

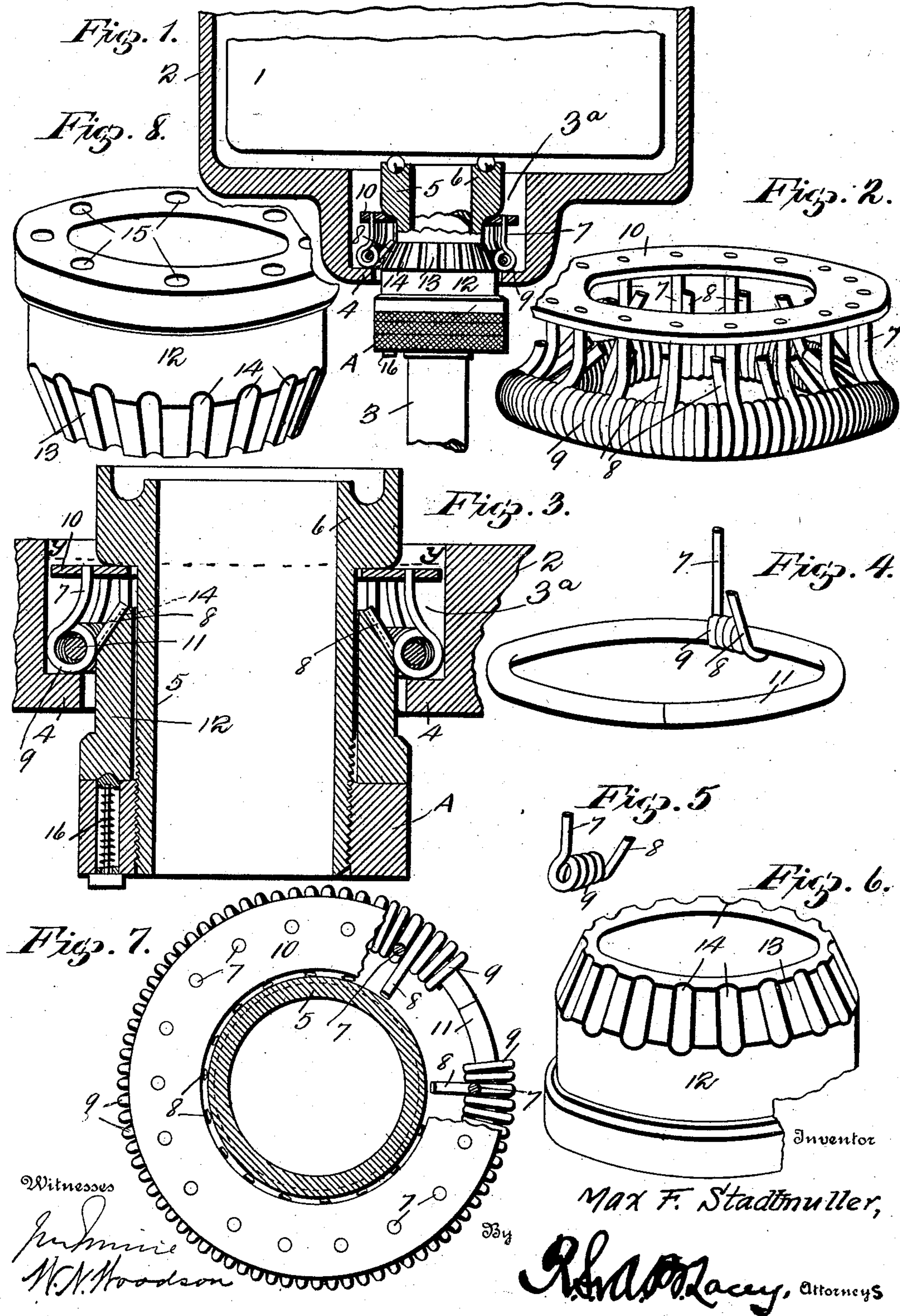
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PATENTED JUNE 21, 1904.

M. F. STADTMULLER.  
COMPENSATING JOURNAL BEARING.

APPLICATION FILED MAR. 21, 1904.

NO MODEL.



# UNITED STATES PATENT OFFICE.

MAX F. STADTMULLER, OF POMEROY, IOWA.

## COMPENSATING JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 763,077, dated June 21, 1904.

Application filed March 21, 1904. Serial No. 199,182. (No model.)

*To all whom it may concern:*

Be it known that I, MAX F. STADTMULLER, a citizen of the United States, residing at Pomero-  
roy, in the county of Calhoun and State of  
Iowa, have invented certain new and useful Im-  
provements in Compensating Journal-Bear-  
ings, of which the following is a specification.

In the operation of machinery, such as  
cream-separators, considerable vibration is  
occasioned.

This invention provides a bearing for neu-  
tralizing in whole or part the vibration, there-  
by obviating the noise, the wear and tear,  
and the many objectionable features attrib-  
utable thereto.

The invention consists of a box, frame, or  
support, a bearing, and yielding braces be-  
tween the box and bearing for centralizing  
the latter and taking up the vibration, said  
braces unitedly constituting a compensator, the  
tension of which is regulable to offer a greater  
or less resistance to the amplitude of vibra-  
tions.

The invention further consists of a tension-  
regulator for the said compensator and inter-  
locking means between said regulator and  
compensator to prevent relative turning when  
adjusting the parts to vary the tension of the  
yielding braces.

The invention also consists of the peculiar  
formation of the yielding braces, the mount-  
ing therefor, and an expansible ring passed  
through the eyes or coils of said braces and  
holding them in line and admitting of their  
inward and outward movement, so as to  
snugly fit the box or frame forming a sup-  
port for the bearing as a whole.

The invention further consists of the novel  
features, details of construction, and combi-  
nations of parts, which hereinafter will be more  
particularly set forth, illustrated, and finally  
claimed.

In the accompanying drawings, forming a  
part of the specification, Figure 1 is a side view  
of a journal-bearing embodying the invention,  
showing the same in connection with a separa-  
tor, the lower portion of which is illustrated in  
section. Fig. 2 is a perspective view of the com-  
pensator. Fig. 3 is a vertical central section of  
the component parts of the bearing, the same

being on a larger scale. Fig. 4 is a perspec-  
tive view of the expansible ring upon which  
the yielding braces are mounted, one being  
in position thereon. Fig. 5 is a perspective  
view of a yielding brace. Fig. 6 is a per-  
spective view of the tension-regulator. Fig.  
7 is a horizontal section of the bearing about  
on the line Y Y of Fig. 3. Fig. 8 is a per-  
spective view of the tension-regulator in-  
verted.

Corresponding and like parts are referred  
to in the following description and indicated  
in all the views of the drawings by the same  
reference characters.

The compensating journal-bearing is de-  
signed for general application where vibra-  
tion of a rotary shaft is to be utilized, and  
inasmuch as it is peculiarly adapted for sepa-  
rators and analogous machinery it is illus-  
trated in this connection in the accompany-  
ing drawings, in which—

The numeral 1 indicates the separator, 2 the  
frame, and 3 the vertical or rotary shaft. The  
lower portion of the frame 2 constitutes a box,  
within the cavity 3<sup>a</sup> of which the compensating  
bearing is arranged and supported by the inner  
shoulder 4.

The journal-bearing proper comprises the  
sleeve 5, having an outer shoulder 6 near one  
end and externally threaded at its opposite  
end to receive the set-nut A by means of  
which the tension of the yielding braces com-  
prising the compensator is regulated. The  
rotary shaft 3 is snugly journaled in the sleeve  
5, so as to prevent any lost movement be-  
tween them. The term "sleeve" as applied  
to the part 5 embraces any element that may  
be used in the capacity of a bearing for the  
shaft 3.

The compensator is composed of a series of  
yielding braces having the form substantially  
as shown in Fig. 5 and disposed in a circle,  
so as to embrace the sleeve 5 and come be-  
tween it and the box, frame, or like support  
receiving the journal-bearing as a whole. The  
yielding braces comprise angularly-dis-  
posed arms 7 and 8 and one or more coils 9,  
the several parts being integrally formed and  
constituting portions of a length of wire bent  
upon itself intermediate of its ends to form

the coils and having its end portions extended to provide the arms 7 and 8. When the yielding braces are assembled, the arms 7 are arranged about parallel with the axis of the journal-bearing, whereas the arms 8 are inclined so as to exert a lateral pressure upon the sleeve 5. A ring 10 is provided to connect the yielding braces in series, and said braces have their arms 7 jointed thereto in any substantial and rigid manner. The coils or eyes 9 unitedly form a circle and lie side by side, as indicated most clearly in Fig. 2, said circle of coils being spaced from the supporting-ring 10. An expansible ring 11 is passed through the coils or eyes 9 and serves to maintain the same in line or proper position and to admit of the coils moving inward or outward to allow for slight variations in the diameter of the recess 3<sup>a</sup> of the box or support designed to receive the bearing. This expansible ring may, if desired, serve to supplement the action of the yielding braces, particularly so if made of stout material.

The tension-regulator consists, essentially, of a sleeve 12, having a conical end 13, which is adapted to be forced between the compensator and the bearing 5, so as to increase the tension of the compensator as may be desired. The sleeve 12 snugly fits the sleeve or bearing 5, and its conical end is provided with a series of grooves 14, forming seats to receive the inclined arms 8 of the yielding braces or compensator elements. In this manner is provided a positive interlocking connection between the tension-regulator and compensator to prevent relative turning of the parts when the set-nut A is turned either to advance or permit the withdrawal of the regulator, according as the tension of the compensator is to be increased or diminished. Moreover, the seats or grooves 14 receiving the arms 8 hold the latter in fixed position, which is essential to the efficiency of the invention. A series of depressions 15 are formed in the lower or outer end of the tension-regulator and are adapted to cooperate with a spring-actuated stop 16, carried by the set-nut, so as to hold the latter in the adjusted position against any possible casual displacement.

The compensating journal may be used in any connection where it is required to take up the vibration of a rotary shaft, and in the arrangement of the parts it is of the utmost importance that the shaft receive a snug fit in the bearing or sleeve 5 and that the tension-regulator closely encircle said bearing, while the compensator is snugly received in the box, frame, or support, provision being had for a limited play between the tension-regulator and said box, frame, or support. When the tension-regulator 12 is advanced by means of the set-nut A, the inclined arms 8 are repressed—that is, moved outward by means of the conical end 13 wedging between said arms and the sleeve 5—thereby offering

a greater resistance to the vibration of the shaft and sleeve 5, according as may be desired to meet the exigencies of the case.

Having thus described the invention, what is claimed as new is—

1. In a compensating journal-bearing, the combination of a bearing-sleeve, a series of yielding braces arranged about said sleeve and having inwardly-extended arms, a tension-regulator mounted upon the bearing-sleeve and positively interlocking with said arms of the yielding braces, a set-nut threaded upon the bearing-sleeve for advancing the tension-regulator, and interlocking means between said set-nut and tension-regulator to prevent casual displacement or loosening of the set-nut, substantially as set forth.

2. In a compensating journal-bearing, the combination of a bearing-sleeve, a series of yielding braces arranged to encircle the bearing-sleeve, means for varying the tension of said yielding braces, and an expansible ring having loose connection with the yielding braces and adapted to hold them in line and to admit of their inward and outward movement, substantially as specified.

3. In a compensating journal-bearing, the combination of a bearing-sleeve, yielding braces arranged in a circle about the bearing-sleeve, each comprising an eye and angularly-disposed arms, an expansible ring passed through the eyes of the yielding braces, and a tension-regulator mounted upon the bearing-sleeve and adapted to be advanced thereon so as to compress the yielding braces, substantially as and for the purpose specified.

4. In a compensating journal-bearing, the combination of a bearing-sleeve, a series of yielding braces arranged in a circle about the bearing-sleeve, each comprising angularly-disposed arms and a number of coils, the several coils of the yielding braces coming together, a ring having said yielding braces connected thereto by one of their arms, and a tension-regulator mounted upon the bearing-sleeve and adapted to be advanced thereon so as to vary the tension of said yielding braces, substantially as specified.

5. In a compensating journal-bearing, the combination of a bearing-sleeve, a series of yielding braces arranged in a circle about the bearing-sleeve, each comprising angularly-disposed arms and a number of coils, the several coils of the yielding braces coming together, a ring having said yielding braces connected thereto by one of their arms, a tension-regulator mounted upon the bearing-sleeve and adapted to be advanced thereon so as to vary the tension of said yielding braces, and an expansible ring passed through the series of coils of the said yielding braces, substantially as set forth.

6. The herein-described compensating journal-bearing comprising a bearing-sleeve, a series of yielding braces, each consisting of a

number of coils and angularly-disposed arms, a ring having the yielding braces connected thereto by one of their arms, an expansible ring passed through the coils of the yielding  
5 braces, a tension-regulator mounted upon the bearing-sleeve and having one end made conical and provided with grooves to receive the other arms of the yielding braces, a set-nut threaded upon the bearing-sleeve, and inter-

locking means between the tension-regulator and set-nut to prevent casual displacement of the latter, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MAX F. STADTMULLER. [L. s.]

Witnesses:

JOHN F. GUTZ,  
C. V. LANGLEY.