



Office de la Propriété

Intellectuelle
du Canada

Un organisme
d'Industrie Canada

Canadian
Intellectual Property
Office

An agency of
Industry Canada

CA 2780313 C 2017/10/31

(11)(21) **2 780 313**

(12) **BREVET CANADIEN
CANADIAN PATENT**

(13) **C**

(86) Date de dépôt PCT/PCT Filing Date: 2010/11/02
(87) Date publication PCT/PCT Publication Date: 2011/05/19
(45) Date de délivrance/Issue Date: 2017/10/31
(85) Entrée phase nationale/National Entry: 2012/05/08
(86) N° demande PCT/PCT Application No.: PL 2010/000109
(87) N° publication PCT/PCT Publication No.: 2011/059349
(30) Priorité/Priority: 2009/11/10 (PL P389529)

(51) Cl.Int./Int.Cl. *E21C 27/02* (2006.01)

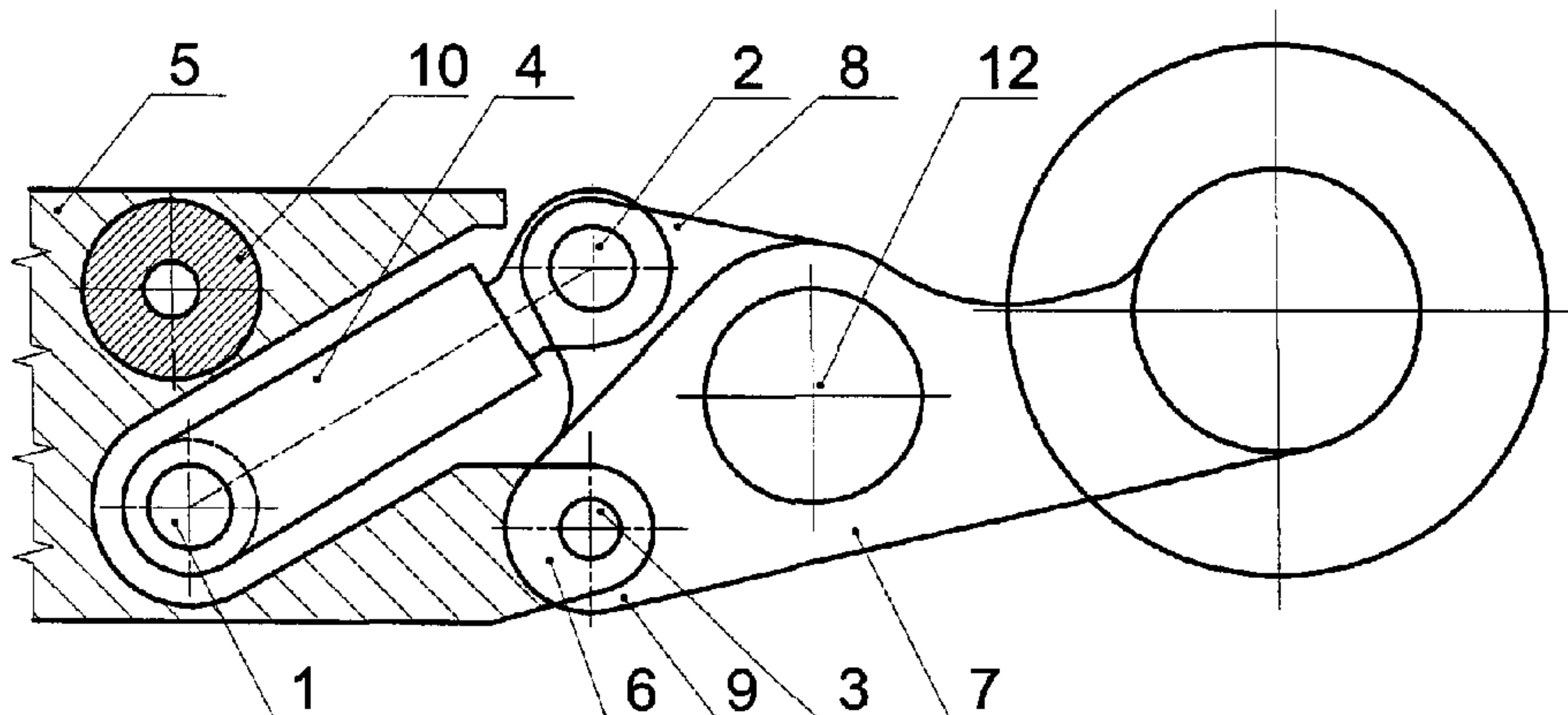
(72) Inventeurs/Inventors:
BEDNARZ, RYSZARD, PL;
GWIAZDZINSKI, PAWEŁ, PL;
GONSIOR, LUKASZ, PL;
OLSZANSKI, MAREK, PL

(73) Propriétaires/Owners:
FAMUR SPOLKA AKCYJNA, PL;
FAMUR INSTITUTE SP. Z.O.O., PL

(74) Agent: KIRBY EADES GALE BAKER

(54) Titre : PROCEDE POUR MONTER UN BRAS D'ECARTEMENT SUR UN CORPS D'UNE HAVEUSE-CHARGEUSE
A LONGUE PAROI

(54) Title: METHOD FOR MOUNTING A RANGING ARM ON A BODY OF A LONGWALL SHEARER LOADER



(57) Abrégé/Abstract:

The method for mounting a ranging arm on a body of a longwall shearer loader characterised by the fact that the shearer's ranging arm is pivotally connected through the eyes and at least one pin with the eyes of the articulated joint located from the side wall side in the bottom part of the shearer's body outside of the chain conveyor. The axis of the pin or pins is situated below the axis of the motor of the shearer's ranging arm. The hydraulic cylinder is pivotally connected with the eyes of the shearer's ranging arm located between the eyes of the articulated joint with a pin, the axis of which is situated above the axis of the motor of the shearer's arm. The hydraulic cylinder is located between the axis of the feed drive shaft and the pin of pins connecting the shearer's ranging arm with the eyes of the articulated joint.

ABSTRACT

The method for mounting a ranging arm on a body of a longwall shearer loader characterised by the fact that the shearer's ranging arm is pivotally connected through the 5 eyes and at least one pin with the eyes of the articulated joint located from the side wall side in the bottom part of the shearer's body outside of the chain conveyor. The axis of the pin or pins is situated below the axis of the motor of the shearer's ranging arm. The hydraulic cylinder is pivotally connected with the eyes of the shearer's ranging arm located between the eyes of the articulated joint with a pin, the axis of which is situated above the 10 axis of the motor of the shearer's arm. The hydraulic cylinder is located between the axis of the feed drive shaft and the pin of pins connecting the shearer's ranging arm with the eyes of the articulated joint.

METHOD FOR MOUNTING A RANGING ARM ON A BODY OF A LONGWALL SHEARER LOADER

The subject of the invention is the method for mounting a ranging arm on a body of
5 a longwall shearer loader.

A shearer's ranging arm mechanism has been described that includes a rocker arm
in form of a beam with bent ends, whereas the bent end from the side of a hydraulic
cylinder has a tip pointing to the outside and parallel to the main central part of the rocker
arm. Such a rocker arm is mounted in the area above the travel in such a manner as to locate
10 it next to the body and parallel to it.

A cutter-loader ranging arm mechanism has also been described in the Polish
description of the patent No. 199858. In the case of such a mechanism, a guide is mounted
on a cutter-loader body from the bottom side, which is open from both the cylinder side as
well as the arm side. The guide is closed from below with a detachable cover. Inside the
15 guide, there is a pilot installed in such a manner as to enable its slide motion. The pilot moves
along interchangeable (detachable) glide bars mounted on the guide. On the one side, the
pilot is connected through a self-aligning bearing with a piston rod of a hydraulic cylinder
of which is also fixed through a self-aligning bearing to the shearer's body. On the other
side, the pilot is connected with the eye of the shearer's ranging arm through a rocker. The
20 rocker is connected with the pilot and the eye of the shearer's ranging arm also through self-
aligning bearings.

A method for mounting a ranging arm on a body of a longwall shearer loader
according the invention comprising pivotally connecting the ranging arm through first eyes

of the ranging arm and at least one first pin with second eyes of the articulated joint located on a side wall side and in a bottom part of the body outside of the chain conveyor.

An axis of the at least one first pin connecting the first eyes of the ranging arm with the second eyes of the articulated joint are situated below an axis of a motor of the ranging arm. The hydraulic cylinder is pivotally connected with third eyes placed on the ranging arm and is located between the second eyes of the articulated joint with a second pin, an axis of said second pin being situated above the axis of the engine of the ranging arm.

The hydraulic cylinder is pivotally connected with the body with a third pin, whose axis is situated below the axis of the engine of the ranging arm and below an axis of a feed drive shaft. The axis of the pin is situated at a same height as the axis of the at least one first pin connecting the ranging arm with the second eyes of the articulated joint.

The hydraulic cylinder is located between the axis of the feed drive shaft and the pin or pins connecting the shearer's ranging arm with the eyes of the articulated joint.

The method for mounting a ranging arm on a body of a longwall shearer loader described as the invention is intended for use in the case of very low shearers. This method enables easy drive transmission to the goaf side in restricted space (overall dimensions) conditions.

An example of the subject of the invention has been presented in the drawing, where fig. 1 indicates the method for mounting a ranging arm on a body of a longwall shearer loader as seen from the side, fig. 2 indicates the method for mounting a ranging arm on a body of a longwall shearer loader as seen in an axonometric view and fig. 3 indicates the method for mounting a ranging arm on a body of a longwall shearer loader as seen from above.

The shearer's ranging arm 7 is pivotally connected through eyes 9 and at least one pin 3 with eyes of the articulated joint 6 located on the coal face side and in the bottom part of the shearer's body 5 outside of the armoured face conveyor 11.

The axis of the pin or pins 3 connecting the eyes of the shearer's ranging arm 7 with 5 the eyes of the articulated joint 6 are situated below the axis of the motor 12 of the shearer's arm 7. The hydraulic cylinder 4 is pivotally connected with eyes 8 placed on the shearer's ranging arm 7 and is located between the eyes of the articulated joint 6 with a pin 2, the axis of said pin being situated above the axis of the motor 12 of the shearer's arm 7.

The hydraulic cylinder 4 is pivotally connected with the shearer's body 5 with a pin 10 1, the axis of which is situated below the axis of the cylinder 12 of the shearer's arm 7 and below the axis of the feed drive shaft 10.

The axis of the pin 1 is situated at the same height as the axis of the pin or pins 3 connecting the shearer's ranging arm 7 with the eyes of the articulated joint 6.

The hydraulic cylinder 4 is located between the axis of the feed drive shaft 10 and 15 the pin or pins 3 connecting the shearer's ranging arm 7 with the eyes of the articulated joint 6.

CLAIMS

1. A method for mounting a ranging arm on a body of a longwall shearer loader using an articulated joint and a hydraulic cylinder pivotally connecting the ranging arm through 5 first eyes of the ranging arm and at least one first pin with second eyes of the articulated joint located on a coal face side and in a bottom part of the body outside of an armoured face conveyor, wherein an axis of the at least one first pin connecting the first eyes of the ranging arm with the second eyes of the articulated joint are situated below an axis of a motor of the ranging arm.

10

2. The method for mounting a ranging arm on a body of a longwall shearer loader according to claim 1 wherein the hydraulic cylinder is pivotally connected with third eyes placed on the ranging arm and is located between the second eyes of the articulated joint with a second pin an axis of said second pin being situated above the axis of the motor of 15 the ranging arm.

3. The method for mounting a ranging arm on a body of a longwall shearer loader according to claim 1 wherein the hydraulic cylinder is pivotally connected with the body of the shearer with a third pin an axis of which is situated below the axis of the motor of the 20 ranging arm and below an axis of a feed drive shaft, where the axis of the third pin is situated at a same height as the axis of the at least one first pin connecting the ranging arm with the eyes of the articulated joint and the hydraulic cylinder is situated between the axis of the feed drive shaft and the at least one first pin connecting the ranging arm with the second eyes of the articulated joint.

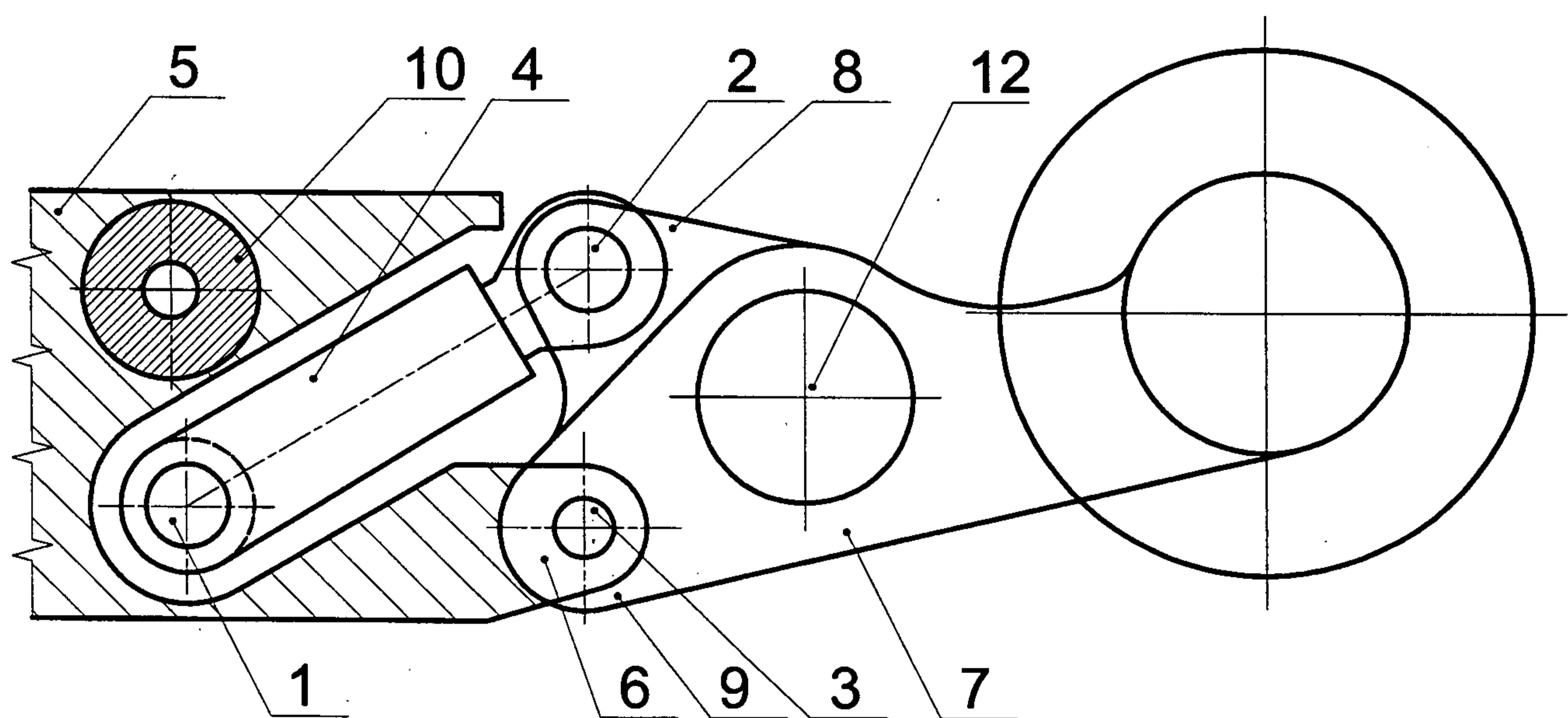


Fig.1

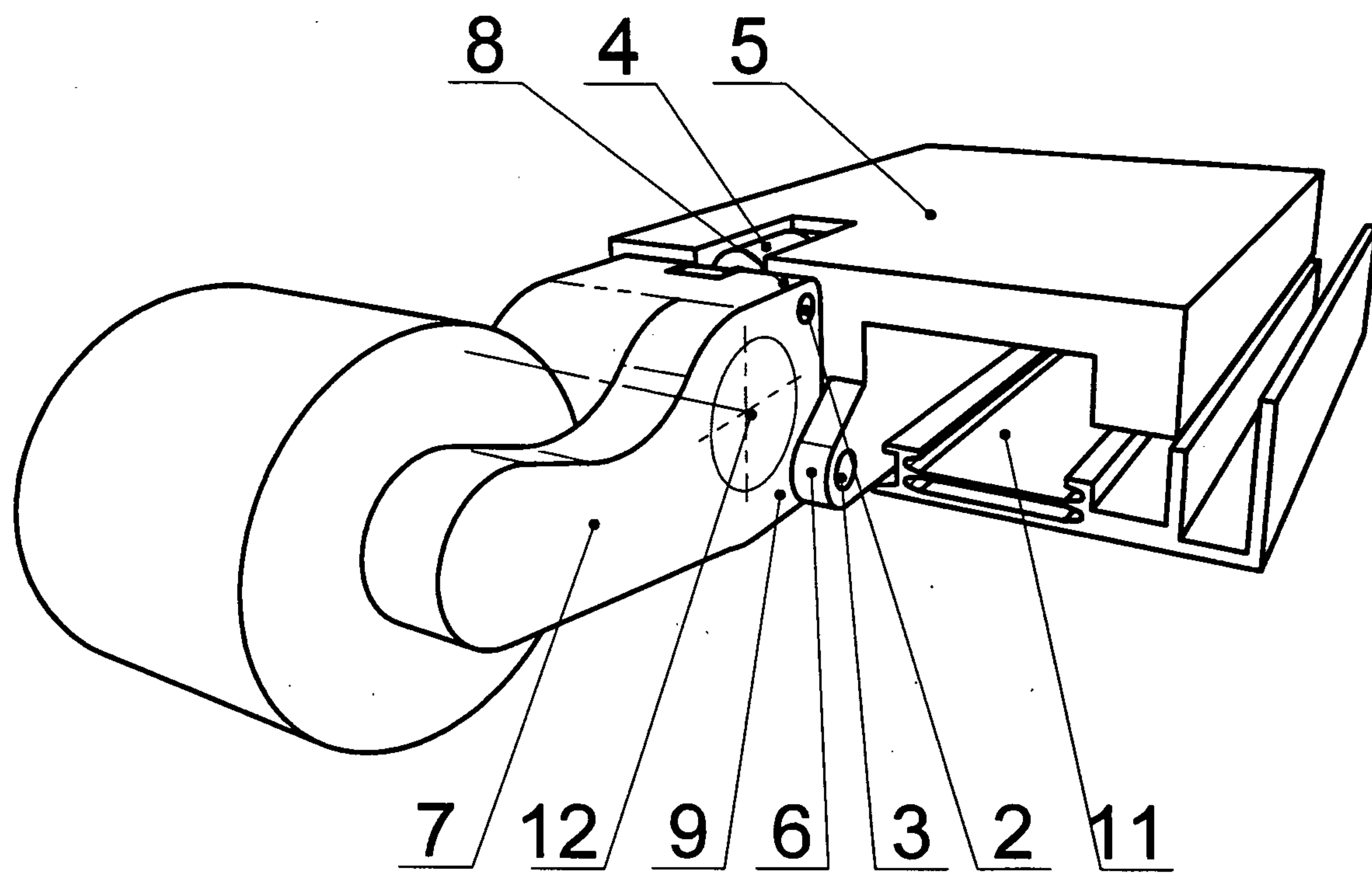


Fig. 2

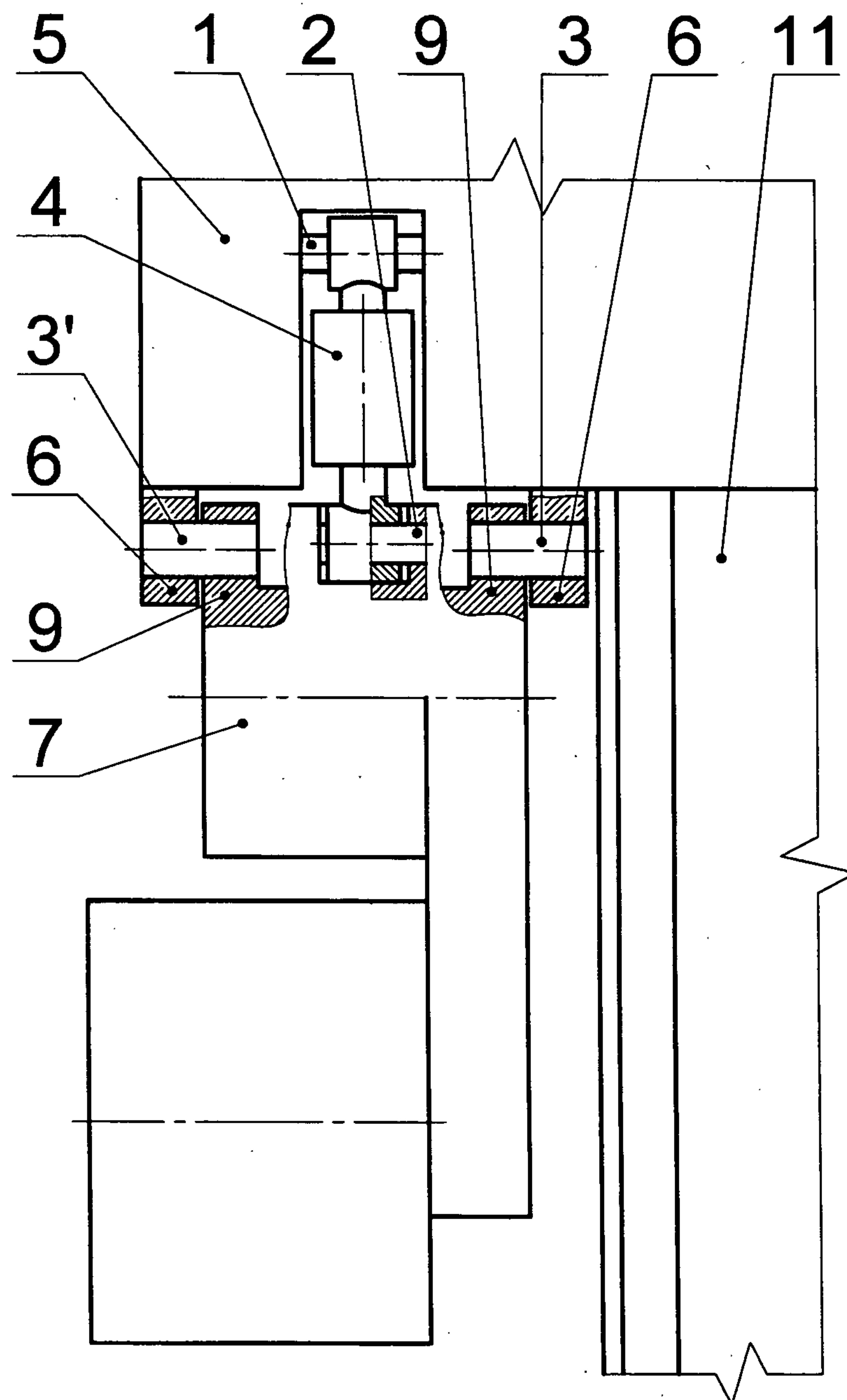


Fig. 3

