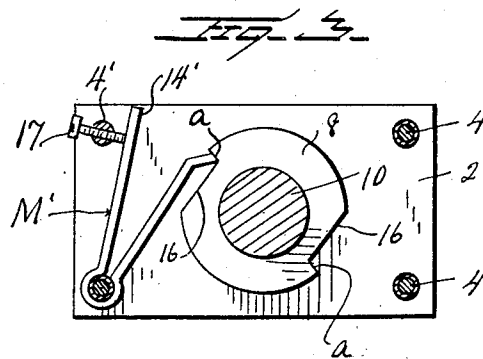
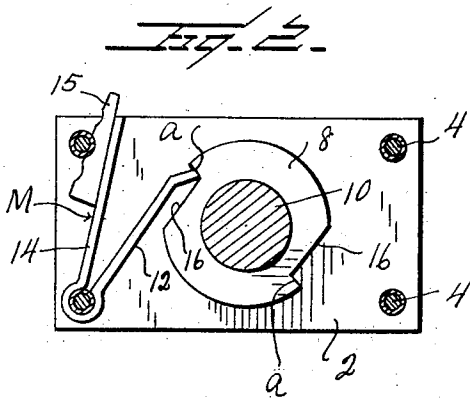
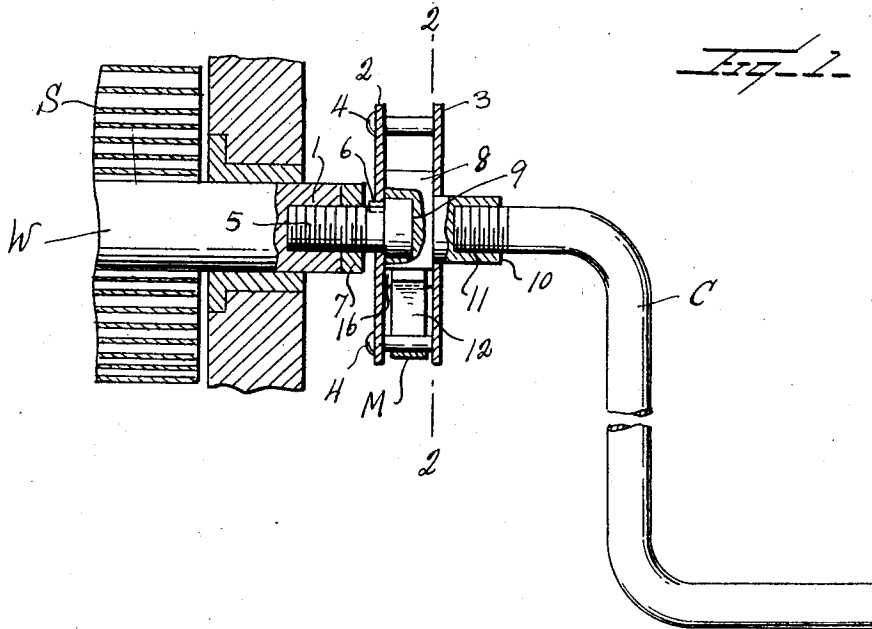


D. E. ODOM.
OVERWINDING PREVENTER.
APPLICATION FILED APR. 26, 1920.

1,395,592.

Patented Nov. 1, 1921.



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OVERWINDING-PREVENTER.

1,395,592.

Specification of Letters Patent.

Patented Nov. 1, 1921.

Application filed April 26, 1920. Serial No. 376,640.

To all whom it may concern:

Be it known that I, DANIEL E. ODOM, a citizen of the United States, residing at Bennettsville, in the county of Marlboro and State of South Carolina, have invented certain new and useful Improvements in Overwinding-Preventers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in overwinding preventers and has relation more particularly to a device of this general character especially designed and adapted for use in connection with the winding shaft of a spring motor.

It is an object of the invention to provide an overwinding preventer which operates as a clutch normally connecting the spring shaft and the winding key or crank locked for unitary rotation and which becomes inoperative by the resistance of the spring when substantially completely wound.

It is also an object of the invention to provide a novel and improved device which operates to give an audible signal when the spring has been properly wound.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved overwinding preventer whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a large fragmentary view partly in section and partly in elevation, illustrating an overwinding preventer constructed in accordance with an embodiment of my invention and in applied position;

Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1; and

Fig. 3 is a view similar to Fig. 2 but illustrating a further embodiment of my invention.

As disclosed in the accompanying drawings, W denotes a winding shaft for a spring S comprised in a motor structure, or the like, and one end portion of the shaft W is provided with a socket 1 to provide means

whereby my improved overwinding preventer may be operatively engaged therewith.

As disclosed in the accompanying drawings, my improved overwinding preventer comprises two spaced plates 2 and 3 in overlying relation and maintained in a conventional manner in pre-determined spaced relation by the tie bolts 4. 5 denotes a shaft section having one end portion extending through the plate 2 and keyed or otherwise secured to said plate, as at 6. The outer end portion of the shaft 5 is adapted to be threaded within the socket 1 of the winding shaft W and also threaded upon the shaft 5 is a lock nut 7 coacting with the outer end of the shaft W in order to maintain the requisite connection between said shafts W and 5. Positioned between the plates 2 and 3 is a cylindrical block 8 having in one of its side faces and at the axial center thereof a socket or recess 9 in which the adjacent end portion of the shaft 5 extends whereby said end portion of the shaft serves as a bearing or support for said block.

The opposite side face of the block 8, at its axial center, is provided with an outstanding cylindrical trunnion 10 extending freely through the second plate 3 and provided in its outer end with a socket 11 in which is adapted to be threaded an end portion of a winding crank or key C. If preferred, the winding crank or key C may be secured to the trunnion 10 in any manner which fully complies with the requirements of practice.

M denotes a spring member substantially V-shape in form and having its apex portion formed into a loop or bearing substantially snugly engaging one of the bolts 4 and the free end portion of one of the arms 12 of the spring member M is constantly in contact with and urged toward the periphery of the cylindrical block 8 while the outer end portion of the second arm 14 of said member M extends beyond a second bolt 4 and constantly urged in a direction thereto.

As is particularly illustrated in Fig. 2, a tapered wedge member 15 is forced between the free end portion of the arm 14 of the spring member M and the adjacent bolt 4 whereby an effective means is provided for regulating the tension of the member M and particularly the frictional contact of the free end portion of the arm 12 of the spring member M on the periphery of the cylin-

drical block 8. The frictional contact of the arm 12 with the periphery of the block 8 normally serves to hold the block 8 for rotation with the shaft 5 and the plate 2 so that when the block 8 is rotated through the instrumentality of the crank or key C, the shaft W will also be rotated to effect the requisite winding of the spring S. When the spring S has been sufficiently wound, the resistance or tension of said spring will be greater than the tension of the arm 12 of the member M upon the block 8, and upon continued rotation of the crank or key C, the block 8 will rotate independently of the shaft 5. By this means, overwinding of the spring S is effectively prevented.

I also find it of advantage to provide the periphery of the block 8 with the depressions 16 providing the abrupt shoulders α , said recesses and shoulders being positioned in the line of contact of the arm 12 of the member M with the periphery of the block 8. When the block 8 rotates independently of the shaft 5, the spring will snap within a recess 16, resulting in the production of a sound which serves to give an audible signal that the spring S has been properly wound. The arm 12 on the member M also coacts with a shoulder α of a recess 16 particularly when it is desired to disengage the crank or key C from the trunnion 10.

It is also to be understood that by increasing or decreasing the tension of the spring member M, the automatic release of the block or member 8 may be had in accordance with the desired winding of the spring S.

As illustrated in Fig. 3, the tension of the spring member M' is under control of a screw 17 coacting with and constantly in contact with the free end portion of the arm 14' and which screw 17 is threaded through the adjacent connecting bolt 4'.

From the foregoing description, it is thought to be obvious that an overwinding preventer constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof, and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

1. The combination with a shaft and means placed under tension by the shaft upon rotation thereof; of a winding device comprising two plates in spaced relation, means connecting said plates and maintaining the same in spaced relation, a shaft ex-

tending through one of the plates and fixed thereto, one end portion of the shaft being engageable with the first named shaft, the opposite end portion of said second named shaft extending between the plates, a block positioned between the plates and provided with a recess in a face to receive the end portion of the second named shaft between the plates, whereby said second named shaft serves as a support for said block, said block being provided with a trunnion freely directed through the second plate, a rotating medium coacting with the trunnion, and a spring member operatively supported by the plates and frictionally engaging the block, whereby the shaft and block may rotate in unison.

2. The combination with a shaft and means placed under tension by the shaft upon rotation thereof; of a winding device comprising two plates in spaced relation, means connecting said plates and maintaining the same in spaced relation, a shaft extending through one of the plates and fixed thereto, one end portion of the shaft being engageable with the first named shaft, the opposite end portion of said second named shaft extending between the plates, a block positioned between the plates and provided with a recess in a face to receive the end portion of the second named shaft between the plates, whereby said second named shaft serves as a support for said block, said block being provided with a trunnion freely directed through the second plate, a rotating medium coacting with the trunnion, and a spring member operatively supported by the plates and frictionally engaging the block, whereby the shaft and block may rotate in unison, the periphery of the block being provided with means coacting with the spring member, to give an audible signal upon rotation of the block independently of the second named shaft.

3. In combination with a shaft and means placed under tension by the shaft upon rotation thereof, two members connected for relative rotation, one of said members being engaged with the shaft for rotation therewith, the second member being provided with means for rotating the same, a spring carried by the first named member and frictionally engaging the second named member whereby said members rotate in unison, said spring being of a tension less than the maximum exertion of the tensioning means, said second named member being provided with means coacting with the spring to give an audible signal upon rotation of said second named member independently of the first named member.

4. In combination with a shaft and means placed under tension by the shaft upon rotation thereof, two members connected for relative rotation, one of said members being

engaged with the shaft for rotation there-
with, the second member being provided
with means for rotating the same, a spring
carried by the first named member and fric-
tionally engaging the second named mem-
ber whereby said members rotate in unison,
said spring being of a tension less than the
maximum exertion of the tensioning means,
said second named member being provided
with means coacting with the spring to give 10
an audible signal upon rotation of said sec-
ond named member independently of the
first named member, said means including
a recess in the surface of the second named
member with which the spring contacts. 15
In testimony whereof I hereunto affix my
signature.

DANIEL E. ODOM.