fingers F^3 of the two carriers on the ends differ in length, the fingers on the left-hand end being longer than those on the right-hand end. The carriers in the middle of the figure, it will be noticed, represent the carriers traveling along the lower or forwarding track G and have no connection with the present description.

By referring to Fig. 3 it will be noted that the carrier on the upper track and the one on the lower track have fingers F^3 which differ in length. The return-track H , as hereinbefore stated, is provided with branch tracks at each salesman's station, and, as shown in Figs. 1, 2, and 3, the first station is illustrated with branch tracks H' branching down from the main portion of the track H . The branch tracks H' are of such a width that the fingers F^3 on the right-hand carrier (shown in Figs.

1 and 2) will move down along said branch tracks and away from the middle portion of the track, which continues in a straight line. For each station the branch tracks H' increase inwardly in width and are so arranged that the carriers belonging to the second station will not leave the main track at the first station because the fingers F^3 of said carriers are wider than the branch tracks, and their inner ends therefore rest and travel on the main track past the first station. For example, the carrier A (shown at the left hand of Fig. 1) has been placed on the return-track by the cashier and is moved forward by hand until the upper end of the arm J strikes the inwardly-projecting pin I^3 , when said arm is moved into the position shown in dotted lines, Fig. 1, in which position of the parts the cams $C C'$ have pressed against the jaws $D D'$ and caused said jaws to grip the cable K , and the carrier is then propelled along the track H by the movement of the cable. If the carrier just described belongs to the first station and the fingers F^3 are of the length shown at the top of Fig. 3 and at the right-hand end of Fig. 2, said fingers are too short to reach over onto the main track H . The said fingers therefore glide down along the branch tracks H' and move along said tracks, the lower end of the arm J striking the inwardly-projecting pin I^4 on the bracket I^2 and causing the arm J to assume its normal position, as shown in the extreme left hand of Fig. 1, and in said movement the shaft B is moved, causing the cams $C C'$ to move from the position shown in Fig. 7 to that shown in Fig. 10, whereupon the spring E acts on said jaws and opens the same. The diverged carrier then moves along said branch track H' by momentum and is discharged from the end of the tracks into a suitable receptacle out of the path of travel of the carriers. If the carrier above described had been the one shown in the left hand of Fig. 2 or the bottom of Fig. 3 provided with the long fingers F^3 , it would not have been diverted at the first station owing to the length of the fingers, which would extend over and remain on the main track H , in which case the lower end of the arm J would be above the projecting pin I^4 , and consequently the jaws would not be unlocked, but would continue to grip the cable, and the carrier would be propelled along the main track until it reached the station to which it belonged, in which case the fingers F^3 would not reach over onto the main track, because the branch tracks at said station would be increased inwardly in width to correspond with the width of the supporting-fingers F^3 , and the carrier would be diverted onto the branch tracks. In other words, the width of the branch tracks H' and the width of the fingers F^3 are graduated for each station, and those carriers in which the fingers are of greater width than the branch tracks along the line will pass on to their own stations or the one where the branch tracks are as wide as the fingers F^3 .

By the above-described mechanism the carriers entering the cashier's station are returned to the salesman along the main line and each carrier is diverted at the station from which it came.

The supporting-arms F of the carriers are provided with upwardly-turned arms F⁵, which fit around the central downward extension of the main tracks G' and H² of the forwarding and return tracks and steady the carriers in their travel along the tracks.

I do not limit myself to the arrangement and construction shown, as the same may be varied without departing from the spirit of my invention.

Having thus ascertained the nature of my invention and set forth a construction embodying the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a conveying apparatus, a main track, a propelling-cable, carriers adapted to grip said cable and to be propelled along the main track, branch tracks at each station leading from said main track for supporting the carriers diverted at the stations to which they belong, means on said carriers for supporting the same in their travel along said main track and the branch tracks to which the carriers belong, a cable-gripping mechanism on each carrier, and a device for disengaging the gripping mechanism from the cable located in the path of the diverted carriers traveling along the branch tracks, the branch tracks of each station and the supporting means on the carriers belonging to said stations being

correspondingly graduated in width whereby only carriers belonging to a station can be diverted at said station.

2. In a conveying apparatus, a main track, a propelling-cable, carriers adapted to grip said cable and to be propelled along the main track, branch tracks at each station leading from said main track for supporting the carriers diverted at the stations to which they belong, means on said carriers for supporting the same in their travel along said main track and the branch tracks to which the carriers belong, a cable-gripping mechanism on each carrier composed of two opposite gripping-jaws, a shaft, cams mounted on said shaft and adapted to act on said jaws to close the same upon the propelling-cable, and a spring adapted to open said gripping-jaws upon the removal of said cams from their actuating position on said jaws, and a device for disengaging said gripping mechanism from the cable located in the path of the diverted carriers traveling along the branch tracks, the branch tracks of each station and the supporting means on the carriers belonging to said stations being correspondingly graduated in width whereby only carriers belonging to a station can be diverted at said station.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 5th day of May, A. D. 1898.

GEORGE A. AMSDEN.

Witnesses:

A. L. MESSER,
C. A. STEWART.