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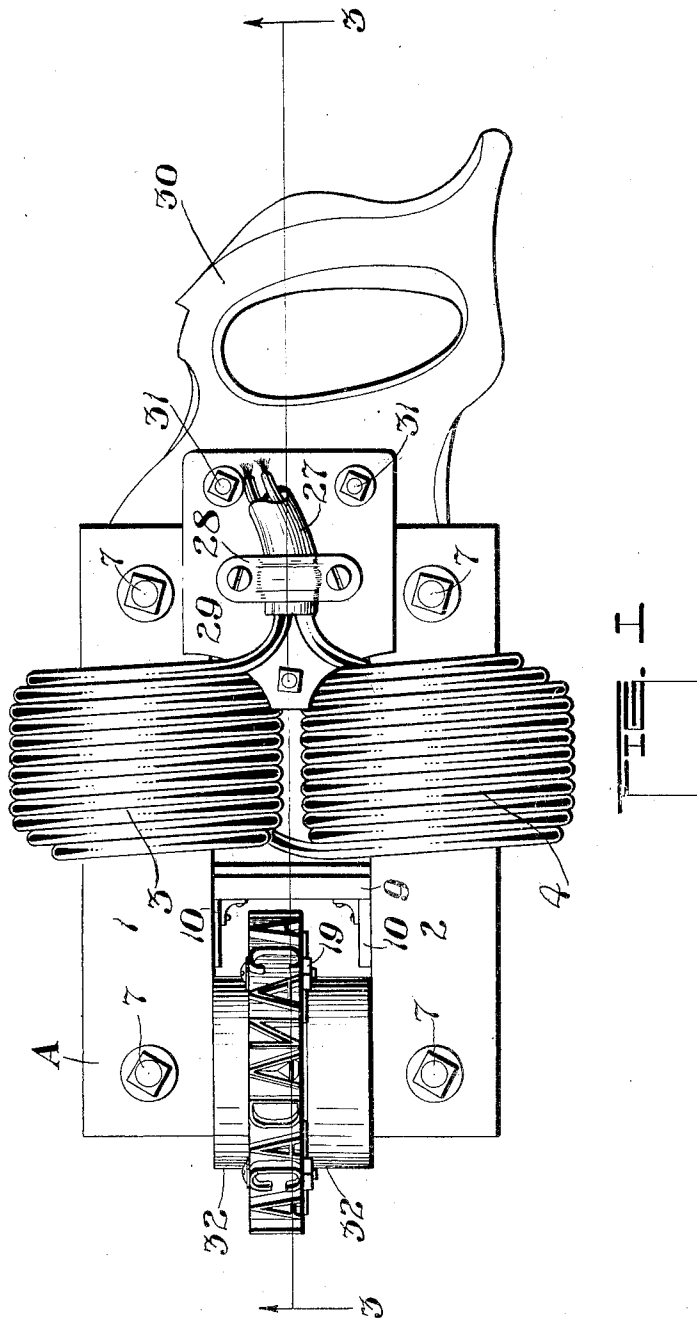
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ROTARY INDUCTION BRANDING UNIT

Filed Dec. 13, 1934

4 Sheets-Sheet 1



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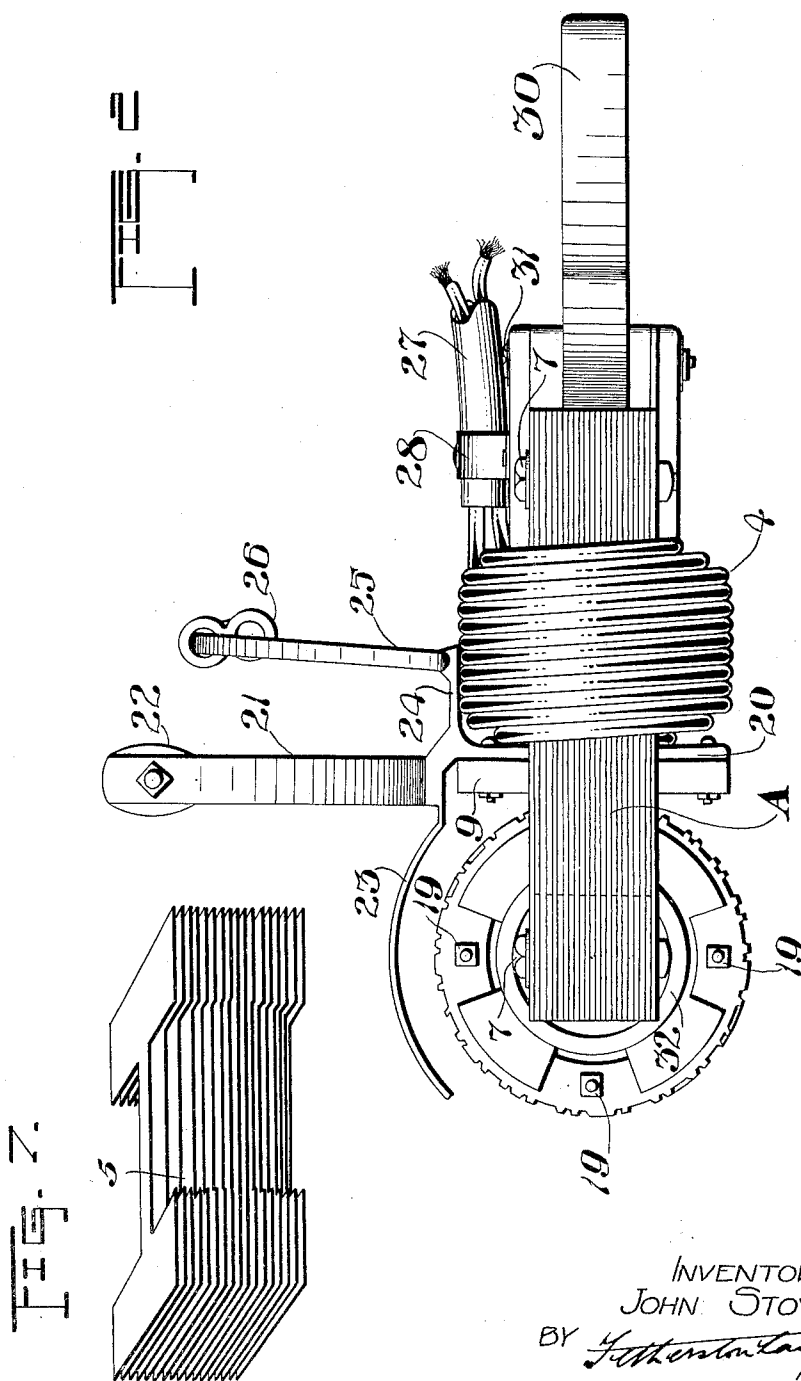
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ROTARY INDUCTION BRANDING UNIT

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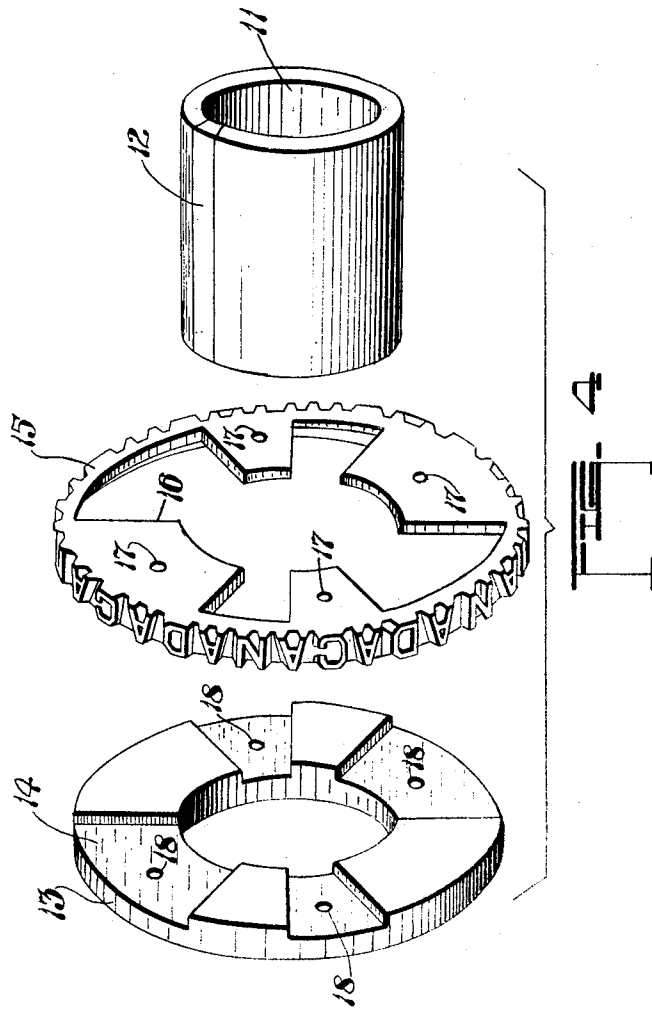
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ROTARY INDUCTION BRANDING UNIT

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## UNITED STATES PATENT OFFICE

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## ROTARY INDUCTION BRANDING UNIT

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5 Claims. (Cl. 219—30)

This invention relates to improvements in rotary induction branding units and an object of my invention is to provide a rotary branding iron which may be suspended over a branding table and wheeled over the rind of a carcass to be branded.

A further object of my invention is to provide a rotary branding iron in which the heat upon the incised surface of the rotary brand is maintained by induction.

A further object of my invention is to provide a rotary induction branding iron of the class described which can be maintained steadily at a sufficient heat to effect a sustained branding operation without being cooled by the cold dampness of the rind with which it comes in contact.

A further object of my invention is to provide an induction branding iron of the class described which can be easily manipulated.

A further object of my invention is to provide a rotary branding iron of the class described which may be simply and economically manufactured and cannot easily become out of order.

With the foregoing more important objects in view, and such other objects as may appear as the specification proceeds, my invention consists primarily in the arrangement and construction of parts, all as hereinafter more particularly described, reference being had to the accompanying drawings, in which:—

Fig. 1 is a plan view of my rotary induction branding iron.

Fig. 2 is a side view of Fig. 1.

Fig. 3 is a side elevation in section upon the line 3—3 of Fig. 1.

Fig. 4 is an extended perspective view of the component parts of my rotary branding wheel.

Fig. 5 is a plan view of the laminated core.

Fig. 6 is a rear elevation of my laminated core.

Fig. 7 is a perspective view of the axle portion of the laminated core in my invention.

In the drawings like characters of reference indicate corresponding parts in the different figures.

My rotary induction branding iron consists of a massive laminated core A composed of soft steel laminations to form a magnetic circuit to be later described. Wound around the two legs 1 and 2 of this core are two insulated primary coils 3 and 4 connected in series to induce magnetic flux in the core A.

An axle 5 also formed of soft metal laminations connects the legs 1 and 2 being bonded into the forward ends of these members and cylindrically formed with respect to the portion which extends

between the legs as clearly shown in Fig. 7. The legs 1 and 2 are spanned by a laminated cross piece 6 which is also bonded into the laminations of the legs as clearly shown in Fig. 6. The laminations of the core A are firmly held together by means of nutted through bolts 7.

An insulating bridge 9 extends across the core at the forward side of the primary coils 3 and 4, further insulating shields 10 being bracketed to this bridge and extending forwardly a short distance from the bridge.

Around the cylindrical axle 5 is a split bushing 11 provided with an insert 12 of insulating material between the split edges. This bushing is rigidly mounted upon the axle either by being shrunk thereupon or in some other manner rendered immovable. Freely mounted upon the bushing is a wheel 13 formed of any tough insulating material such as Transite, this wheel being provided with a plurality of mortises 14, the edges of which radiate from the central point of a line drawn diametrically across the wheel.

Upon the periphery of the wheel 13 is mounted the branding ring 15 which is in the form of a metallic tire, its periphery being incised to any configuration with which it is desired to mark hog rind or any other substance. Wings or tenons 16 radiate inwardly from the ring 15 and are designed to be received into the mortises 14. Drillings 17 extend centrally through the wings, and similar drillings 18 in alignment therewith extend through the mortises 14. Stud 19 are placed through these drillings in order to render the wheel assembly rigid. The ring or tire 15 will be made of a metal alloy suitable for the purpose of branding the rinds of various carcasses, wood material, fibre, etc.

To the rear of the bridge 9 is a standard 20 suitably attached to the legs of the core A. Extending upwardly from this standard is a yoke 21 between the free ends of which is mounted a handle 22. It will be here noted that the bridge 9 is suitably attached to the standard 20.

Attached to the standard and projecting forwardly thereof, is an arcuate guard 23 and extending rearwardly from the standard is a projection 24 to which is mounted a lateral slide bar 25. Upon the slide bar is attached a split shackle 26 to enable the device to be suspended from a counterbalance located over the branding table.

Leads 27 pass through a bracket 28 which is mounted upon a plate 29 suitably mounted upon the core A and formed of insulating material. A guiding handle 30 extends rearwardly from the laminated cross piece 6, being attached adjacent

thereto by means of bolts 31 extending through the plate 28.

It should be finally mentioned that I prevent lateral movement of the branding wheel 13 by means of a pair of rings 32, the width of these rings being approximately equal to the space between the faces of the wheel and the inner faces of the legs 1 and 2 of the core A.

When it is desired to operate my branding iron, the current is switched on, this causing an alternating flow of electrical energy to pass through the series wound coils 3 and 4. A state of magnetic flux is thereby produced in the laminated core A. The incised branding ring 15 forms a conductor and being unbroken in its circumference, forms a secondary circuit for a current induced by the core. In this way, it almost instantaneously becomes heated to a sufficient degree to permit of a continuous branding operation until the current is turned off. The object of the bridge 9 is of course to prevent heat from the branding surface from reaching the insulated windings 3 or 4.

It will be understood that in actual practice, I cover my unit with a suitable housing in order to protect the operator but have not considered it necessary to show this housing in the accompanying drawings.

Since various modifications can be made in the above invention, and many apparently widely different embodiments of same, made within the scope of the claims without departing from the spirit and scope thereof, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense and I desire only such limitations placed thereon as are specifically expressed in the accompanying claims.

What I claim as my invention is:—

1. A branding device comprising a transformer core, a primary winding associated therewith, and a branding wheel comprising a metallic annulus having branding portions rotatably mounted with reference to the core so that most of the magnetic flux produced in the latter passes through the wheel in a substantially axial direction to heat the same by induced current.

2. A branding device comprising a transformer core, a primary winding associated therewith, and a branding wheel comprising a metallic annulus journaled on the core so that most of the magnetic flux produced in the latter passes through the wheel in a substantially axial direction to heat the same by induced currents.

3. A branding device comprising a transformer core having a portion thereof cylindrically reduced, an annular bushing rigidly secured over said reduced portion, said bushing having a sector insert of insulating material, a primary winding on said core, a wheel of insulating material freely rotatable on said bushing transversely of the magnetic flux in said reduced core portion, and an annular metal branding member secured on the periphery of said wheel and constituting a closed secondary circuit.

4. A branding device comprising a transformer core including spaced parallel side pieces and an end piece connected therebetween, a primary winding disposed on said side pieces, a wheel journaled on said end piece and freely rotatable between the side pieces in such manner that most of the magnetic flux produced in the core passes through the wheel in a substantially axial direction, said wheel comprising a hub portion of insulating material and a metal tire mounted thereon, said tire having a peripheral branding surface and constituting a closed secondary circuit.

5. In an electrical branding device, a rectangular transformer core having axially elongated side pieces and relatively short end pieces connecting the side pieces in spaced relation, a wheel freely rotatable on one end piece between and parallel with said side pieces, so that most of the magnetic flux produced in the core passes through the wheel in a substantially axial direction, a guard member of non-magnetic heat insulating material bridging said side pieces rearwardly of said wheel, a primary winding on said core side pieces and behind said guard member, and an annular metal branding member on the periphery of said wheel and providing a closed secondary unit.

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