

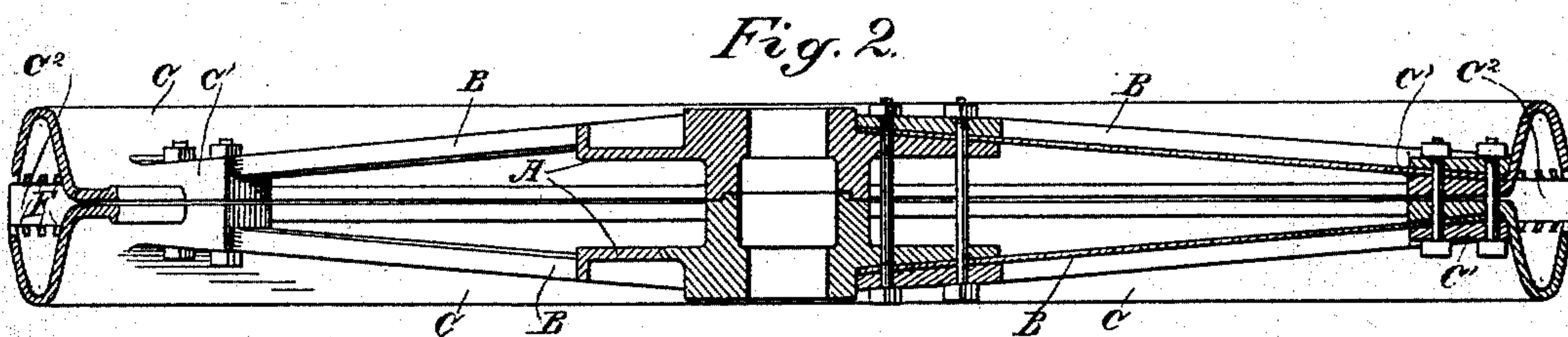
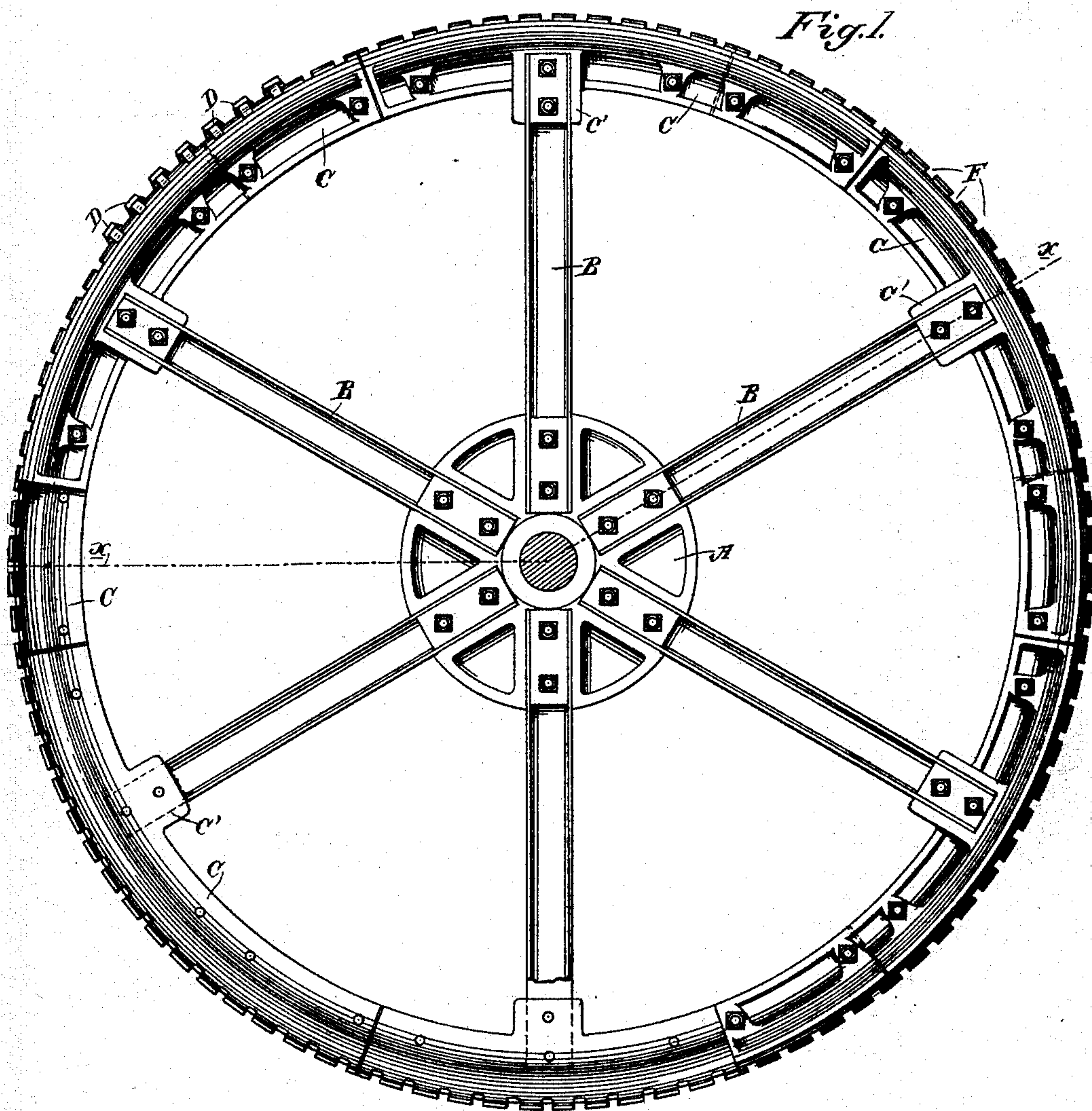
(No Model.)

2 Sheets—Sheet 1.

A. S. HALLIDIE.
GRIP PULLEY.

No. 483,442.

Patented Sept. 27, 1892.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

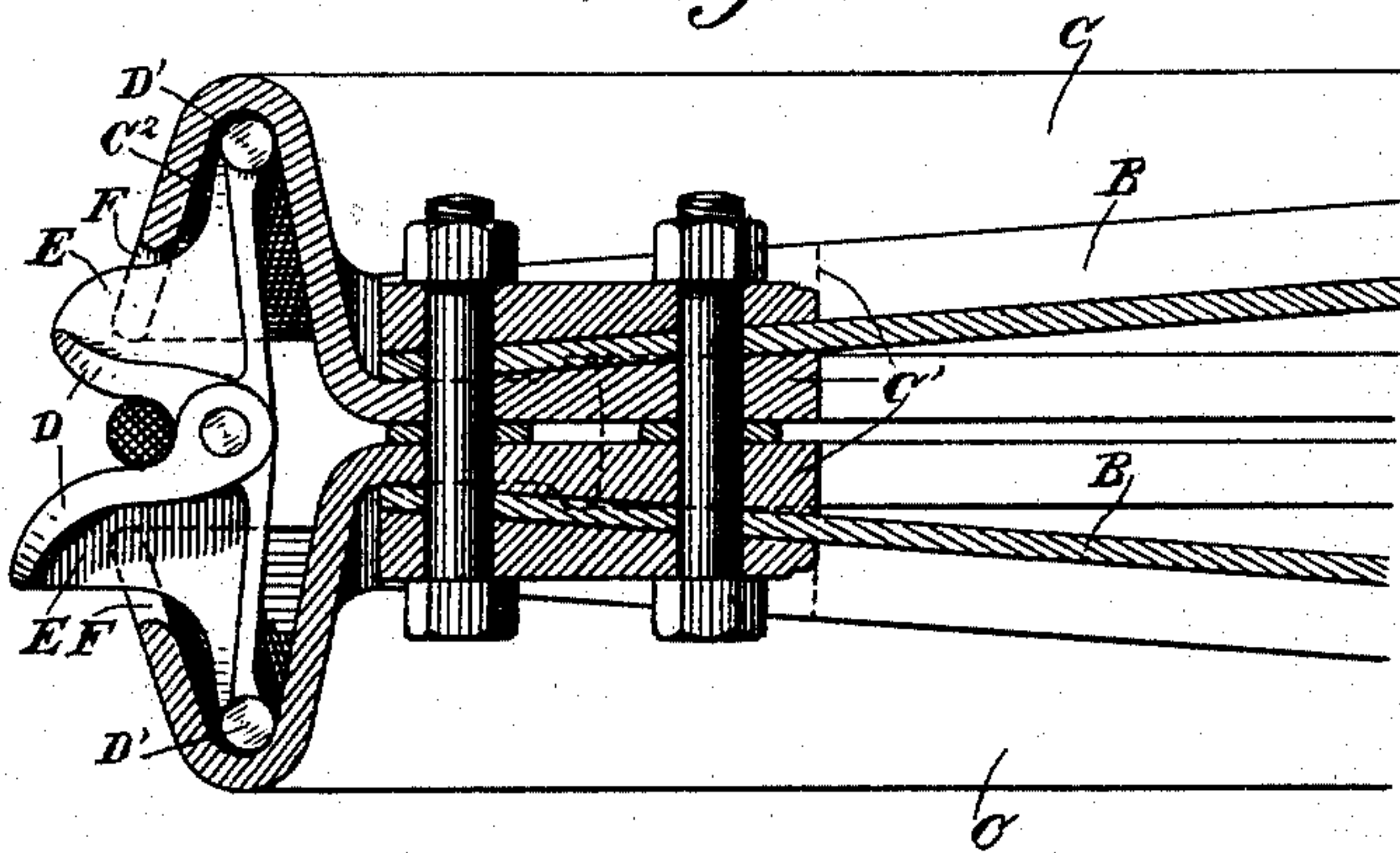
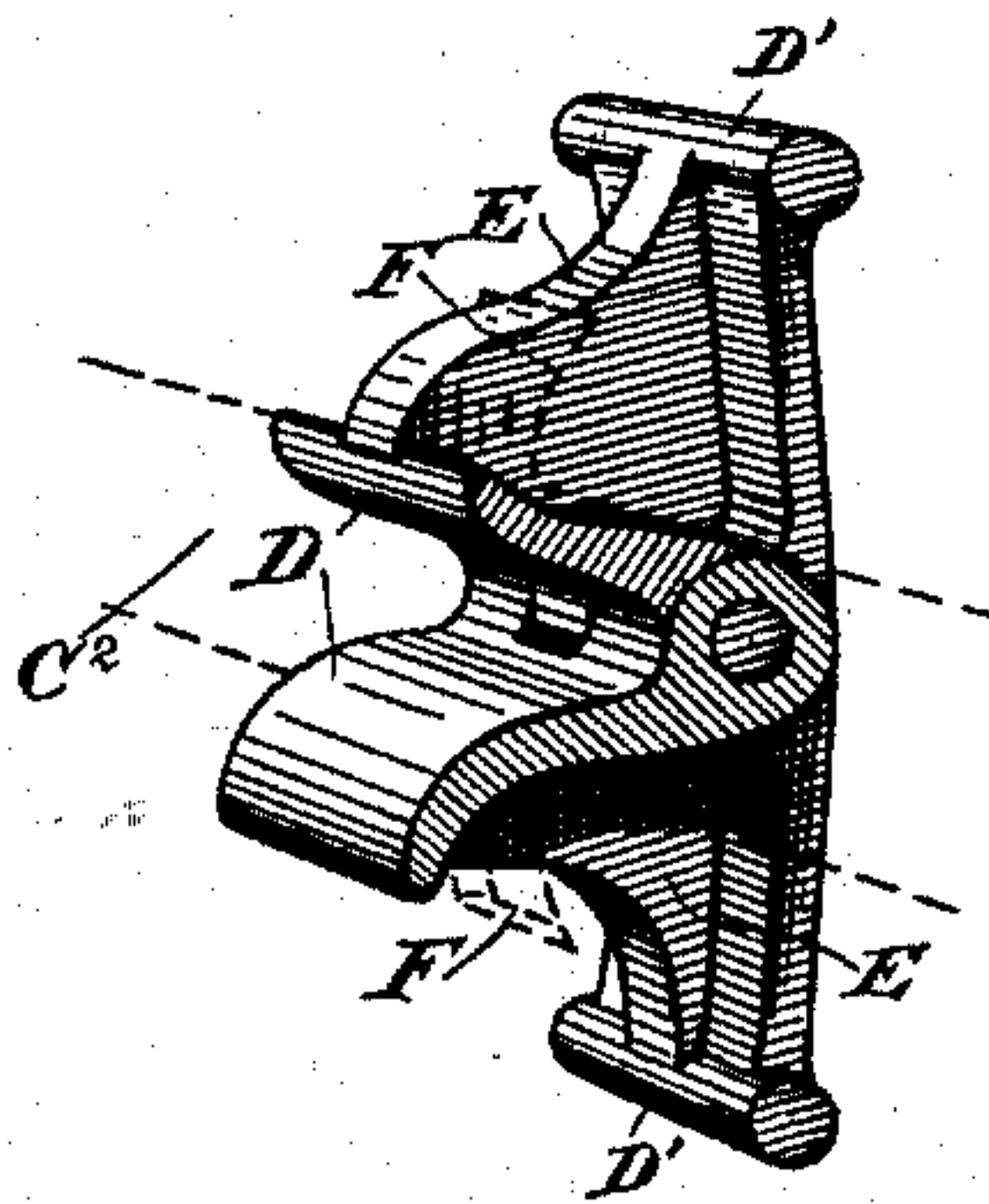


Fig. 4.



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UNITED STATES PATENT OFFICE.

ANDREW S. HALLIDIE, OF SAN FRANCISCO, CALIFORNIA.

GRIP-PULLEY.

SPECIFICATION forming part of Letters Patent No. 483,442, dated September 27, 1892.

Application filed February 10, 1892. Serial No. 421,015. (No model.)

To all whom it may concern:

Be it known that I, ANDREW S. HALLIDIE, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Grip-Pulleys; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of pulleys known as "grip-pulleys;" and it consists in an improvement in construction by which greater efficiency and portability are obtained, and in certain details of construction.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side view of my pulley, some of the sections being removed. Fig. 2 is a vertical cross-section on the line $x x$ of Fig. 1. Fig. 3 is a detail cross-section through the rim, showing the jaws in their position. Fig. 4 is a view of the jaws.

The object of my present invention is to construct the pulley of parts which can be separated so as to reduce a large pulley to small packages for transportation on muleback or otherwise, which is necessary in mountainous localities where these pulleys are frequently used.

It has, also, the further object of improving the construction and efficiency of the pulley.

The hub of my pulley is formed of two disks A A, firmly bolted and locked together and having radial recesses or channels upon the outer faces to receive the wrought-iron arms B, which radiate to the periphery of the pulley in pairs, these arms being secured in the hub by bolts, as shown. The rim of the pulley is built up of segments C, having cast upon them lugs C', which have radial channels to receive the outer ends of the arms B, to which they are bolted. The relative position of the recesses in the hub and in these lugs is such that the arms of each pair are widest apart at the hub and converge toward each other at the rim in the form of a V, so that great stiffness is given to the pulley on account of these converging arms arranged in pairs upon the opposite side.

Each segment of the rim is made in two halves. These halves overlap each other, so that the meeting ends of the segments upon

one side are at points intermediate between the meeting ends of the segments upon the opposite side. These segments are formed with the circumferential groove C², into which the heel or fulcrum of the gripping-jaws rest. These jaws D are formed, as shown in Fig. 4, in two parts, resembling a bell-crank lever, the two being hinged together at the angles which meet for that purpose. The outer ends D' extend into the outer sides of the circumferential groove or channel in the rim of the pulley, so that when pressure is brought upon the interior curve formed by the meeting of the jaws the outer ends will be supported in the outer sides of the channel, while the central portion will be depressed into the central portion of the channel, which is lower than the outer portion, as shown in the section Fig. 3. This causes the jaws to grip the rope firmly and hold it.

E E are webs extending from the backs of the jaws D to the outer ends D'. The rim of the pulley has transverse slots or channels F formed in it to receive these webs, and they act as guides, moving in these slots to allow the grip-jaws to open and close, but preventing them from moving in the direction of the circumference. When the pulley is designed to work in a vertical position, the jaws may be of the same length; but when it works in a horizontal position the jaws are made of unequal lengths, the upper jaw being sufficiently short to clear a clip or any similar attachment on the rope, as in the case of a ropeway, and the lower jaw is sufficiently long to prevent the rope slipping out, and sufficiently heavy to keep the jaws of the grip open when released from the pressure of the rope.

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

1. A pulley consisting of a two-part hub having disks or flanges formed integral therewith and having their outer faces provided with radially-arranged recesses, arms arranged in pairs having their inner ends seated in said recesses and thence converging outwardly toward the pulley-rim, bolts passing through the inner ends of both arms of each pair and through the flanges of the two parts of the hub, an outer rim composed of over-

lapping segmental plates and having a circumferential groove or channel in its periphery, said rim having the radially-disposed recessed lugs C', projecting from its inner face, adapted to receive the outer ends of the arms, and bolts passing through said ends and the lugs, substantially as herein described.

2. A grip-pulley consisting of a two-part hub portion having disks or flanges formed integral therewith, with their outer faces provided with radially-disposed recesses, arms having their inner ends seated in said recesses, and bolts passing through said ends and the disks or flanges of the two-part hub, thereby securing the arms in pairs and the two parts of the hub to each other, an exterior rim composed of opposed overlapping segments bolted together and having a circumferential groove or channel in its periphery, said segments having transverse slots formed in them, the gripping-jaws mounted in pairs within the peripheral groove or channel of the rim and projecting through the same and having arms located within the rim, and webs E, working in said transverse slots and retained against side movement thereby, substantially as herein described.

3. A grip-pulley consisting of a two-part hub having the radially-disposed recessed disks or flanges, arms seated in the recesses of the disks or flanges and converging toward the rim of the pulley, bolts passing through the inner ends of the arms and the disks or flanges of the hub, thereby securing said arms and clamping the two parts of the hub together, an exterior rim composed of opposed overlapping segments bolted together and forming the groove or channel C² between their adjoining outer edges, said edges having slots made transversely in them, the gripping-jaws located within said groove or channel and hinged together in pairs at their meeting angles and provided with arms D', projecting at right angles with the jaws and lying loosely within the channel in the rim, said jaws having webs passing through said transverse slots and connecting the jaws with the arms, substantially as herein described.

In witness whereof I have hereunto set my hand.

ANDREW S. HALLIDIE.

Witnesses:

S. H. NOURSE,
J. A. BAYLESS.