March 5, 1957 G. B. VRIONIS 2,783,705

SPRING WOUND ROTISSERIE

Filed April 26, 1954 5 Sheets-Sheet 1

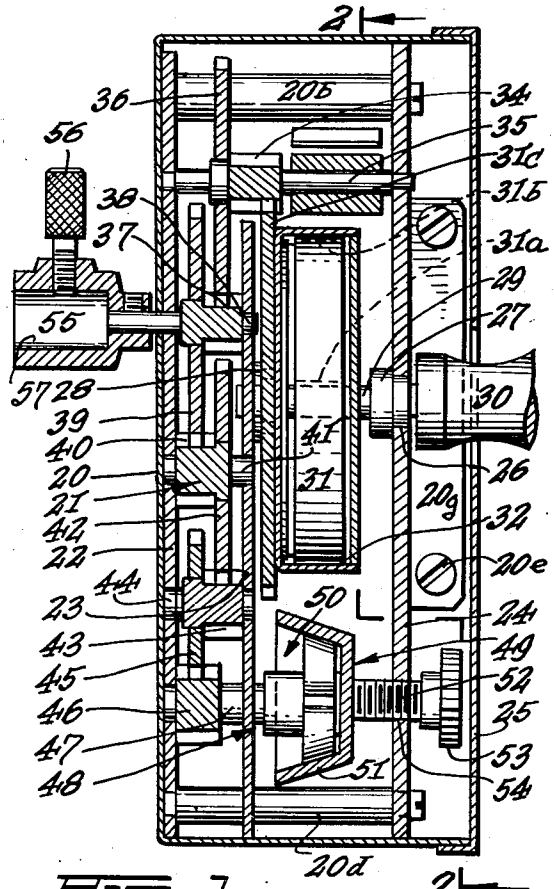


FIG. 1

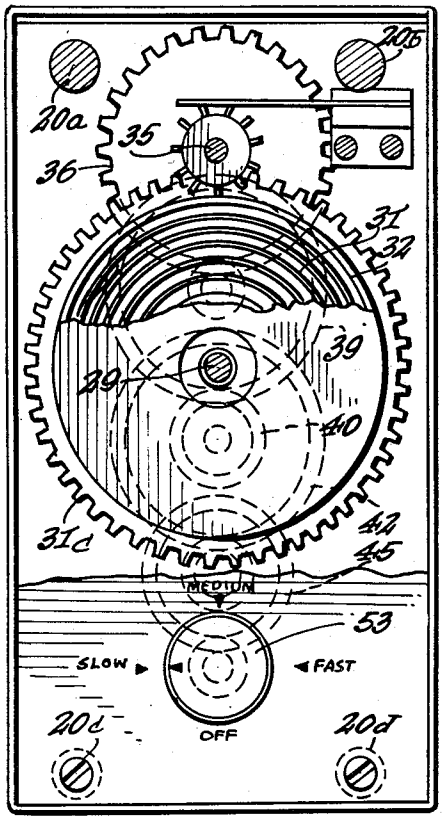


FIG. 2

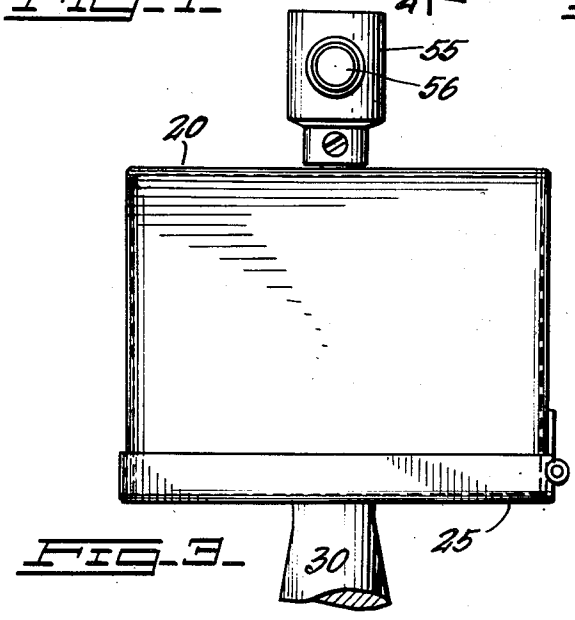


FIG. 3

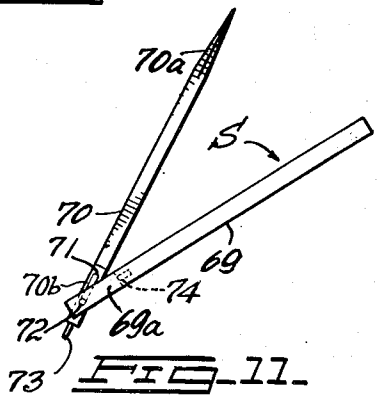


FIG. 11

INVENTOR.
George B. Vrionis

March 5, 1957 G. B. VRIONIS 2,783,705

SPRING WOUND ROTISSERIE

Filed April 26, 1954 5 Sheets-Sheet 2

FIG-4

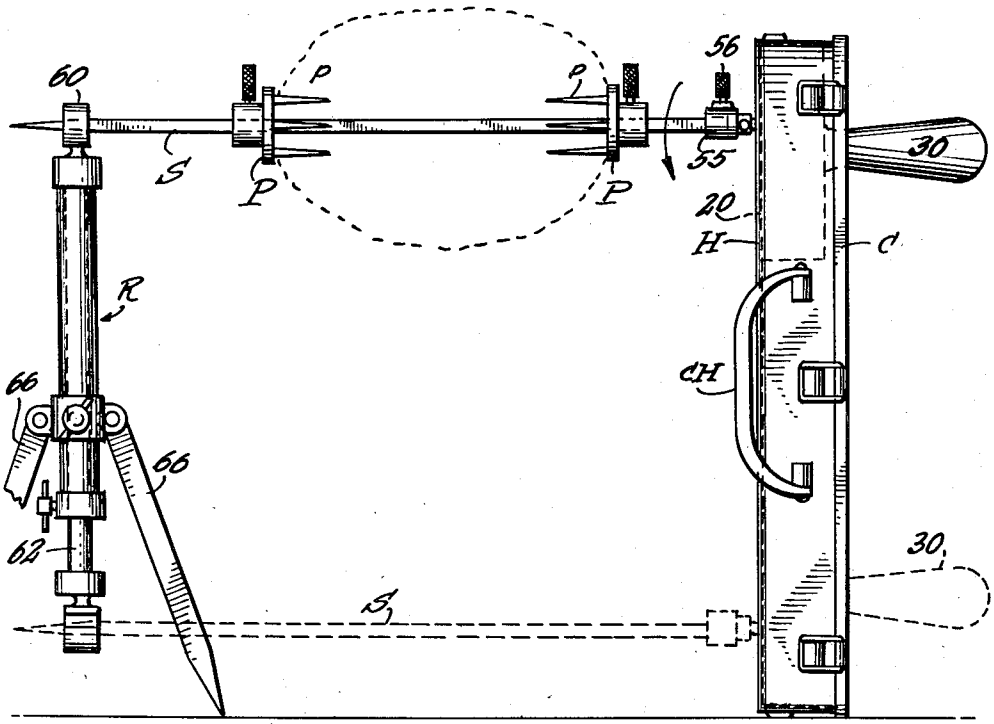


FIG-5

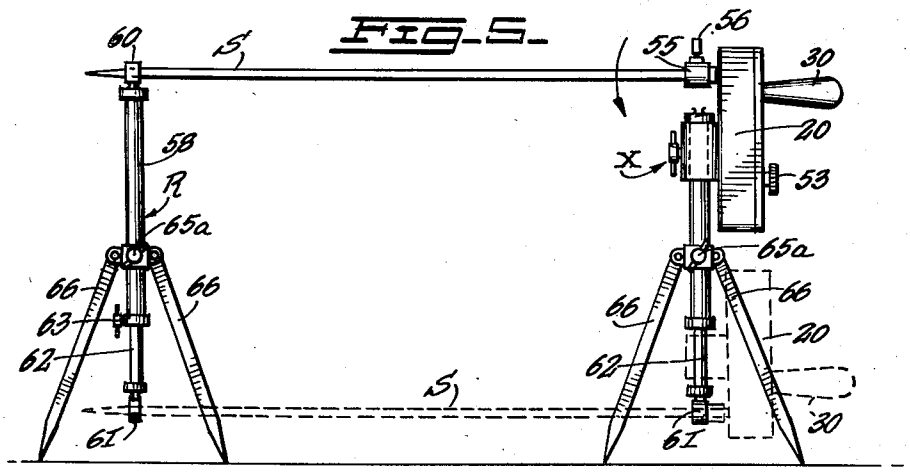
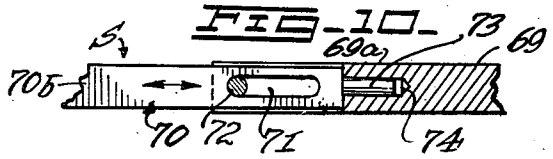


FIG-10



INVENTOR.

George B. Vrionis

March 5, 1957 G. B. VRIONIS 2,783,705

SPRING WOUND ROTISSERIE

Filed April 26, 1954 5 Sheets-Sheet 3

FIG. 6.

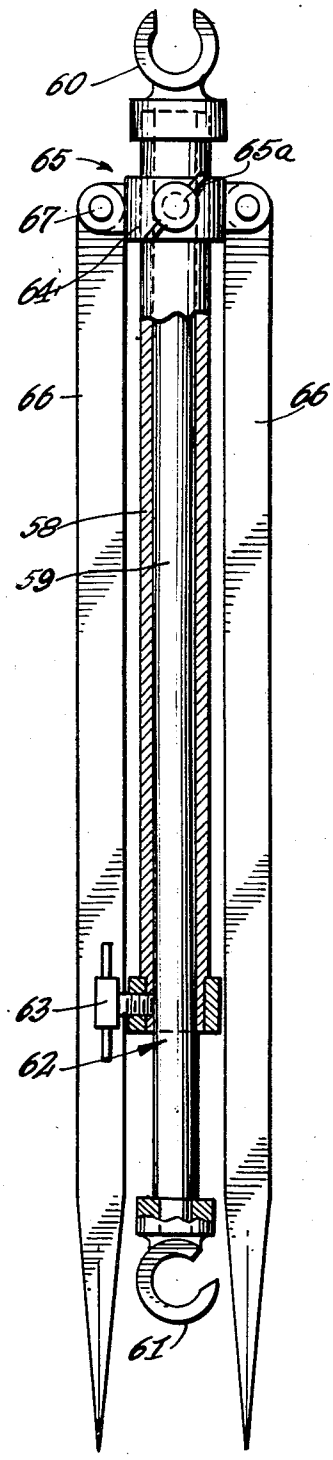


FIG. 7.

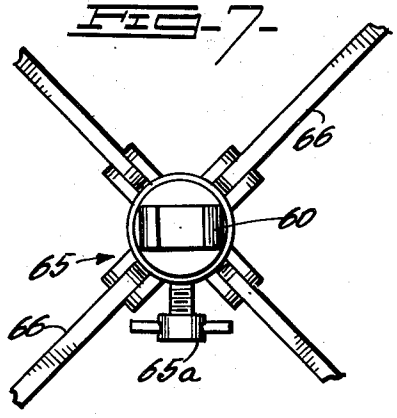
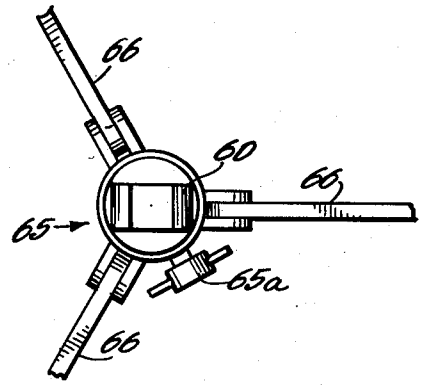


FIG. 8.



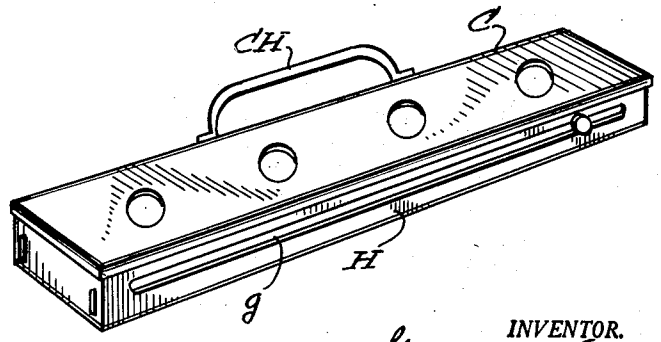


FIG. 9.

INVENTOR.
George B. Vrionis

March 5, 1957 G. B. VRIONIS 2,783,705

SPRING WOUND ROTISSERIE

Filed April 26, 1954 5 Sheets-Sheet 4

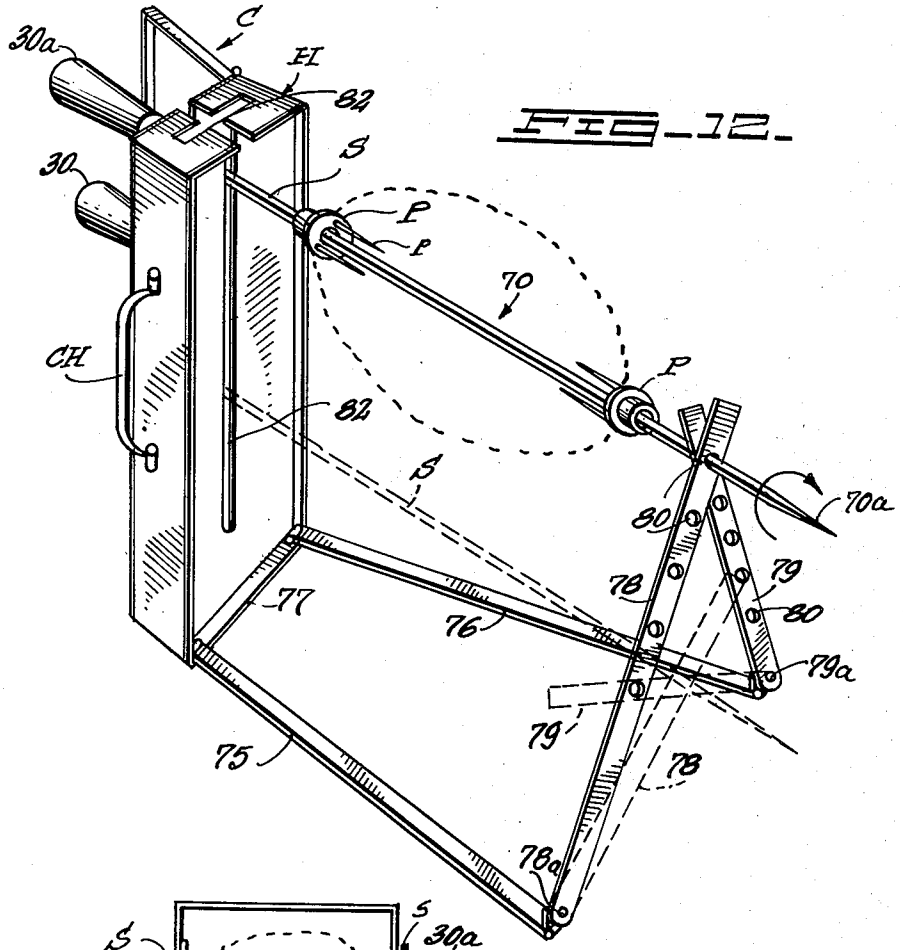


FIG-12-

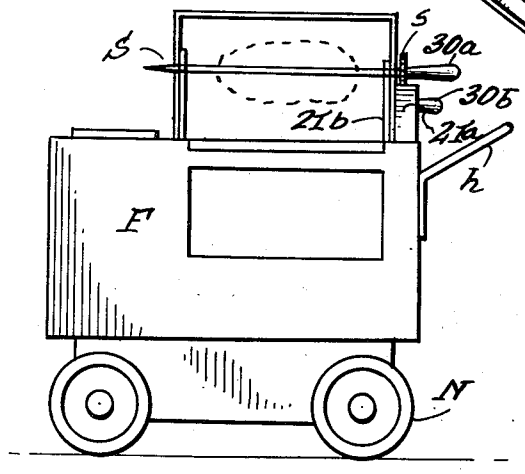
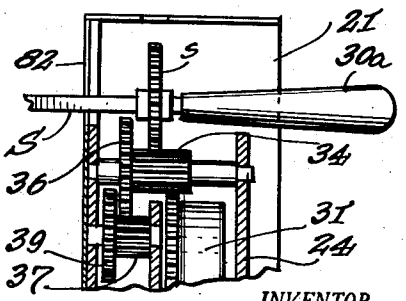


FIG-14-

FIG-13-



INVENTOR.
George B. Vrionis

March 5, 1957 G. B. VRIONIS 2,783,705

SPRING WOUND ROTISSERIE

Filed April 26, 1954 5 Sheets-Sheet 5

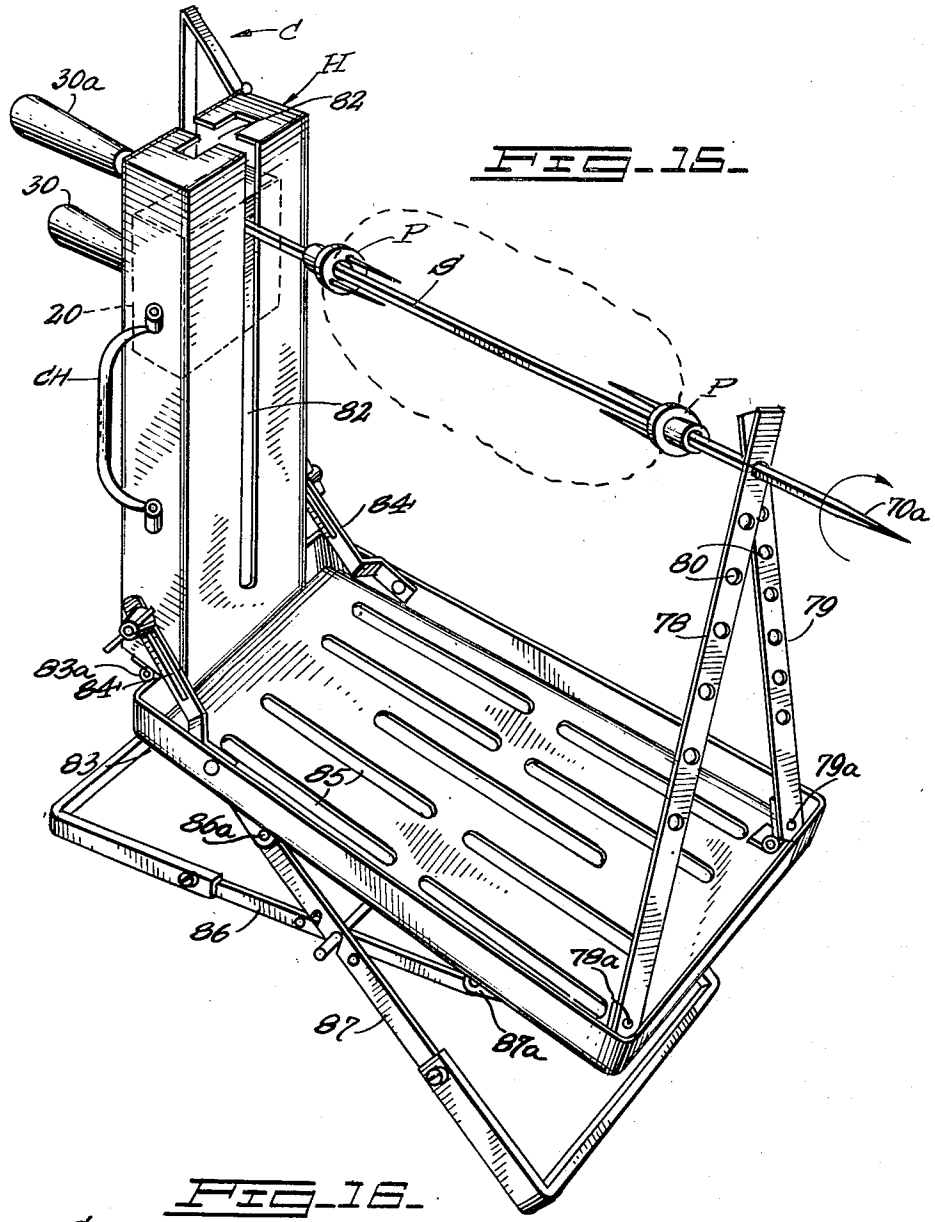


FIG. 15.

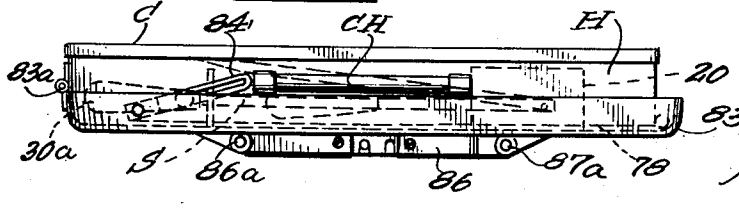


FIG. 16.

INVENTOR.
George B. Vrionis

United States Patent Office 2,783,705 Patented Mar. 5, 1957

2,783,705

SPRING WOUND ROTISSERIE

George B. Vrionis, New York, N. Y.

Application April 26, 1954, Serial No. 425,398

6 Claims. (Cl. 99—421)

This invention relates to wrought metal grilles for roasting poultry, meats, sausages and the like and more particularly to outdoor rotisseries. Especially this invention relates to rotisseries which are of a portable nature and may be assembled outdoors with ease and with a minimum of effort.

One object of this invention is to provide a rotisserie which will be easy and safe to operate and inexpensive to manufacture.

Another object of this invention is to provide a rotisserie with a manually wound spring mechanism to rotate the spit upon which the foods to be roasted are held.

Still another object of this invention is to provide a rotisserie having adjustable racks to support the spit over the open fire of the outdoor hearth.

A still additional object of this invention is to provide a spring wound mechanism and means for securing said mechanism to one of the supporting racks of the rotisserie.

Another object of this invention is to provide a governor to regulate the speed of the spring wound mechanism and the rotation of the spit respectively.

A still further object of this invention is to provide a specially designed portable container in which the entire rotisserie mechanism may be housed and carried.

An additional object of this invention is to provide means in said portable container to house the spring wound mechanism and to permit said container to be utilized as a supporting rack for said rotisserie.

These and other objects are described in detail in the specifications which follows.

Referring to the figures:

Fig. 1 is a section through the spring-wound mechanism showing various details and the manner in which the spring is being wound.

Fig. 2 is a section on the line 2—2 of Fig. 1, showing additional details of the spring-wound mechanism.

Fig. 3 is a top view of Fig. 2.

Fig. 4 is a general view of the rotisserie showing the application of the device described herein to outdoor use.

Fig. 5 is a view showing the application of the device herein described to a pair of upright racks.

Fig. 6 is a detailed view showing the various mechanical details of one of the upright racks of the rotisserie.

Fig. 7 is a top view of the rack shown in Fig. 6, showing the four legs in extended position.

Fig. 8 is a modification of the rack shown in Fig. 6. In this case the rack has only three legs instead of four.

Fig. 9 shows the carrying container or case in which the entire mechanism of the rotisserie may be housed and carried.

Fig. 10 shows the manner in which the spit may be made to hinge in its center and fold in two to facilitate its packing into the case shown in Fig. 10.

Fig. 11 shows the manner in which the spit is hinged and is folded for packing.

Fig. 12 is a perspective view of another modification.

Fig. 13 is a view showing the spit as a separate part of the spring-wound mechanism.

Fig. 14 shows the application of the spring-wound mechanism herein described to wheeled garden rotisseries.

Fig. 15 shows a modification with the rotisserie in expanded position.

Fig. 16 shows the rotisserie of Fig. 15, in folded position.

Specifications

Referring to Fig. 1, the numeral 20 indicates the container housing the entire spring-wound mechanism 21, the latter consisting primary of three supporting frames 22, 23 and 24 held together by means of supporting and spacing frame studs 20*a*, 20*b*, 20*c* and 20*d*. The entire spring mechanism 21 is secured to the container 20 by means of the fastening screws 20*e* and a pair of flanges 20*g* both extending beyond the frame 24. A hinged cover 25 encloses the mechanism 21 within its container 20.

Referring more particularly to the supporting frame 24, it has a circular opening 26 fitted with a solid bearing 27 which is in perfect alignment with an opening in the supporting frame 23 which is fitted with a bearing 28. A spring winding shaft 29 is mounted in the bearings 26 and 27 with one end 29 secured to a winding handle or knob 30 and the other end fastened to the inner end 31*a* of the spring 31. The spring 31 is housed in a container 32 with its outer end 31*b* riveted to the latter's rim. The operation upon the knob 30 winds the spring within its container 32 and places the latter under tension.

A spur gear 31*c* is securely held to the outer surface of the container 32, its teeth being in mesh with the teeth of a stud gear 34 that is mounted upon a shaft 35 and secured to a larger spur gear 36. In turn the gear 36 is in mesh with a stud gear 37 mounted upon a shaft 38 that is secured to a larger spur gear 39 with the latter in mesh with a stud gear 40 that is mounted onto a shaft 41 and secured to a larger spur gear 42. The teeth of the spur gear 42 mesh with the teeth of the stud gear 43 that is mounted to a shaft 44 and is secured to a larger gear 45, while the latter is being in mesh with the teeth of the stud gear 46 being held upon the shaft 47.

The end 48 of the shaft 47 has a fly governor 49 that in the main consists of a pair of governor shoes 50 being hinged to the shaft 47 at 50*a* and 50*b*. The operation of the governor will be described later.

The governor shoes 50 are being enclosed within a tapered shell 51 which may be moved laterally by means of the threaded shaft 52 which rotates within the threaded portion 54 in the frame 24 and operates by the exterior knob 53.

The shaft 38 extends beyond the rear portion of the container 20 and serves as a support for a bushing member 55 which is fitted with a knob-screw 56 to make tight the rear end of the spit (S) which is fitted into a square opening or hole 57 in the bushing member 55 and is held securely by means of the knob-screw 56. The bushing member 55 serves in this case as a coupling to hold the spit (S), to the spring-wound mechanism.

Referring to Figs. 6, 7 and 8, the rotisserie racks in the main consist of an upright hollow member support 58 housing therein a movable member 59; the upper end of the support 58 being fitted with a spit ear 60. The lower portion of the sliding member 59, is likewise equipped with a similar spit ear 61. At the lower end 62 the support 58 is provided with a bushing fitted with a set screw 63 which serves to hold in place the sliding member 59 within the hollow of the tubular member 58.

A sliding ring or bushing 64 is fitted with a plurality of mountings (in this case four or three) 65 serving as supports or bearings for the legs 66 of the rotisserie racks. The legs in question are secured and hinge to the mountings 65 by means of the mounting pins or studs 67.

Referring more particularly to Fig. 9, it shows in perspective the carrying case which in the main includes the

housing (H) the cover for the housing (C) and the carrying handle (HC). In Figs. 4 and 5 it is shown how the rotisserie is used for roasting meats over an open outdoor hearth fire. It is understood that the same rotisserie may be used in an indoor hearth.

In Fig. 4, the spring wound mechanism **21** is mounted directly within the carrying case (H) the latter taking the place of one of the rotisserie racks (R). In Fig. 5, two similar racks (R) are used with the spring-wound mechanism **21** being rigidly secured to one of the rotisserie racks (R) by means of a clamp and screw arrangement (X).

Referring to Figs. 10 and 11, the spit (S) consists in the main of a square (or round) spit member **69** and **70**. The member **70** has on one end thereof a sharp point **70***a* while at the other end **70***b* an elongated slot **71**. The member **69** has one end **69***a* bifurcated with a pin **72** extending across the arms of the bifurcation and loosely engaging in the slot **71** of the member **70**. In addition, the end **70***b* of the member **70** has an extension **73** and the end **69***a* of the member **69** has a hole **74**. When the spit members **69** and **70** are extended to their full length, the extension **73** is fitted into the opening **74** to permit both members to remain in a straight alignment. To fold the members into two halves, the extension **73** is disengaged from the opening **74** until the members are free to hinge my means of the pin **72** in the slot **71**.

Fig. 12, shows a perspective view of another modification as shown and illustrated in Figs. 1 to 11 inclusive. In this case the housing (H) serves as a complete rotisserie including the driving mechanism and spit support racks. Numerals **75** and **76** indicate a pair of hinged arms held upon the lower portion **77** of the housing (H). A secondary pair of arms **78** and **79** hinged at **78***a* and **79***a* to the arms **75** and **76** respectively are provided to serve as a secondary upright rotisserie support. The arms **78** and **79** are provided with holes **80** into which is fitted the sharp end **70***a* of the spit (S), when said arms **78** and **79** are swung upwardly to the positions as better shown by Fig. 12 of the drawings, where the arms cross each other with selected holes **80** in alignment. To change the height of the roast over the hearth fire, the spit (S) is lowered by lowering the entire spring-wound mechanism within the housing (H) and also by relocating the sharp end **70***a* of the spit (S) within another pair of holes **80** on the members **78** and **79** as shown in dotted lines in Fig. 12.

Fig. 13, shows the manner in which the spit (S) may be mounted to the spring-wound mechanism **20** separately and independently of its train of gears. In this case the spit (S) has a separate handle **30***a* and a gear **81** which is placed over the stud gear **34** and is in mesh with its teeth. The spit can be removed from the rotisserie proper by simply lifting it from a slot **82** cut into the wall of the housing (H).

Fig. 14 shows the application of the spring-wound mechanism shown in Figs. 1 to 13 inclusive to outdoor wheeled rotisseries. In this case the outdoor rotisserie is equipped with a frame (F) fitted with a set of wheels (W) and a handle (*h*) to wheel it about. The spit (S) is mounted over the charcoal hearth (*c*) and is operated by a spring-wound mechanism **20***a* located at the side **21***a* of the frame **21***b* of the wheeled rotisserie. The spit (S) can be removed from the wheeled rotisserie without interfering with the mechanism **20***a* by means of the handle **30***b*.

Referring to Figs. 15 and 16, the rotisserie is shown provided with a charcoal tray **83** and the rotisserie housing (H) secured thereto by means of the hinges **83***a*. A pair of brackets **84** is also provided to hold the rotisserie (H) in an upright position while the tray **83** is held upon a pair of folding leg supports **86** and **87** hinged to extensions **86***a* and **87***a* under the tray **83**. When the rotisserie shown in Fig. 15, is not in use it may be folded into a compact unit as shown in Fig. 16.

Operation

To operate the rotisserie shown in Figs. 1 to 11 inclusive, the various parts of the unit are removed from its portable carrying case (H) and are assembled over an open hearth outdoors. When the rotisserie racks are used (two in number), the racks are placed on either side of the open hearth and their individual height over the fire is adjusted by means of the screwknobs **63** and **65***a*. The spring-wound mechanism **21** is secured to one of the rotisserie racks (R) by means of the clamp (X); one end of the square-shaped spit (S) then is fitted into the square opening or hole of the bushing or coupling **55** and by means of the knob screw **56** it is made tight, while the other end of the spit (the sharp end) is inserted into the spit ear **60** (see Fig. 5). The poultry or meat to be roasted is subsequently speared onto the sharp spit end and is secured to the spit proper by means of the sliding adjustable prong carrying plates (P), the latter being fitted with a plurality of sharp pins (*p*) which are forced into the poultry or the meat to be roasted to hold it securely upon the spit while it rotates to roast the meat evenly around all sides.

When the poultry is properly mounted the spring-wound mechanism **21** is wound by means of the handle or knob **30** and the speed of the rotation of the spit is regulated. This task is accomplished by means of the governor knob **53** which is manipulated by hand. The governor has four designated speed positions; one position is for "off" with the spring-wound mechanism at standstill and the spit (S) not rotating; another position is for "slow," another position for "medium" speed and a fourth position for "high" speed. There are many other speed positions available in addition to these four and by proper manipulation upon the regulating knob **53** they may be had at will.

While two rack supports (R) may be used, one may be dispensed with and in its place may be used the carrying case (H) of the unit. Such an arrangement is shown in Fig. 4. In this latter case, the spring-wound mechanism **21** is fitted within the case itself and is adjusted as to the proper height and position over the open fire of the hearth. When the roast needs be moved closer to the fire, the spit (S) may be placed over the lower ears **61** of the racks (R) with the spring-wound mechanism **21** also appropriately moved lower. In this case the spring-wound mechanism is secured by the clamp (X) to the sliding member **62** of the rack (R) instead to the rack member **58**. To move the spring-wound mechanism **21** within the container (H) the latter is provided with a sliding groove (*g*) which is machined in the side frame of the container (see Fig. 9).

The rotisserie may also be provided with a musical clock (M) to measure and to report when the time approaches to rewind the spring. Such musical instrument may consist of a very simple music-box mechanism operated by means of pins secured to a rotating drum operated by the rotation of the gears in the spring-wound mechanism **21**. When the rotation of the gears in the spring mechanism stops, the tune will be discontinued; an indication that it is time to rewind the mechanism.

In Fig. 12, which is a modification of the mechanism shown in Figs. 1 to 11 inclusive, the racks (R) are dispensed with and the entire unit is made compact and portable. In this case the housing (H) is provided with a flanged bottom, its lower portion **77** carrying two hinged extension arms **75** and **76** preferably made of flat stock. To these, at **78***a* and **79***a* are hinged two spit supporting arms **78** and **79** which have a plurality of holes **80**. To operate the rotisseries shown in Fig. 12, the extension arms **75** and **76** are hinged free from the bottom of the housing (H) until they lay flat upon the hearth, then the supporting arms **78** and **79** are hinged up until two of the holes **80** are in alignment. To adjust the height of the spring-wound mechanism in the housing (H) the

entire spring unit is moved until the sharp point **70***a* of the spit (S) is at the same height with the holes **80** in the arms **78** and **79**, then the unit **21** is made tight by means of the screwknob **20***e* (see Fig. 1).

In the case of Fig. 12, the spit (S) is not secured to a coupling **55** as shown in Figs. 1 to 11 inclusive but is a separate unit consisting of the spit (S), a spit handle **30***a* and a spur gear (*s*) secured permanently to the spit. The housing (H) is provided with a slot **82** into which the spit with its gear is lowered until the gear (*s*) contacts the stud gear **34** of the spring unit **21**. It can be seen that to remove the spit from the rotisserie shown in Fig. 12, only the spit (S) is lifted by means of the handle **30***a* and its gear (*s*), otherwise the entire unit of the spring-wound mechanism **21** remains within the housing (H), (see Fig. 13).

In Fig. 14, it is shown the application of the spring-wound mechanism shown in Figs. 1 to 13 inclusive to wheeled garden rotisseries. In the latter the hearth is portable and may consist of a carriage body (F) with a handle (*h*) and wheels (N) to be wheeled about. Upon the hearth (F) there are supports **21***b* to support the spit (S) which is similar in construction to the one shown in Fig. 13. The spring-wound mechanism **21***a* may be secured permanently to the supports **21***b* and may be provided with a winding handle or knob **30***b*. The spring-wound mechanism **21***a* is similar in construction to the one shown in Figs. 1 and 13. To remove the roast from the wheeled rotisserie, the entire spit unit including the spit (S), its gear (*s*) and the roast is raised off the rotisserie by means of the handle **30***a*.

When not in use, the rotisserie shown in Fig. 16 is in folded position. To unfold the device, the housing (H) containing the spring-wound mechanism **20** is hinged upwardly upon its hinges **83***a* until it stands upright held securely by the brackets **84**. The spit (S) is supported upon the supporting arms **78** and **79** while the charcoal tray **83** is held above ground by the legs **86** and **87**.

Having described my invention what I claim is:

1. In a rotisserie, a carrying case having a slot formed longitudinally of one surface thereof, a tray hingedly connected at one of its ends to one end of said carrying case, adapted to close over one side of said case, spit supporting arms pivotally mounted within said tray at the other end of said tray, said arms adapted to swing to substantially vertical positions above said tray, said arms having openings adapted to align when said arms are swung upwardly and crossed, and a spit having one end supported within said slot with the other end of the spit mounted for rotation within aligning openings of said spit supporting arms.

2. In a rotisserie, a carrying case having an open ended slot extending from one end thereof, a combined grill and tray hinged to one end of said case adapted to close over said case, means for securing one end of said tray in a horizontal position at right angles to said case, a pair of spit supporting arms pivotally connected to said

tray adjacent to the other end of said tray, said arms having lines of openings, selected openings of said arms adapted to register when said arms are swung to a substantially vertical supporting position, and a spit supported within said slot and extended through said registering openings, and said tray providing a grill.

3. The subject matter as claimed in claim 1 and said tray having spaced elongated openings providing a grill when swung to its opened position, for passage of heat in grilling articles supported on said spit.

4. In a rotisseries, a carrying case having a slot formed longitudinally of one wall thereof, a spit support embodying a pair of pivoted arms adapted to swing upwardly to vertical positions, said arms having openings adapted to align when said arms are swung upwardly and crossed, a spit held at one of its ends in said slot, the other end of said spit being rotatably supported in aligning openings of said arms, and means for pivotally connecting said arms to said carrying case for folding over one side of said case.

5. In a rotisserie, a carrying case having a slot formed longitudinally of one wall thereof, a spit support embodying a pair of pivoted arms, a member pivotally connected to said case at one end of the case, adapted to swing outwardly to a position at right angles with respect to said case, a pair of pivoted arms connected with said member and adapted to swing laterally, said arms having openings, the openings of said arms adapted to register when the arms are swung to a supporting position, and a spit having one of its ends supported within said slot, the other end of said spit extending through registering openings of said arms.

6. In a rotisserie, a carrying case having a slot formed longitudinally of one wall thereof, one end of the slot being open, a spit support embodying a pair of pivoted arms adapted to swing upwardly to vertical positions, said arms having lines of spaced openings formed throughout their lengths, selected openings of said arms adapted to register as the arms are swung to a supporting position, a spit having one of its ends supported within said slot, the other end of said spit being supported within the registering openings of said arms whereby said spit is adjusted vertically, and means for pivotally connecting said arms with said carrying case.

References Cited in the file of this patent

UNITED STATES PATENTS

1,051,502	Klein	Jan. 28, 1913
1,541,472	Born	June 9, 1925
1,666,394	Miglin	Apr. 17, 1928
1,749,004	Strawn	Mar. 4, 1930
1,958,884	Bonanno	May 15, 1934
2,477,183	Humensky	July 26, 1949
2,505,976	Leon	May 2, 1950
2,635,529	Nisenson	Apr. 21, 1953