

A. J. DAVIS.
Friction Gear-Wheel.

No. 219,922.

Patented Sept. 23, 1879.

Fig. 1.

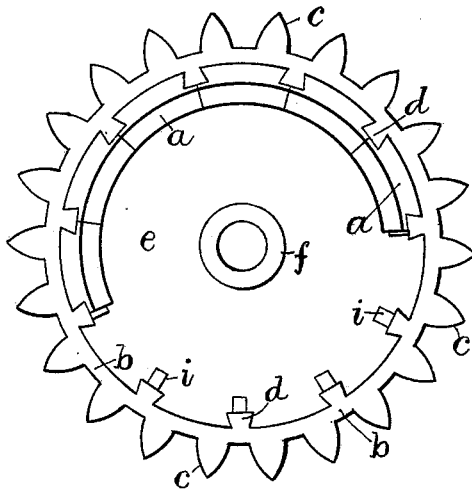
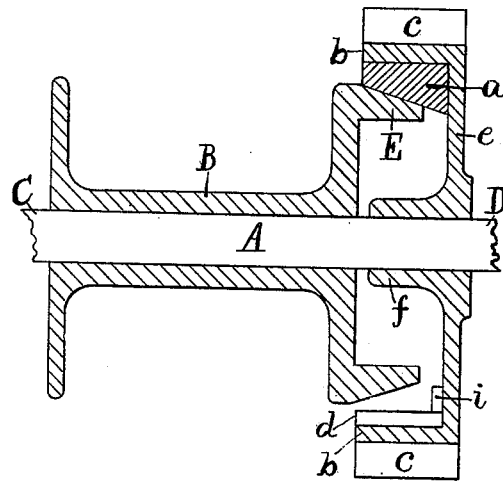


Fig. 2.



Attest.

Chas. C. Herrick

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Inventor.

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UNITED STATES PATENT OFFICE.

ALBERT J. DAVIS, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN FRICTION GEAR-WHEELS.

Specification forming part of Letters Patent No. 219,922, dated September 23, 1879; application filed August 15, 1879.

To all whom it may concern:

Be it known that I, ALBERT J. DAVIS, of Newark, in the county of Essex, State of New Jersey, have invented a new and useful Improvement in Friction Gear-Wheels, of which the following is a specification.

My invention relates to an improvement in friction gear-wheels; and consists in utilizing the web of a driving-gear to contain wooden frictional blocks, secured therein by dovetailed ribs, and formed with an interior conical surface to operate with a cast-iron cone.

I am aware that wood has been combined with gear-wheels before to transmit the power or motion of the gear by friction upon the wooden surface; but in all such cases the wheel has been provided with some other flange than the web of the gear, thus increasing the width of the gear an amount equal to the width of the flange or wooden cone, while by the construction I adopt the entire width of the gear is utilized to contain the wood excepting the part occupied by the plate or arms at one side of the gear. That this is a matter of considerable value will be apparent from a description of the drawings attached hereto, of which—

Figure 1 is a side or flat view of a friction-gear having its web lined for a part of its circumference with wooden blocks, the remainder of the blocks being removed to show the arrangement of the ribs for driving the blocks. Fig. 2 is a longitudinal section of the friction-gear mounted upon a shaft, A, with a hoisting-drum, B, one end of the latter being formed with a cone of iron to operate in contact with the interior of the wooden blocks.

The bearings or pillow-blocks of the shaft would be placed at C and D, outside the drum and gear, and the drum and gear be pressed together when in action in the usual way.

The blocks *a* are curved externally to fit the interior of the web *b*, to which the teeth *c* of the gear are attached, and the web is provided with ribs *d*, preferably dovetailed in shape, between which the blocks *a* are fitted, and by which they are held in place and driven around when the gear is revolved.

The inner ends of the blocks fit against the

plate *e*, which connects the web *b* with the hub *f*, and ribs *i* may also be formed on the plate adjoining the ends of the ribs, to support the inner ends of the blocks against the strain applied by the drum.

The ribs *i* being useful chiefly to strengthen the blocks *a* when made of great depth, they may be omitted without affecting the value of my invention.

If desired, screws may be inserted through the plate *e* or web *b* into the wooden blocks; but in practice I find the dovetailed ribs *d* suffice to keep the blocks in place.

By the construction I have described the friction-wheel and drum take less room upon the shaft A than by any other arrangement, as the cone projecting from the drum is received into the interior of the gear-wheel, the whole width of which is utilized for the friction-blocks except the thickness of the plate *e*.

In cases where it is desired to use friction-blocks, or a conical surface greater than the width of the gear-wheel, the web *b* may be extended toward the drum B beyond the inner ends of the teeth *c*.

The compactness of this construction makes a much greater saving than would be imagined in the construction of hoisting-machines and similar apparatus in which such friction-gears are used, as any increase in the length of the shaft A necessitates a longer pinion-shaft to drive the gear, and a greater width to the entire framing of the machine connected with the gear.

The location of the blocks inside the driving-gear web *b* also affords the greatest possible security against derangement or injury to the same, and the arrangement of the blocks within a rough shell, like the web *b*, permits the device to be constructed at the lowest possible cost.

I am aware that dovetailed ribs have been used to hold wooden blocks or frictional apparatus in a recessed wheel, as in Patent No. 179,869, issued to B. Sanford, July 18, 1876; but I do not claim the use of such ribs except as herein stated, and therefore claim the same in combination with the gear-wheel and blocks *a*, in the manner following.

I claim as my invention—

In a friction gear or cog wheel, the combination of the web *b*, provided upon the outside with the teeth *c*, and the blocks *a*, fitted upon the inside of the web, and supported by the dovetailed ribs *d*, substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

ALBERT J. DAVIS.

Witnesses:

GEO. H. BODENSCHATZ,

WM. L. FISH.