

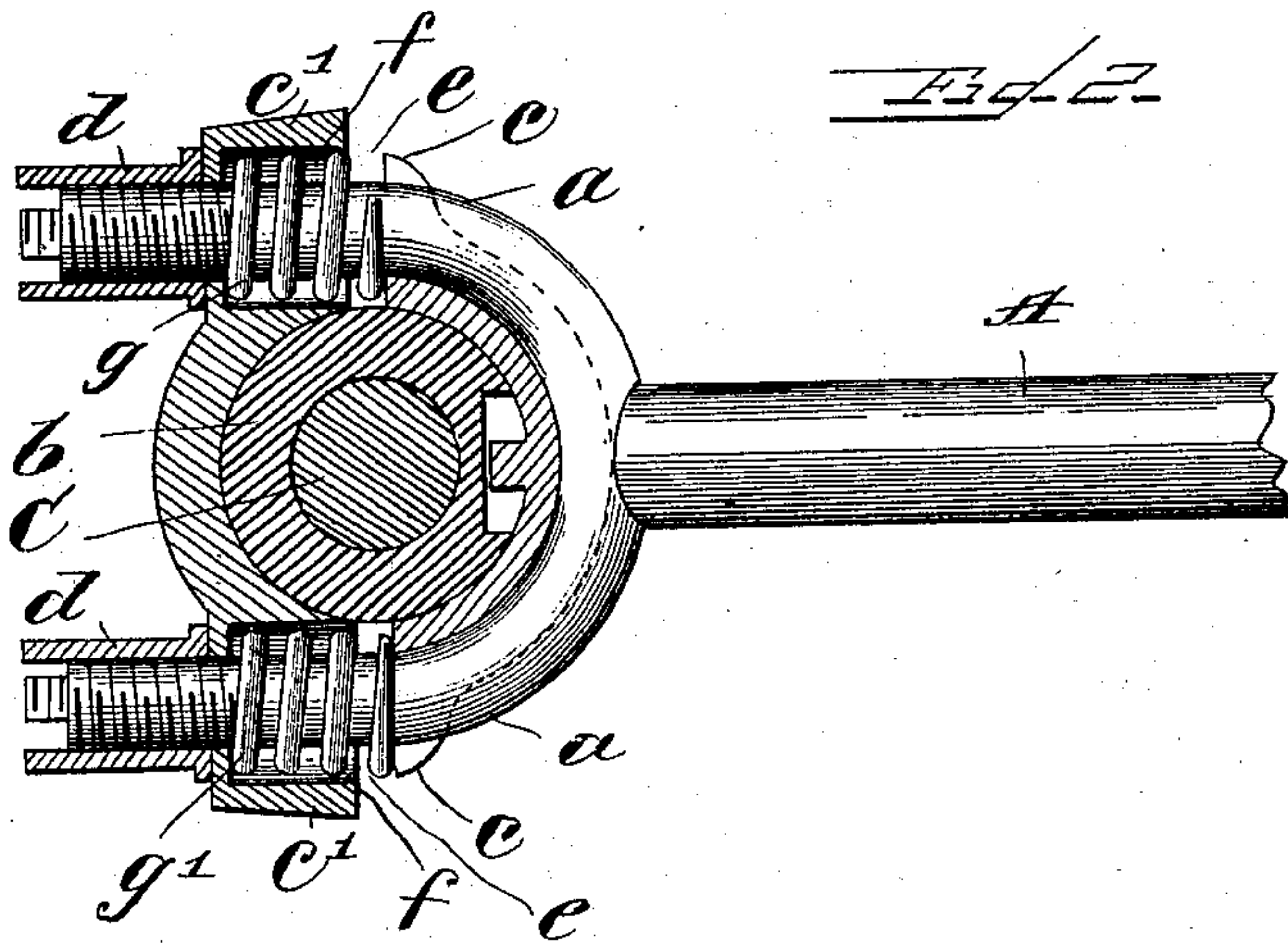
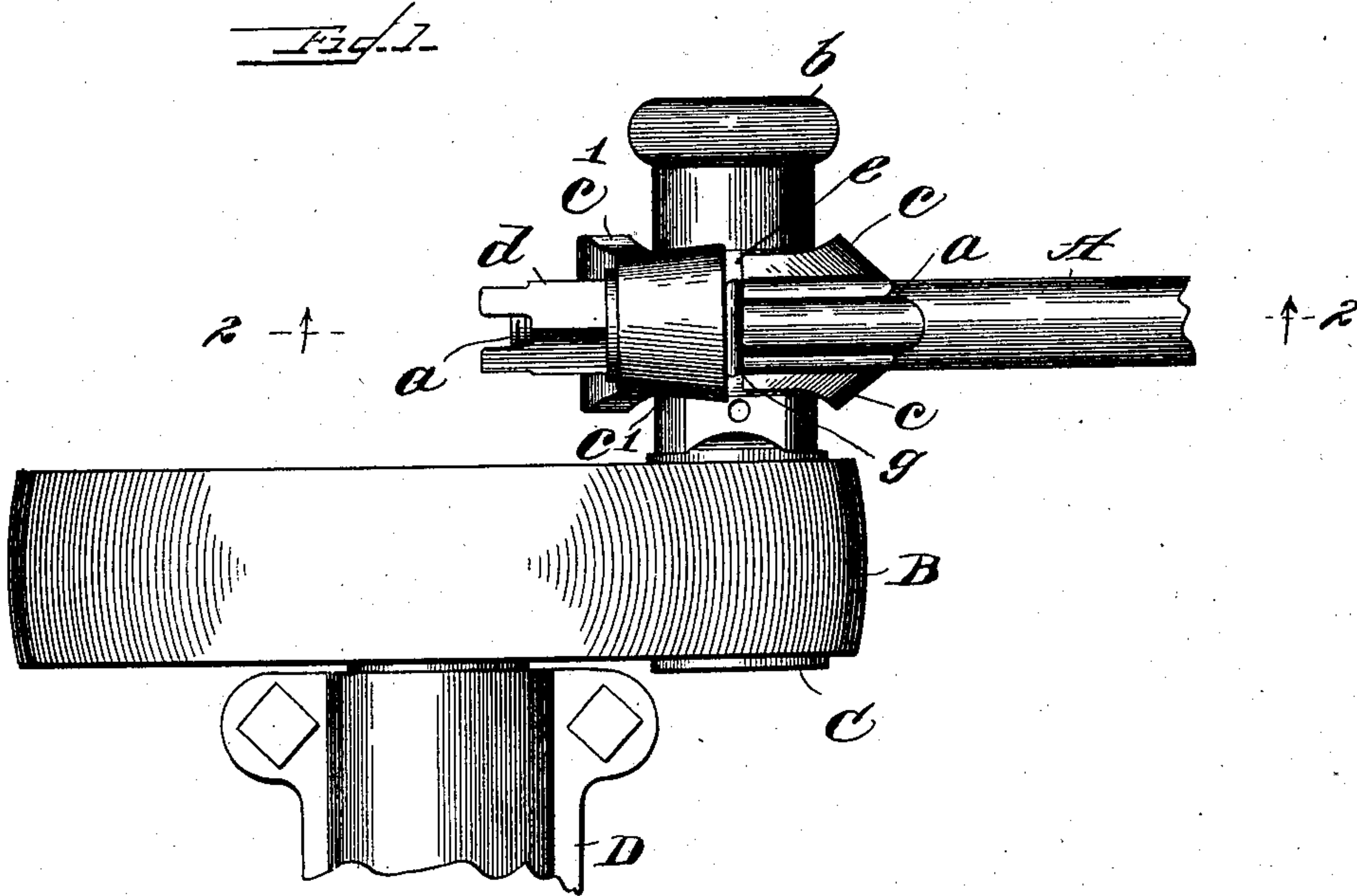
No. 751,500.

PATENTED FEB. 9, 1904.

A. GRIEVES.
PITMAN.

APPLICATION FILED MAY 16, 1903.

NO MODEL.



WITNESSES.

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ALBERT GRIEVES, OF SPRINGFIELD, OHIO, ASSIGNOR TO INTERNATIONAL HARVESTER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

PITMAN.

SPECIFICATION forming part of Letters Patent No. 751,500, dated February 9, 1904.

Application filed May 16, 1903. Serial No. 157,372. (No model.)

To all whom it may concern:

Be it known that I, ALBERT GRIEVES, a citizen of the United States; residing at Springfield, in the county of Clarke and State of Ohio, have invented a new and useful Improvement in Pitman and other Connections, of which the following is a specification.

The invention relates to an improvement in pitman and other connections.

The object of the invention is to take up any looseness occasioned between the parts which surround the crank-pin or similar device.

The invention consists substantially in the construction hereinafter described, illustrated in the accompanying drawings, and more fully pointed out in the claims.

Like letters refer to the same parts in the drawings, in which—

Figure 1 represents a plan view of a pitman connection applied to a crank-pin on the fly-wheel of a mowing-machine. Fig. 2 is a view showing a longitudinal cross-section on the line 2 2 of Fig. 1.

In the drawings the invention is shown applied, for exemplification, to the pitman of a mowing-machine where it connects to the crank-pin of the fly-wheel. This is a point where there is usually great wear, owing to the eccentric motion and the rapidity of the motion, and therefore it is particularly necessary to take up any looseness resulting from such wear.

A designates the pitman of a mowing-machine to which is connected in the usual manner a yoke or fork *a*.

B designates the fly-wheel, which is of any customary construction.

C marks the crank-pin, which is best shown in Fig. 2 of the drawings.

D indicates a portion of the frame of a mowing-machine.

b designates a close-fitting bushing which encompasses the crank-pin and is formed with an enlarged spherical portion on its outer surface, with its greatest diameter formed at the point indicated at the line 2 2 in Fig. 1. The bushing in turn is surrounded by clamps, which in this case are made in two sections *c*

and *c'*. The part or section *c* is preferably formed with a circumferential seat or groove for the fork of the pitman. Part *c'* may be conveniently provided with holes or apertures through which the extreme ends of the fork *a* may pass and project sufficiently beyond to enable a suitable fastening device to be applied thereto, which in the illustration is a pair of nuts *d*, and of course the ends of the yoke are threaded to engage such nuts, and the clamps are consequently held in position and in a certain definite adjustment by means of these nuts. When these jaws or clamps are new, they are designed so as to fit closely around the bushing; but a certain space is left between them, as shown at *e*, so that when applied their proximate ends will not bear against each other. In one of the clamps or jaws there is advantageously formed a suitable rest or socket both above and below for springs, which in the drawings are indicated at *f*. For the sake of economy in construction and space it has been found convenient to have the springs encircle the fork-arms of the pitman. The tendency of the springs is to force apart the jaws or clamps, and their tension is to an extent regulated by the nuts before referred to, as it is required from time to time, inasmuch as the springs ordinarily in the course of use lose a part of their tension, and this tension or power of expansion is increased as the clamps are adjusted by the nuts up to a certain limit, and at the same time the clamps are made to approach each other by the same manipulation of said nuts, and thus take up the wear between said clamps and the bushing.

In extensive use of bearings of this nature it has been found that there will be a certain amount of wear between the bushings and the clamps and a corresponding amount of looseness, which is decidedly objectionable and should be taken up, and likewise it has been found that in the manufacture of the devices the relative proportions of the bushings and clamps are somewhat variable, so that with the same adjustment by the nuts the looseness between said bushings and clamps in differ-

ent connections will not be the same. It has been customary, therefore, for many years to insert some means between the clamps to hold them rigidly apart, no matter if there is wear
 5 between such clamps and bushings or variable sizes, as indicated, and to effect this end a means frequently employed has been a series of washers, which have certain objections which will now be stated. In the first place
 10 in assembling the machines it is hardly possible to determine without experiment how many washers are required, and the machinist may put in a given number of washers and then assemble the parts and find that he has
 15 too many or too few washers and have no other recourse but to knock down these parts and remove or add washers and try again. This may happen more than once and has a tendency to consume considerable time. By
 20 the spring illustrated in the drawings in place of the washers the parts may be adjusted into their proper relation at the first attempt at assembling such parts, for the spring yields and permits the parts to be brought together
 25 with sufficient nearness, no matter whether they vary in size in different connections or not. Again, in the actual use of the machine when looseness results from wear the farmer, who is frequently not expert in adjusting the
 30 machine, will attempt to take up the looseness by merely screwing up the nuts; but it is manifest that there has not been the same wear on the washers produced as has been effected between the clamps and bushings,
 35 and consequently the washers will interpose a rigid obstacle to bringing the clamps closer to the bushings and the farmer will think that he has effected the taking up of the looseness when, in fact, he has utterly failed to accom-
 40 plish this end, and, moreover, even if the farmer is sufficiently expert to appreciate that he must take out one or more washers in order to secure the desired adjustment it requires some time and experiment to do this, which
 45 it is desirable should be avoided. By the use of the springs illustrated in the drawings in place of the washers referred to the farmer, whether he is expert or not, will when he finds looseness between the clamp and bush-
 50 ing naturally turn the nuts, and as the springs yield he must secure the adjustment for the taking up of this looseness without interference. Furthermore, as the thickness of washers varies it is evident that the same nicety of
 55 adjustment cannot always be had as by the use of springs in place of washers.

It is obvious that the invention above referred to may be utilized in various parts of machinery and in many other kinds of ma-
 60 chines without change in principle, and it is not, therefore, to be understood that there is any intention of limiting the application to crank-pins or fly-wheels of mowing-machines, although this form of machine is shown in
 65 the drawings, and the invention may be ad-

vantageously used in connection therewith. It is further manifest that many changes may be made in the details of the device shown without departing from the spirit thereof, and these will occur to the ordinary mechanic. 70

What I claim, and desire to secure by Letters Patent, is—

1. In a pitman connection, the combination of a crank-pin and a pitman, and means for connecting these parts, including clamp-jaws
 75 applied to said pin, said jaws being of less length than a semicircle, yielding means interposed between said jaws and normally tend- ing to separate them, and means for drawing
 said jaws together, as and for the purpose set
 80 forth.

2. In a pitman connection, the combination of a crank-pin and a pitman, and means for connecting these parts, including clamp-jaws
 85 arranged to form a bearing-seat for said pin, means for yieldingly maintaining said jaws out of contacting relation with respect to each other, and means for drawing said jaws to- ward each other to take up wear of the bear- ing-surface of said jaws upon said pin, as and
 90 for the purpose set forth.

3. The combination in a pitman connection, of a pitman, a crank-pin, and jaws or clamps for connecting such pitman and crank-pin, of
 95 means for holding the jaws or clamps in bearing relation with respect to the crank-pin, and elastic means tending to force said jaws or clamps away from said crank-pin; substan- tially as and for the purpose set forth.

4. The combination in a pitman connection, 100 of a pitman, a crank-pin having a spherical surface, and jaws or clamps for connecting such pitman and crank-pin, of means for holding said jaws or clamps in bearing rela- tion with respect to the crank-pin, and elastic 105 means tending to force said jaws or clamps away from said crank-pin; substantially as and for the purpose set forth.

5. The combination in a pitman connection, of a pitman, a crank-pin, a bushing surrounding 110 such crank-pin, jaws or clamps bearing against the bushing, and means for holding the jaws or clamps in definite relation to said bushing, and elastic means tending to separate said jaws or clamps; substantially as and for the 115 purpose set forth.

6. The combination in a pitman connection, of a pitman, a crank-pin, a bushing surrounding the crank-pin and having a spherical portion, 120 jaws or clamps bearing against the bushing, means for holding the jaws or clamps in defi- nite relation to the crank-pin and bushing, and elastic means tending to force said jaws or clamps apart; substantially as and for the 125 purpose set forth.

7. The combination in a pitman connection, of a pitman formed at one end with two branches, a crank-pin, jaws or clamps for connecting such pitman and crank-pin, one of
 130 said jaws or clamps being formed with a seat

adapted to the fork of said branched pitman, and the other jaw or clamp having perforations at its opposite ends adapted to guide it on the said branches, of means for holding the jaws or clamps in definite relation to the crank-pin, and means tending to force said jaws or clamps apart and away from said crank-pin; substantially as and for the purpose set forth.

8. The combination in a pitman connection, of a pitman, a crank-pin, and jaws or clamps for connecting such pitman and crank-pin, each of the sections of said jaws having a length slightly less than a semicircle, whereby such jaws are prevented from contacting with each other, means for positively holding the jaws or clamps in definite relation to the crank-pin, and means automatically tending to force said jaws or clamps away from said crank-pin; substantially as and for the purpose set forth.

9. The combination in a pitman connection, of a pitman formed at one end with two branches, a crank-pin, a pair of jaws or clamps connecting the pitman and crank-pin, and one of such jaws having a seat or depression for the yoke of the pitman, and the other having apertures at each end adapted to guide the same on the branches of the pitman, and said jaws each having inside seats adapted to fit its connection to the pitman, with means for positively holding the jaws or clamps in definite relation to the crank-pin, and means tending to automatically force said jaws or clamps away from said crank-pin; substantially as and for the purpose set forth.

10. The combination in a pitman connection, of a pitman provided at one end with two branches, a crank-pin, a pair of jaws or clamps for connecting such pitman and crank-pin, one of such jaws provided with sockets or seats, elastic means arranged in said sockets or seats, and the other provided with an abutment for supporting one end of such elastic means, whereby the jaws or clamps

may be automatically under a pressure tending to separate them, and means for normally holding such jaws in a definite relation to each other; substantially as and for the purpose set forth.

11. The combination in a pitman connection, of a pitman formed at one end with two branches, a crank-pin, jaws or clamps for connecting such pitman and crank-pin, and adapted to be held in position by said branches, and having seats or sockets formed therein, an elastic means confined in said seats or sockets, and apertures for the passage of the branches of the pitman, and adjusting means bearing on the outer jaw or clamp and serving to positively hold it in a definite relation to the opposing jaw or clamp and to the crank-pin; substantially as and for the purpose set forth.

12. The combination in a pitman connection, of a pitman having a forked or branched end, a crank-pin, a bushing encircling the crank-pin, a pair of jaws or clamps bearing against the bushing, one of which has an exterior curved seat for the yoke, and the other of which is apertured at each end for the passage of the two branches of the yoke of said pitman, and is recessed at each end on its inner surface, springs seated in the recesses in one jaw and bearing against the end of the other jaw, thereby tending to force said jaws apart, and nuts arranged exteriorly of the outer jaw and engaging screw-threads upon the branched ends of the pitman, and bearing against the outer ends of such jaw, whereby a definite and positive adjustment is provided; substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 6th day of May, 1903, in the presence of the subscribing witnesses.

ALBERT GRIEVES.

Witnesses:

CHASE STEWART,
MAURICE KANE.