ILLUSTRATED TALK GIVEN AS FEATURE OF JOINT MEETING

Engineering Societies Hear Link-Belt Engineer

MOVIES SHOWN

Members of the Armour branches of the various engineering societies heard an illustrated lecture, which was given by R. F. Bergmann, assistant chief engineer of the Link-Belt Company. The subject of his talk was "Material Conveyance Equipment." He was secured through the efforts of Dean Heald and Mr. R. P. Petersen, an Armour alumnus.

The first part of the talk consisted in slides illustrating the different types of conveying machinery. The three main types of conveyors are the screw, belt, and chain. These were described in detail in the slides and commented upon by Mr. Bergmann in order to enlighten the group.

The screw conveyor essentially consists of a central shaft or pipe around which a sheet steel spiral is wound, and which rotates in a V-shaped trough. Material is dragged through the trough by the action of the screw.

Describes Screw Conveyor

There are two general forms of screw conveyors: The full-blade spiral, and the ribbon blade. In the former the blade, or flight, extends and is attached to the central shaft. In the latter a narrow spiral band is connected by gudgeons to the shaft but does not touch it. The full blade screw is used for dry, granular materials, such as coal, and the ribbon conveyor is used for handling sticky materials such as sugar, wet clay, etc. The full blade screw is used also in an enclosed trough for raising crushed materials vertically to upper floors.

The belt conveyor consists essentially of a carrying belt, intermediate rollers or idlers for supporting the belt; head and tail pulleys and the supporting structure. The belt may be of canvas, rubber, impregnated layers of cotton duck or a thin flat steel band. For carrying bulk materials the belt is generally given a trough shape by the idlers, and for transporting packages the belt is usually flat.

Special Discharge Methods

Troughing idlers usually consist of a series of three or more pulleys mounted on a shaft in one plane, the whole being supported on a board or a steel member. Intermediate rollers for flat belts generally consist of a straight-face steel tube carried on a shaft with journals at either end.

The discharge of materials from a belt conveyor is effected by a device known as a belt tripper. It consists of two superimposed pulleys with their shafts and bearings mounted on a frame, so that the load is carried over the upper pulley and discharged into a chute. The frame may be fixed, or it may be mounted on a wheeled carriage which is movable on rails from power supplied by the belt.

A very important type of chain conveyor is the pivoted-bucket carrier. This conveyor consists of two parallel strands of steel or malleable iron roller chain between which is mounted a series of sheet steel, cast-iron or malleable iron buckets. The buckets are made so that each bucket in the series overlaps the one preceding, thereby making an articulated line without gaps. The buckets are suspended from their central points and are free to swing so that their vertical center lines are always normal to a horizontal line. This arrangement permits the conveyor to be used simultaneously for horizontal conveying and for elevating.

Various Types Used

The discharge of the buckets is effected by turning them over on a specially designed dump carriage which is movable on the same rails that carry that conveyor. Each bucket has a lug on its side, and this lug coming in contact with a curved section of the discharger causes the bucket to turn completely over, emptying its contents into the receiver.

A continuous elevator consisting of a chain or belt having buckets attached at intervals is known as a bucket elevator. The head and foot are mounted in a frame for supporting shafting and pulleys. The buckets may be spaced or continuous on the belt. The latter are known as continuous-bucket elevators, and the former as spaced-bucket elevators. Spaced-bucket elevators are of centrifugal discharge type and are relatively high-speed machines. Continuous-bucket elevators are operated at a low-speed. These elevators are used for all bulk materials that do not adhere to the buckets.

Skip-hoist Is Automatic

An apparatus for the intermittent hoisting of bulk material, consisting of a tower with guides, or an inclined runway with trucks on which the load-carrying bucket travels is known as the skip-hoist. Steel wire hoisting rope leads from the bucket over sheaves at the top of the tower and thence to a single drum hoisting engine. A hopper with a loading spout and gate at the bottom is arranged for loading the skip bucket when it is in the pit, and it is emptied at the top by dumping.

The automatic skip operates continuously, starting up when the load in the skip has become equal to a predetermined amount, shutting off the loading chute, dumping at the top, waiting a sufficient interval for all the contents to pass out and returning to the loading pit at the bottom, where it automatically opens the loading gate and is ready to repeat the cycle. It was used for conveying large quantities of limestone to the top of hoppers in the moving picture of the Marblehead Lime Company.

Movies Show Application

In certain types of conveying machinery it is necessary to remove pieces of iron from a stream of bulk material so as to prevent damage to machines to which it may be passing. To do this a magnetic separator is used which consists of a magnetic pulley for a belt conveyor, in which the iron and steel are held against the belt while it passes around the pulley after it has delivered the material.

In the moving picture of the Marblehead Lime Company in action, everyone of the types of conveyance heretofore mentioned were seen in operation. The picture showed the application of each one of these machines to the type of work which it was necessary to perform.

SIDELINES

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WITH THE presentation of Major Fordney to the student body, the factor of personal element was no longer omitted from the subject of the stratosphere flight. We have read accounts of that scientific undertaking but to no avail as compared to the satisfaction and benefits derived from the narrations of the "man involved." We fully appreciate that educational incident and hereby extend a sincere vote of thanks to the member of the faculty who was instrumental in securing that valuable speaker, Major Fordney.

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THE QUESTION of the sale of beer over bars is again before the state legislature. The House passed the Devine bill last week, amending the state liquor control act to permit the sale of beer over bars. From all appearances it never was against the law. However, Governor Horner submitted a message of opposition and threatened to veto the bill. The governor said, "It is important we be consistent and not violate our campaign pledges, because we desire to retain the confidence of the people." There's not much confidence left to retain, but then that makes a good basic agument for reelection.

Arx News

"Wally" Sobel claims to be the only fellow who can be completely drenched, without having his . . . . put in the sink. While arguing with **"Speed" Forsythe** over a bucket of **H-2-O, "Speed"**, who for once lived up to his name, did a presto change, and low and behold **"Wally"** looked more like a drowned rat than a rat could!

Now that all you loyal ARX supporters have heard the good news, you had better call up that "sweet young thing" of yours and make a date for March 9, before someone else does. As you all know, the dance this year is to be held at the Tower and Town Club. (It's a big place, not a small place). Be sure and get your tickets NOW as they are going fast.

It looks like KUK won't be back in school next year. Since he reduced the price of his colored water, he has lost his main income. "No money, no school," says KUK!

And the frosh are still studying their composition plates.

The sophs have challenged the juniors to a track meet, and not to be out done, the juniors in turn challenged the sophs to a tennis match. By a popular vote, no letter men can compete. Looks like the juniors have it in the bag! Get me!

"Leonardo da Vinci" Stewart Sanford Granger has just completed the west facade of the spacious drafting room with a few of his famous frescos. As yet the price of his dynamic work has not been set, but should be somewhere in the millions. How about paying some of your creditors "Stew"?

A.S.M.E. Members In Essay Contest

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considered shall include papers submitted by student members in competition during the year ending June 30, 1934.

3. The awards shall be given for the best papers, adjudged from the standpoint of applicability (practical or theoretical), value as a contribution to mechanical engineering literature, completeness, originality of matter, and conciseness.

4. All papers should be sent to the secretary of the society and should be clearly marked on the outside, "Attention of Ernest Hartford for the Committee on Awards." They must be in his hands by June 30.

5. Only papers by single authors will be considered.

6. The paper should not be shorter than 2,000 words, typewritten on standard paper (8½ by 11 inches), and should have the name and address of the contestant with the name of the college, at the top of the first sheet.

Student members of the A. S. M. E. who are interested in competing, may obtain a very complete bibliography on the subject for the essay.

Convention in April

The annual A. S. M. E. convention will be held in Chicago this April. Fifteen mid-west colleges will be represented. Each college presents a fifteen minute paper on some engineering subject, to be written by a student member of the local chapter of the A. S. M. E. The paper is to be selected by a committee of the college's faculty members.

Laws Of Probability Discourage Gambling

With an understanding of the laws of probability. it is absolutely absurd to indulge in a game of chance with an expectation of making money, or words to that affect, was what Dr. J. S. Taylor, professor of mathematics at the University of Pittsburgh, stated. He also went on to say that the surest way to reduce the evils of gambling, is to teach the people how the laws of probability operate.

Because people have heard that the probability of a tossed coin falling heads is one-half, they jump to the conculsion that this means that the number of heads and tails will be approximately equal for a large number of tosses. This, he said, is very far from the truth.

Probability Values Are Ratios

Dr. Taylor then said that the probability values state facts concerning ratios, and not differences, because as the number of tosses increases, the number of heads divided by the number of tosses approaches one-half, but the difference between the number of heads and tails, does not approach zero.

This difference fluctuates very irregularly and the important feature is, if you toss long enough, there will come a time when the difference between the heads and tails is very great, while the ratio of the number of heads is still very close to one-half.

Gambling Concerns Favored

Gambling houses or devices are always favored by the odds, and result in a loss for the person who plays for any considerable period.