We GEWERKSCHAFT EISENHUTTE WESTFALIA, a body corporate organized and existing under the laws of the Federal Republic of Germany, of 4670 Lunen, Federal Republic of Germany,

hereby apply for the grant of a Patent for an invention entitled:

"IMPROVEMENTS IN MACHINE FRAME ASSEMBLIES AND ARRANGEMENTS FOR SCRAPER-CHAIN CONVEYORS"

which is described in the accompanying complete specification.

The application is a convention application and is based on the application(s) for patent or similar protection made in GERMANY on 21st May, 1976 under No. P 26 22 672.2

The address for service is care of DAVIES & COLLISON, Patent Attorneys, of 1 Little Collins Street, Melbourne, in the State of Victoria, Commonwealth of Australia.

DATED this 6th day of April, 1977.

H. V. Dimmington

(a member of the firm of DAVIES & COLLISON) for and on behalf of the applicant
AUSTRALIA
Patents Act 1952-1973

DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT OR PATENT OF ADDITION

In support of the Convention application made for a patent or patent of addition for an invention entitled "IMPROVEMENTS IN MACHINE FRAME ASSEMBLIES AND ARRANGEMENTS FOR SCRAPER-CHAIN CONVEYORS"

We
Prof. Dr. Klaus Beckmann, Heidestraße 2, 4670 Lünèn
Walter Lindner, Wilhelm-Löbbe-Allee 19, 4670 Lüne

of

do solemnly and sincerely declare as follows:

1. We, the applicant, are

We are authorized by GEWERKSCHAFT EISENHÜTTE WESTFAlia, the applicant

for the purpose of making this declaration on its behalf.

Fed. Rep. of

2. The basic application as defined by section 141 of the Act was made in Germany on the 31st day of May, 1976, by GEWERKSCHAFT EISENHÜTTE WESTFAlia.

3. WE, HELMUT TEMME, of Im Eickel 59, 4355 Waltrop, Federal Republic of Germany, and OSKAR KÖHLER, of Alisenstrasse 1, 4670 Lünèn of Sud, Federal Republic of Germany, both citizens of the Federal Republic of Germany.

are the actual inventors of the invention and the facts upon which I am entitled to make the application are as follows:—

GEWERKSCHAFT EISENHÜTTE WESTFAlia are the assignees of the inventors.

4. The basic application referred to in paragraph 2 of this Declaration was the first application made in a Convention country in respect of the invention the subject of the application.

(or where a request is made under section 142AA of the Patents Act 1952-1973, for an earlier application made in a Convention country to be disregarded)

4. (1.) The basic application referred to in paragraph 2 of this Declaration was not the first application made in a Convention country in respect of the invention the subject of the application.

(2.) An earlier application in respect of the invention the subject of the application was made in

(3.) A request has been made to you under section 142AA of the Patents Act 1952-1973 to disregard that earlier application.

(Here set out in succeeding sub-paragraphs the facts that show that section 142AA is applicable)

Except as stated in this paragraph, the basic application referred to in paragraph 2 of this Declaration was the first application made in a Convention country in respect of the invention the subject of the application.

Declared at 4670 Lünèn this 03. day of 03. 1977

Walter Beckmann
(Signature of Declarant.)

To:

THE COMMISSIONER OF PATENTS.

(IMPORTANT—Cross out inapplicable words in above Form.)
Claim 1. A machine frame assembly for a scraper-chain conveyor; said assembly comprising side walls, a drum around which the scraper-chain assembly of the conveyor is entrained, the drum being rotatably mounted between the side walls, guide means for guiding the scraper-chain assembly onto the drum, the guide means including a detachable guide plate adjacent the drum, a chain stripping device detachably supported by support means located beneath the guide plate, the support means including a locating member for engaging and locating the chain stripping device in position and locating and locking means formed on the underside of the guide plate for direct engagement with the device to lock the device in position while permitting the device to be directly removed by merely detaching the guide plate.
The following statement is a full description of this invention, including the best method of performing it known to us:-

"IMPROVEMENTS IN MACHINE FRAME ASSEMBLIES AND ARRANGEMENTS FOR SCRAPER-CHAIN CONVEYORS"
The present invention relates in general to machine frame assemblies for scraper-chain conveyors and more particularly to assemblies and arrangements which employ chain stripping devices for stripping or separating the chain or chains of the scraper-chain assembly from the sprocket of the drum thereof. It is known from U.K. Patent Specification 1406300, to have a chain stripping device which is releasably held in position. In the construction described in this patent specification the device has bolts or spigots which engage in apertures in a holder and the spigots are locked in position by retaining means formed on the underside of a guide tongue or plate which forms part of a guide surface guiding the scraper-chain assembly onto the drum. When the guide plate is detached the bolts or spigots can be removed to permit the chain stripping device to be released.

A general object of the present invention is to provide an improved assembly.

In one aspect the invention provides an arrangement comprising a detachable guide plate for guiding a scraper-chain assembly of a conveyor onto a drum.
around which it is entrained, a chain stripping device
for separating the chains of the scraper-chain
assembly from the drum, the chain stripping device
being supported beneath the guide plate and at least
one locking member at the underside of the guide plate
for directly locating with the device to lock the
latter in position whereby the chain stripping
device can be released by lifting when the guide plate
is detached.

The invention also provides a machine frame
assembly for a scraper-chain conveyor; said assembly
comprising side walls, a drum around which the scraper-
chain assembly of the conveyor is entrained, the drum
being rotatably mounted between the side walls, guide
means for guiding the scraper-chain assembly onto the
drum, the guide means including a detachable guide
plate adjacent the drum, a chain stripping device
detachably supported by support means located beneath
the guide plate, the support means including a locating
member for engaging and locating the chain stripping
device in position and locating and locking means formed
on the underside of the guide plate for direct engagement
with the device to lock the device in position while
permitting the device to be directly removed by merely
detaching the guide plate.
An assembly made in accordance with the invention can be constructionally simple permitting the chain stripping device to be easily removed and replaced in a vertical sense into a pocket beneath the guide plate.

Preferably, the locating member also positively connects with the chain stripping device to co-operate with the locating means in holding the device and prevent its movement towards and away from the drum. Indeed the locating member and the locking means may both take the same form, such as projections engaging in recesses or grooves in the upper and lower faces of the chain stripping device. Conveniently round bars welded, for example, to the guide plate and to a support bracket or the like may constitute these projections. In contrast to the prior art separate loose parts can thus be avoided. An advantageous feature of the invention is to make the chain stripping device symmetrical with the recesses or grooves located so that the entire device can be fitted either way up.

It is advisable, as is known, to permit the device to be displaced parallel to the drum axis, to a limited extent for adjustment purposes.

The chain stripping device can be of integral construction with at least one stripping element or blade with an arcuate front face.
The support means for the device may take the form of a bracket detachably secured to a transverse structure extending between the side walls. The bracket can be L-shaped with an upstanding wall secured to the transverse structure, and a foot wall carrying said locating member and wherein web plates extend from the upstanding wall towards the drum and constitute part of the means detachably mounting the guide plate.

In one preferred embodiment of the invention a machine frame assembly comprises side walls, a transverse structure mounted between the side walls and having an upper wall, a drum rotatably mounted between the side walls, a guide plate forming a continuation of the upper wall and leading to said drum, a first projection formed on the underside of the guide plate, a bracket support arrangement detachably secured to said transverse structure and facing the drum, the guide plate being detachably mounted to said arrangement a second projection formed on the support arrangement opposite the first projection of the guide plate and a chain stripping device detachably held between the guide plate and the support arrangement by the engagement of said projections in recesses of the device.

The invention may be understood more readily, and various other features of the invention may become
apparent, from consideration of the following description.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawing, wherein:

Figure 1 is an end view of part of a machine frame provided with a chain-stripping device and made in accordance with the invention;

Figure 2 is a part-sectional side view of the arrangement depicted in Figure 1, together with the drum; and

Figure 3 is a sectional plan view of the arrangement shown in Figure 2;

The drawing shows only part of a machine frame for a scraper-chain conveyor. The frame, as is known, has parallel vertical side walls between which is mounted a rotatable drum around which is entrained a scraper-chain assembly of the conveyor. In this particular embodiment the scraper-chain assembly is of the "inboard" type employing two chains running along the central parts of the conveyor channel sections or pans. The drum, which is either driven or freely rotatable, is denoted by reference numeral 10 in Figures 2 and 3. As illustrated in Figure 2
between the side walls of the frame there is a box-like floor or transverse structure 12 with an inclined upper wall component 11 forming a guide ascending to the upper region of the drum 10. The wall component 11 would normally run smoothly onto the floor of an end channel section or pan of the conveyor. The structure 12, rigidly affixed to the side walls, has an end wall 13 conveniently welded in which serves to mount an arrangement incorporating a chain-stripping device constructed in accordance with the invention. More particularly, an L-shaped bracket support 15 has a main upstanding wall 14 adjoined by welding, or integral with a lower horizontal foot wall projecting towards the drum 10. The main wall 14 carries spigots 17 in its central region which locate in bores in the wall 13. Screws or nuts-and-bolts detachably secure the walls 13, 14. Two spaced-apart parallel shaped web plates 18 are also affixed, as by welding, to the wall 13. The outer edges of the web plates 18 facing the drum 10 have a shape indicated at 18' in Figure 2. The web plates 18 carry mounting blocks 19 at their upper regions and a guide tongue or plate 20 is detachably fixed to these blocks 19 with the aid of screws 21 or the like and similar co-operating blocks. The plate 20 is so arranged and mounted as to form a continuation of the wall component 11 as shown in Figure 2.
The plate 20 has a central recess 22 accommodating the chain-stripping device 23 which here takes the form of two parallel arcuate stripper blades or elements 26. The elements 26, as is known, penetrate the chain sprocket assembly 24 of the drum 24 to ensure the chains of the scraper-chain assembly separate from the sprocket assembly 24. The stripper elements 26 are connected together rigidly by means of a welded-in spacer 25 which locates together with portions of the elements 26 in a pocket defined by the bracket 15 and the plate 20.

The elements 26 carry or are formed with lateral supports in the form of projections or spigots 27 at the lower region of their outer sides. At the inner faces of the web plates 18 there are blocks 29 welded thereto. The projections 27 are spaced from the blocks 29 to form limiting stops. A support and locating member in the form of a round bar 28 is welded to the lower wall of the bracket 15 and the bar 28 is also preferably welded to the blocks 29. A complementary locating and locking member also in the form of a round bar 31 is welded to the underside of the detachable plate 20 to extend parallel to the bar 28. The elements 26 are provided with grooves or recesses 30, 32 in their upper and lower faces or edges which receive the bars 28, 31 respectively.
The stripping device 23 is thus positively located and locked in position by the bars 28, 31 while a certain limited lateral displacement along the bars 28, 31 is defined by the projections 27. In this way the device can be positioned to conform with the drum 10 and more particularly its sprocket assembly 24. Other shapes can be adopted for the projections or members 28, 31 and their corresponding recesses 30, 32.

To dismantle the device 23 the plate 20 is first removed by releasing the screws 21 thereby enabling the device 23 to be lifted straight up from the bar 28. Conversely to re-assemble the device 23 it is located on the bar 28 and the plate 20 is secured by the screws 21 to lock in the device 23 with its bar 31.

The device 23 is symmetrical and the recesses 30, 32 are arranged in corresponding positions vis a vis a median plane so that the device 23 can be transposed through 180° and inverted with the recess 32 locating on the bar 28 and the recess 30 locating with the bar 31. The device 23 can be adapted to conform with other scraper-chain assemblies. For example, a single plate 26 can be provided for a single chain assembly. Other modifications are possible within the general scope of the appended claims.
The claims defining the invention are as follows:-

1. A machine frame assembly for a scraper-chain conveyor; said assembly comprising side walls, a drum around which the scraper-chain assembly of the conveyor is entrained, the drum being rotatably mounted between the side walls, guide means for guiding the scraper-chain assembly onto the drum, the guide means including a detachable guide plate adjacent the drum, a chain stripping device detachably supported by support means located beneath the guide plate, the support means including a locating member for engaging and locating the chain stripping device in position and locating and locking means formed on the underside of the guide plate for direct engagement with the device to lock the device in position while permitting the device to be directly removed by merely detaching the guide plate.

2. An assembly according to claim 1, wherein the locating and locking means takes the form of a projection received by at least one recess in the device.

3. An assembly according to claim 1, wherein the locating and locking means takes the form of a round bar engaging in at least one groove of the device.

4. An assembly according to claim 1, 2 or 3, wherein the locating member takes the form of a projection
received by at least one recess in the device.

5. An assembly according to claim 1, 2, or 3, wherein the locating member takes the form of a round bar engaging in at least one groove on the device.

6. An assembly according to claim 1, wherein the locking means and the locating member prevent movement of the chain-stripping device in a direction towards and away from the drum.

7. An assembly according to any one of claims 1 to 6, wherein the support means is a bracket detachably secured to a transverse structure extending between the side walls.

8. An assembly according to claim 7, wherein the bracket is L-shaped with an upstanding wall secured to the transverse structure, and a foot wall carrying said locating member and wherein web plates extend from the upstanding wall towards the drum and constitute part of the means for detachably mounting the guide plate.

9. An assembly according to claim 1, wherein the chain-stripping device has recesses which receive the locking means and the locating member and wherein the device is symmetrical and is arranged so that it can be positionally inverted with respect to the locating and locking means and the locating member.
10. An assembly according to any one of claims 1 to 9, wherein the chain-stripping device can move laterally parallel to the drum for adjustment purposes and stop means is provided for limiting this lateral movement.

11. In or for a machine frame assembly for a scraper-chain conveyor which assembly has side walls with a drum rotatably mounted between the side walls around which is entrained a scraper-chain assembly of the conveyor, the arrangement comprising a detachable guide plate for guiding the scraper-chain assembly to the drum, a chain-stripping device for separating the chains of the scraper-chain assembly from the drum, the chain-stripping device being supported beneath the guide plate and at least one locking member at the underside of the guide plate for locating with the device to lock the latter in position whereby the chain-stripping device can be released by lifting when the guide plate is detached.

12. A machine frame assembly for use with a scraper-chain conveyor and comprising side walls, a transverse structure mounted between the side walls and having an upper wall, a drum rotatably mounted between the side walls, a guide plate forming a continuation of the upper wall and leading to said
drum, a first projection formed on the underside of the guide plate, a bracket support arrangement detachably secured to said transverse structure and facing the drum, the guide plate being detachably mounted to said arrangement, a second projection formed on the support arrangement opposite the first projection of the guide plate and a chain-stripping device detachably held between the guide plate and the support arrangement by the engagement of said projections in recesses of the device.

13. A machine frame assembly substantially as described with reference to, and as illustrated in, the accompanying drawing.

Dated this 13th day of December, 1979
GEWERKSCHAFT EISENHUTTE WESTFALIA
by its Patent Attorneys
DAVIES & COLLISON