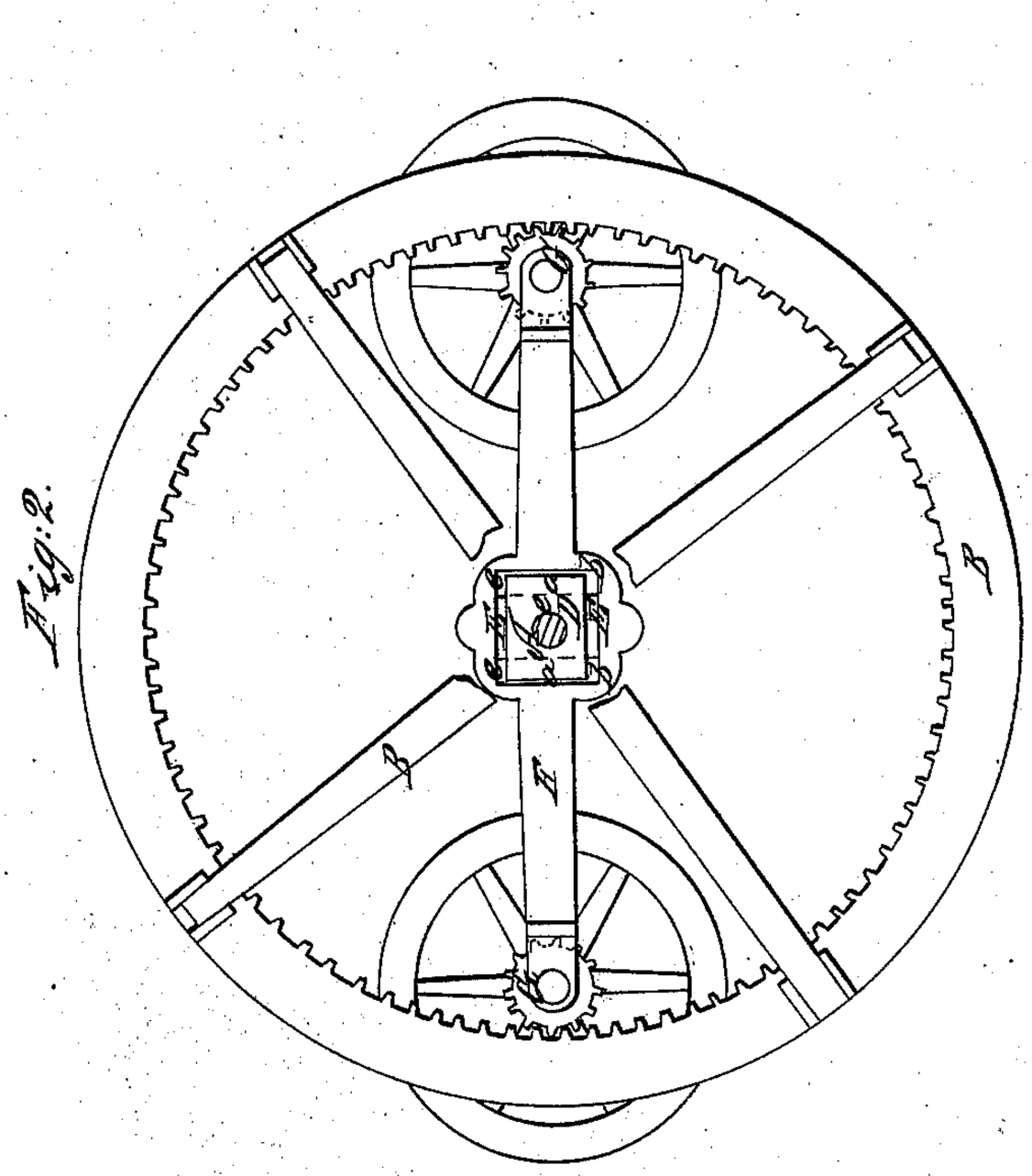
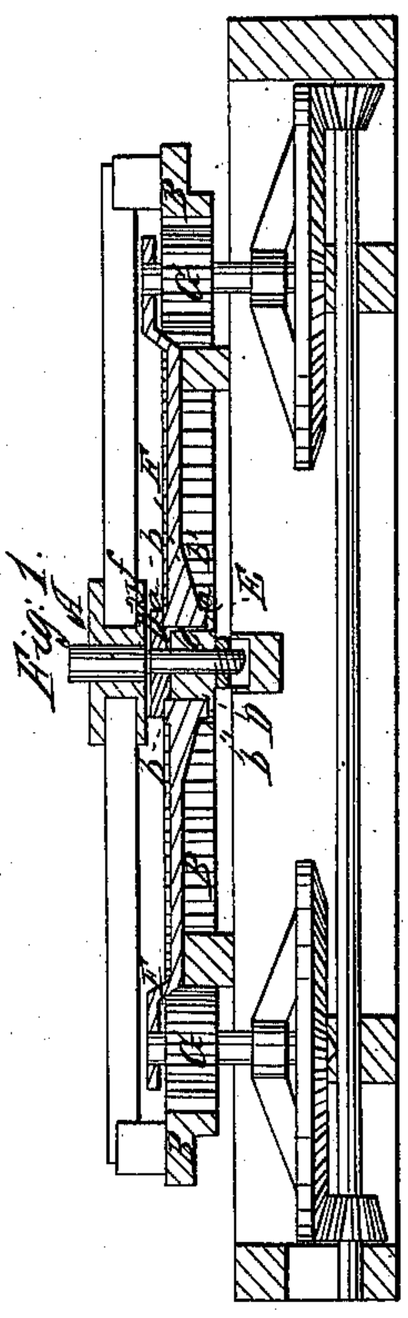
C. Russell,

Horse Power,

No. 12,782, Patented May 1, 1855.





UNITED STATES PATENT OFFICE.

CLEMENT RUSSELL, OF MASSILLON, OHIO.

HORSE-POWER.

Specification forming part of Letters Patent No. 12,782, dated May 1, 1855; Reissued April 15, 1862, No. 1,302.

To all whom it may concern:

Be it known that I, CLEMENT RUSSELL, of Massillon, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Double-Geared Horse-Powers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a vertical longitudinal section of a double geared horse power with my improvement applied to it. Fig. 2, is a plan or top view of a portion of the same, the hub of the annular driving wheel being broken out so as to allow of my improvement being seen.

Similar letters of reference in each of the several figures indicate corresponding parts.

Before setting forth the nature of my improvement, which refers to double geared horse powers, it is deemed advisable to state that in the use of all double geared horse powers which employ an annular geared driving wheel and two transmitting pinions, much difficulty has been experienced from one of said pinions doing all the work at certain points while the other remains passive or out of connection with the driving wheel, resulting from unequal shrinkage in the castings or other imperfections which it is very difficult to obviate in so large a machine. And in order to overcome the serious effects resulting therefrom the axis of the annular internal geared driving wheel has been made capable of adjusting itself or moving laterally to the right or left so that the teeth of said wheel might always be made to gear with both of the pinions at the same time. This arrangement which effected the object aimed at admirably has however been abandoned as useless, on account of the difficulty found in keeping the axis confined and steady, no provision being made for so doing other than providing the axis with a head and passing it down through the slot in which it played, and securing it by a nut, which arrangement allowed of its soon working loose, rendering the operation of the machine very unsteady and imperfect.

My improvement is designed to prevent all possibility of the pin working loose and becoming unsteady.

The nature of said improvement consists in having the axis A, of the annular driving wheel B, fit snugly in a solid flanged self adjusting or sliding box which is made in two parts D, D′, and fitted in an oblong slot E, formed in the bridge F, and allowed to slide freely back and forth in said slot as the irregular parts of the annular driving wheel B, come opposite or in contact with the transmitting pinions G, G, and at the same time prevented from having any vertical movement or play up and down and also from having any lateral play other than in lines at right angles with said pinions G, G, by reason of being fitted snugly in the slot and the lips or flanges *a*, *a*, *a*, *a*, which are cast on the upper and lower section of the box and bearing snugly against ribs or ways *b*, *b*, *b′*, *b′*, cast on the under and upper surfaces of the bridge, said flanges being caused thus to bear against the ribs or ways by means of a nut H, which is screwed on the screwed end of the axis or pin of the driving wheel after the box is fitted in the slot and said axis, which serves for locking the two sections together, has been passed through the central hole *e*, of the box. In order to insert the box in the oblong slot E, the lower section on main part D, must be separated from D′, and passed up from the under side of the bridge through the slot, until its flanges or lips bear against the ways *b′*, *b′*, when the upper section or cap D′ must be inserted from the upper side of the bridge into the slot until its flanges or lips bear against the ribs or ways *b*, *b*, and it come in contact with the section D, when the pin or axis A, must be passed down through the central hole *e*, in the box until its shoulder *f*, bears on the cap, when the nut H must be screwed on the lower end of said pin or axis until all the parts are forced snugly together as shown in the drawing.

By thus arranging and confining the axis it is subjected to but very little strain and wear, and, consequently, all liability of its soon working loose and becoming unsteady and thereby causing the operation of the machine to be imperfect is overcome, and at the same time the use of a center which is capable of shifting or accommodating itself to any irregularities or imperfections in the main driving wheel is rendered practicable, and consequently the disadvantages arising from said imperfections or irregularities, avoided.

I do not claim having the axis of the main driving wheel of double geared horse powers movable as this is common, but,

What I do claim is,

Providing a broad solid flanged box or center C, for the axis A, to rest in, when said box is made in two parts D, D′, and fitted and confined by the axis itself, and flanges *a*, *a*, *a*, *a*, in an oblong slot E formed in a bridge F, as constructed, and arranged in the manner and for the purpose set forth.

CLEMENT RUSSELL.

Witnesses:
W. F. RUDENSTEIN,
J. . KEEL.

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