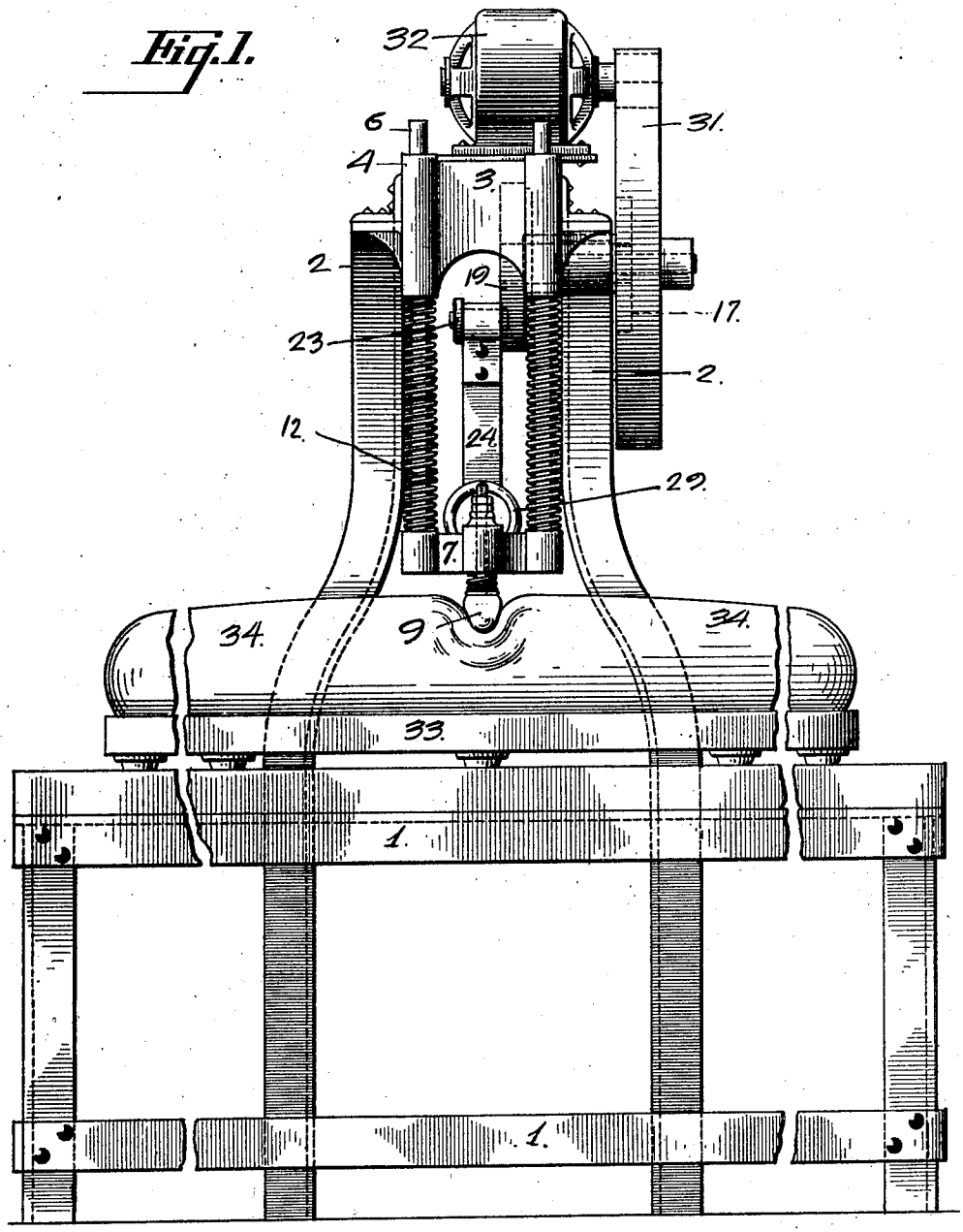
Jan. 29, 1924. 1,481,972

G. A. AICHER

MATTRESS BEATING MACHINE

Filed Dec. 8, 1920 4 Sheets-Sheet 1

Fig. 1.



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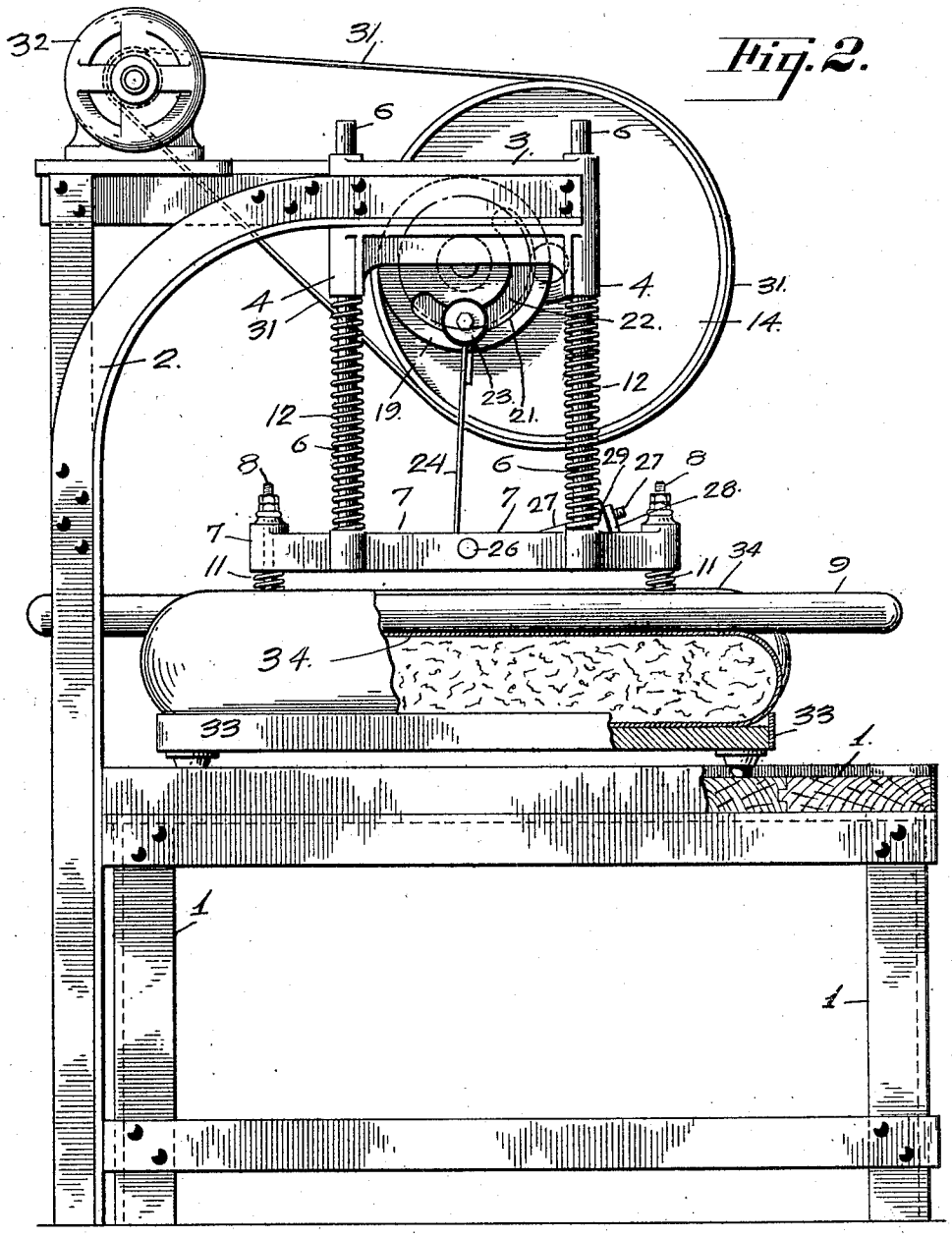
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MATTRESS BEATING MACHINE

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Fig. 2.



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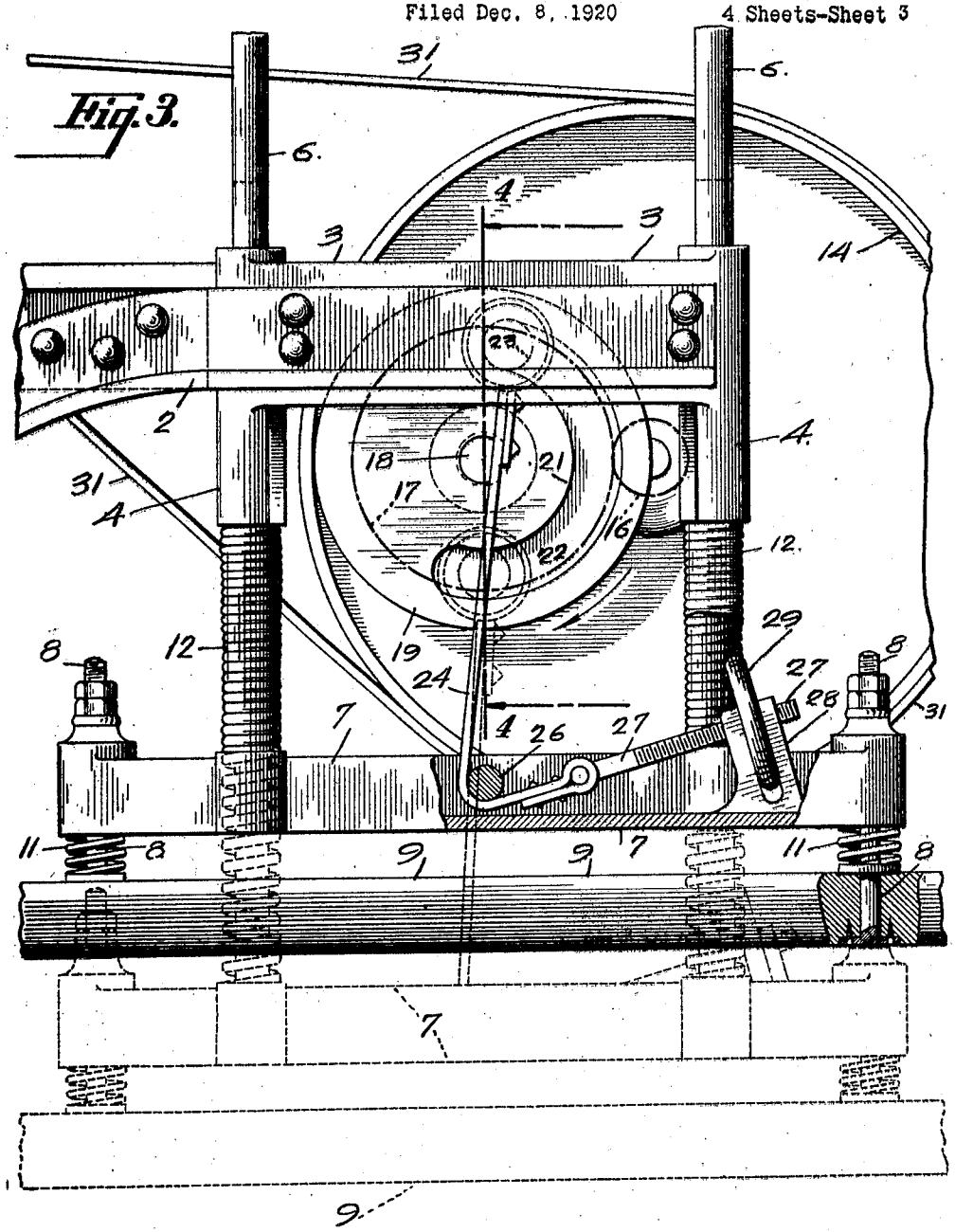
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MATTRESS BEATING MACHINE

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Fig. 3.



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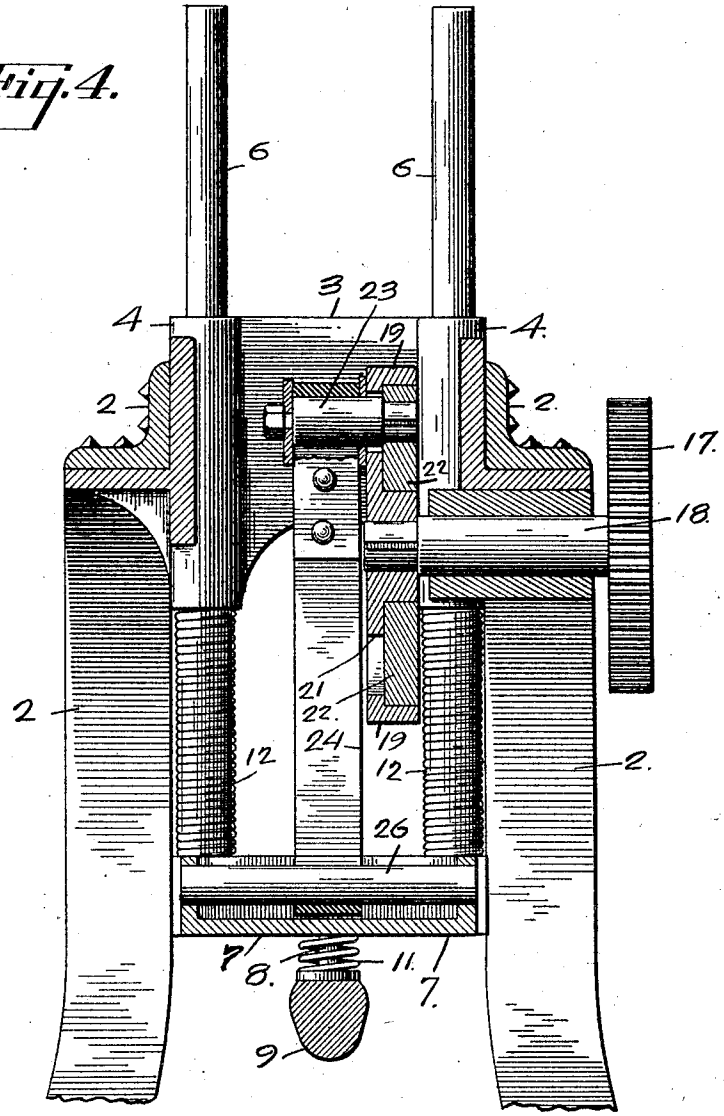
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MATTRESS BEATING MACHINE

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Fig. 4.



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Patented Jan. 29, 1924. 1,481,972

UNITED STATES PATENT OFFICE.

GUSTAV A. AICHER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO DROLL PATENT CORPORATION, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

MATTRESS-BEATING MACHINE.

Application filed December 8, 1920. Serial No. 429,283.

To all whom it may concern:

Be it known that I, GUSTAV A. AICHER, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented a new and useful Improvement in a Mattress-Beating Machine, of which the following is a specification.

My invention relates to improvements in a mattress beating machine wherein a resiliently and reciprocating beating element operates in conjunction with a movable mattress supporting element to subject different portions of the surface of a mattress thereon to the reciprocations of said beating stick.

The primary objects of my invention is to provide a new and improved mattress beating machine.

A further object of the invention is to provide an improved device of the character described having improved means for adjusting the position of the stroke of the beating stick relatively to the adjacent surface of the mattress whereby the force of impact of said stick may be altered.

Another object of the invention is to provide improved means for moving the mattress relatively to the beating stick whereby different portions of said mattress may be engaged and beaten by said stick.

A still further object of the invention is to provide an improved driving means for the reciprocating stick whereby said stick may be automatically disconnected from positive connection with said drive during the lower or operating portion of the reciprocations of said beating stick to deliver a resilient blow of said mattress.

I accomplish these several objects by means of the improved device disclosed in the drawings forming a part of the present specification, wherein like characters of reference are used to designate similar parts throughout the said specification and drawings, and in which:—

Fig. 1 is a broken front elevation of the improved machine;

Fig. 2 is a broken side elevation of the machine with the mattress partly in section to disclose the operation of the beating stick;

Fig. 3 is an enlarged, broken side elevation of the reciprocating mechanism disclosing the manner in which reciprocations are imparted to the beating stick; and

Fig. 4 is an enlarged vertical sectional view taken on line 4—4 of Fig. 3 is the direction indicated.

Referring to the drawings the numeral 1 is used to designate a supporting table having an upwardly extending portion 2 supporting an upper rigid bearing member 3 having preferably four vertically disposed bearings 4 in each corner thereof within which are slidably mounted four rods 6 having a lower movable member 7 rigidly secured to the lower ends thereof.

The member 7 is provided with depending rods 8 slidably mounted in opposite ends of said member 7 and having rigidly connected between them a beating element 9, preferably in the form of a rod or stick.

Springs 11 are interposed between the rod or beating element 9 and the lower member 7 whereby said beating element 9 is resiliently mounted, the purpose of which will hereinafter be more fully set forth.

Rotatably mounted upon the upper member 3 is a sheave 14 having a pinion 16 connected thereto and meshing with a gear 17 on a shaft 18 also rotatably and centrally mounted upon the member 3. The shaft 18 is provided at its outer end with an annularly flanged disc 19 having an arcuate slot 21 therein. A floating disc 22 is rotatably mounted upon the shaft 18 and within the annularly flanged disc 19 and has a wrist pin 23 rigidly connected thereto and projecting through the arcuate slot 21.

A flexible connecting rod 24, preferably a leather strap or the like, has one end rotatably connected to the wrist pin 23 and the other end, after passing under a transverse rod 26 in the approximate center of the frame member 7, is fixed to one end of a threaded rod 27 passing through a nut or internally threaded hand wheel 29 rotatably mounted between suitable supports 28 formed integral with the lower frame member 7, whereby rotation of the wheel 29 will lengthen or shorten the distance between the upper and lower members 3 and 7, respectively, to adjust the beating impact between the beating element 9 and the mattress hereinafter more fully set forth.

The sheave 14 is connected by a suitable driving belt 31 to a motor 32 whereby operation of the machine may be obtained.

Upon the table 1 is movably mounted a carriage 33 to support a mattress 34 and hold the same in a position where it will be engaged by the reciprocating beating element 9. The carriage is made movable in all directions in order that different portions of said mattress 34 may be engaged by said beating element 9.

In operation the rotation of the sheave 14 will in turn rotate the arcuately slotted disc 19 in the direction indicated by the curved arrow in Fig. 3 of the drawings. As the disc 19 rotates the rear end of the arcuate slot 21 therein, which is substantially semicircular, engages the wrist pin 23 and carries the same to the upper portion of its circular path. After the said wrist pin 23 passes the highest point in its rotation it is free to fall through the slot 21 to the lowermost point within its path, and this descent is assisted by the tension under which the springs 12 were placed, acting in conjunction with the weight of the lower frame member 7, during the upward movement of said wrist pin 23.

The descent of the wrist pin 23 permits a rapid constantly accelerating movement of the beating element 9 and causes a resilient impact of said element with the mattress 34 thereby beating that portion of said mattress which lies directly under the said beating element 9. As that portion is properly beaten the carriage 33 with the mattress 34 thereon is moved to various positions under the reciprocating beating element 9 until the desired condition is attained.

The impact of the stroke of the beating element 9 with the mattress 34 may be adjusted by manipulation of the wheel 29 which will lengthen or shorten the flexible connecting rod 24 to the desired length.

For instance, if a light stroke is desired for mattresses having a certain type of stuffing or filling material, the wheel 29 is rotated to shorten the connecting rod 24 which action will elevate the lower or movable frame member 7 so that the mattress 34 will not be so deeply engaged while said frame is in its lowermost position.

The carriage 33 with the mattress 34 thereon is moved about upon the table 1 to expose different portions of the surface thereof to the action of the beating element 9. As the action of the element 9 is very rapid it is evident that portions of the stuffing of the mattress 34 may be moved about and equally distributed within said mattress by moving the same while being subjected to the action of the beating element.

The beating element or stick 9 is resiliently mounted upon the lower frame member 7 by means of the rods 8 and springs 11 in order to cushion the blow or impact of the stick 9 with the ticking of the mattress 34 to prevent injury to said ticking.

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

1. A mattress beating machine comprising a mattress supporting element arranged to receive a mattress; a beating element slidably mounted above said mattress; springs mounted in connection with said beating element to normally exert a downward pressure thereon; a power driven shaft mounted above the beating element; a disc rotatably mounted upon the shaft and connected to the beating element; and means mounted upon the shaft arranged to alternately engage the disc to rotate the same and thereby lift the beating element upwardly against the pressure of the springs and to disengage said disc to permit free downward movement of the beating element due to pressure by the springs to strike a blow upon the mattress.

2. A mattress beating machine comprising a mattress supporting element arranged to receive a mattress; a beating element slidably mounted above said mattress; springs mounted in connection with said beating elements to normally exert a downward pressure thereon; a power driven shaft mounted above the beating element; a floating disc rotatably mounted upon the shaft and connected to the beating element; a driving disc secured upon the shaft adjacent the floating disc, said driving disc having a slot therein arranged to engage an extension upon the floating disc, whereby said floating disc is engaged during one portion of each rotation of the shaft and released during the remaining portion of each rotation whereby said beating element is alternately lifted against the pressure of the springs and released for free downward movement actuated by said springs to strike a blow upon the mattress.

3. A mattress beating machine comprising a mattress supporting element arranged to receive a mattress; a beating element slidably mounted above said mattress; springs mounted in connection with said beating element to normally exert a downward pressure thereon; a power driven shaft mounted above the beating element; a floating disc rotatably mounted upon the shaft; a flexible connection secured between the disc and the beating element; a driving disc secured upon the shaft adjacent the floating disc, said driving disc having a slot arranged to engage an extension provided upon the floating disc whereby said floating disc is engaged during one portion of each rotation and released during the remaining portion of said revolution thereby moving said flexible connection to alternately lift the beat-

ing element against the pressure of the springs and release said element for free downward movement actuated by the springs to strike a blow upon the mattress.

4. A mattress beating machine comprising a mattress supporting element arranged to receive a mattress; a beating element slidably mounted above the said mattress; springs mounted in connection with said beating element to normally exert a downward pressure thereon; a power driven shaft mounted above the beating element; a floating disc rotatably mounted upon the shaft; a flexible connection secured between the disc and the beating element; a driving disc secured upon the shaft adjacent the floating disc, said driving disc having a slot arranged to engage an extension provided upon the floating disc whereby said floating disc is engaged during one portion of each rotation and released during the remaining portion of said revolution thereby moving said flexible connection to alternately lift the beating element against the pressure of the springs and release said element for free downward movement actuated by the springs to strike a blow upon the mattress; and means for adjusting the flexible connection to vary the force of the blow exerted by the downward movement of the beating element.

In witness whereof I hereunto set my signature.

GUSTAV A. AICHER.