

Dec. 31, 1935.

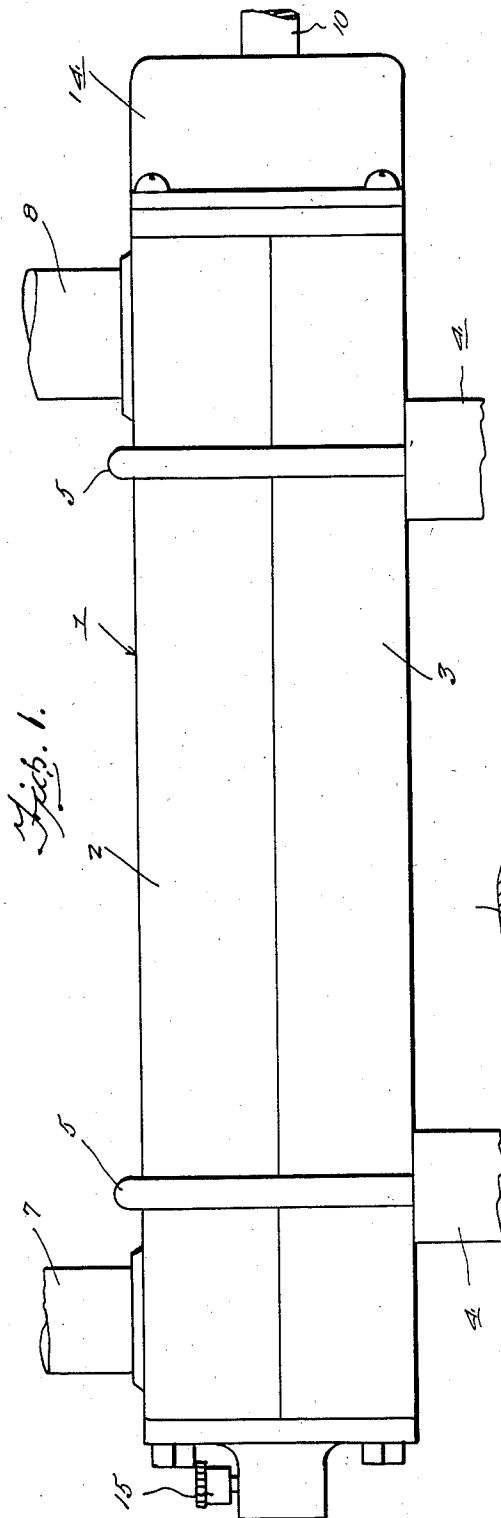
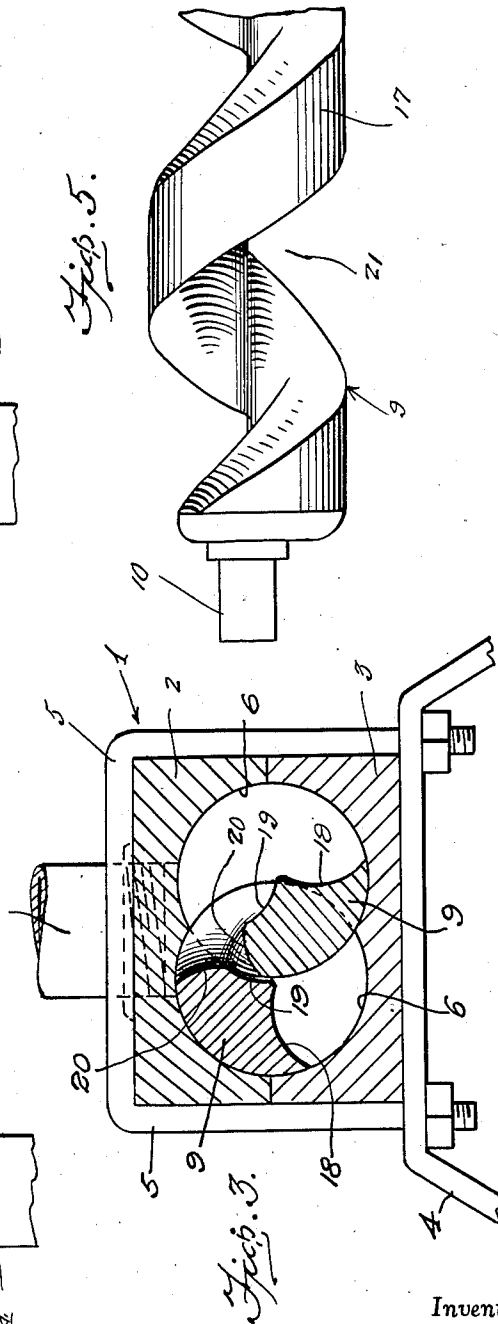
W. C. FRANKLIN

2,026,306

PUMP

Filed Nov. 22, 1934

2 Sheets-Sheet 1



Inventor

W. C. Franklin

By *Clarence A. O'Brien*
Attorney

Dec. 31, 1935.

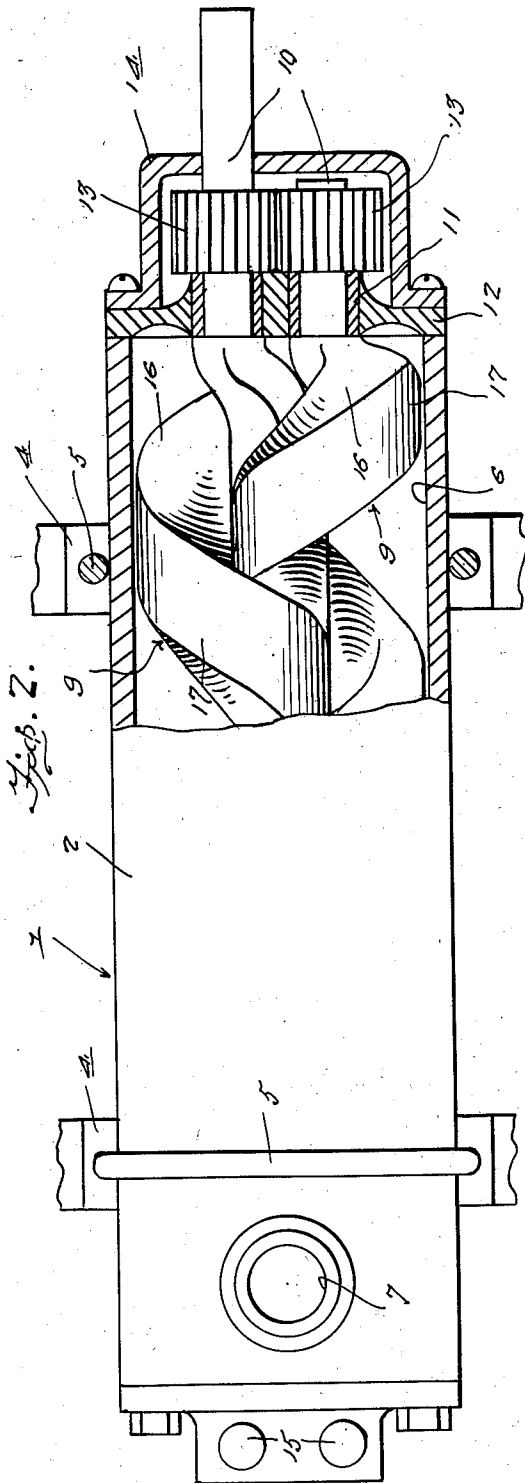
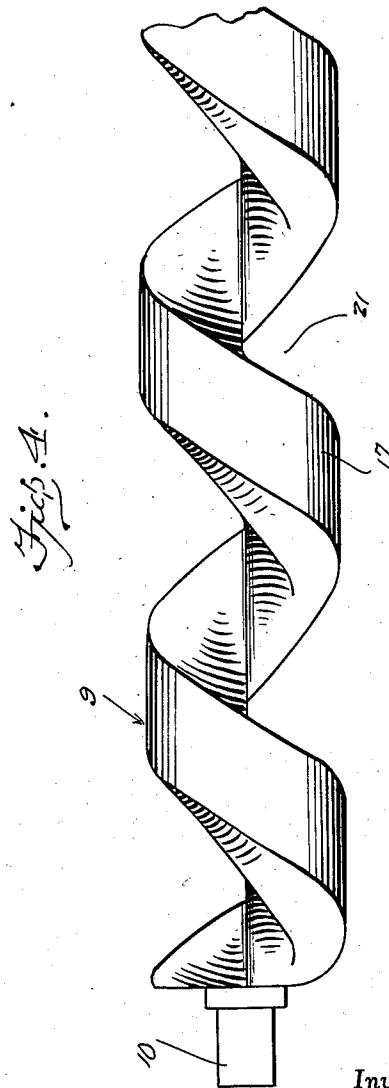
W. C. FRANKLIN

2,026,306

PUMP

Filed Nov. 22, 1934

2 Sheets-Sheet 2



Inventor

W. C. Franklin

By *Alvanee A. O'Brien*
Attorney

UNITED STATES PATENT OFFICE

2,026,306

PUMP

Wallace C. Franklin, Gallup, N. Mex., assignor of
one-half to Howard L. Woods, Gallup, N. Mex.

Application November 22, 1934, Serial No. 754,321

1 Claim. (Cl. 103—128)

The present invention relates to new and useful improvements in pumps of the type including a housing and spiral impellers rotatable in said housing, said impellers coacting with each other in a manner to provide a plurality of pockets or compartments for receiving and moving the liquid being pumped forwardly or toward the discharge end of said pump.

An important object of the present invention is to provide a pump of the aforementioned character comprising oppositely spiralled rotary impellers embodying a novel construction through the medium of which leakage between the pockets or chambers will be prevented, thus assuring efficiency while at the same time permitting the pump to be operated successfully at comparatively low speed.

Other objects of the invention are to provide a pump of the character described which will be comparatively simple in construction, strong, durable, reliable in operation, compact and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a view in side elevation of a pump constructed in accordance with the present invention.

Figure 2 is a view partially in top plan and partially in horizontal section of the invention.

Figure 3 is a view in vertical transverse section through the pump.

Figure 4 is a view in side elevation of a portion of one of the spiral impellers.

Figure 5 is a view in side elevation of a portion of the other impeller.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a casing which is designated generally by the reference numeral 1, said casing comprising complementary upper and lower half sections 2 and 3, respectively. The casing 1 is firmly secured on suitable supports 4 through the medium of U-bolts 5. The casing 1 has formed longitudinally therein communicating impeller channels 6 with the end portions of which intake and discharge pipes 7 and 8, respectively, communicate.

Mounted for rotation in the channels 6 of the casing 1 are meshed, oppositely spiralled impellers 9 which terminate, at their ends, in trunnions 10 which are journaled in suitable bearings 11 in the end walls 12 of said casing 1. Fixed on the trunnions 10 on one end of the impellers 9 are meshed gears 13 for causing said impellers to rotate in opposite directions.

The gears 13 are enclosed in a housing 14 on the adjacent end of the casing 1, said housing being adapted to retain a lubricant for the gears 13 and the adjacent bearings 11. One of these trunnions projects beyond the housing 14 (see Figure 2) for receiving an actuating crank, drive pulley or the like. Suitable fittings 15 are provided for lubricating the trunnions on the other ends of the impellers 9.

The impellers 9 fit closely in the channels 6 of the casing 1, as shown to advantage in Figure 3 of the drawings. As illustrated to advantage in Figure 5 of the drawings, one edge or side of the spirals 17 of the impellers 9 is substantially concave, as at 18. The other edge or side of the spirals 17 is formed to provide a substantially concave inner portion 19 and a convex outer portion 20. Further, the cuts 21 of the spiral impellers 9 extend substantially to the longitudinal axes of said impellers.

It is believed that the operation of the pump will be readily apparent. Water or other liquid, entering the casing 1 through the intake pipe 7 enters the pockets or chambers formed by the impellers 9 and is driven by said impellers toward the other end of said casing from which it is discharged through the pipe 8. The construction of the impellers 9 is such that comparatively large pockets or chambers are provided and leakage between said pockets or chambers is prevented, thus assuring a high degree of efficiency and permitting the pump to be driven at comparatively low speed if desired. The concave portion 19 of each of the impellers 9 receives the convex portion 20 of the other impeller.

It is believed that the many advantages of a pump constructed in accordance with the present invention will be readily understood, and although a preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:—

A pump comprising a casing, meshed oppositely spiralled impellers rotatably mounted in the casing, the cuts in said impellers extending substantially to the longitudinal axes thereof, one side of each of the impeller spirals including a substantially concave inner portion and a substantially convex outer portion, the substantially concave inner portion of one impeller receiving the substantially convex outer portion of the other impeller, the other side of each of the impeller spirals being substantially undercut, and means for actuating the impellers in unison.

WALLACE C. FRANKLIN.