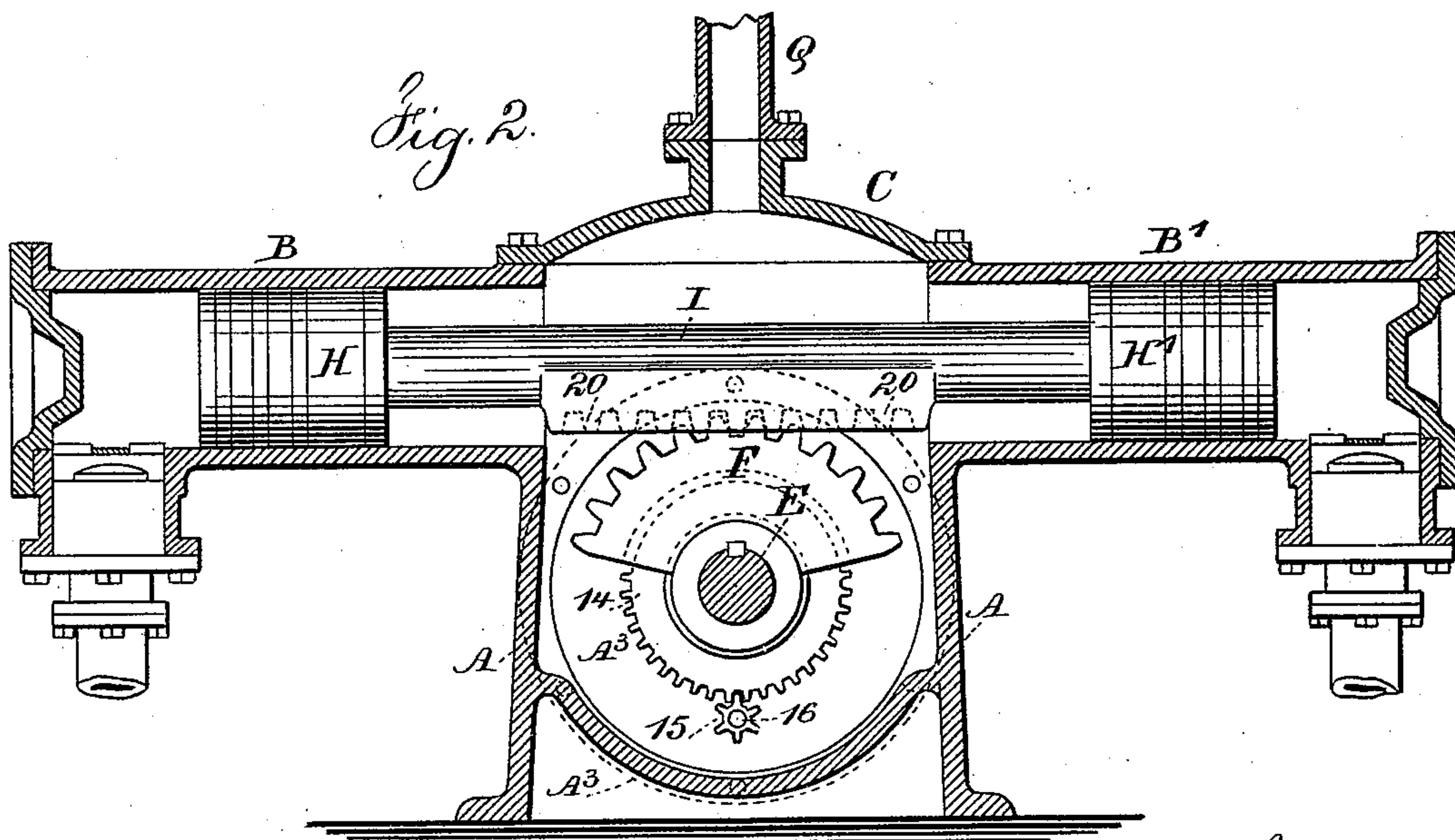
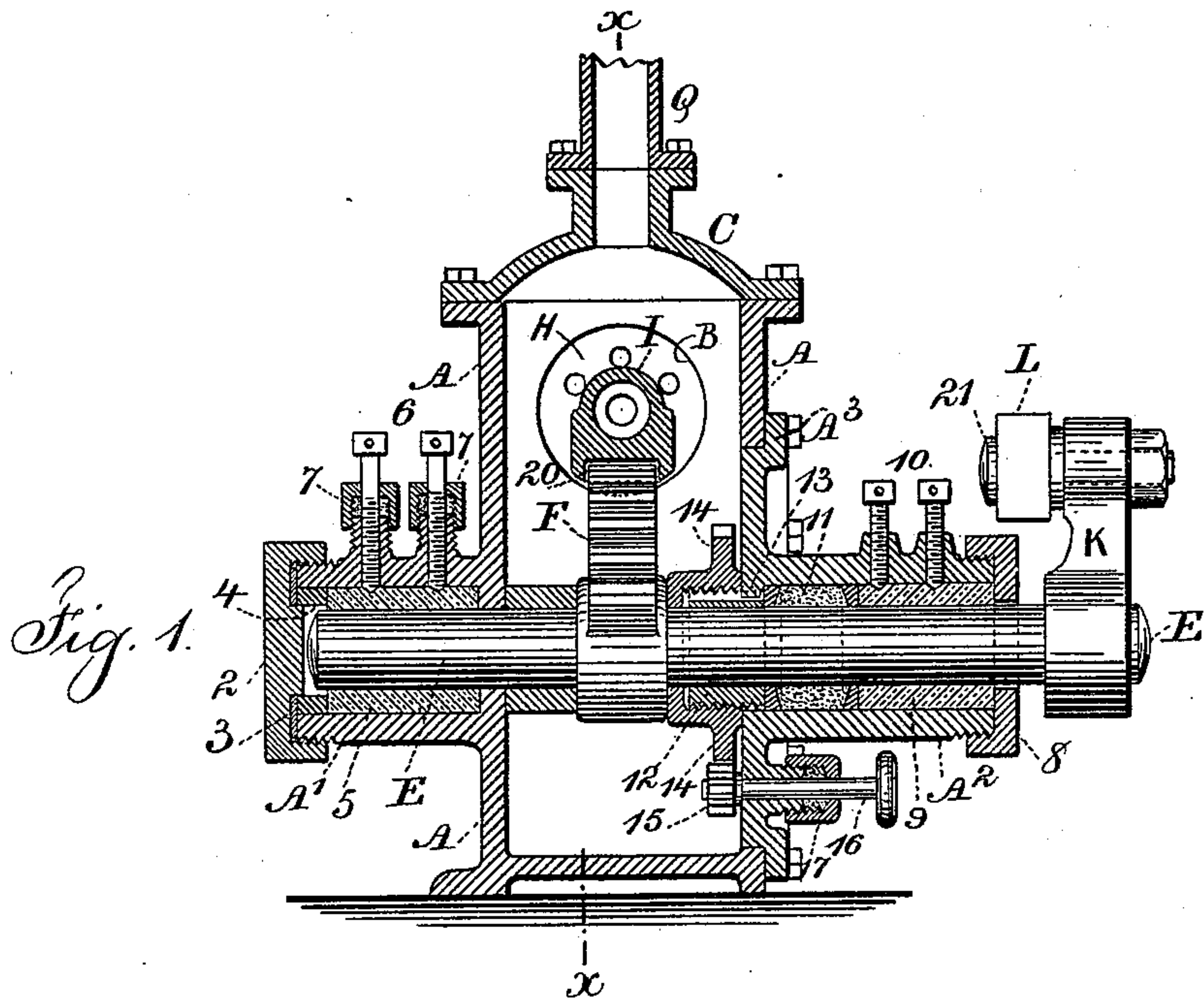


M. GRIMM.
PACKING.

Patented Apr. 4, 1893.



Witnesses

Chas H. Smith
J Staib

Inventor

Marc Grimm
per Lemuel W. Serrell
Atty

UNITED STATES PATENT OFFICE.

MAX GRIMM, OF WEST HOBOKEN, NEW JERSEY.

PACKING.

SPECIFICATION forming part of Letters Patent No. 494,716, dated April 4, 1893.

Application filed July 11, 1892. Serial No. 439,665. (No model.)

To all whom it may concern:

Be it known that I, MAX GRIMM, a citizen of the United States, residing at West Hoboken, in the county of Hudson and State of New Jersey, have invented an Improvement in Packings for Rock-Shafts, &c., of which the following is a specification.

This invention is especially intended for rendering tight the joint between the rock shaft and the case in a pump for refrigerating apparatus, and in which the case receives the actuating parts of the pump and in which the pump is employed for maintaining the proper pressure in the refrigerating apparatus, and the packing serves to prevent the escape of the ammonia which has heretofore been very difficult in refrigerating apparatus.

In the drawings Figure 1 is a cross section of the case and of the packing for the rock shaft, and Fig. 2 is a section at the line $x x$, the details of the pump pistons being omitted.

The rock shaft E receives its motion from a link L connected with a crank pin 21 on the crank K, and this rock shaft E passes across through the case A, which case A is provided at one side with a tubular projecting hub for the reception of the journal or bearing boxes 5 which are set up by the screws 6 that pass through the packing glands 7, and this end of the rock shaft is closed by a cap 2 screwed upon the tubular bearing A' and having a washer 3 that intervenes between the cap 2 and the end of the tubular bearing A', and there is an intermediate ring 4 between the end of the bearing 5 and the cap 2 for preventing looseness of the parts.

I have represented the segmental gear F as acting upon the teeth 20 of the piston rod I which moves the pistons H and H' within the cylinders B and B', which cylinders form a part of the case, and there is a cap C shown as over the central portion of the case with a pipe Q through which the materials are passed, but these parts may be of any desired construction, and in order to introduce the segmental gear F, one side of the case A is open and provided with a cap plate A³, which cap is bolted on firmly against a washer or the joint is calked after the parts have been put together and upon this cap A³ is a tubular bearing A² surrounding the rock shaft E and provided with an end cap 8 screwed upon the

tubular bearing, and the journal boxes 9 surround this rock shaft E and they are set up from time to time to compensate for wear, by the screw bolts 10, and it will be observed that these journal boxes 9 are adjacent to the crank upon the rock shaft, so that there is but little leverage to cause the bearings of the rock shaft to wear unequally. The fibrous or compressible packing 11 is made of any suitable material, and surrounds the rock shaft within the tubular bearing A², and adjacent to the ends of the journal boxes 9, and the packing is set up from the interior in order that the pressure of the material within the chamber A may aid in forcing the packing tightly around the shaft E; and with this object in view there is a sleeve 12 around the shaft and adjacent to the inner edge of the packing 11, and this sleeve is forced outwardly to compress the packing. A convenient manner of doing this consists in providing a screw thread around the exterior of the sleeve 12, and a longitudinal channel in the said sleeve for the projection 13 upon the cap A³, in order that the sleeve may be moved endwise but not rotated, and the wheel 14 is made with an internal thread fitting around the sleeve 12, so that when this wheel 14 is rotated, it will force the sleeve 12 against the packing 11, or the reverse, and it is advantageous for this gear 14 to rest at the back edge of its hub against the hub of the segmental gear F, so that such gear may act efficiently in forcing the sleeve 12 outwardly upon the packing 11 to tighten the same around the rock shaft E, and as a convenient means for rotating the wheel 14 I make use of a pinion 15 on a shaft 16 having a hand wheel on the outer end, and this shaft 16 passes through a gland or packing 17 which may be set up to make the parts tight, as usual, hence by rotating this pinion 15 by the hand wheel outside the case, the gear 14 is revolved in either one way or the other and the packing tightened or loosened according to the direction in which the pinion 15 is rotated.

This improvement while primarily intended for use with the pump of a refrigerating apparatus, is not necessarily limited in that particular.

I claim as my invention—

1. The combination with the rock shaft, a case and tubular bearings for the rock shaft,

of journal boxes within the tubular bearings near the ends of the rock shaft, and a packing around the rock shaft and within one of the tubular bearings, and means for setting up
5 such packing from the inside of the case, so as to act upon the packing in the same direction as the pressure of the material within the case, substantially as set forth.

2. The combination with the pump case having
10 ing tubular bearings, of a rock shaft passing into such tubular bearings, journal boxes within the tubular bearings and near the ends of the shaft, a cap for closing one of the tubular bearings, a packing within the other tubular
15 bearing and around the shaft, and a screw sleeve acting within the case and upon the inner end of the packing to compress the same outwardly, substantially as set forth.

3. The combination with the case and its tubular bearings, of a rock shaft passing
20 through the tubular bearings, and journal boxes within the case and around the rock shaft near the ends thereof, screws for acting upon the journal boxes to compensate wear, a compressible packing around the shaft and
25 within one of the tubular bearings, a sleeve for setting up the packing from the inside of the case, and mechanism substantially as specified and actuated from outside the case
30 for giving motion to the sleeve within the case, substantially as set forth.

Signed by me this 6th day of July, 1892.

MAX GRIMM.

Witnesses:

GEO. T. PINCKNEY,

WILLIAM G. MOTT.