

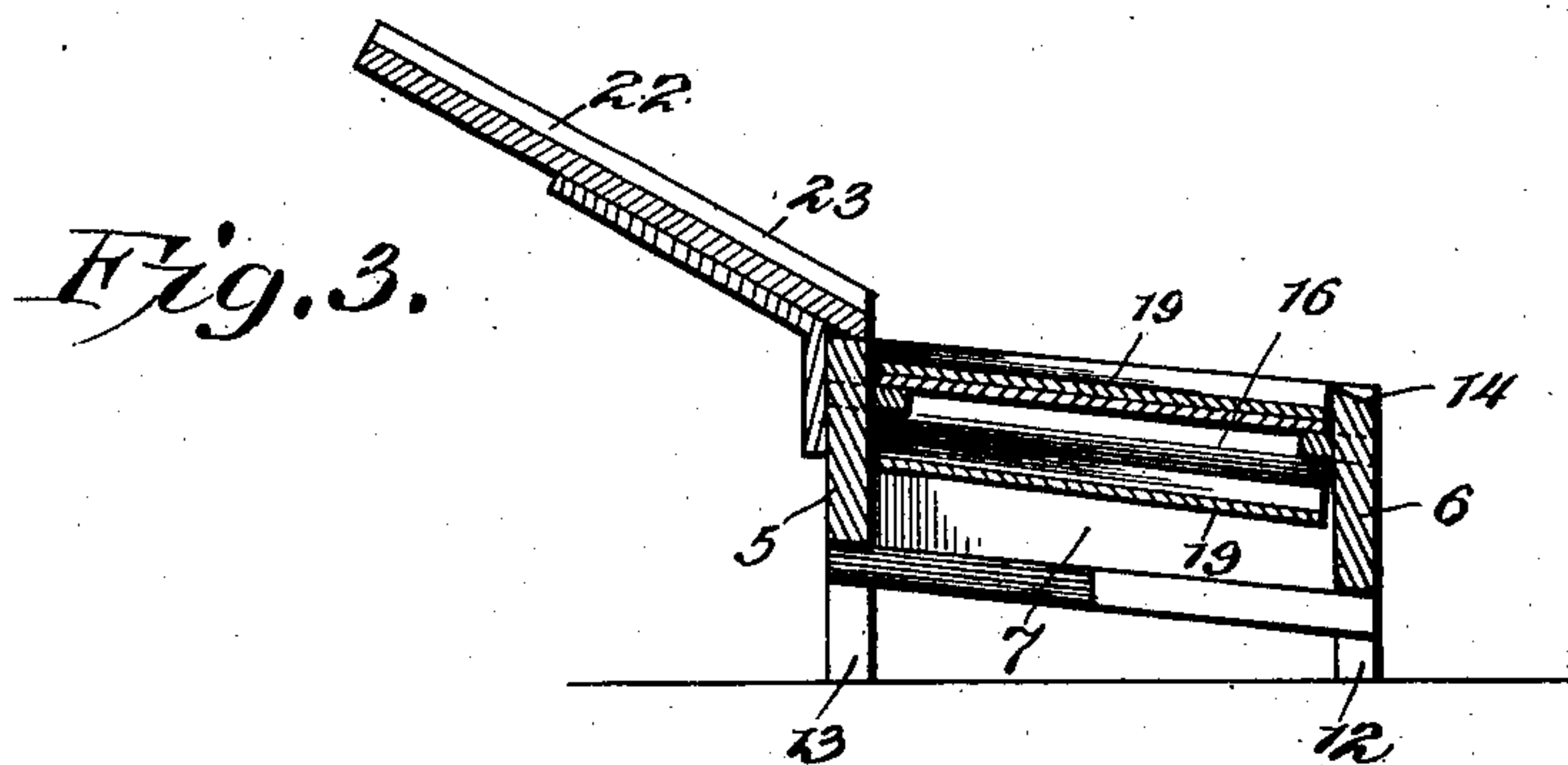
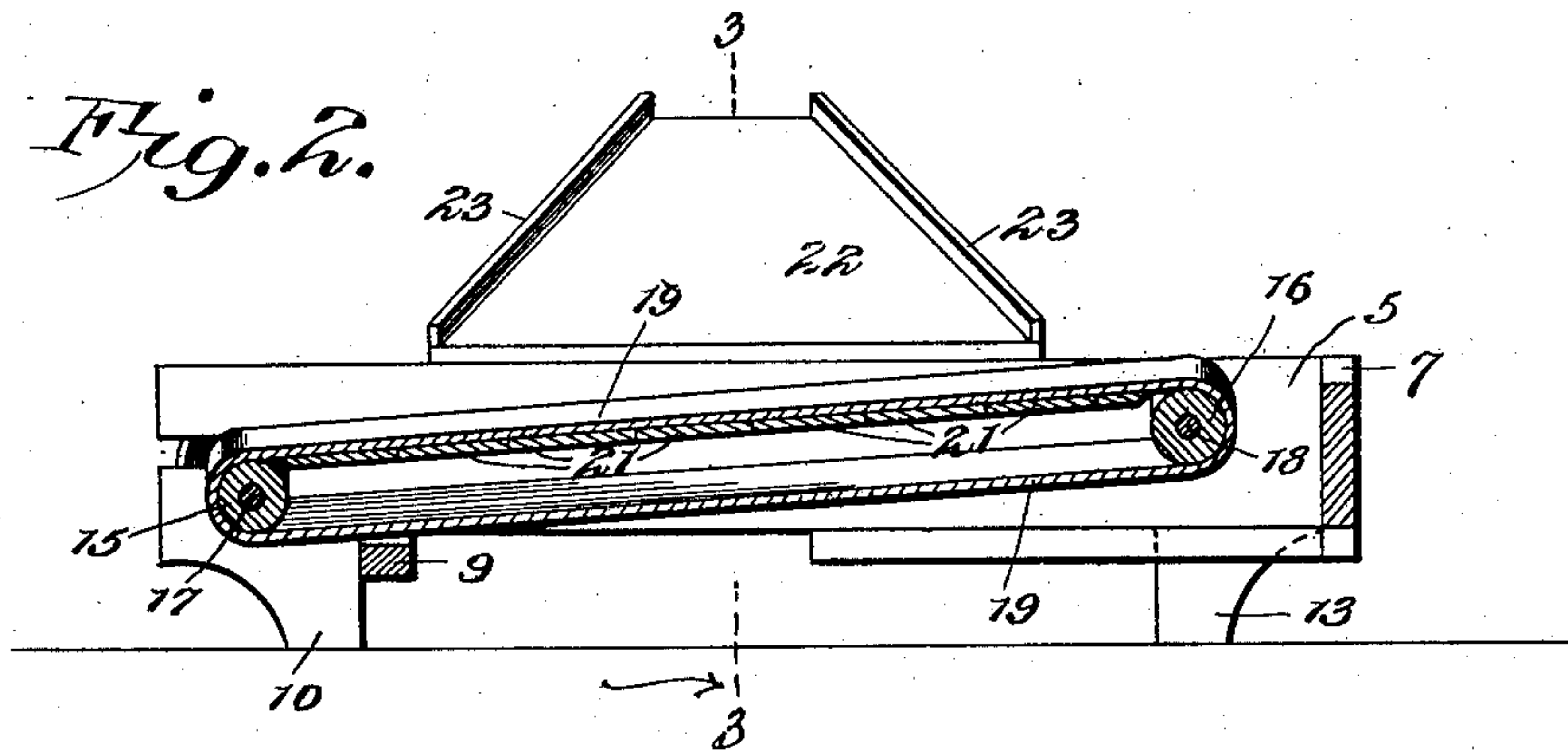
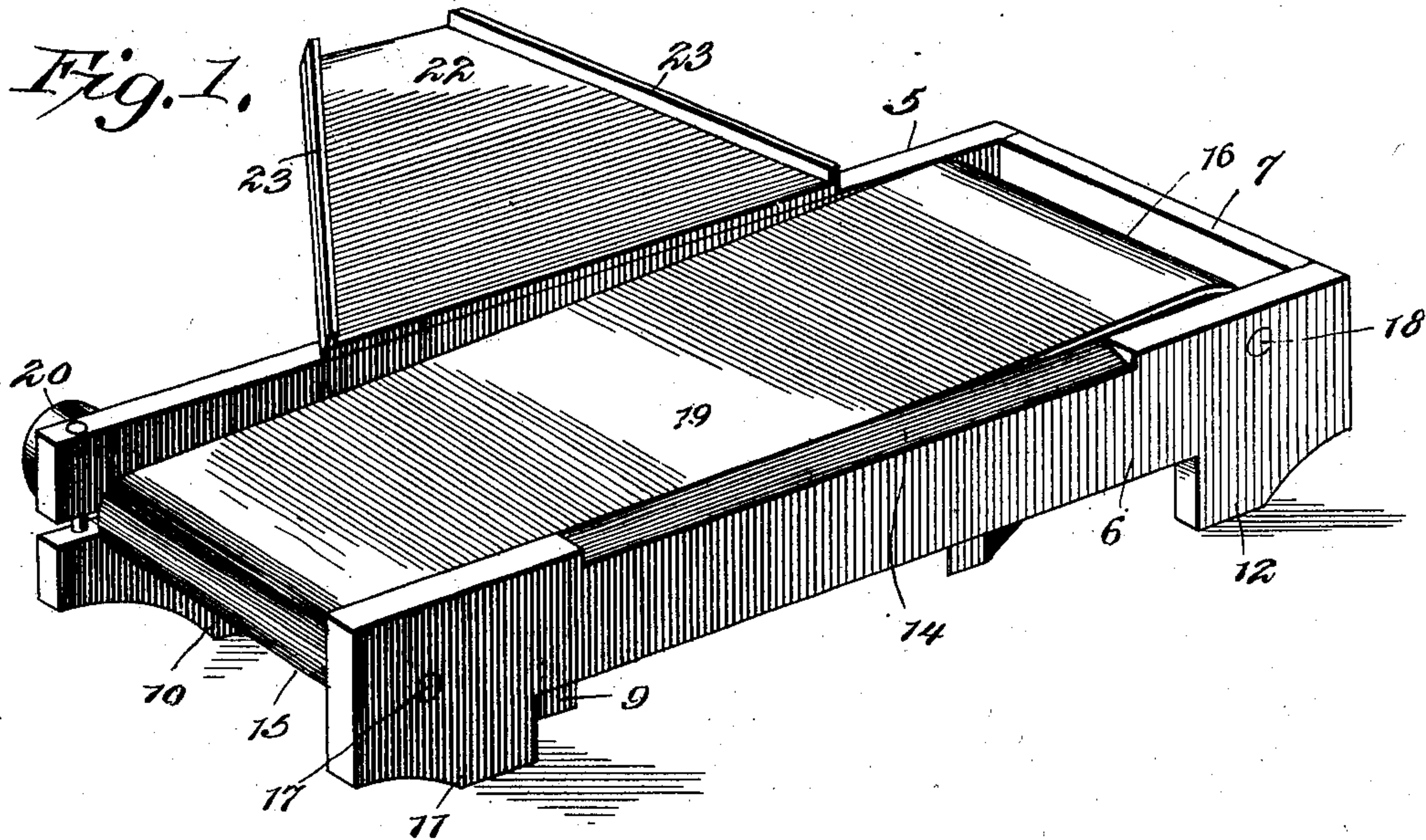
No. 733,944.

PATENTED JULY 21, 1903.

C. CARLSON.
ORE WASHER.

APPLICATION FILED JUNE 13, 1900.

NO MODEL.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLIE CARLSON, OF JOPLIN, MISSOURI.

ORE-WASHER.

SPECIFICATION forming part of Letters Patent No. 733,944, dated July 21, 1903.

Application filed June 13, 1900. Serial No. 20,205. (No model.)

To all whom it may concern:

Be it known that I, CHARLIE CARLSON, a citizen of the United States, residing at Joplin, in the county of Jasper and State of Missouri, have invented a new and useful Ore-Washer, of which the following is a specification.

This invention relates to apparatus for treating ores, and more particularly to the class of ore-washers wherein the ore in a finely-divided state is distributed upon a table or apron by the action of a stream of water, the lighter particles of foreign matter being washed away, while the heavier particles of the ore settle and are recovered from the table or apron.

The object of the invention is to provide a construction wherein the reclaimed ore will distribute itself in a layer of varying thickness and purity and will be discharged in such manner that the portions of different purity may be separately collected.

Further objects and advantages of the invention will be evident from the following description.

In the drawings forming a portion of the specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a perspective view of the complete machine, omitting the water-supply pipes. Fig. 2 is a longitudinal section of the apparatus. Fig. 3 is a section on line 3 3 of Fig. 2.

Referring now to the drawings, the present ore-washer comprises a rectangular frame, including sides 5 and 6, having an end piece 7, the sides at the opposite end of the frame being connected at their under edges by a cross-brace 9, the specific construction of the frame, however, being immaterial, as will be understood.

Each side 5 and 6 of the frame has supporting-feet 10, 11, 12, and 13, the feet 11 and 12 at one side being somewhat shorter than the feet 10 and 13, so that the frame has a transverse slant, the lower side 6 having its upper edge cut away intermediate of its ends to form a discharge-spout 14, as shown, the upper edges of the sides of the frame lying horizontally, as shown.

At each end of the frame and within the inclosure thereof are rotatably mounted rollers 15 and 16, carried by shafts 17 and 18, which

are journaled in the sides 5 and 6, these rollers having substantially the same diameter and being disposed to conform to the lateral slant of the frame. The two rollers are disposed at different distances from the upper edges of the sides 5 and 6 of the frame, the roller 15 lying lower than the roller 16, and engaged with these rollers is an endless flexible belt 19, of canvas or other suitable material, the shaft of roller 15 having a pulley 20, through the medium of which the roller may be turned to feed the belt thereover, the belt in practice being moved with its upper surface down the incline from the roller 16 to the roller 15.

The belt 19 extends entirely across the interior of the frame, with its edges abutting against the inner faces of the sides 5 and 6, and the upper side of the belt between the supporting-rollers runs and lies against transverse supporting-boards 21, so that the belt may be held from sinking between the rollers.

Lying upon the upper edge of the side of the frame is a chute 22, the end of which upon the side of the frame is flared, as shown, said chute having raised edges 23, so that water and ore supplied thereto may run down the chute and discharge therefrom onto the moving belt. The ore, as above intimated, is in a finely-divided state and is supplied to the chute, down which runs a stream of water, the heaviest ores as they pass from the chute onto the belt settling rapidly upon the belt, while the lighter ores are washed across, the sand and other foreign matter being washed entirely across the belt and out over the discharge portion of the side 5 of the frame. The tilt of the belt secures a uniform depth of water, and hence the ores of different specific gravities will be deposited in a layer of even thickness, but of varying degree of purity, the purest ores being adjacent the side 5 and the ores of least purity—i. e., the lightest ores—being at the opposite side of the belt. These separated or washed ores are finally discharged at the lower end of the belt, and by collecting at different points of the width of the belt ores of different purities may be recovered.

In operation the belt 19 moves very slowly, and the material to be separated is washed transversely onto the same from the chute 22

and is spread thereby. As the material falls upon the belt from the chute and travels transversely across the table it forms, owing to its varying specific gravity, into strata extending longitudinally of the bed, the first stratum being composed of the heavier material and lying next to the upper side 5 of the device, the next stratum being of a lighter material, and so on, until the sand and other light impurities are washed over the side 6 of the frame. While the foregoing is taking place the material will accumulate upon the bed until it entirely fills the same and becomes flush with the upper horizontal edges of the sides 5 and 6 from the point of delivery onto the bed to the discharge end thereof, thus constituting a smooth even surface horizontal longitudinally, but inclined from back to front, over which the water and incoming ore to be cleaned and separated are continuously washed and from which a portion of the material in its separated condition is being continuously drawn at the discharge end of the table. In practice the speed of the belt is regulated according to the quantities of material being received thereby, thus insuring a uniform quantity of material being maintained upon the belt.

It will be understood that in practice various modifications of the specific construc-

tion shown may be made and involving the essence of the present invention and that any suitable materials and proportions may be used without departing from the spirit of the invention.

What is claimed is—

In an ore-separator, the combination with a suitable frame, of a table mounted therein with its longitudinal edges abutting against the sides of the frame, said table being uniformly inclined both longitudinally and transversely, and adapted to travel continuously in the direction of its longitudinal inclination to discharge the separated material, means for delivering material transversely to the table at its higher side, and means for discharging the impurities transversely from the table at its lower side; whereby the material in its passage transversely across the table will be separated into strata of varying degrees of purity and be delivered in its separated condition at the lower longitudinal end of the table.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLIE CARLSON.

Witnesses:

TILLIE MULLER,
BLANCHE ELAM.