

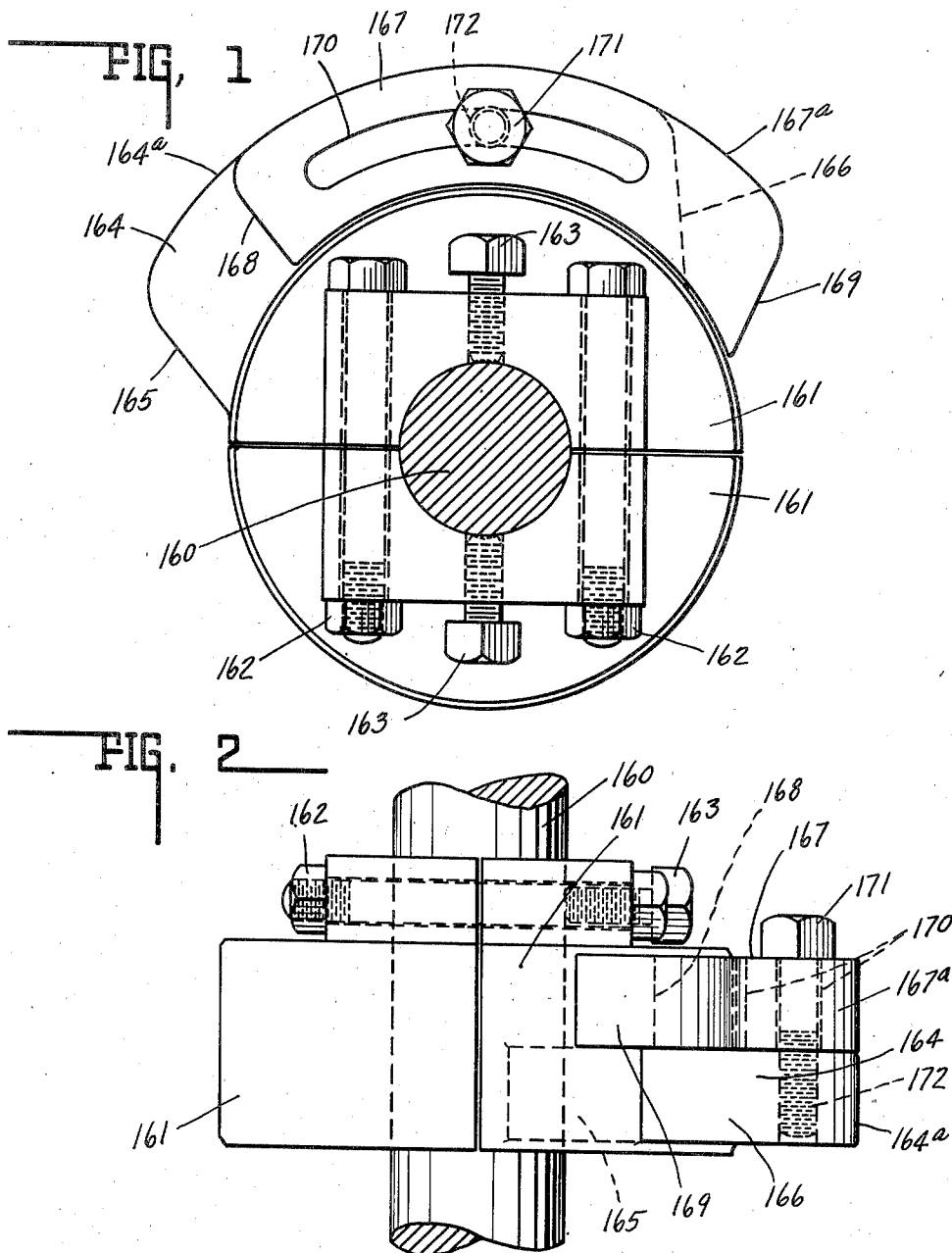
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GLASS MACHINE OPERATING CAM

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GLASS MACHINE OPERATING CAM

James A. Lewis, Hartford City, Ind., assignor to
Sneath Glass Company, Hartford City, Ind.Original application November 5, 1938, Serial No.
239,041. Divided and this application Decem-
ber 14, 1939, Serial No. 309,144

1 Claim. (Cl. 74-568)

This invention relates to an adjustable cam organization which is peculiarly applicable to glass forming machines.

This application is a division of the copending application, Serial No. 239,041, filed November 5, 1938, and entitled "Glass machine" and the latter is hereby made a part hereof.

The chief object of this invention is to provide a readily attachable and removable cam structure capable of angular, as well as axial, adjustment upon a control shaft and further capable of internal adjustment and all for cycle duration control purposes or, in other words, a universally adjustable cam arrangement.

The present invention permits time cycle control within the range of adjustability of the invention as to initiation or cessation and duration of operation of a follower controlled or actuated mechanism.

Other objects and features of the invention will be set forth more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawing, the following description and claim:

In the drawing Fig. 1 is a top plan view of an adjustable cam arrangement adapted for varying the duration of operation of mechanism such as disclosed in the aforesaid copending application.

Fig. 2 is a side view of said arrangement.

For an understanding of but one application or use of the invention, reference is had to the copending application referred to.

Therein, as well as herein, 160 indicates a rotating shaft. For any given machine "set up" it may be assumed to have a constant speed of rotation. This may represent, as in the copending application, the main control shaft of a glass machine. Upon such shaft is mounted a plurality of such cams, and the adjacent followers, engaged thereby in timed relation, control the several operations of such a glass machine. This control shaft 160 rotates a predetermined rate relative to the machine operation. This rate may be varied by substitution of other ratio connections, as required or desired.

Encircling shaft 160 are blocks 161 secured together as at 162 and to said shaft as at 163. Thus, the block assembly is readily attachable to and removable from the control shaft. Also, as will be readily apparent, the block assembly may be adjusted longitudinally on said shaft as well as angularly thereon.

One of the blocks has an arcuate extension

164 with faces 165 and 166. Another arcuate segment 167 has faces 168 and 169 and includes an arcuate slot 170. A bolt 171 is arranged to thread into hole 172 in portion or extension 164 and thereby clamp the two arcuate portions together in adjusted position.

It is to be understood, a follower—not shown—engages face 165, face 164a and 167a, as well as face 169. That is, the follower is of sufficient width to successively be engaged by or engage these faces in shaft and cam rotation. If secured together in registering overlapping relation, the face 169 is ineffective for control purposes and face 166 becomes effective because portion 167 is smaller in angular degrees than portion 164.

When these arcuate segments are extended relative to each other, the angular interval between faces 165 and 169 determines the duration of operation control in the rotation of the control shaft 160.

It will be obvious from Fig. 1 that the other block 161 may be provided with a suitable arcuate extension and adjustably support a cooperating arcuate portion, as previously described.

As is well understood in the cam art, the slope of faces 165, 168, 166 and 169 will be that required or desired dependent upon the character of follower contact desired, and the duration of initial and final movements of the follower consistent with minimum wear of said faces and the follower in the repetitious cyclic operation thereof.

Therefore, with this adjustable cam arrangement, within the limits of said adjustment, the duration of control imposed thereby or resulting therefrom may be varied. This is of great value in the glass machine industry wherein liquid glass supplied to ware making machines may vary from day to day as to temperature, and proper formation of that ware, as recited, for example, in the copending application referred to, requires a certain duration of control or formation. In this instance, it is apparent no other adjustments of the ware making machine are required other than to adjust portions 164 and 167 relative to each other and blocks 161 relative to shaft 160. These adjustments may be readily effected and with a minimum loss of time in machine operation and with a minimum effort upon the part of the mechanic or operator in charge of such machine.

While the invention has been illustrated and described in great detail in the foregoing de-

scription, the same is to be considered as illustrative and not restrictive in character.

The several modifications described herein as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claim.

The invention claimed is:

10 In a control cam arrangement capable of radial presentation to and mounting upon a shaft as well as axial and arcuate adjustment thereon including a plurality of successively arranged and connected arcuate base structure
15 forming members for shaft envelopment, means for securing the enveloping base structure rigidly to the shaft in axially and angularly adjusted position thereon, the combination of a laterally projecting cam portion integral with one member,
20 said member having an exterior surface axially offset from the cam portion and contiguous thereto and of arcuate form, the arcuate form surface being concentric with that of the supporting shaft, the face of the projecting cam
25 portion adjacent the arcuate surface being of

plane character and substantially transverse to the structure axis, the said cam portion including two end faces at opposite ends and an outer face of arcuate form concentric with that of the shaft, another cam portion having inner and outer arcuate faces registering with the exterior and outer faces of the member and first mentioned cam portion respectively, and two end faces, and a flat face for first mentioned cam portion plane face contact, the outer faces of the cam portions
10 constituting a single follower contactable surface where overlapped and one and opposed end face of each cam portion constituting opposed continuations of the follower surface, and means connecting the cam portions together in adjusted
15 relation with the flat faces in holding contact and the inner arcuate surface in contact with the exterior surface for radial support, said connecting means including an elongated arcuate slot in one cam portion and coaxial with the
20 structure axis, and a clamping member carried by the other member and seated in the slot and having operative bearing on the slotted cam portion.

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