

June 7, 1927.

W. OWEN

1,631,150

BLANK FEEDING DEVICE

Filed July 9 1925

2 Sheets-Sheet 1

Fig. 5. Fig. 6.

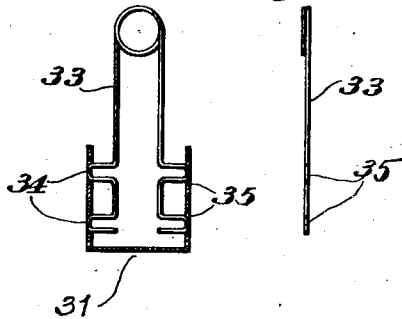
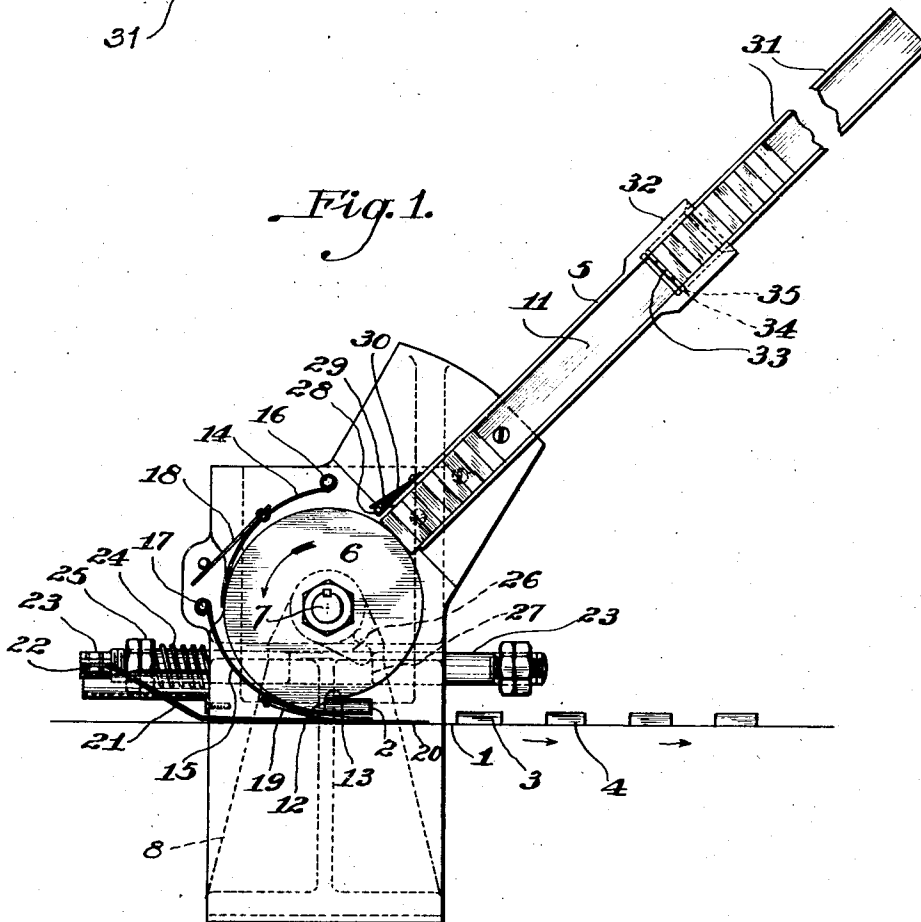


Fig. 1.



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Fig. 3.

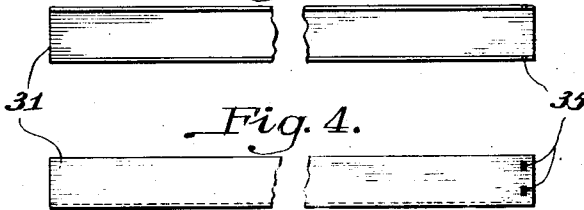
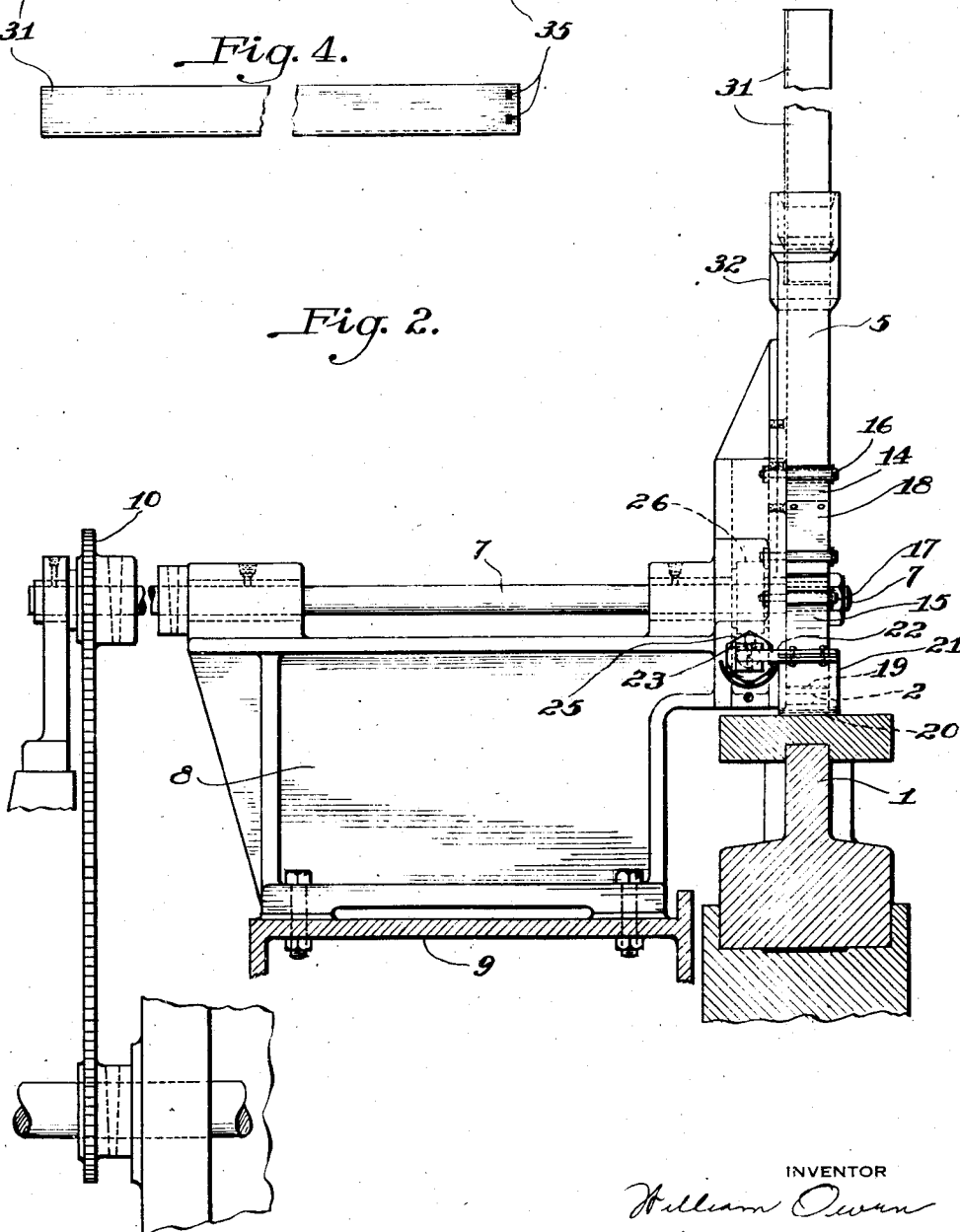


Fig. 4.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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BLANK-FEEDING DEVICE.

Application filed July 9, 1925. Serial No. 42,513.

The invention relates to apparatus for feeding glass blanks, such as those used in making spectacles, to a furnace, such blanks being softened in the furnace preliminary to pressing in a mold. It has for its primary objects, the provision of means of simple construction for giving a reliable automatic feed of the blanks, and one which will handle the blanks gently so that any chipping of the blanks incident to such handling is reduced to a minimum. A further object is the provision of an apparatus which satisfactorily handles blanks of varying thickness. One embodiment is illustrated in the accompanying drawings wherein:

Figure 1 is a side elevation of the apparatus. Fig. 2 is an end elevation looking at the apparatus of Fig. 1 from the left hand side. Figs. 3 and 4 are elevation views of the removable magazine. And Figs. 5 and 6 are elevation views of the closure device for the bottom of the magazine.

Referring to the drawings, 1 is a carrier of refractory material adapted to receive the glass blanks 2, 3 and 4 from the feeding apparatus and carry them through a tunnel kiln or furnace where the blanks are brought to a degree of plasticity such that they may be pressed to circular form in a suitable molding machine. The blanks are fed to the carrier 1 from the magazine 5 by means of a wheel 6 mounted to rotate upon the axle 7 in the direction of movement of the carrier, as indicated by the arrow. This axle, as well as the magazine 5 is supported upon a casting or bracket 8 bolted to a part 9 of the framework of the machine, as indicated in Fig. 2, the axle being provided at its end with a sprocket wheel 10 by means of which it is continuously rotated at a speed such as is necessary to give any desired spacing of the blanks 2, 3, 4, etc., upon the carrier.

The magazine 5 is preferably mounted in an inclined position, as indicated in Fig. 1, and is open upon one side, as indicated at 11, the blanks lying one above the other as indicated in Fig. 1 and the weight of the column of blanks being supported upon the periphery of the wheel 6. The wheel 6 is provided with a feed shoulder 12 which is

adapted to engage the bottom blank of the stack in the chute 5 and carry it around until it arrives at the position indicated by the blank 2 where it is deposited upon the plate 20 and then upon the carrier 1 which is moving continuously to the right, as indicated by the arrow. The periphery of the wheel from the shoulder 12 around to the point 13 is in the form of a spiral which continuously approaches the center of rotation of the wheel, the amount of approach being equal to the height of the shoulder. The purpose of this spiral arrangement is to prevent any falling movement of the stack of blanks after the bottom blank has been carried laterally from beneath the stack by the shoulder 12. That is, the periphery of the wheel immediately following the shoulder closely approaches the lower end of the magazine or chute 11, so that when the bottom blank is moved away, the next blank is in such close proximity to the surface of the wheel behind the shoulder that the movement of the stack after the bottom blank has been moved away is very slight. This involves a substantial advantage as any chipping of the blanks at this point is reduced to a minimum. Blanks which are not chipped give a better finished product than blanks which have had small chips or particles broken away in the process of handling.

The blanks are held against the periphery of the wheel after they are removed from the chute by means of the sheet metal guide members 14 and 15 mounted upon the pins 16 and 17 and pressed yieldingly inward by means of the leaf springs 18 and 19. When the blanks arrive at the position indicated by the blank 2 of Fig. 1, they are deposited upon a plate 20 which lies upon the surface of the carrier and is reciprocated back and forth at timed intervals. The movement of the plate to the left permits the blank to move down and engage the surface of the carrier, and after the blank has been moved forward by the carrier, the plate 20 is brought back to its original position, so that it is in position to receive the next blank from the wheel. This arrangement gives less disturbance of the powder or dust upon

the hearth than if the plate were not used, and the tendency to chip the blanks is also reduced. The plate 20 is bent upwardly at its rear end as indicated at 21 and is attached by means of a cross bar 22 to the rear end of the rod 23, the rear end of such rod being slotted to receive the bar 22. The rod 23 is mounted for reciprocatory movement and is yieldingly pressed to the left by means of the spring 24 bearing against the nut 25 carried by the rod. The rod is moved to the right at timed intervals by means of a cam 26 carried by the axle 7, such cam being positioned so as to engage a transverse slot 27 extending through the rod 23. The parts are timed so that the plate 20 is moved back and forth once for each revolution of the wheel 6.

In order to take care of the blanks of varying thickness and prevent two blanks being moved ahead by the shoulder 12 from position in the chute or magazine 5, a spring held stop member 28 is employed upon the edge of the magazine. This stop member is hinged to the magazine wall at 29 and is held yieldingly in the position shown by means of a leaf spring 30. This prevents a second blank lying on top of the lowermost blank from being fed ahead with the lowermost blank. In case a blank of unusual thickness should be fed through the magazine, the stop member will permit such thick blank to be carried forward by the shoulder 12.

The blanks are brought to the magazine 5 in supplemental magazines 31 open at one side the same as the magazine 5 and adapted to telescope into the enlarged end 32 of the magazine 5. These supplemental magazines are filled as the blanks are weighed, and the brought to the feeding device in suitable racks. When the blanks from a supplemental magazine are exhausted such magazine is removed from the magazine 5 and a new magazine filled with blanks is placed in position. In order to constitute a closure for the bottom of the supplemental magazine 31, the spring device 33 shown in Figs. 5 and 6 is employed. This device is provided with lateral projections 34 adapted to fit in suitable slots 35 in the lower end of the supplemental magazine. When in position, this spring device engages the lowermost blank in the supplemental magazine and prevents it falling out when the magazine is held in vertical position, or in the inclined position of Fig. 1. After the supplemental magazine full of blanks is positioned, as indicated in Fig. 1, the spring device 33 is grasped by the operator and the sides sprung together so as to release the projections 34 from the slots 35, after which the spring device is moved downward in the magazine 5 until the lowermost blank of the stack, which is being lowered arrives in

close proximity to the top blank of the magazine 5, after which the spring device is withdrawn. This provides a convenient means for handling the blanks and applying them to the machine without danger of cutting the hands of the operator or of chipping the blanks in the operation of positioning a new stack. The supplemental magazines may be made 30 inches or more in length, and carry a large number of blanks, so that the work of the operator in tending the machine is reduced to a minimum.

What I claim is:

1. In combination with a carrier for glass blanks, which are to be heated, a wheel mounted above the carrier for rotation in the direction of travel of the carrier, said wheel having at its edge a feeding shoulder with the peripheral surface of the wheel to the rear of the shoulder formed on a curve which gradually approaches the center of rotation of the wheel, a chute leading to the peripheral surface of the wheel and adapted to feed the glass blanks carried thereby to position for engagement by said shoulder, means for giving the wheel a movement of rotation such as to deliver the blanks from the chute to the carrier at the desired intervals, guide means in opposition to the periphery of the wheel for maintaining the blanks from the chute in contact with the wheel until they reach the lower side thereof, a plate mounted upon the carrier in position to receive the blanks from the wheel, and means for reciprocating said plate at timed intervals.

2. In combination with a carrier for glass blanks which are to be heated, a wheel mounted above the carrier and having at its edge a feeding shoulder, a chute open along one side leading to the periphery of the wheel and adapted to feed glass blanks thereto, a blank magazine also open along one side having sliding interfitting engagement with the upper end of the chute, and a stop means for the blanks mounted removably in the lower end of the magazine.

3. In combination with a carrier for glass blanks which are to be heated, a wheel mounted above the carrier and having at its edge a feeding shoulder, a chute open along one side leading to the periphery of the wheel and adapted to feed glass blanks thereto, a blank magazine also open along one side having sliding interfitting engagement with the upper end of the chute, and a stop means for the blanks mounted releasably in the lower end of the magazine and adapted to be removed through the open side thereof.

4. In combination with a carrier for glass blanks which are to be heated, a wheel mounted above the carrier and having at its edge a feeding shoulder, a chute open along one side leading to the periphery of the

wheel and adapted to feed glass blanks thereto, a blank magazine also open along one side having sliding interfitting engagement with the upper end of the chute, and a
5 spring clip mounted releasably in the lower end of the magazine and extending through the open side thereof and adapted, when re-
leased, to be slid downward through the chute so as to support the blanks during
such movement. 10

In testimony whereof, I have hereunto subscribed my name this 7th day of July, 1925.

WILLIAM OWEN.