

(No Model.)

C. M. FRANK.

ANTI FRICTION WAY FOR SHINGLE SAWING MACHINES.

No. 415,323.

Patented Nov. 19, 1889.

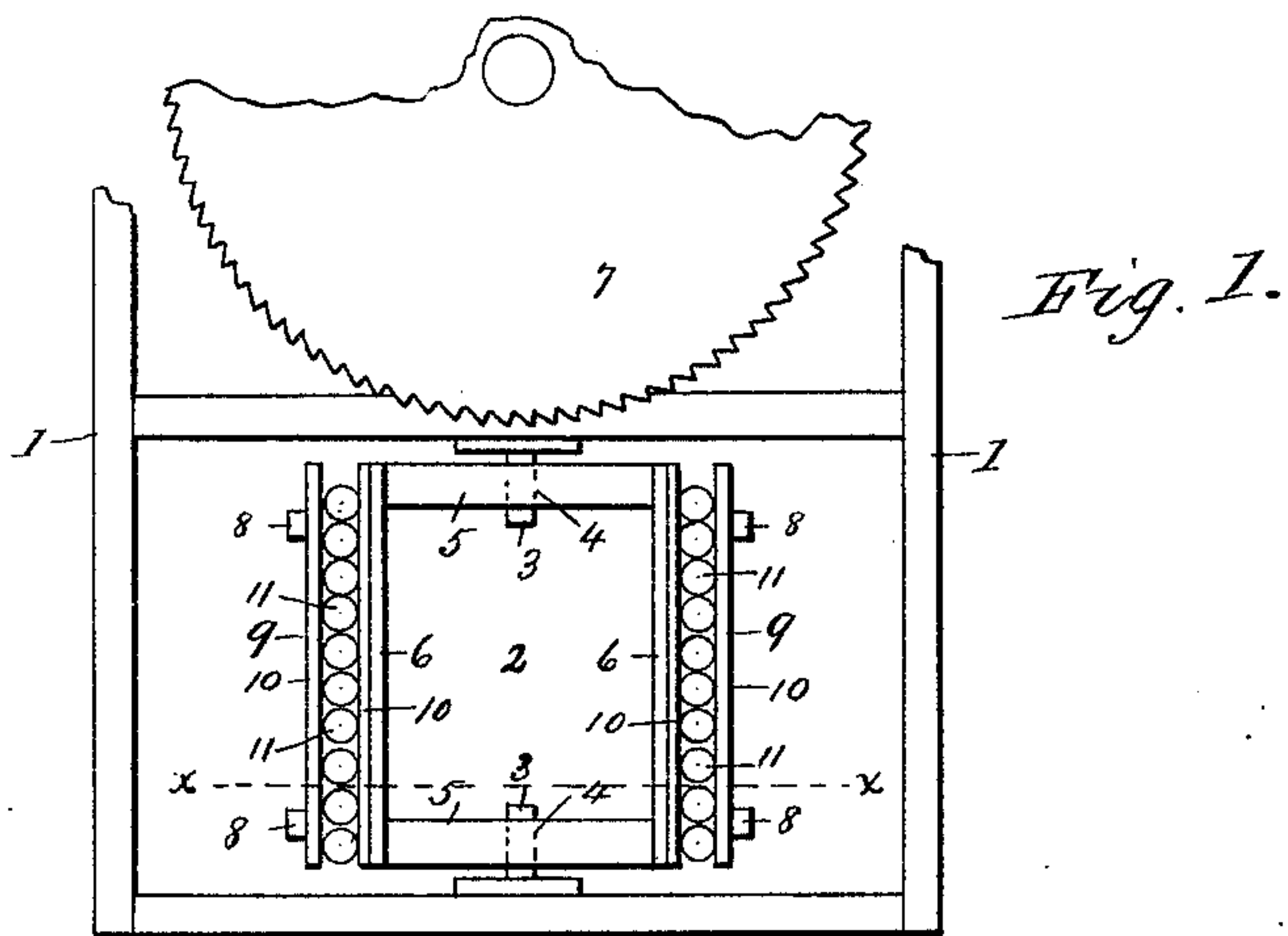


Fig. 2.

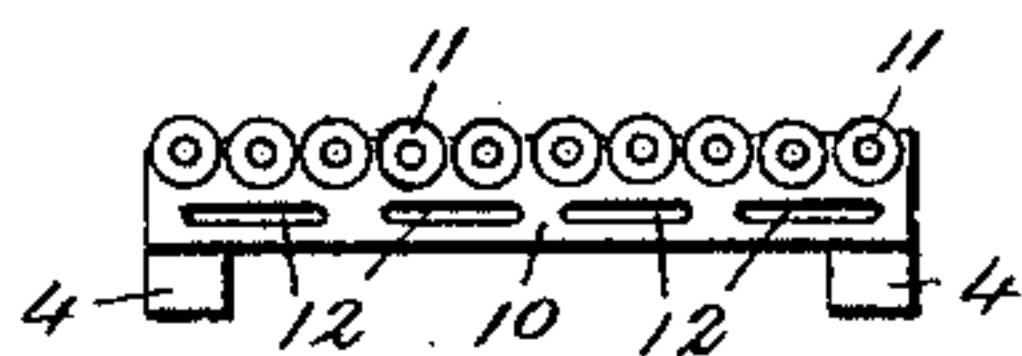


Fig. 3.

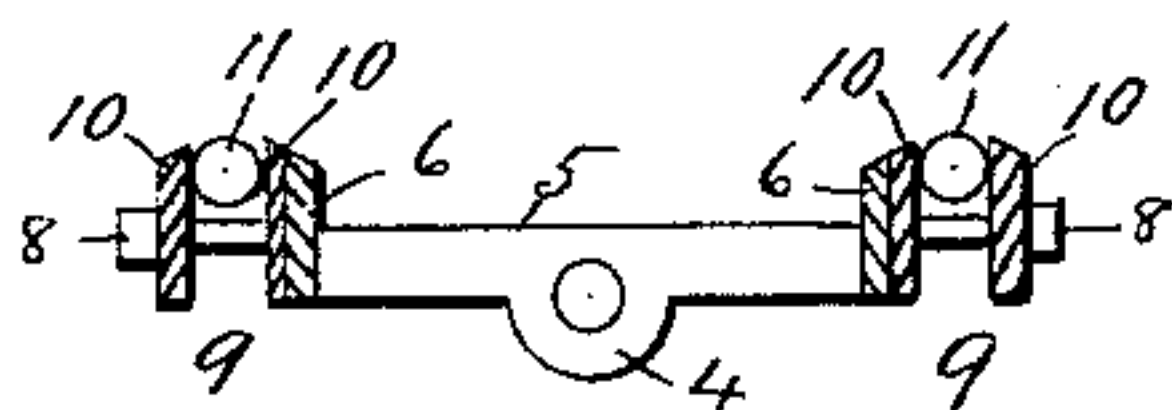


Fig. 4.

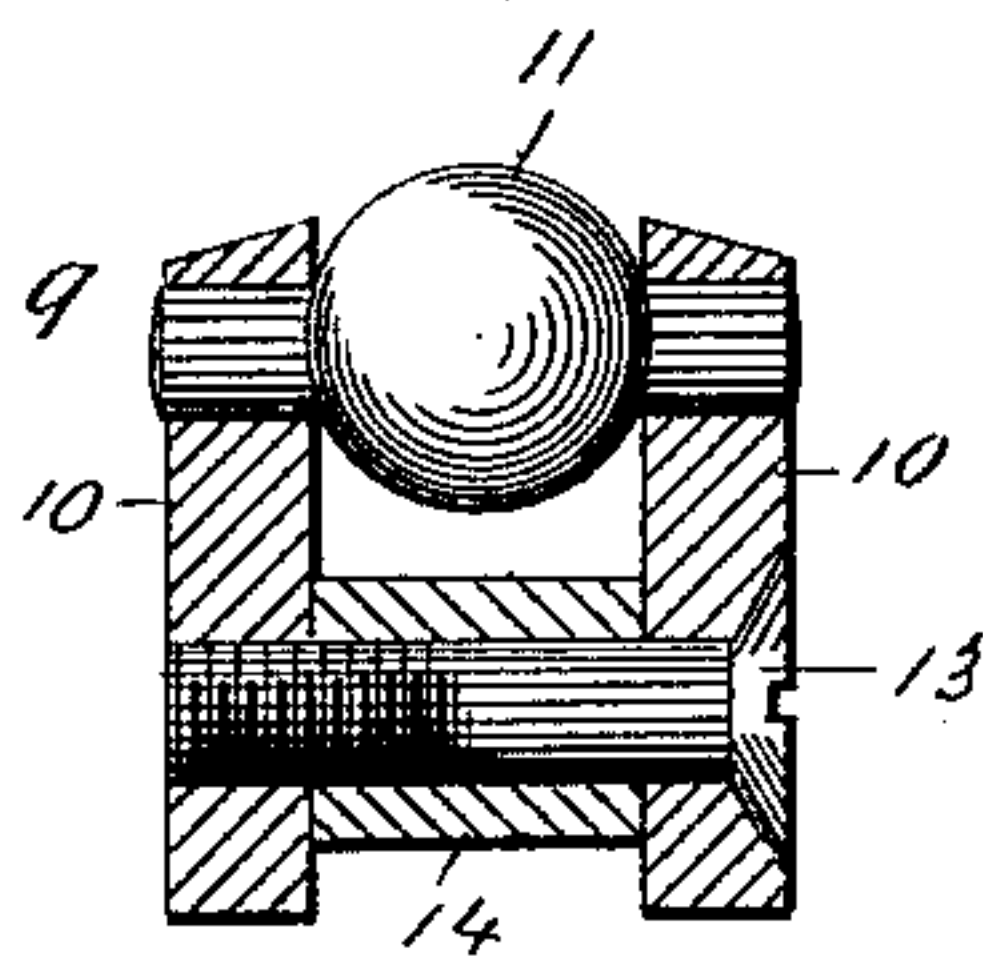


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## ANTI-FRICTION WAY FOR SHINGLE-SAWING MACHINES.

SPECIFICATION forming part of Letters Patent No. 415,323, dated November 19, 1889.

Application filed September 12, 1888. Serial No. 285,262. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES M. FRANK, a citizen of the United States, residing at Stanton, in the county of Montcalm and State of Michigan, have invented certain new and useful Improvements in Shingle-Sawing Machines, of which the following is a full, clear, and exacting specification.

My invention relates to improvements in the feeding mechanism of shingle-sawing machines, the main object thereof being to lessen or wholly avoid the friction between the shingle-bolt and the ways by which it is supported as it is fed forward to the saw, whereby the operation of sawing is rendered less laborious to the operator, and at the same time the work is performed in a more efficient and expeditious manner.

Prior to my invention a feeding mechanism was constructed for use in connection with a shingle-sawing machine in which a series of disks or short rollers were journaled upon the side pieces of the tilting table and upon which the carriage supporting the shingle-bolt was moved forwardly. This construction was defective in that the broad surfaces and sharp edges of the disks or rollers upon which the shingle-bolt was moved caused too much friction between the same; also, owing to the sharp edges at the peripheries of said disks or rollers, the ready adjustment of the shingle-bolt was rendered difficult, especially when said bolt had a rough surface, which is not an uncommon occurrence, and, also, the use of said disks or rollers was further objectionable in that the accumulation of pitch upon their broad surfaces or peripheries seriously interfered with the rapidity and efficiency of operation in feeding the shingle-bolt forward.

My invention is designed to obviate these and other objections; and it consists in the novel features of construction and combination or arrangement of parts hereinafter fully disclosed in the description, drawings, and claims.

Referring to the accompanying drawings, forming part of this specification, in which the same reference-numerals indicate the same parts, Figure 1 represents a plan view of the tilting table, the saw, and a portion of

the frame of a shingle-sawing machine to which my invention is applied, the carriage provided with dogs for supporting and holding the shingle-bolt not being shown; Fig. 2, a side view of the tilting table, showing one of the ways or two-part frames in which my ball-rollers are journaled; Fig. 3, a transverse-sectional view of the tilting table and my two-part roller-supporting frames attached thereto, the section being taken on the line *xx* of Fig. 1; Fig. 4, an enlarged transverse section of one of my two-part frames in which the ball-rollers are journaled, and Fig. 5 an enlarged plan view of one of my ball-rollers.

In the drawings the reference-numeral 1 indicates a frame, which is supported by the main frame (not shown) of the machine, and within which the oscillating or tilting table 2 is journaled upon the studs or journals 3, which are secured to said frame 1 and fit in boxes or bearings 4 in the end pieces or supports 5 of the tilting table 2. This table is composed of said end pieces or supports 5 and the side pieces or supports 6, the latter corresponding to the usual ways upon which the carriage and dogs for holding the shingle-bolt are moved forwardly toward the saw 7, said carriage and dogs not being illustrated, as they are of ordinary or usual construction. To each of the side pieces 6 of this tilting table is suitably secured, as by means of bolts 8, a two-part frame 9, which is composed of two parallel vertical bars or strips 10, which are beveled or inclined upon their upper edges both inwardly and outwardly, as shown in Fig. 4, for the purpose of preventing the accumulation of dust and other refuse thereon; also, said vertical bars or strips are formed with a series of holes or bearings for receiving the journals of my anti-friction ball-rollers 11, upon which the shingle-bolt is moved forwardly to the saw. Said bars or strips are also formed with slots 12, by which they are adapted to be secured to and adjusted to fit the tilting table of any hand-operated shingle-sawing machine, and also said bars or strips are connected and held together by the screw-bolts 13, around which are placed the sleeves 14, which abut against the inner faces of said bars or strips, hold them apart, and provide proper space between them for the



free action or operation of the ball-rollers, which project a short distance above their inclined or beveled upper edges.

In practice the shingle-bolt is placed in the carriage, "dogged," and arranged with its ends upon the ball-rollers, over which it is moved or pressed forward until the shingle is cut or sawed therefrom. Then the carriage is drawn backward, but without said bolt, which passes above and out of contact with said ball-rollers. Then said bolt is released from the dogs and drops down upon said rollers, when said dogs are again applied and the operation repeated.

It will be obvious from the foregoing that my two-part frames 9, which are secured to the side pieces 6 of the tilting table 2, will support the rollers upon their journals at both ends, and thus afford more firm or secure bearings for said rollers than will the mere side pieces of the tilting table hitherto constructed, in which the disks or rollers were supported upon journals extending from only one side or end of each; that by the employment of my peculiarly-formed rollers (of spherical or ball shape) the least possible contact-surface will be presented to the ends of the shingle-bolt, and consequently friction will be reduced to a minimum, and thus the efficiency and rapidity of the operation of the machine will be promoted and the work of the operator lessened; that my form of rollers will allow the shingle-bolt to assume or be placed in proper position for dogging or being held while undergoing sawing; that owing to their great number and small size they will permit said bolts to move freely after being dogged; that they will allow of the sawing of smaller bolts than usual, which effects a great saving in timber; that their form will also prevent the accumulation of pitch, dirt, or other refuse upon their surfaces, which is not the fact with disks or rollers having broad surfaces or peripheries, and that the inclined or beveled upper edges of the two-part roller-supporting frames will also assist in preventing the objection last named.

Having thus fully described the construction and arrangement or combination of the several parts of my invention, its operation and advantages, what I claim as new is—

1. In a shingle-sawing machine, the combination, with a tilting table, of a series of ball-rollers provided with two journals each and mounted and adapted to revolve upon said table, substantially as described.

2. In a shingle-sawing machine, the combination, with a tilting table, of two-part frames secured to the sides thereof, and anti-friction rollers provided with two journals each and mounted and adapted to revolve between said two-part frames, substantially as described.

3. In a shingle-sawing machine, the combination, with a tilting table, of two-part frames secured to the sides thereof, and anti-friction ball-rollers provided with two journals each and mounted and adapted to revolve between said two-part frames, substantially as described.

4. In a shingle-sawing machine, the combination, with the tilting table 2, composed of the end pieces 5 and side pieces 6, of the two-part frames 9, the bolts 8, for securing them to said side pieces, and the anti-friction ball-rollers provided with two journals each and mounted and adapted to revolve between said two-part frames, substantially as described.

5. In a shingle-sawing machine, the combination, with the tilting table 2, of the two-part frames 9, secured thereto, the screw-bolts 13, the sleeves 14, and the ball-rollers 11, mounted and adapted to revolve between said two-part frames, substantially as described.

6. In a shingle-sawing machine, the combination, with a tilting table, of two-part frames 9, composed of vertical bars or strips 10, formed with slots 12, and a series of anti-friction ball-rollers 11, provided with two journals each and mounted and adapted to be revolved between said two-part frames, substantially as and for the purpose described.

7. In a shingle-sawing machine, the combination, with a tilting table, of two-part frames 9, composed of vertical bars or strips having beveled or inclined upper edges, and a series of anti-friction rollers having the form of spheres or balls, provided with two journals each mounted between said two-part frames and arranged to project a slight distance above their beveled or inclined upper edges, substantially as and for the purpose described.

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