

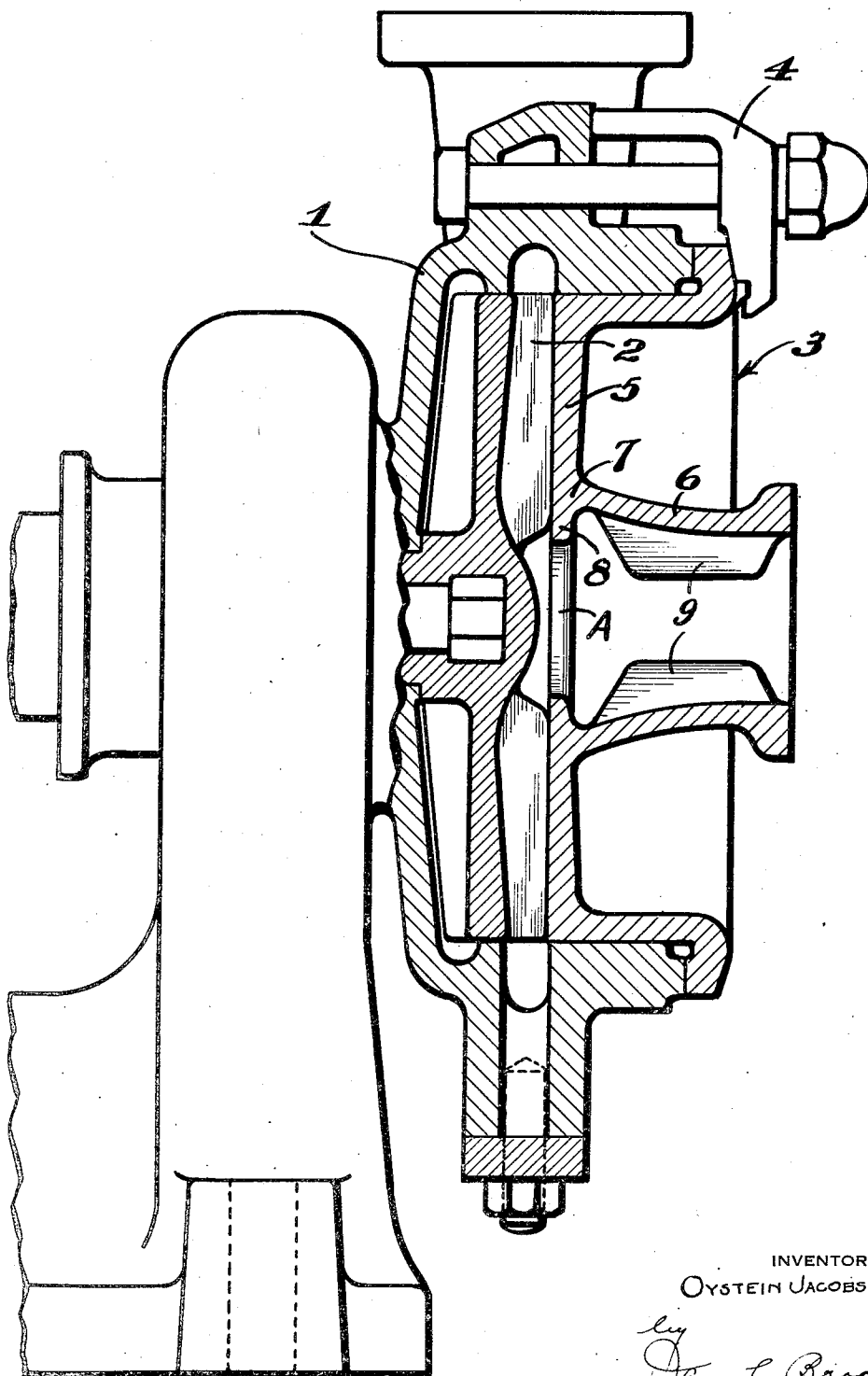
March 6, 1934.

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1,949,474

SUCTION COVER FOR CENTRIFUGAL PUMPS

Filed Feb. 27, 1933



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UNITED STATES PATENT OFFICE

1,949,474

SUCTION COVER FOR CENTRIFUGAL PUMPS

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Application February 27, 1933, Serial No. 658,699

1 Claim. (Cl. 103—103)

The invention relates to suction covers as used on centrifugal pumps. A cover of this kind comprises a disc-like plate clamped to the pump casing in opposition to the runner and provided at its center with an inlet neck. The design of the pump requires a neck which has a given opening at its inner end, and as heretofore constructed, it has been the practice to decrease the diameter of the neck from its outer to its inner end. This gives a construction which is weakest at the inner end of the neck at its juncture with the disc or plate, and when the suction line, which is attached to the neck, is subjected to shock or strain, the neck sometimes cracks or breaks off at its juncture with the plate. This is particularly liable to happen when the composition of the pump is brittle, corrosion-resisting material, such as high silicon iron. The object of the present invention is to provide an improved construction, in which the strength of the neck at its weakest point is so greatly increased that danger of breaking at this point is practically eliminated; while at the same time, a proper suction opening is provided at the inner end of the neck. One embodiment of the invention is shown in the accompanying drawing, wherein:

The figure is a partial vertical section through a centrifugal pump having a cover made in accordance with the invention.

Referring to the drawing, 1 is the pump casing carrying the usual impeller or runner 2, and provided with the cover 3, such cover being secured in place by the usual clamps 4, or by any other suitable means.

The cover comprises a plate or disc 5 and the neck 6, to which the suction pipe (not shown) is attached in the usual manner. The peculiarity of the neck 6 lies in the fact that it increases in diameter from its outer to its inner end, instead of decreasing, as has heretofore been the practice. This gives a connecting base at 7, which is very strong due to the greatly increased moment of resistance resulting from the increased diameter at such base, the relative strength of the present design being approximately three times that of the structure heretofore used having a neck of the same capacity, but tapering in the reverse direction.

In order that the suction opening A may be of the proper size, and not unduly great, due to the tapering form of the neck, the diaphragm 8 is employed to give the necessary restriction. The inner walls of the neck are provided with ribs 9, 9, the use of such ribs in this relation being a feature well known in the art.

What I claim is:

In combination with a centrifugal pump, a cover plate of brittle corrosion resisting material having an integral inlet neck increasing in diameter from the outer to its inner end and an integral annular diaphragm at the extreme inner end of the neck with a strengthening fillet at the juncture of the diaphragm and neck, said diaphragm lying in the plane of said plate and restricting the suction opening.

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