April 8, 1930. C. A. BORGESON 1,753,686

BASEMENT CIRCULATOR

Filed Sept. 26, 1927 2 Sheets-Sheet 1

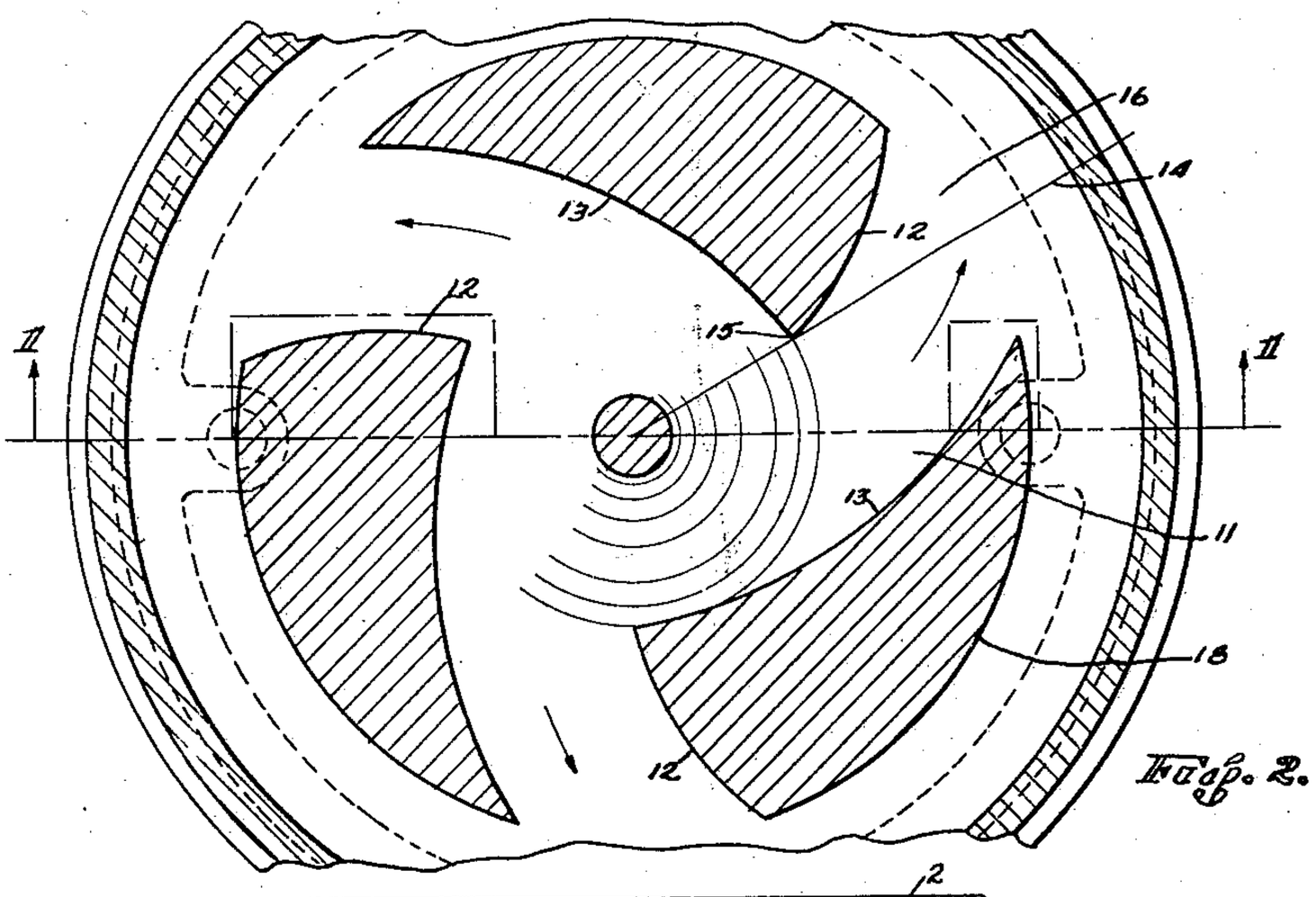


Fig. 2.

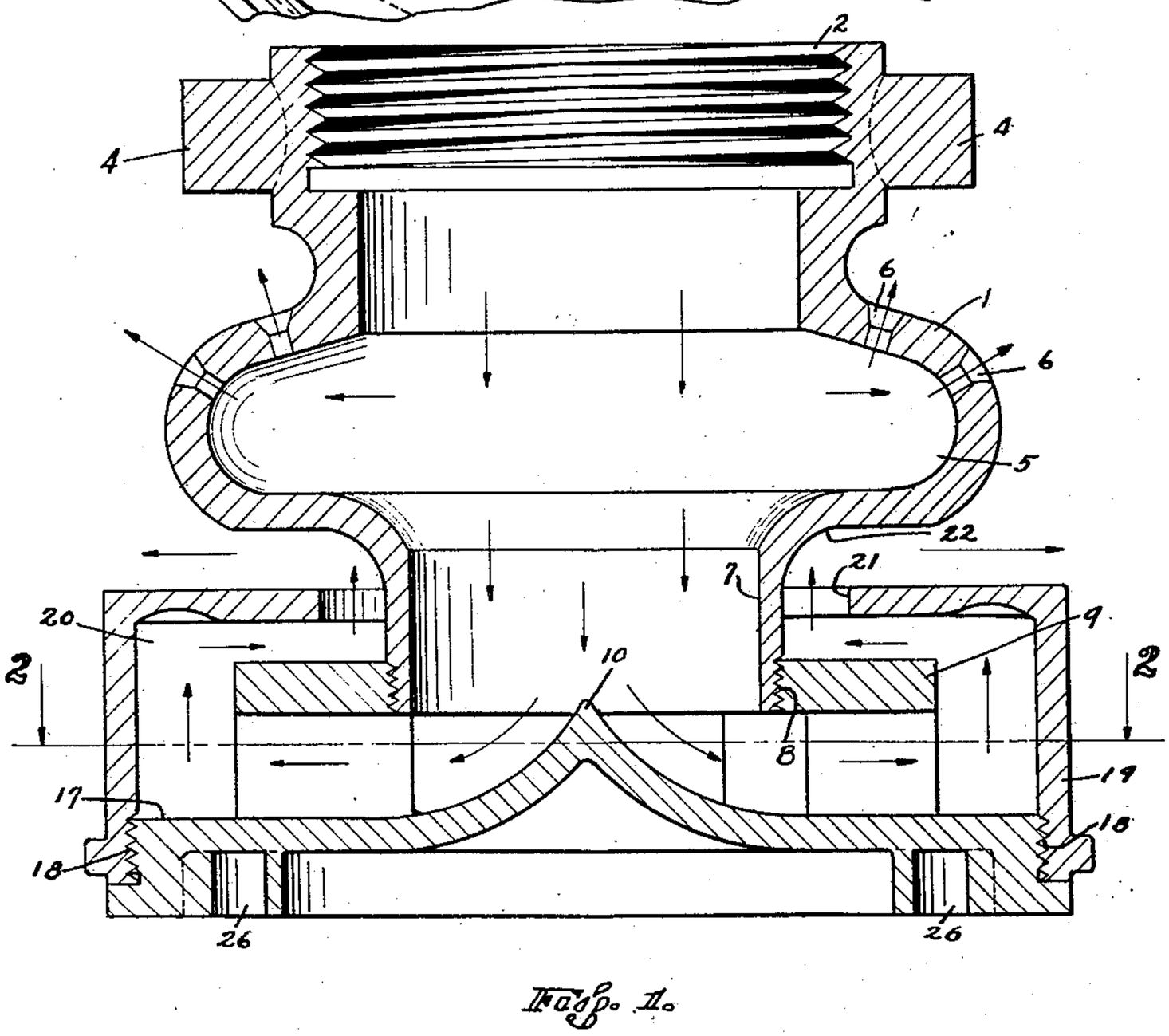


Fig. 1.

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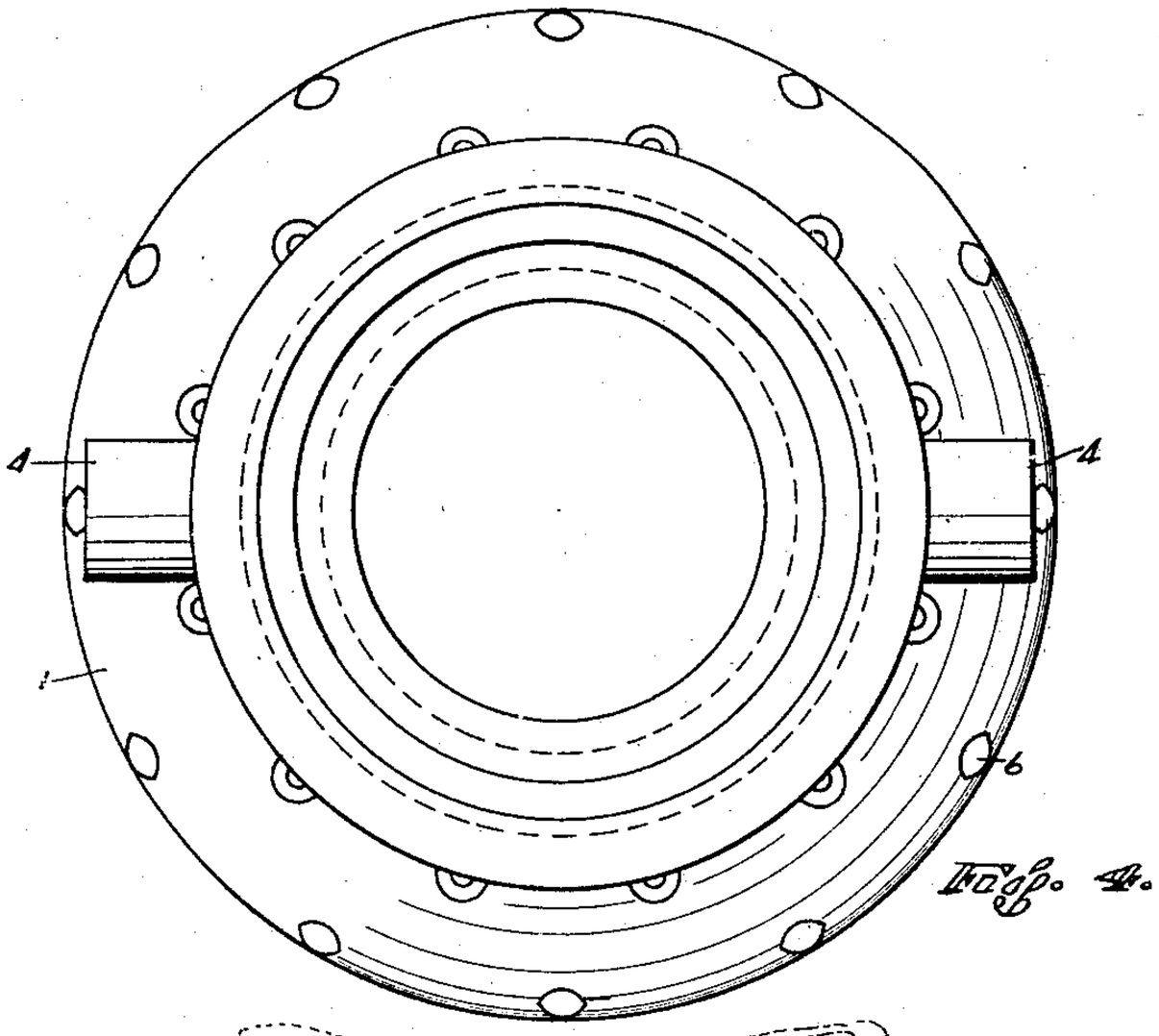


Fig. 4.

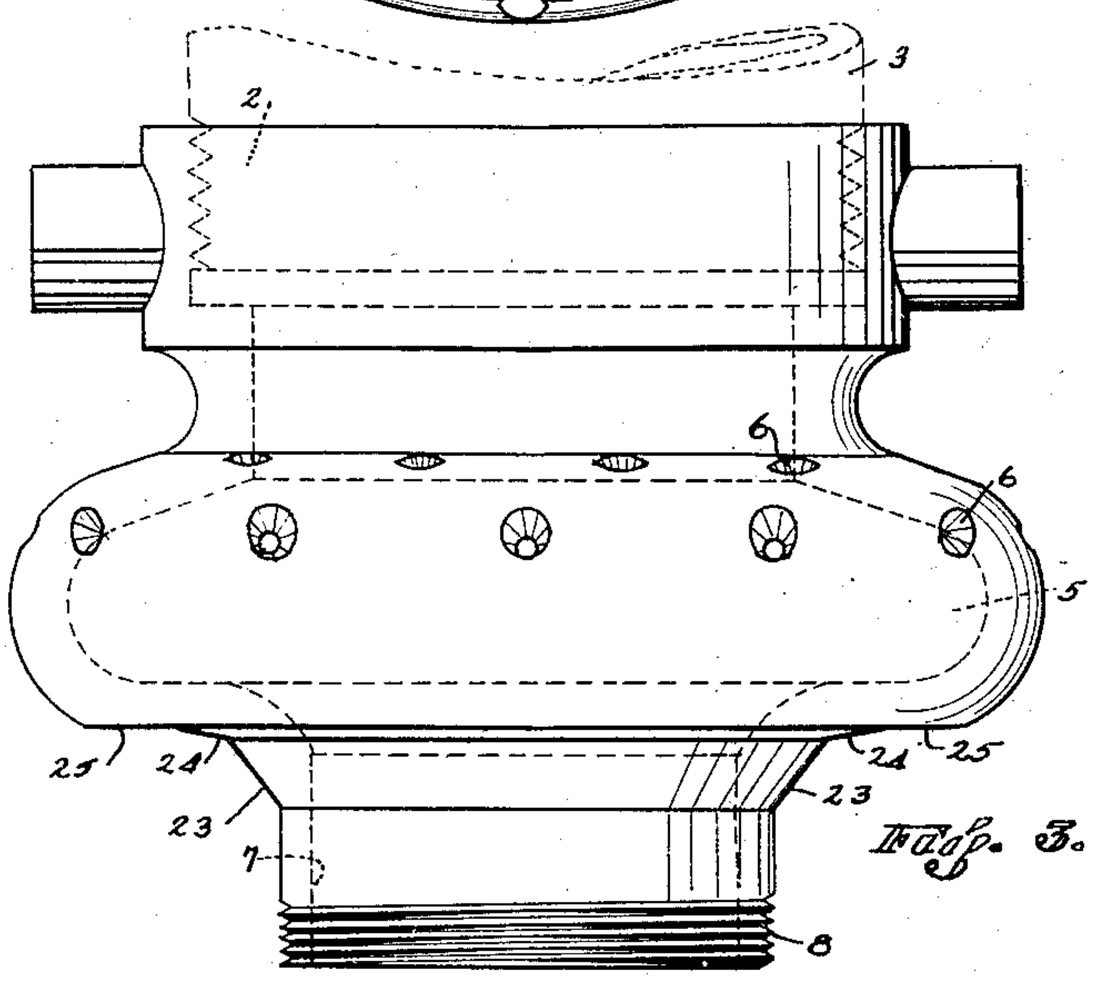


Fig. 3.

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Patented Apr. 8, 1930 1,753,686

UNITED STATES PATENT OFFICE

CHARLES A. BORGESON, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF TWENTY-FOUR AND ONE-HALF PER CENT TO GEORGE W. MITCHELL AND TWENTY-FOUR AND ONE-HALF PER CENT TO ALVA J. LINDERSMITH, BOTH OF SAN FRANCISCO, CALIFORNIA

BASEMENT CIRCULATOR

Application filed September 26, 1927. Serial No. 222,169.

My invention relates to improvements in hose nozzles, and it consists in the combinations, constructions and arrangements hereinafter described and claimed.

An object of my invention is to provide a hose nozzle which is especially designed to be lowered into the hold of a ship for fighting hidden fires or for fighting fires in basements. The different parts of the nozzle are so shaped and arranged with respect to each other as to cause a portion of the water flowing from the nozzle to be ejected in an apron-like spray that extends substantially at right angles to the axis of the nozzle and lies in a flat plane; and to cause the other portion of the water to be ejected through a plurality of small openings which are inclined at such an angle as to cause the water to be directed into the space surrounding the hose and nozzle.

A further object of my invention is to provide a device of the type described which is simple in construction and which is durable and efficient for the purpose intended.

Other objects and advantages will appear in the following specification, and the novel features of my invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings forming a part of this application in which

Figure 1 is a vertical section through the device;

Figure 2 is a section along the line 2—2 of Figure 1;

Figure 3 is a side elevation of a modified portion of the device; and

Figure 4 is a top plan view of the portion of the device shown in Figure 3.

In carrying out my invention I provide a casing 1, having internal threads 2 for receiving the end of a hose 3, see Figure 3. Figure 1 clearly shows how the casing 1 is provided with diametrically disposed projections 4 by means of which the casing may be screwed upon the hose 3. The casing has an enlarged compartment 5 and the upper wall of the compartment has openings 6 therein through which a portion of the water entering the casing may flow. The casing 1 is reduced at 7 and is provided with an external thread 8 for receiving a water spinning element 9, of a shape and structure now to be described.

The special construction of the element 9 is shown in Figures 1 and 2, and it will be noted that the water upon entering the element at its center is deflected by a conical-shaped projection 10 into three channels 11, see Figure 2. These channels have curved side walls 12 and 13 for imparting a whirling motion to the water as it passes therethrough. The channels are curved to such an extent that a radial line 14 passing the inner corner 15 of the channel 11 bisects the outer open end 16. It is this special manner of shaping that causes the water to be whirled at the desired speed as it leaves the element 9.

Figure 1 further shows how the element 9 has a shoulder 17 projecting beyond the periphery 18 of the portion housing the passageways 11. The outer diameter of the shoulder 17 has threads 18 for receiving a cup-shaped member 19. This member, together with the element 9, forms a water passageway 20 that receives the water issuing from the passageways 11 and causes it to flow in the direction of the arrows shown in Figure 1 until the water finally emerges from an opening 21 in the top of the member 19. The exterior surface of the casing 1 at a point adjacent to the opening 21 is curved as at 22, for causing the water to be ejected from the nozzle in a plane substantially at right angles to the longitudinal axis of the nozzle.

From the foregoing description of the various parts of the device the operation thereof will be readily understood.

As stated in the first part of the specification, the nozzle is especially designed for fighting hidden fires such as occur in the holds of a ship. Oftentimes fires which originate in the holds of a ship cannot be successfully fought, because it is impossible for the firemen to enter the hold, due to the flames and poisonous gases and a nozzle which will direct a stream of water in a line parallel to the hose will not always be effective for fighting such fires, because the fire may be in some remote part of the hold where it is impos-

sible to direct the stream of water. With the present device, the nozzle may be lowered through the trap door and be suspended by the hose itself at the desired distance above the floor. The water will be thrown from the nozzle in an apron-like spray, which as heretofore stated, will extend substantially at right angles through the axis of the nozzle. This spray has enough force to carry it approximately forty feet or more away from the nozzle. It will therefore be seen that the remote parts of the hold will be quickly drenched by water when the device is used.

Water will also be ejected from the openings 6, and this water will be sprayed around the points adjacent to the nozzle and hose.

In Figure 3 I show a slightly modified form of the device, this form being identical to the form already described with the exception that the curved surface 22 in the former device is made up of a plurality of planes 23, 24 and 25 in the modified form of the device. These planes will deflect the water in substantially the same manner as the curved portion 22. The element 9 has sockets 26 therein, for receiving a spanner wrench when it is desired to secure the element to the casing 1.

Although I have shown and described one embodiment of my invention, it is to be understood that the same is susceptible of various changes and I reserve the right to employ such changes as may come within the scope of the appended claims.

I claim:

1. A basement circulator comprising a casing and housing having an annular unobstructed water outlet opening formed by them, means disposed within said housing for whirling the water, said casing having an outwardly-extending curved portion overlying the water outlet for directing the water outwardly, and a flat horizontal portion extending from the curved portion for projecting the water in an apron-like spray transversely to the axis of the circulator.

2. A basement circulator comprising a casing, a housing enclosing the outlet end of said casing and having an opening disposed concentric with the casing outlet for forming an annular water outlet opening, a member mounted in said housing for whirling the water, said casing having a curved portion flaring outwardly from the annular outlet and merging into a flat horizontal portion for directing water issuing from the annular outlet in an apron-like spray.

3. A basement circulator comprising a casing having a water outlet, a housing enclosing the outlet end of said casing and having an opening therein disposed in concentric relation with the casing outlet for forming an annular water outlet opening, and means carried by said housing for directing the water radially from the casing outlet, said casing having a curved portion flaring outwardly in opposed relation to the annular water outlet and merging into a flat horizontal portion.

4. A basement circulator comprising a casing, a housing disposed at the open end of the casing and having means for directing water in a radial direction that issues from the casing, means for whirling the water, said casing and housing forming an annular water outlet, the casing having an outwardly flared portion extending in opposed relation to the water outlet and a flat horizontal portion extending from the flared portion.

CHARLES A. BORGESON.