

L. D. ROWELL.
 WORK SUPPORT OR HOLDER.
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1,066,951.

Patented July 8, 1913.

Fig. 1.

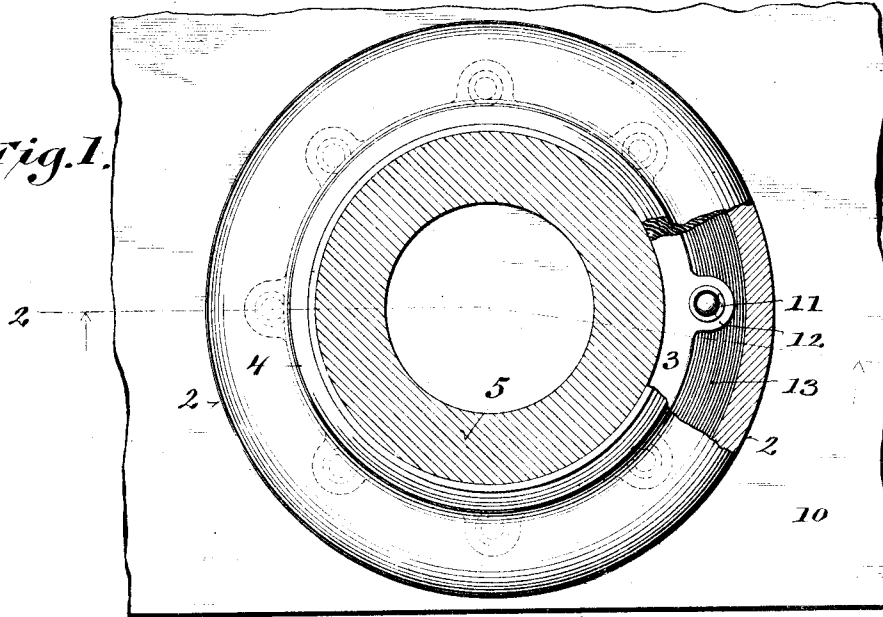
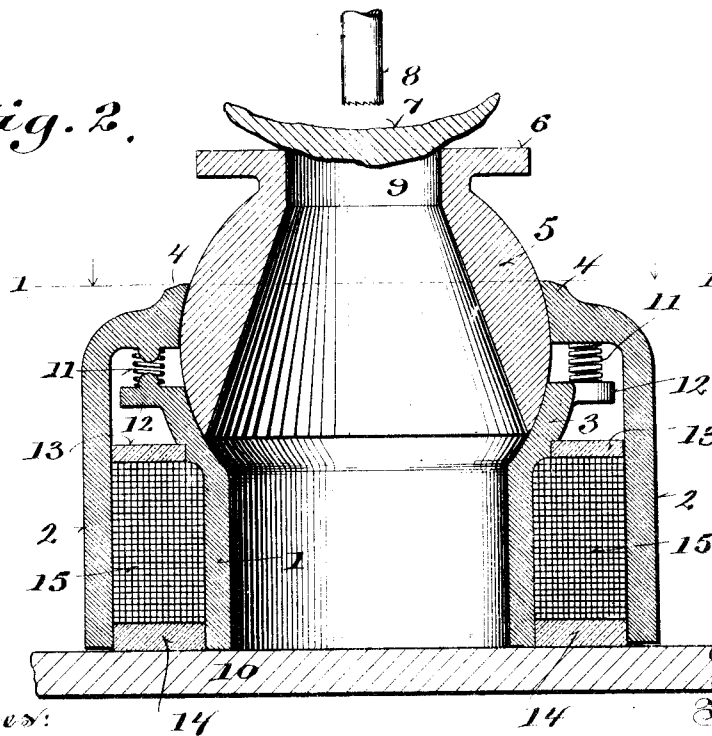


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

LEWIS D. ROWELL, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO CUTLER-HAMMER CLUTCH COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

WORK SUPPORT OR HOLDER.

1,066,951.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LEWIS D. ROWELL, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Work Supports or Holders, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvements in work supports or holders. It will, of course, be understood that although certain features of my invention are especially applicable to work supports or holders, the same are adapted for various purposes and may be used in different relations. It is the object of my invention to provide a work support or holder with means by which the same may be readily and quickly adjusted.

In order to explain my invention I shall show and describe the same as applied to a machine for sawing buttons from shells. It has been the practice to provide such a machine with a plurality of work supports or holders which are mounted upon a circular table. Each work support carries a shell from which buttons or disks may be cut or formed by means of a tubular saw. The table may be rotated so as to pass the several work supports successively in front of the workman or operator in order that he may adjust the same one after the other to place each shell in the proper position.

The views in the accompanying drawing are as follows:

Figure 1 is a plan of the preferred form of my work support or holder arranged upon a suitable supporting table, the same being shown in section on the line 1—1 of Fig. 2. Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1.

The preferred form of my work support or holder which is shown in the drawing, is preferably provided with an inner barrel 1 and an outer barrel 2, the inner barrel preferably being arranged concentrically within the outer barrel. The inner barrel preferably carries a ring or clamping member 3, and the outer barrel preferably carries a ring or clamping member 4. These rings form a two-part socket within which is disposed a ball or spherical member 5 preferably having a tilting table 6 formed thereon. The tilting table is preferably adapted to carry a shell 7 from which the saw 8 is

adapted to cut buttons or disks. When the buttons are formed, the same may drop through a hole or passage 9 into the inner barrel 1.

The inner barrel 1 may bear or rest upon a rotatable table 10 or other support. The outer barrel 2 is preferably yieldingly supported upon springs 11 which are disposed between the ring 4 and lugs 12, said barrel being normally slightly raised from the table. The inner barrel preferably carries non-magnetic rings 13 and 14, between which is arranged an electro-magnetic winding 15. These rings serve to hold the winding in place and also to guide the outer barrel.

In order to more fully explain my invention, I shall now describe the operation of the work support.

The outer barrel, the inner barrel, the ball and the table are made of magnetic material. While the winding 15 is inert, the work support may move about table or support 10, and the ball 5 may be turned so as to adjust the position of the tilting table to arrange the shell in the proper position in relation to the saw. When the proper adjustment is thus made, the winding 15 may be energized. The outer barrel 2 will then be drawn downwardly, thereby causing the ball 5 to be firmly clamped between the rings or clamping members 3 and 4. The magnetic circuit of the winding 15 will extend through the inner barrel 1, the table 10, the outer barrel 2 and the ball 5. Inasmuch as there will be a magnetic attraction between the table 10 and the outer and inner barrels, the work support will be firmly held in position upon the table. In order to permit further adjustment of the tilting table, the winding may be deenergized. The outer barrel 2 will then be raised by the action of the springs 11, thereby causing the rings 3 and 4 to release the ball 5.

While I have particularly described my invention as applied to a work support or holder, I am aware that it may be used in other relations.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In combination, means having relatively movable parts adapted to act as a chuck or clamp, a table or support carried thereby and adapted to be moved so as to adjust the position thereof, and an electro-

magnetic winding for actuating the relatively movable parts of said means to clamp said support in a fixed position.

2. In combination, a socket comprising relatively movable parts, a member having a portion within said socket, and an electromagnetic winding adapted to actuate the parts of said socket relatively to clamp said member therebetween.

3. In combination, a socket provided with relatively movable members forming a clamp, a work-holder or support carried thereby, and adapted to be moved so as to adjust the position thereof, and an electro-magnetic winding arranged to actuate said clamp and also to secure said clamp to a foundation.

4. In combination, relatively movable members forming a spherical socket and adapted to act as a chuck or clamp, a substantially spherical member arranged in said socket and adapted to be turned, and an electro-magnetic winding adapted to relatively actuate the movable members of said chuck to secure said spherical members in a stationary position, said winding being so disposed that when it actuates the chuck it simultaneously secures the chuck to a support or foundation.

5. In combination, means forming a two-part socket, a ball arranged within said socket and adapted to be turned, and an electro-magnetic winding for operating the two parts of said socket relatively to clamp said ball in a fixed position.

6. In combination, two parts forming a spherical socket and adapted to act as a chuck or clamp, a ball arranged within said socket and adapted to be turned, and an electro-magnetic winding adapted to cause said parts to clamp said ball between the same, and means for urging said parts to release said ball.

7. In combination, two parts forming a spherical socket and adapted to act as a chuck or clamp, a ball arranged within said socket, a spring arranged between said parts and an electro-magnetic winding for drawing said parts toward each other against the action of said spring so as to cause said parts to clamp said ball between the same.

8. In combination, an inner barrel and an outer barrel having a socket formed between the same, a ball arranged within said socket and adapted to be turned, and an electro-magnetic winding arranged between said barrels, said winding being adapted to cause said barrels to clamp said ball between the same.

9. In combination, an inner barrel and an outer barrel having a socket formed between the same, a ball arranged within said socket and adapted to be turned, and an electro-

magnetic winding adapted to cause said barrels to clamp said ball between the same, and means adapted to cause said barrels to release said ball.

10. In combination, an inner barrel and an outer barrel having a socket formed between the same, said barrels being provided with an air gap between portions of the same, a ball arranged within said socket and adapted to be turned, and an electro-magnetic winding arranged between said barrels and adapted to cause said barrels to clamp said ball between the same, parts of the magnetic circuit of said winding being formed by said barrels.

11. In combination, a support, an inner barrel and an outer barrel having a socket formed between the same, said barrels being provided with an air gap between portions of the same, a ball arranged within said socket and adapted to be turned, and an electro-magnetic winding arranged between said barrels and adapted to cause said barrels to clamp said ball between the same, said barrels and said support being parts of the magnetic circuit of said winding so that said barrels will be attracted to said support to fasten the same thereto.

12. In combination, an inner barrel and an outer barrel having a socket formed between the same, rings of non-magnetic material arranged between said barrels to separate the same from each other, a ball arranged within said socket and adapted to be turned, and an electro-magnetic winding arranged between said barrels and said rings.

13. In combination, an inner barrel and an outer barrel having a socket formed between the same, a ball arranged within said socket having a work support or a table carried thereby, and provided with a hole extending through said ball and communicating with said inner barrel and an electro-magnetic winding interposed between said barrels.

14. In combination, an inner barrel having a concave portion, and an outer barrel having a concave portion, said concave portions forming a spherical socket, a ball arranged within said socket and adapted to be turned, an electromagnetic winding adapted, when energized, to move said barrels relatively whereby the ball will be clamped in the socket, and means for urging said barrels to release said ball.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

LEWIS D. ROWELL.

Witnesses:

L. L. ROWE,

A. ROLLMANN.