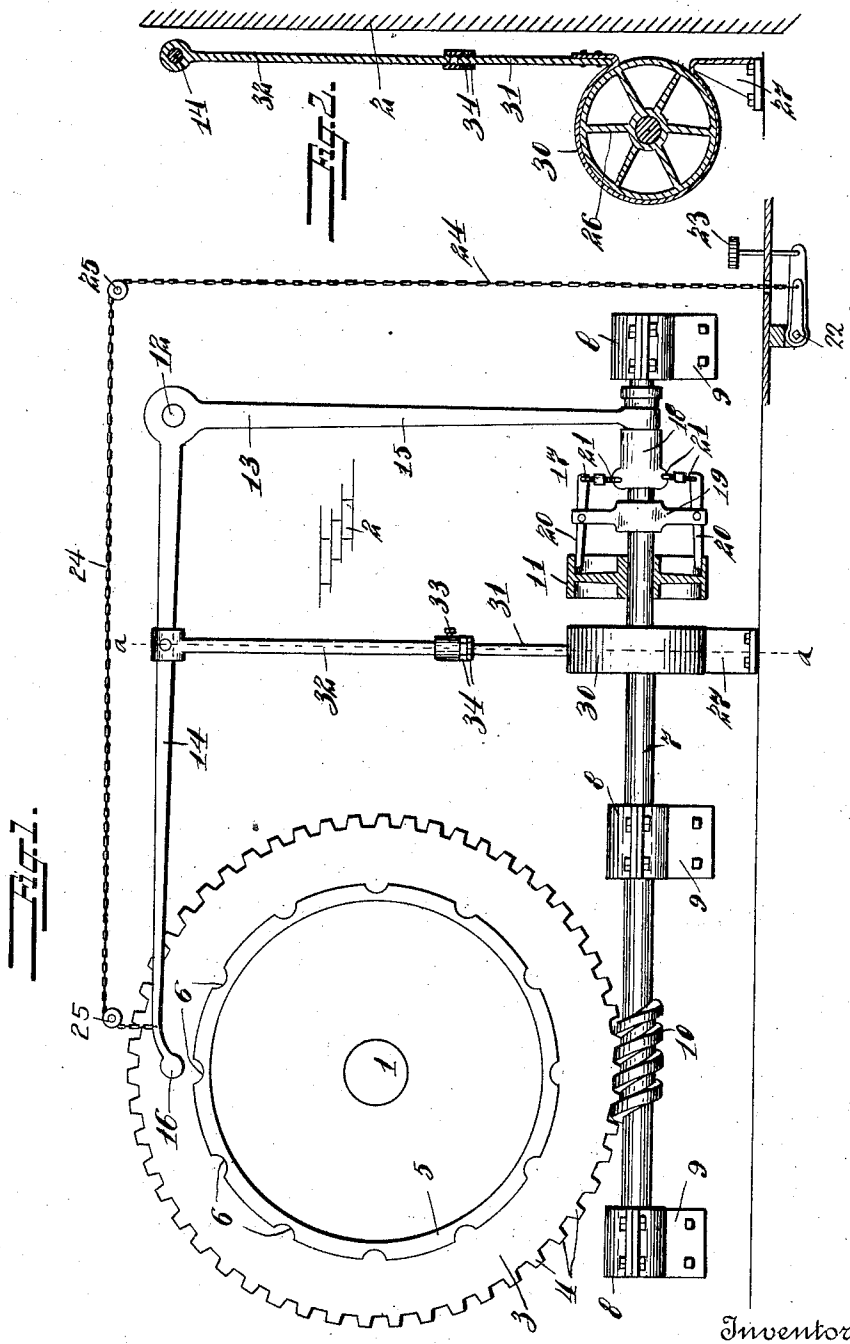


No. 859,397.

PATENTED JULY 9, 1907.

L. D. MANCHESTER.
OVEN STOP.

APPLICATION FILED DEC. 22, 1906.



Witnesses
Stelze H. Murray
C. N. Griesbauer

L.D. Manchester

By *A. B. Wilson & Co*
Attorneys

UNITED STATES PATENT OFFICE.

LAWRENCE D. MANCHESTER, OF SIOUX FALLS, SOUTH DAKOTA.

OVEN-STOP.

No. 859,397.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed December 22, 1906. Serial No. 349,131.

To all whom it may concern:

Be it known that I, LAWRENCE D. MANCHESTER, a citizen of the United States, residing at Sioux Falls, in the county of Minnehaha and State of South Dakota, have invented certain new and useful Improvements in Oven-Stops; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in reel ovens, particularly with reference to stop mechanisms for controlling the rotation of the reel, and it consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings,—Figure 1 is an elevation of an oven provided with my improved stop mechanism; and Fig. 2 is a sectional view of the stop mechanism, taken on the plane indicated by the line a—a of Fig. 1.

The shaft 1 of the revoluble oven reel projects beyond one wall 2 of the oven. To the said shaft is secured a bull wheel 3 provided with peripheral spurs 4. The said wheel has a stop rim 5 on one side thereof concentrically-disposed with reference thereto and provided in its periphery with stop notches 6, which correspond in number with the pendent trays or cracker holders with which the reel is provided. Said reel is not here shown, as its construction is well known to those skilled in the art to which my invention relates and forms no part of my present improvements.

A driving shaft 7 is journaled in bearings 8 on brackets 9, which brackets are here shown as secured to the oven wall 2. The said shaft has a worm 10, which engages the spurred periphery of the bull wheel, and on the said shaft is a loose pulley 11, which when the oven is in operation is continuously driven by an endless belt, (not shown). A pivot stud 12 projects from the oven wall 2 and on said stud is pivotally mounted a bell-crank 13, which has a substantially horizontal arm 14 and a substantially vertical arm 15. The horizontal arm is provided at its free end with a stop device 16, to engage any one of the stop notches 6 and coact therewith to arrest the rotation of the bull wheel, and hence of the oven reel.

On the shaft 7 is a clutch device 17. The same comprises a sleeve 18, which is splined on the shaft, a cross-bar 19, a pair of friction clutch levers 20, pivotally connected to the ends of the cross-bar and longitudinally adjustable links 21, which connect said sleeve to the said levers. The free ends of the friction clutch levers 20 project within the rim of the pulley 11 and are adapted to frictionally engage the same on its inner side at opposite points to lock said pulley to the shaft to cause said shaft to be rotated by said pulley, when it is desired to cause the bull wheel and hence the oven

reel to be rotated. The arm 15 of the bell-crank 13 is connected to the sleeve 18 to cause said sleeve to be shifted longitudinally on the shaft 7 when the said bell-crank is operated, and hence to cause the clutch mechanism to engage and disengage the pulley 11.

An operating rod 22 is disposed at a suitable point on the oven convenient to the baker and is provided with pedals 23, whereby the baker may depress said rod by the application of one of his feet to one of said pedals. The upper end of the said rod is connected to the arm 14 of the bell-crank by means of an operating chain 24, which passes over supporting and direction sheaves 25.

A friction brake wheel 26 is secured to the shaft 7, at a suitable point. A standard 27 is disposed below the brake wheel, and a friction brake band 30, which is preferably made of sheet iron, has one end attached to said standard 27. Said brake band partially encircles the brake wheel 26 and the other end thereof is attached to a vertically-movable rod 31. The said rod is connected to a brake arm 32, which is carried by the arm 14 of the bell-crank and said rod is longitudinally adjustable with reference to said arm 32 and is secured thereto at any desired adjustment by means of a set-screw 33 and lock nuts 34. It will be understood that when the bell-crank is partially turned to cause its arm 14 to raise, the arm 32 will raise the brake rod 31 and hence slacken the brake 30 on the brake wheel 26. When the said arm 14 of the bell-crank moves downwardly, by the partial turning of the bell crank in the reverse direction, said rod 31 in descending will draw the brake band tightly around the brake wheel and will apply frictional brake tension to said wheel to arrest the rotation of the shaft 7.

As before stated, the pulley 11 is normally loose on the shaft 7, but is in constant rotation, being driven by its power belt. When the bell crank is in position with its stop device 16 in engagement with one of the stop notches 6 of the bull wheel the clutch device 17 is in unclutched position with reference to said pulley 11. When it is desired to start the reel of the oven in rotation, the baker by means of the operating rod 22 and pedal 23, draws upon the chain 24, to cause said chain to raise the arm 14 of the bell-crank so that the roller 16 becomes disengaged from the stop notch of the bull wheel. This upward movement of the arm 14, as before stated, slackens the friction brake band on the brake wheel 26. The arm 15 of the bell-crank moves the clutch 18 in the direction required to cause the links 21 to draw inwardly on the outer ends of the clutch levers 20, and said clutch levers are caused to frictionally engage the pulley 11 to lock said pulley to the shaft 7, and hence cause the latter to rotate and the worm 10 to rotate the bull wheel and the oven reel. Such rotation of the bull wheel will continue so long as the stop device 16 is maintained out of engagement

with the stop notches 6, but when the operating rod 22 is released, the arm 14 of the bell-crank will descend by its own gravity, its stop device 16 registers with one of the notches 6, and in so doing will cause the bell-crank to release the clutch from the driving pulley and to apply the brake band to the brake wheel and hence arrest the rotation of the shaft 7, worm 10 and bull wheel.

From the foregoing description, taken in connection 10 with the accompanying drawings, the construction and operation of the invention will be readily understood, without requiring a more extended explanation.

Various changes in the form, proportion, and the 15 minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined by the appended claims.

Having thus described my invention, what I claim 20 as new, and desire to secure by Letters-Patent, is,—

1. The combination in stop mechanism for oven reels, of a bull wheel having stop notches, a driving shaft geared to said bull wheel to rotate the same and provided with a brake wheel, a driving pulley loose on the driving shaft,

a clutch mechanism to lock said driving pulley to said 25 shaft, a bell crank connected to said clutch to operate the same, and having a stop device to coact with the stop notches of the bull wheel, a brake belt to coact with the brake wheel, a longitudinally extensible brake arm connected to the bell crank and to the brake band to operate 30 the latter, and means to trip the bell crank from the stop notches of the bull wheel.

2. In a stop mechanism for oven reels, the combination 35 of a bull wheel having stop notches, a driving shaft having a worm engaging the bull wheel, a brake wheel and a driving pulley on said shaft, said brake wheel being fast thereto and said driving pulley being loose thereon, a sleeve splined on the driving shaft, a cross bar on said shaft, clutch levers fulcrumed to said cross bar and adapted to engage the inner side of the rim of said pulley, 40 longitudinally adjustable links connecting said clutch levers to said sleeve, a bell crank connected to the said sleeve to operate the same and having a stop element to coact with the stop notches of the bull wheel for the purpose 45 set forth, and a brake element operated by the bell crank and coacting with the brake wheel to control the rotation of the driving shaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LAWRENCE D. MANCHESTER.

Witnesses:

H. E. WYLLIE,
R. J. CONE.