C. S. OVERTON.

SELF ADJUSTING REVOLVING PRESS.

APPLICATION FILED DEC. 23, 1910.

1,006,001. Patented Oct. 17, 1911.

2 SHEETS—SHEET 1.

Fig. 1

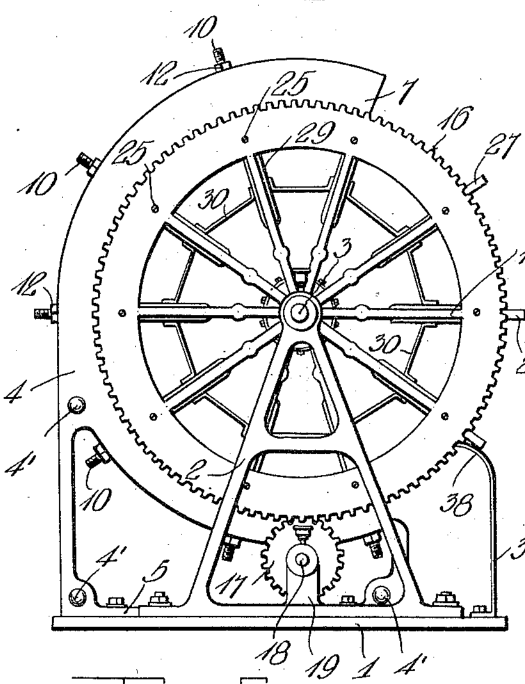


Fig. 2

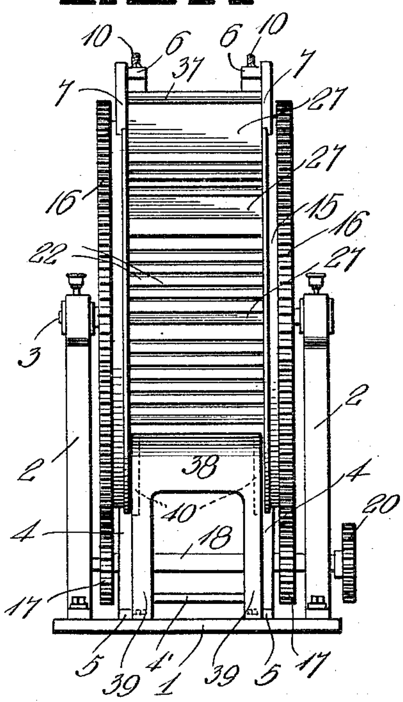
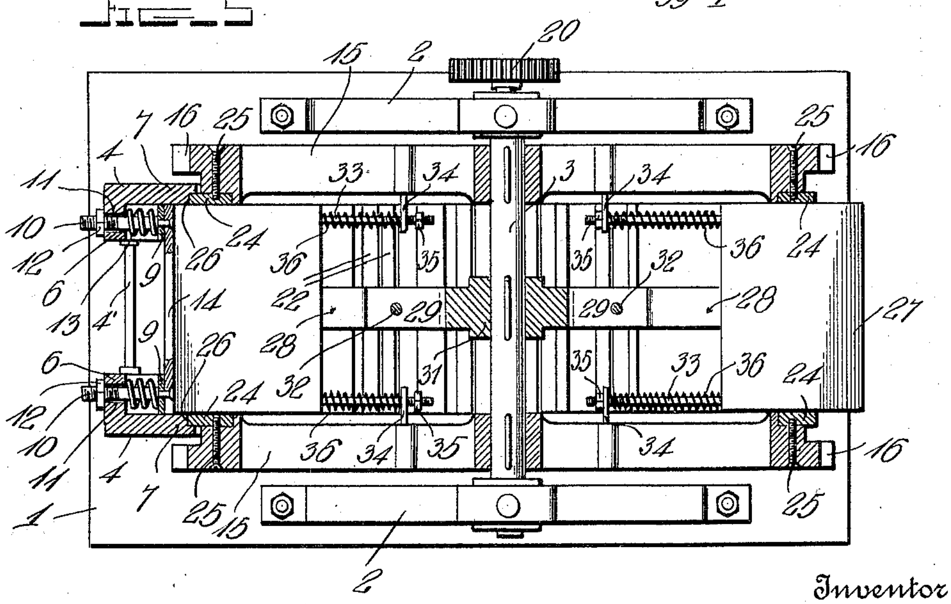


Fig. 5



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2 SHEETS—SHEET 2.

Fig. 4

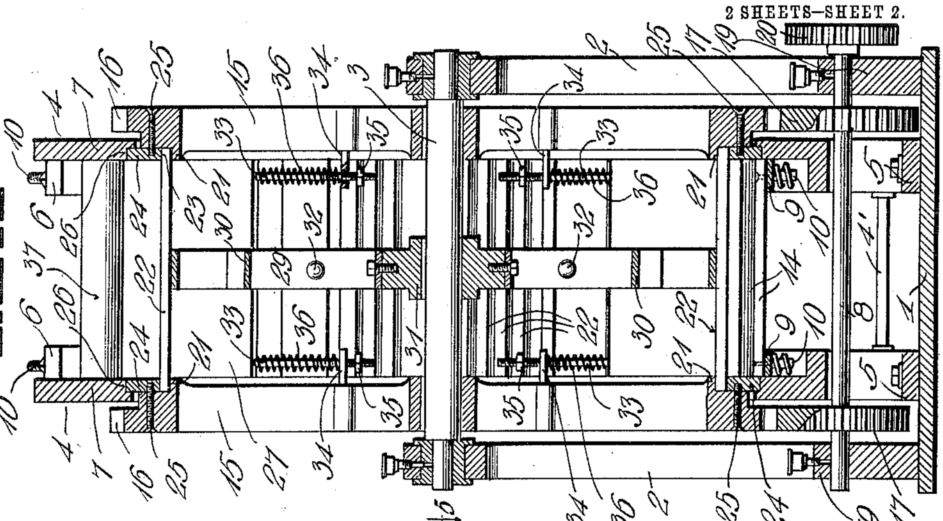
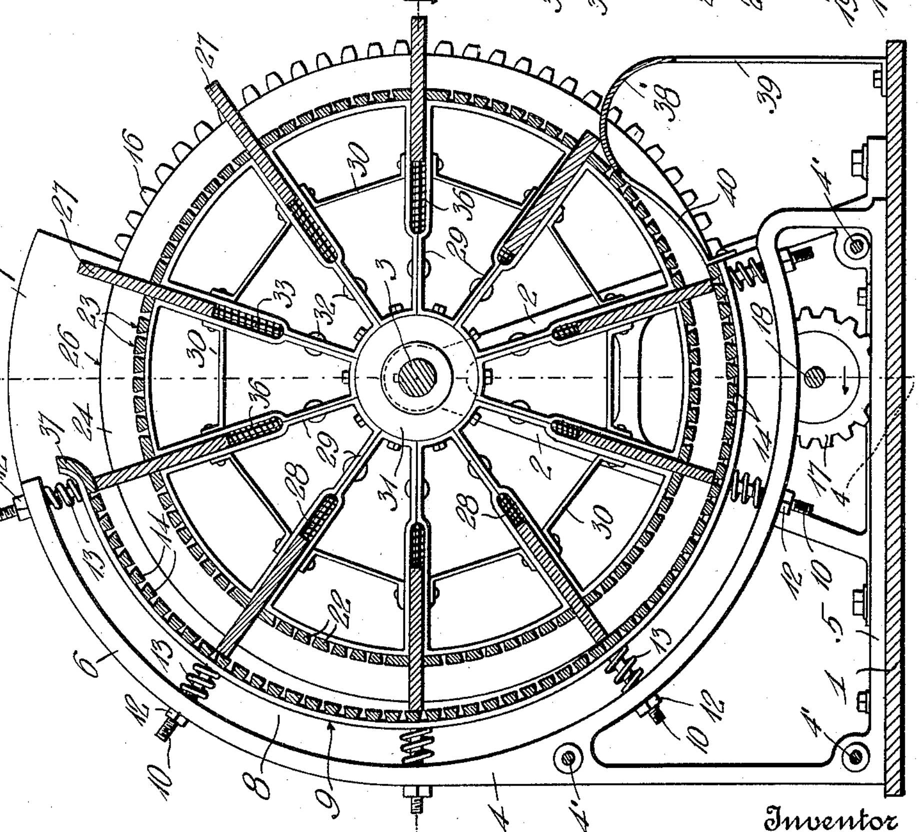


Fig. 3



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UNITED STATES PATENT OFFICE.

CHARLES S. OVERTON, OF SOLOMONS, MARYLAND.

SELF-ADJUSTING REVOLVING PRESS.

1,006,001. Specification of Letters Patent. Patented Oct. 17, 1911.

Application filed December 23, 1910. Serial No. 598,933.

To all whom it may concern:

Be it known that I, CHARLES S. OVERTON, a citizen of the United States, residing at Solomons, in the county of Calvert and State of Maryland, have invented certain new and useful Improvements in Self-Adjusting Revolving Presses; 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.

This invention relates to improvements in self adjusting revolving expressing presses.

One object of the invention is to provide a press of this character which is particularly adapted for expressing oil from fish.

Another object is to provide an expressing press having a yieldable self adjusting expressing mechanism and means whereby the yielding pressure of said mechanism may be regulated.

A further object is to provide an improved means for feeding and carrying the material through the expressing mechanism and discharging the pressed material therefrom.

From the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a side view of my improved press; Fig. 2 is a front end view thereof; Fig. 3 is a central vertical sectional view of the same; Fig. 4 is a central vertical cross sectional view on the line 4—4 of Fig. 3; Fig. 5 is a horizontal sectional view on the line 5—5 of Fig. 3.

In the embodiment of the invention I provide a supporting frame comprising a base 1 on which is secured oppositely disposed bearing standards 2 in the upper ends of which is revolubly mounted a pressing wheel shaft 3. To the base 1 are bolted or otherwise secured upwardly projecting side members 4 of the frame, said members comprising a square base engaging portion 5 and upwardly projecting semi-circular supporting bars 6 having on their outer edges integrally formed inwardly projecting substantially semi-circular guide flanges 7 the upper ends of which are extended a short distance beyond the upper ends of the bar 6 as shown in Fig. 3 of the drawing. The side members 4 are secured together and spaced apart by shouldered tie or bracing bolts 4′ which are arranged therein as shown in Fig. 3 of the drawing.

Arranged within the semi-circular bars 6 and supported thereby is a substantially semi-circular concave 8 which forms the stationary member of the pressing mechanism. The concave 8 comprises two semi-circular spring metal plates or bars 9 which engage the inner sides of the flanges 7 of the supporting bars 6 and are yieldingly and adjustably secured in position by a series of supporting bolts 10 the inner ends of which are suitably secured to the bars or plates 9 and the threaded ends of which project through and loosely engage bolt holes 11 formed in the bars 6 as clearly shown in Fig. 5 of the drawing. On the projecting threaded outer ends of the bolts are arranged adjusting nuts 12 whereby the concave is supported and adjusted as will be hereinafter more fully described. On the bolts 12 between the bars 6 and the outer sides of the plates 9 are arranged coiled springs 13 by means of which said plates 9 are yieldingly held in a projected or operative position. To the inner sides of the spring metal plates 9 are secured a series of transversely disposed slats 14 which are spaced a suitable distance apart and are riveted or otherwise firmly fastened to the plates 9. The side edges of the slats 14 are preferably inclined or formed on an angle whereby dove tail shaped spaces are formed between the bars as shown through which the oil or juices from the material being pressed passes.

Fixedly mounted on the shaft 3 and adapted to be operated thereby is the revolving member of the press, said member comprising a combined feeding and pressing wheel consisting of supporting wheels 15 having on their outer edges annular toothed flanges 16 with which are engaged spur gears 17 fixed on a drive shaft 18 revolubly mounted in short bearing standards 19 arranged in the lower portion of the bearing standards 2 as shown. On one end of the shaft 18 is mounted a drive gear 20 whereby said shaft and the wheels 15 are revolved.

On the inner sides of the rims of the wheels 15 are formed inwardly projecting annular flanges 21 with which are engaged an annular series of slats 22 which form the working surface of the wheel and which co-act with the slats 14 of the concave to press the ma-

terial fed between the same as will be hereinafter more fully described. The slats 22 are preferably of dove tail shape and are spaced a suitable distance apart to form between themselves dove tail shaped spaces. The opposite ends of the slats are secured in dove tail shaped recesses 23 formed in annular slat supporting rings or plates 24 which are engaged with the inner sides of the wheels 15 and the flanges 24 thereon. The plates or rings 24 are secured to the wheels by screws 25 or similar fastening devices. The outer edges of the plates or rings 24 are also revolubly engaged with annular recesses 26 formed in the inner edges of the flanges 7 of the semi-circular supporting bars 6. By thus arranging the rings 24 the slats 22 will be securely held in position and the wheel steadied and guided in its revolving movement.

It will be noted that the semi-circular supporting bars 6 and the concave 8 are arranged eccentrically to the slatted surface of the wheel so that the space between the slatted surface of the concave and the slatted surface of the wheel decreases in width from the upper end of the concave and inlet of the press toward the lower end of the concave and discharge end of the press. Into this gradually decreasing space the fish or other material to be pressed is fed and the oil or juices thus gradually expressed therefrom. The gradually decreasing space between the concave and the wheel is regulated by means of the adjusting bolts 10 and nuts 12 which hold the concave in place. The adjustment of the concave by the bolts 10 not only regulates the width of the space between the concave and the surface of the revolving member of the brace but also owing to the flexible or spring metal supporting bars or plates 9 of the concave slats, will when the opposite ends of the concave are moved inwardly or outwardly increase or diminish the distance between the adjacent edges of the slats thereby controlling the flow or passage of the oil or juices through the concave.

In practice the fish or other material is fed from a suitable hopper or feeding mechanism (not shown) onto the upper side of the wheel adjacent to the upper end of the concave and in order to feed the material in proper quantities into the space between the concave and working surface of the revolving member or wheel of the press I provide a series of radially projecting yieldingly supported feeding plates 27 which are slidably engaged with spaces 28 formed between the outer portions of a series of centrally disposed radially projecting quadrangular guiding and supporting frames 29 the sides of which are braced by transversely disposed brace bars 30 arranged therein as shown. The inner ends of the frames 29 are secured to a centrally disposed circular hub 31 by screws or other fastening devices, said hub being keyed or otherwise rigidly secured to the shaft 3. The inner portions of the engaged sides of the frame are preferably riveted together as shown at 32. The outer ends of the frames 29 are formed on an arc and engage and support the central portion of the slats 22 of the wheel. The blades 27 are supported and guided at their inner ends by guiding and supporting bolts 33 the outer ends of which are secured in the inner edges of the plates adjacent to their opposite ends while the inner threaded ends of the bolts are loosely engaged with guide lugs 34 secured in the spokes of the geared supporting wheels 15. On the inner threaded ends of the bolts 33 are arranged stop nuts 35 which engage the guide lugs 34 and thus limit the outward movement of the blades, said movement being regulated by adjusting the nuts 35 on the threaded inner ends of the bolts. On the bolts 33 between the lugs 34 and the inner edges of the plates 27 are arranged coiled plate projecting springs 36 whereby the plates 27 are projected and yieldingly held in a projected position and into operative engagement with the inner surface of the concave 8 thereby carrying or forcing the material between the projecting ends of the plates around through the space between the concave and the working surface of the revoluble member or wheel of the press. As the blades are brought into the gradually decreasing space between the concave and surface of the wheel the plates will be gradually forced back by the concave against the pressure of the springs 36 and when the plates have cleared the concave, said springs will again project the same outwardly to a position for receiving and moving the next charge of material into engagement with the concave. It will be noted that the upper end of the concave is curved outwardly or flared as at 37 thus permitting the fish to be readily forced between the concave and also facilitating the engagement of the outer edges of the plates 27 therewith.

At the discharge end of the machine and spaced a suitable distance from the same is a wheel scraping blade 38 which is provided with supporting legs 39 secured at their lower ends to the base 1 as shown. The upper inner edge of the plate 38 is preferably sharpened or beveled and is disposed in position to engage and scrape any of the pressed material which may adhere to the slatted surface of the revolving member or wheel of the press after leaving the concave. The scraper 38 is held in position to engage the surface of the wheel in the manner described by curved supporting bars 40 having their inner ends secured to the lower ends of the flanges 7 of the supporting bars 6 as

shown. When thus arranged the supporting bars 40 also serve to hold the feed plates 27 in position and to force the same back into the spaces 28 so that the outer edges of the plates will be flush with the outer surface of the slats 22 and will thus readily pass the edge of the scraping blade as the wheel revolves. The pressed material when forced from the lower end of the concave falls into the base 1 or onto a suitable receptacle provided to receive the same.

In presses of the same nature as that herein shown and described employing a worm screw, great difficulty has been experienced with what is termed "wallowing" or in other words in the material turning over and over with the screw. In my improved press this difficulty is entirely overcome. Particular attention is also invited to the automatically adjustable or self regulating feature of my improved press wherein the material may be efficiently handled irrespective of the quality of the same. This is extremely important owing to the fact that some fish are very poor and when cooked are comparatively dry, while other fish are fat and when cooked and prepared for pressing are very oily. Owing to this difference in the grade or character of the fish no fixed arrangement of press can be successfully employed. By means of the self adjusting feature of my improved press this difficulty is entirely overcome. Another point to which it is desired to call attention is the accessibility to all parts for inspection or for cleaning purposes, this feature being an improvement over the forms of presses of this character now in use.

From the foregoing description taken in connection 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 minor details of construction, may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended claims.

Having thus described my invention, what I claim is:

1. In an expressing press, a supporting frame, a concave arranged therein and comprising flexible supporting plates, a series of slats secured to and spaced a suitable distance apart in said press, springs arranged between said plates and frame to hold said concave yieldably in operative position, means for regulating the position of the concave and the space between the slats thereof, a revolving pressing member mounted eccentrically to said concave, and means for feeding the material between said member and said concave.

2. In an expressing press, a supporting frame, a flexible concave adjustably and yieldably secured to said frame, a revolving pressing member comprising geared supporting wheels, a series of slats spaced apart and secured at their opposite ends to the inner sides of said wheels, said slats forming a pressing surface to co-act with the surface of said concave, means whereby said supporting wheels are mounted to bring said slatted surface eccentric to said concave, and means for feeding material between the slatted surface and the concave.

3. In an expressing press, a supporting frame, a concave arranged therein, said concave comprising flexible supporting plates, a series of slats secured to and spaced a suitable distance apart on said plates, a series of supporting bolts secured at their inner ends to said plates and having a sliding engagement at their outer ends with said frame, springs arranged between said plates and frame whereby said concave is yieldingly held in an operative position, adjusting nuts arranged on the outer ends of said bolts whereby the position of the concave is regulated and the space between the slats thereof is increased and diminished, a suitably mounted revolving pressing member arranged eccentric to said concave whereby a gradually decreasing space is formed between said concave and revolving member, and a series of feeding devices carried by said revolving member whereby the material is forced between said member and the concave.

4. In an expressing press, a supporting frame comprising side members having substantially semicircular supporting bars, a flexible concave adjustably and yieldingly secured to said bar, a revolving pressing member comprising geared supporting wheels, a series of slats spaced apart and secured at their opposite ends to the inner sides of said wheels, said slats forming a pressing surface adapted to coact with the surface of said concave, means whereby said supporting wheels are mounted to bring said slatted surface eccentric to said concave, means whereby said revolving member is driven, and a series of feeding devices carried by said revolving member whereby the material is fed between the slatted surface thereof and the coacting surface of the concave.

5. In an expressing press, a supporting frame, a flexible slatted concave adjustably and yieldingly secured to said frame and adapted to form the stationary member of the press, a revolving member arranged eccentric to said concave said revolving member comprising supporting wheels, a series of slats spaced apart and secured at their opposite ends to the inner side of said wheels to form a cylindrical pressing surface adapted to coact with the slatted sur-

face of said concave, a series of slidably mounted radially projecting feed plates carried by said revolving member, means to project said plates and to hold the same in operative engagement with the concave whereby the material is forced between the same and the coacting surface of the revolving member, and means whereby said revolving member is driven.

6. In an expressing press, a supporting frame comprising upwardly projecting substantially semi-circular supporting bars, annular inwardly projecting guide flanges formed on the outer edges of said bars, a concave arranged between and secured to said bars to form the stationary member of the press, a revolving pressing member arranged eccentric to said concave whereby a gradually decreasing space is formed between said revolving member and the concave, said revolving member comprising supporting wheels having on their outer edges annular series of gear teeth and on their inner sides annular inwardly projecting supporting flanges, an annular series of slats arranged on said supporting flanges, slat holding rings having formed in their inner edges dove tail shaped notches adapted to receive the opposite ends of said slats whereby the latter are secured in position and spaced a suitable distance apart on said supporting flanges, means to secure said rings to said wheels, a series of radially disposed spring projected feeding plates slidably mounted in said revolving member, and means whereby said plates are supported and guided.

7. In an expressing press, a supporting frame comprising upwardly projecting substantially semi-circular supporting bars, annular inwardly projecting guide flanges formed on the outer edges of said bars, a concave arranged between and secured to said bars to form the stationary member of the press, a revolving pressing member arranged eccentric to said concave whereby a gradually decreasing space is formed between said revolving member and the concave, said revolving member comprising wheels having on their outer surface annular series of gear teeth and on their inner sides annular inwardly projecting supporting flanges, an annular series of slats arranged on said supporting flanges, slat holding rings having formed in their inner edges dove tail shaped notches adapted to receive the opposite ends of said slats whereby the latter are secured in position and spaced a suitable distance apart on said supporting flanges, means to secure said rings to said wheels, a feeding mechanism carried by said revolving member, said mechanism comprising a series of radially disposed guiding and supporting frames arranged in the slatted portion of said member, said frames having their inner ends secured together and having between the adjacent sides of their outer portions radially disposed guide spaces, feed plates slidably mounted in said spaces and adapted to be projected and retracted between the slats of said member, plate supporting and guiding bolts secured to the inner edges of said plates, apertured guide lugs secured to the inner sides of said supporting wheels and adapted to receive the inner ends of said bolts, stop nuts arranged on the inner ends of said bolts, plate projecting springs arranged between said plates and lugs whereby the plates are projected and yieldingly held in a projected position and in engagement with the inner surface of the concave whereby the material to be pressed is forced between said surface and the coacting surface of the revolving member of the press.

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

CHARLES S. OVERTON.

Witnesses:
CHAS. L. MARSH,
T. ARCHER HELLEN.